

BSD Security Upgrades Classroom Walls

Specifications, Bid/Permit Set

March 29, 2021

Bid Package:

Bethany and Oak Hills Elementary Schools

Bid Package:

Montclair and West Tualatin View Elementary Schools

Prepared For:

Beaverton School District

Prepared by:

Convergence Architecture

SECTION 00 01 07

SEALS PAGE

DESIGN PROFESSIONALS OF RECORD

Architect: Convergence Architecture



Electrical Engineer: Landis Consulting



TABLE OF CONTENTS

DIVISION 00 - GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS

- 000115 LIST OF DRAWINGS
- (PROVIDED BY BEAVERTON SCHOOL DISTRICT)

DIVISION 01 - GENERAL REQUIREMENTS

- 011100 SUMMARY OF WORK
- 011400 WORK RESTRICTIONS
- 012300 ALTERNATES
- 012500 SUBSTITUTION PROCEDURES
SUBSTITUTION REQUEST FORM
- 012900 PAYMENT PROCEDURES
- 013100 PROJECT MANAGEMENT AND COORDINATION
- 013123 PROJECT MANAGEMENT DATABASE (E-BUILDER)
- 013200 CONSTRUCTION PROGRESS DOCUMENTATION
- 013300 SUBMITTAL PROCEDURES
- 013500 SPECIAL PROCEDURES
- 013526 SAFETY REQUIREMENTS
- 013553 SECURITY PROCEDURES
- 014100 REGULATORY REQUIREMENTS
- 014200 REFERENCES
- 014500 QUALITY CONTROL
- 015100 TEMPORARY UTILITIES
- 015200 CONSTRUCTION FACILITIES
- 015300 TEMPORARY CONSTRUCTION
- 015500 VEHICULAR ACCESS AND PARKING
- 015600 TEMPORARY ENCLOSURES
- 015800 PROJECT IDENTIFICATION
- 016100 COMMON PRODUCT REQUIREMENTS
- 016200 PRODUCT OPTIONS
- 016400 OWNER-FURNISHED PRODUCTS
- 016500 PRODUCT TRANSPORTATION, STORAGE, AND HANDLING REQUIREMENTS
- 017100 EXAMINATION AND PREPARATION
- 017400 CLEANING AND WASTE MANAGEMENT
- 017600 PROTECTING INSTALLED CONSTRUCTION
- 017700 CLOSEOUT PROCEDURES
- 017800 CLOSEOUT SUBMITTALS
- 017900 DEMONSTRATION AND TRAINING

DIVISION 02 – EXISTING CONDITIONS

- 024119 SELECTIVE DEMOLITION

DIVISION 05 – METALS

- 054000 COLD-FORMED METAL FRAMING

DIVISION 06 – WOOD, PLASTICS, & COMPOSITES

- 061000 WOOD CARPENTRY

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

- 072300 INTERIOR PARTITION ACOUSTICAL INSULATION
- 079200 JOINT SEALERS

DIVISION 08 – OPENINGS

- 081113 HOLLOW METAL DOORS AND FRAMES
- 082000 SOLID CORE WOOD DOORS
- 087100 DOOR HARDWARE

DIVISION 09 – FINISHES

- 092900 GYPSUM BOARD
- 095113 ACOUSTICAL PANEL CEILINGS
- 096513 RESILIENT WALL BASE
- 096800 CARPET FLOORING
- 097200 WALL COVERINGS
- 099100 PAINTING

DIVISION 10 – SPECIALTIES

- 102813 TOILET ACCESSORIES

DIVISION 21 – FIRE SUPPRESSION

- Not included.

DIVISION 22 – PLUMBING

- Not included.

DIVISION 23 – MECHANICAL

- Not included.

DIVISION 26 – ELECTRICAL

- 260000 GENERAL ELECTRICAL REQUIREMENTS
- 260519 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES
- 260533 RACEWAYS AND BOXES FOR ELECTRICAL SYSTEMS
- 260553 ELECTRICAL AND CONTROL IDENTIFICATION
- 260583 WIRING CONNECTIONS
- 262726 WIRING DEVICES

DIVISION 27 – COMMUNICATION SYSTEMS

- 270000 GENERAL COMMUNICATIONS SYSTEM REQUIREMENTS
- 270000 COMMUNICATIONS HORIZONTAL CABLING

DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

- 283000 FIRE DETECTION AND ALARM

TESTING REPORTS

- BSD_BETHANY ELEMENTARY_ASBESTOS SURVEY REPORT_02-26-2021
- BSD_MONTCLAIR ELEMENTARY_ASBESTOS SURVEY REPORT_02-26-2021
- BSD_OAK HILLS ELEMENTARY_ASBESTOS SURVEY REPORT_02-26-2021
- BSD_WEST TUALATIN VIEW ELEMENTARY_ASBESTOS SURVEY REPORT_02-26-2021

END OF SECTION

SECTION 00 01 15

LIST OF DRAWINGS

NOTE: Users of this Project Manual shall check the Construction Documents with the List of Drawings to be sure each sheet is included.

LIST OF DRAWINGS (BID PACKAGE - DATED 3/29/2021)

ARCHITECTURAL

Bethany Elementary School:

B.A0	CODE, GENERAL NOTES, SITE PLAN, OVERALL PLAN
B.A1	ACCESSIBILITY IMPROVEMENTS
B.A2	FLOOR PLAN
B.A3	REFLECTED CEILING PLAN, SCHEDULES
A.8	GENERAL DETAILS
E.1	ELECTRICAL ABBREVIATIONS AND SYMBOLS LEGEND
B.ED2	ELECTRICAL DEMOLITION PLANS
B.E2	ELECTRICAL PLANS

Montclair Elementary School:

M.A0	CODE, GENERAL NOTES, SITE PLAN, OVERALL PLAN
M.A1	ACCESSIBILITY IMPROVEMENTS
M.A2	FLOOR PLAN, REFLECTED CEILING PLAN, SCHEDULES
A.8	DETAILS
E.1	ELECTRICAL ABBREVIATIONS AND SYMBOLS LEGEND
M.ED2	ELECTRICAL DEMOLITION PLAN
M.E2	ELECTRICAL PLANS

Oak Hills Elementary School:

OH.A0	CODE, GENERAL NOTES, SITE PLAN, OVERALL PLAN
OH.A1	ACCESSIBILITY IMPROVEMENTS
OH.A2	FLOOR PLAN, REFLECTED CEILING PLAN, SCHEDULES
A.8	GENERAL DETAILS
E.1	ELECTRICAL ABBREVIATIONS AND SYMBOLS LEGEND
OH.ED2	ELECTRICAL DEMOLITION PLANS
OH.E2	ELECTRICAL PLANS

West Tualatin View Elementary School:

WTV.A0	CODE, GENERAL NOTES, SITE PLAN, OVERALL PLAN
WTV.A1	ACCESSIBILITY IMPROVEMENTS
WTV.A2	FLOOR PLAN, SCHEDULES
A.8	GENERAL DETAILS

END OF SECTION

SECTION 01 11 00**SUMMARY OF WORK****PART 1 GENERAL****1.1 CONDITIONS AND REQUIREMENTS**

- A. The Bidding Requirements, provided under Division 0, and the Sections contained in Division 1 – GENERAL REQUIREMENTS of these Specifications apply to the Work specified in this Section.

1.2 SECTION INCLUDES

- A. Sections contained in Division 0 and Division 1 of the Specifications apply to the Work specified in this Section and in each Section of the Specifications. The Contractor shall instruct each of his Subcontractors to become fully familiar and comply with all requirements of these documents.
- B. The project and the Work of the Contract can be described in summary as follows:
 - 1. Interior selective demolition as indicated on Drawings.
 - 2. Interior construction of new walls and doors as indicated on Drawings and as specified herein.
- C. General:
 - 1. Do not interrupt electric, gas, water or other services to existing Owner occupied structures without at least 72 hours prior notice to the District and then only at a definite time and for a definite duration approved by the District.
 - 2. Contractor shall schedule demolition and remodel to accommodate Owner's continued use of existing mechanical, plumbing and electrical services as required for Owner's continued occupancy and beneficial use of designated areas.
 - 3. Provide all services required. Protect and maintain existing utilities, active electrical conductors, sewers, pipes, and other active lines on school property.
 - 4. Utilities, pipes, sewers, electrical conductors and the like to be abandoned shall be capped in accordance with instruction of governing authority or as directed.
- D. Protections:
 - 1. Protect sidewalks, asphalt paving, concrete, shrubs and lawn areas at all times from spillage of materials used in carrying out the Work. Exercise care to preclude materials from clogging catch basins and yard drains. Leave all drainage items clean and in proper working condition.
 - 2. Clean, repair, resurface or restore existing surfaces to their original condition, or completely replace such surface to match existing, where damaged by construction operations.

1.3 ASBESTOS FREE CERTIFICATION

- A. Absolutely no materials containing asbestos are to be provided or installed as part of this Project. The Contractor shall ensure that no subcontractor or any of Contractor's own forces installs any materials containing asbestos. At final closeout of the Project, the Contractor shall provide to the School District certification that no materials containing asbestos have been installed in the Project and that the Project is asbestos free as required by the State of Oregon.
 - 1. Upload letter of certification to E-Builder to verify it meets the needs of the District.

1.4 COORDINATION

- A. The Contractor is responsible for overall coordination of the Project.
- B. The Drawings and Specifications are arranged for convenience only and do not necessarily determine which trades perform the various portions of the Work.
- C. Coordinate sequence of the Work to accommodate Owner occupancy. If mechanical, electrical, or plumbing work is to interrupt power or water usage, the District must be notified 72 hours in advance.
- D. Do all necessary Work to receive or join the Work of all trades.
- E. Verify location of existing utilities and protect from damage.
- F. Mechanical and Electrical Drawings: The mechanical and electrical drawings are diagrammatic. Additional offsets and bends may be required and are to be installed as may be required. The Architect may make minor adjustments in fixture, outlets, grille, louver, or ventilator locations prior to rough-in work with no additional cost to the project.
- G. Calculate dimensions and measures for layout of work; do not scale the Drawings. Record deviations from Drawing information on existing conditions, and review with the Architect at time of discovery. Record actual conditions on project record drawings.
- H. Installer Inspection:
 - 1. Require installer of each major unit of work to inspect substrate and conditions for installation, and to report unsatisfactory conditions in writing. Correct unsatisfactory conditions before proceeding with installation.
 - 2. Inspect each product immediately before installation. Do not install damaged or defective products, materials, or equipment.
 - 3. Start of installation shall be understood as acceptance of substrate conditions by the installer.
- I. Clearances: Review the Design Drawings for possible conflicts prior to rough-in. Contractor is responsible for verification that equipment will fit in the space provided. Resolve conflicts with the Architect prior to rough-in work.

1.5 CUTTING AND PATCHING

- A. Provide cutting, fitting, and patching of the Work as required.
- B. Make its several parts fit properly together.
- C. Uncover Work to provide for installation of ill-timed Work.
- D. Remove and replace defective Work.
- E. Remove and replace Work not conforming to requirements of Contract Documents.
- F. Remove samples of installed Work as specified or where directed for testing.
- G. Install specified Work in existing construction.

- H. Uncover Work to provide for Architect's observation of Work covered prior to inspection or approval.
- I. Provide routine penetrations of non-structural surfaces for installation of piping, ducts, electrical conduit, and other mechanical and electrical items.

1.6 SUBMITTALS-All BSD contracts require use of E-Builder Process module.

- A. Submit schedule of all shop drawings, product data and samples specified in each individual section of the project manual. Coordinate construction schedule and installation dates of each product and assembly and allow ample time for Architect's review. Allow time for possible disapproval and resubmission.
- B. Deliver submittals (that need to be reviewed in person) to Convergence Architecture, 7302 N. Richmond Avenue, Portland, OR 97203.
- C. Transmit each item under Architect-accepted form. Identify Project, Contractor, Subcontractor, and major supplier; identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate. Identify deviations from Contract Documents. Provide space for Contractor and Architect review stamps.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Coordinate submittal of related items with construction schedule for timely submittal to the Architect.
- F. After Architect's review of submittal, revise and resubmit as required, identifying changes made since previous submittal.
- G. Do not fabricate products or begin work that requires submittals until return of submittal with Architect acceptance.
- H. Timing of Submittals:
 - 1. Submittals – Within 10 days of Notice of Award of Contract:
 - a. A designation of the Work to be performed by the Contractor by his own forces.
 - b. List of Subcontractors and major materials suppliers for principal portions of the Work.
 - 2. Submittals – Prior to Notice to Proceed:
 - a. Executed Agreement.
 - b. Performance and Labor & Material Payment bonds per Oregon Law (ORS 279.029, 279.542, 701.430) with certified copy of Power of Attorney from Attorney-in-Fact executing bonds.
 - c. Certified copies of Contractor's Liability Insurance Policies (AIA Doc.G705)
 - 3. Submittals – Within 15 days After Notice to Proceed and Prior to first Payment Application, upload the following to the Submittal Module on E-Builder:
 - a. Schedule of values.
 - b. Schedule of submittals. Upload to Submittal Register on E-Builder.
 - c. Copies of acquired building permit licenses etc. to complete the work of this contract.

- d. Construction schedule.
 - 4. Submittals – Prior to each Month's Payment:
 - a. Application and Certificate for Payment (AIA Document G702 and G703).
 - 1 Submit with back-up using Invoice Approval Process in E-Builder.
 - b. Notarized affidavit of payments to all subcontractors and major material suppliers.
 - c. Updated construction schedule.
 - d. Public Works Contractor Wage Certification per Oregon Law. Upload BOLI Payroll submittals to E-Builder.
 - 5. Submittals – Prior to Substantial Completion: Notification to Architect that work of the Project is substantially complete, including a listing of items of work to be completed or corrected, together with certificate of occupancy or occupancy permit issued by the Local Building Department for the entire Project.
 - a. Attach Commissioning Reports for critical life safety systems to Substantial Completion notification on E-Builder I. Schedule of Values:
 - 1 Submit typed schedule on AIA Form G703. Contractor's standard form or media-driven printout will be considered on request.
 - 2 Provide breakdown per each specification section listed in the project manual.
 - 3 Upload draft of Schedule of Values to the Submittal Module on E-Builder.
- J. See Section 01 33 00 SUBMITTAL PROCEDURES.

PART 2 PRODUCTS**2.1 MATERIAL**

- A. The Contractor warrants to the Owner that the materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will conform to the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

PART 3 EXECUTION (Not Used)**END OF SECTION**

01 14 00**WORK RESTRICTIONS****PART 1 GENERAL****1.1 WORK RESTRICTIONS**

- A. Work Sequence:
 - 1. Complex schedules, phased construction and/or compressed schedules are common.
 - 2. Coordinate work sequence and phased construction requirements with BSD Representative.

1.2 CONTRACTOR USE OF PREMISES – GENERAL

- A. General: Owner will occupy portions of the building during the construction period. Do not interfere with the Owner's operations. Coordinate use of premises under the direction of the Owner.
- B. Use of Site:
 - 1. Assume full responsibility for the protection and safekeeping of Products under this Contract, stored on the Site.
 - 2. Confine operations at the site to the areas permitted. Portions of the site beyond areas on which work is indicated are not to be disturbed.
 - 3. Move any stored Products, under Contractor's control, which interfere with operations of Owner or separate contractors.
 - 4. Keep existing driveways and entrances serving the premises clear and available at all times.
 - 5. Maintain continuity of utility services to existing building.
 - 6. Lock automotive type vehicles and other mechanized or motorized construction equipment, when parked and unattended. Do not leave vehicles or equipment unattended with the motor running. Keys are not to be left in the vehicle.
 - 7. Do not encumber the site with materials or equipment. Confine stockpiling of materials and location of storage sheds to the areas indicated.
 - 8. Limit access to prohibited locations and arrange schedules with BSD personnel.
 - 9. Define contractor areas for work, access, staging, storage, etc.
 - 10. Provide staging & logistics plan. Delineate on site plan. Submit Staging & Logistics Plan with submission of Construction Schedule.

1.3 CONTRACTOR USE OF PREMISE – EXISTING BUILDINGS

- A. Use of Site:
 - 1. Maintain the existing building in a safe and weathertight condition throughout the construction period. Repair damage caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period.
 - 2. Keep public areas such as hallways, stairs, and toilet rooms free from accumulation of waste material, rubbish, or construction debris.
 - 3. Smoking/ vaping of tobacco or marijuana products, or open fires, will not be permitted within the building enclosure or on the work site premises at all.
 - 4. Contractor personnel prohibited from undesignated areas.
 - 5. Toilet facilities are the Contractor's responsibility to provide.
 - 6. Limit/contain smoke, dust, dirt, noise – including radios to immediate work area.

7. Broom-clean work area daily.
8. Restore existing surfaces where damaged or modified by construction operations to their original condition.
9. Room may be designated for use as a field office if coordinated through the BSD representative. Room must be vacated by stipulated completion date, regardless of authorized adjustments to construction schedule.

1.4 OCCUPANCY REQUIREMENTS – EXISTING BUILDINGS

- A. Scheduling Requirements:
 1. Contractor shall organize and coordinate work in a manner that does not interfere with the normal operations of areas of the facility being occupied and used by the Owner.
 2. Contractor shall maintain safe and convenient public access to the toilet rooms at all times that the facility is normally open to the public.
 3. Contractor shall continuously maintain public entry to the portions of the building being used by the Owner. The Contractor shall also continuously maintain safe, direct and legal exiting routes from all areas of the building to the outside.
 5. Communications shall include:
 - a. Megan Finch, construction Project Manager:
 - 1) Cell Phone: 971-276-0097
 - 2) Office Phone: 503-356-4318
 - 3) Email: Megan_Finch@beaverton.k12.or.us
- B. Provide for continued occupancy, access, and egress. Existing utilities shall be maintained to the building. Provide minimum 24 hour notice for any disruption.
- C. Provide safety protection for occupants.

1.5 WORK SEQUENCE

- A. Coordinate the construction schedule and operations with the Owner's Designated Representative.
- B. The Contractor is responsible for employing an approved abatement contractor for the removal of hazardous materials at the school as necessary.
- C. It is anticipated that Contractor may begin work in June, 2021.
- D. All work shall be substantially complete on or before August, 2021.
- E. Final Completion shall occur no later than September, 2021.

END OF SECTION

SECTION 01 23 00**ALTERNATES****PART 1 GENERAL****1.1 GENERAL REQUIREMENTS**

- A. Description: Alternates indicated Bid Proposal, include changes in Work as described by the Alternates listed in this Section. Alternates may be either additive or deductive to the Base Bid. The alternate amount will either be added to or deducted from the Base Bid amount if the Owner decides to accept a corresponding change in either scope of work or in products, materials, equipment, systems, or installation methods described in the Contract Documents.
- B. Coordination: Coordinate related Work and modify or adjust surrounding Work that is affected by each accepted alternate and ensure that work is complete and fully integrated as required to complete the Project under each alternate.
- C. Note that the Information for Bidders requires that bidders bid upon all Alternates that may be indicated on the Bid Proposal. Bid the Alternate as Lump Sums which will be considered independently of each other.
- D. The Owner's electing to exercise any Alternate does not relieve the Contractor of timely completion of the project, within the periods indicated.
- E. Notification: Immediately following award of Contract, prepare and distribute to each party involved, notification of the status of each alternate. Indicate whether alternates have been accepted, rejected, or deferred for consideration at a later date.
- F. Schedule:
 - 1. A "Schedule of Alternates" is included at the end of this section.
 - 2. Specification Sections that may be referenced in each Alternate contain pertinent requirements for materials and installation to achieve the Work described by each Alternate.
 - 3. Include as part of each Alternate, miscellaneous devices, appurtenances, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.

PART 2 PRODUCTS**2.1 EMERGENCY LIGHT FIXTURE**

- A. Wall-mounted battery emergency light fixture with two high-performance LED's rated at 5.3 watts per lamp head which deliver a total of 1,100 lumens. Battery shall provide a minimum of 90 minutes of illumination at the rated wattage upon loss of building power. Thermoplastic white housing, integral test switch, and adjustable heads. Shall be rated for 120 - 277 volts and UL Listed. Lithonia model ELM6L or approved.

PART 3 EXECUTION**3.1 SCHEDULE OF ALTERNATES**

- A. Additive Bid Alternate No. 1 – If Additive Bid Alternate No. 1 is exercised by the Owner, provide.
 - 1. Alternate No. 1: Bethany Elementary - Provide new wall infill, door and associated work at Staff Lounge #C103 as shown on drawing B.A1.
 - 2. Alternate No. 1: Bethany Elementary – Remove existing lighting switch and install stainless steel blank cover plate at Staff Lounge #C103 as shown on drawing B.E2. Provide new lighting switch adjacent to new door on the latch side and connect to existing lighting circuit.
- B. Additive Bid Alternate No. 2 – If Additive Bid Alternate No. 2 is exercised by the Owner, provide.
 - 1. Alternate No. 2: West Tualatin View Elementary – Provide four (4) emergency light fixtures as described in section 2.1.A. Two shall be mounted at each exit door in the Commons, one shall be mounted in the south vestibule, and one shall be mounted in the north vestibule. Wall mount fixtures and connect to closest unswitched lighting branch circuit.

END OF SECTION

SECTION 01 25 00**SUBSTITUTION PROCEDURES****PART 1 GENERAL****1.1 SUBSTITUTIONS**

- A. Submit two copies of CSI substitution form attached at the end of this document to the Architect via E-Builder. Architect to forward any substitution to BSD representative for approval via E-Builder prior to acceptance by the Architect.
- B. Include in Request:
1. Complete data substantiating compliance of proposed substitution with Contract Documents.
 2. For Products:
 - a. Product identification, including manufacturer's name and address.
 - b. Manufacturers literature.
 - c. Product description.
 - d. Performance and test data
 - e. Reference standards.
 - f. Samples, where appropriate.
 - g. Name and address of similar projects on which product was used and date of installation.
 - h. If item deviates from District standards.
 - 1) District Standards can be viewed at the District's website at www.beaverton.k12.or.us/depts/facilities. at Home Page, click on Facilities Development" for list of documents.
 - i. Maintenance requirements
 - j. Unit Cost
 3. For Construction Methods:
 - a. Detailed description of proposed method and Drawings illustrating methods.
 - b. Itemized comparison of proposed substitutions with product or method specified.
 - c. Data relating to changes in construction schedule.
 - d. Accurate cost data on proposed substitution in comparison with product or method specified.
 - e. If method deviates from District standards.
 - 1) District Standards can be viewed at the District's website at www.beaverton.k12.or.us/depts/facilities. At Home Page, click on "Facilities Development" for list of documents.
- C. Substitution after Award of Contract
1. Substitution of products will not normally be approved after Contract is executed. However, substitutions may be considered for one or more of the following conditions.
 - a. Unavailability beyond control of Contractor, such as strikes, lockouts, discontinuance by the manufacturer or his authorized supplier.
 - b. Requirements for compliance with final interpretation of code requirements or insurance regulations.
 - c. BSD or Architect requested substitution.
 - d. If it can be shown that specified product or system is not well suited for proposed application or that another is superior and/or less costly and has attached detailed documentation including cost savings/increase.

- e. Subsequent information or data discloses inability of specified product to perform properly in the design for which it was intended.
- f. Manufacturer or fabricator refusal to certify or guarantee performance of specified product as required.
- g. Subsequent information that a long delivery rate will not be compatible with Contract construction period.
- h. Proof for any of the above set forth conditions shall be submitted to the Consultant in writing with all pertinent data in the form of a Change Order Request for Consultant's and less costly substitution shall be credited to BSD's account.

END OF SECTION



Advancement
of Construction
Technology

SUBSTITUTION REQUEST

(During the Bidding Phase)

Project: _____ Substitution Request Number: _____

 From: _____
 To: _____ Date: _____
 A/E Project Number: _____
 Re: _____ Contract For: _____

Specification Title: _____ Description: _____
 Section: _____ Page: _____ Article/Paragraph: _____

Proposed Substitution: _____
 Manufacturer: _____ Address: _____ Phone: _____
 Trade Name: _____ Model No.: _____

Attached data includes product description, specifications, drawings, photographs, and performance and test data adequate for evaluation of the request; applicable portions of the data are clearly identified.

Attached data also includes a description of changes to the Contract Documents that the proposed substitution will require for its proper installation.

The Undersigned certifies:

- Proposed substitution has been fully investigated and determined to be equal or superior in all respects to specified product.
- Same warranty will be furnished for proposed substitution as for specified product.
- Same maintenance service and source of replacement parts, as applicable, is available.
- Proposed substitution will have no adverse effect on other trades and will not affect or delay progress schedule.
- Proposed substitution does not affect dimensions and functional clearances.
- Payment will be made for changes to building design, including A/E design, detailing, and construction costs caused by the substitution.

Submitted by: _____
 Signed by: _____
 Firm: _____
 Address: _____
 Telephone: _____

A/E's REVIEW AND ACTION

- ☐ Substitution approved - Make submittals in accordance with Specification Section 01330.
☐ Substitution approved as noted - Make submittals in accordance with Specification Section 01330.
☐ Substitution rejected - Use specified materials.
☐ Substitution Request received too late - Use specified materials.

Signed by: _____ Date: _____

Supporting Data Attached: ☐ Drawings ☒ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

SECTION 01 29 00

PAYMENT PROCEDURES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Forms and procedures for progress payments.

1.2 APPLICATION FORMS

- A. For applications for payment, AIA Document G702, supported by AIA Document G703, Continuation Sheet.
- B. Prepare the schedule of values in such a manner that each major item of Work and each subcontracted item of Work is shown as a line item broken down in terms of material and labor costs on AIA Document G703, Application and Certificate for Payment Continuation Sheet in similar format.
- C. The schedule of values shall be submitted for review by the Owner and Architect prior to the first application for payment via E-Builder; and may be used when, and only when, accepted in writing by the Owner and Architect. Use E-Builder Submittal Module.
- D. Payment request is to include the Contractor's Federal Tax Identification number and return address.
- E. Each Application for Payment shall be based upon the Schedule of Values submitted by the Contractor to the BSD Representative and the Architect within 10 days of the award of Contract. The Schedule of Values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the BSD Representative and the Consultant may require: Format AIA G702 with G703 Schedule of Values.

1.3 PAYMENTS

- A. Owner will make progress payments on account of the Contract once monthly for the scheduled duration of the project based on the value of Work accomplished or materials in the job site, as stated in the schedule of values on the Application and Certificate for Payment. Complete and forward on or about the 1st day of the month.
- B. Submit via E-Builder forms requesting payment for the Architect to review.
- C. Payments will be made on protected materials on hand at the job site properly stored, protected, and insured. Materials held offsite in a bonded and insured warehouse will be considered for payment if the application for payment contains an insurance certificate and bill of sale for materials stored offsite. Estimated quantities shall be subject to Architect's review and judgment.

1.4 EARLY PURCHASE AND PAYMENT OF MATERIALS AND EQUIPMENT

- A. Order materials and equipment requiring a long lead or waiting time early so as not to delay progress of the Work.
- B. The Contractor will be reimbursed for early order materials or items upon receipt and verification of quality and quantity against submittals and shipping documents by Owner's Representative. Receipt shall be to the job site or stored at Owner's other premises in an orderly and safe manner, secured from normal weather damage. Security remains the responsibility of the Contractor.
- C. When such items are procured by BSD, the items will be assigned to the General Contractor for receiving and installation.
- D. As part of the procurement of the items, the specifications will require the start of the product warranty/guarantee extended to coincide with the Project Substantial Completion date and be fully assignable to the General Contractor or its designee.

END OF SECTION

SECTION 01 31 00**PROJECT MANAGEMENT AND COORDINATION****PART 1 GENERAL****1.1 COORDINATION**

- A. The contractor shall coordinate scheduling, submittals, sequencing of the installation of interdependent elements, utility coordination, and space requirements for installation and maintenance of finished work and storage or staging areas for all trades. The mechanical, electrical, and electrical drawings are diagrammatic and may require special coordination between trades. The Contractor shall provide multidisciplinary coordination of drawings as necessary to insure proper space and layout of various portions of the work.
- B. Notes on various drawings are not meant to determine trade or work jurisdictions. As an example, there may be “architectural” items shown or indicated on mechanical, plumbing, and electrical drawings. Further, there may also be “mechanical”, “plumbing” or “electrical” items shown on architectural drawings. The Contractor is responsible to include all items in the bid cost regardless of which drawing they are indicated on.
- C. The Contractor shall coordinate all work with the Owner’s representative to minimize conflict and insure the least inconvenience to the general public and adjoining properties. Claims for additional time or money resulting from a lack of coordination will not be considered.
 - 1. Directions shall originate only from the Owner’s designated representative and/or the Architect. Communications with other BSD stakeholders are to be considered supplementary and not binding. Instructions, information, and/or direction from other BSD stakeholders are not official direction, and must be confirmed with the Owner’s designated representative and/or the Architect.

1.2 SUPERVISION

- A. The Contractor shall provide a competent superintendent who is present on-site during all phases of construction and while work is in progress.

1.3 PRE-CONSTRUCTION CONFERENCE

- A. Purpose:
 - 1. To discuss items of interest in such detail that the Contractor shall have a clear understanding of the Owner’s requirements, Contract Documents, and conditions affecting the Work. Items to be discussed include, but are not limited to:
 - a. Roles of Architect, Owner, Contractor, and Inspectors.
 - b. Procedures for handling change orders, requests for payment, and other administrative details.
 - c. Procedures for handling shop drawing, substitutions, inspections, etc.
 - d. Scheduling of the work.
 - e. Contractor’s comments on any inaccuracies or ambiguities found in the Contract Documents.
 - f. To discuss any and all questions by the Contractor to make sure that the Contractor is aware of all conditions affecting the work prior to the awarding of the Contract.

2. For the General Contractor to discuss with the Owner, Architect, subcontractors, and other interested parties the design, methods, organization, schedule of the work, contract requirements, mutual understandings relative to the Contract Documents, and procedures of the Administration of the Contract. Items to be discussed include, but are not limited to:
 - a. Construction Schedule.
 - b. Project Coordination: Designation of responsible personnel.
 - c. Procedures and processing of submittals, pay requests, change orders.
 - d. Record Document maintenance.
 - e. Hazardous materials.
 - f. Review of existing building conditions.
- B. Date of Conference: Before actual construction begins, when scheduled by the Architect.
- C. Attendance: The Owner, Architect, Contractor, and his superintendent shall attend as well as subcontractors and suppliers designated by the Owner, Architect, or Contractor.
- D. Place: To be designated by the Owner.

1.4 PROJECT COORDINATION SUBMITTALS

- A. Schedule of Values: Submit within 15 days from Award of Contract. Provide in format approved by the Owner's Representative.
 1. Format: Identify each line item with number and title of the corresponding SPECIFICATION SECTIONS. Indexing by general division is not acceptable.
 2. Keep Schedule of Values current with progress of work, and provide as integral part of Application for Payment. Revise schedule to list Change Orders for each Application for Payment.
 3. Breakdown per phasing (if included in project). Submit via E-Builder.
- B. Construction Schedule:
 1. Submit Construction Schedule in line with published schedule contained in these bid documents within 20 days of Award of Contract and provide update at every week subcontractor coordination meeting. Schedule shall consist of a horizontal bar chart with separate designation for each major trade or operation, identifying first workday of each week. Clearly designate Critical Path of construction.
 2. Show complete sequence of construction by activity, identifying work of separate stages and other logically grouped activities. Show projected percentage of completion for each item of work as of the first of each month. Submit via E-Builder.

1.5 SUBMITTAL PROCEDURES

- A. Submit information as required by each Section of the Specification. Coordinate with construction schedule and allow sufficient time for Architect and consultant review. Allow time for potential disapproval and re-submittal.
 1. The Contractor should expect a minimum review/processing time of seven (7) days for the Architect review and a minimum of fourteen (14) days for Architect's consultant and Owner's review.

1.6 SHOP DRAWINGS

- A. Submit drawings via E-Builder.

1.7 SAMPLES

- A. Submit full range of manufacturer's standard colors or custom colors where specified, textures and patterns for Architects final selection. Submit via E-Builder unless sample cannot be adequately reviewed without seeing the physical sample.
- B. Submit samples to illustrate functional characteristics of the product, with integral parts and attachment devices. Coordinate submittal of different categories for interfacing work.
- C. Include identification on each sample, giving full information.
- D. The Contractor shall clearly mark and identify applicable products, models, options and other data on manufacturer's standard data or catalog cuts. The Contractor shall provide supplemental data or information unique to this project. Where specified in other sections of the specification, assembly, installation, start-up, adjusting and finishing. The Contractor shall submit supporting reference data, affidavits and certifications that products meet or exceed the specified requirements.

1.8 PRODUCT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturer's standard data to provide information unique to the work.
- B. Submit via E-Builder.

1.9 WARRANTIES

- A. Prior to final payment, furnish one (1) digital submission of all warranties required for each item of materials where stipulated in the Contract Documents. Submit as part of the O&M deliverables.

1.10 LAYOUT OF THE WORK

- A. The Contractor shall survey and verify the conditions of the existing project site. The purpose of the survey is to record existing conditions prior to the construction for comparison with the Contract Documents.
- B. The Contractor shall report any conflicts to the Architect prior to the start of the Work. The Architect will provide revisions to the Contract Documents or issue instructions to deal with conflicts.
- C. The Contractor shall be responsible for remedying conflicts that could have been prevented by timely reviews of existing conditions. All remedies which vary from the Contract Documents shall be approved by the Architect and the Owner's Representative.

1.11 JURISDICTIONAL REPORTING REQUIREMENTS

- A. Certification of occupancy shall not be issued prior to all inspections normally required in the course of construction by the Authority Having Jurisdiction.

1.12 PROGRESS MEETINGS

- A. Purpose: Project meetings will be held each week, from beginning of construction to final acceptance, to discuss items of mutual interest regarding coordination and progress of the work.
 - 1. The Contractor shall fully brief the Architect and BSD Representative on the progress of the Work.
- B. Day of Week: To be mutually determined by the Architect, Owner, and the Contractor.
- C. Attendance: The Owner, Architect, Contractor, and his superintendent shall attend, or their representatives. Other subcontractors, suppliers, or manufacturer's representatives shall attend when requested by the Contractor, Owner, or Architect.
- D. Place: Project site or as otherwise designated by the Owner.
- E. Chairman: The Contractor shall chair the meeting.
- F. Meeting Date Changes: Contact Owner's Representative to request any changes in the meeting date; provide 24 hour notice. The Owner's Representative will set the new date.
- G. Meeting Report: The Contractor will later issue a meeting report to the Contractor and Owner. Submit via E-Builder.
- H. The Contractor shall be responsible for notifying subcontractors and other representatives of scheduled construction meetings where their attendance is requested.

1.13 PRE-INSTALLATION CONFERENCES:

- A. Pre-Installation Conferences: Contractor to arrange and conduct pre-installation conferences prior to initialization of work of major trades as required within the Specifications. Attendance shall include Owner's representative, Contractor, major sub-contractor(s), and Architect. Include technical representatives of product manufacturers and others recognized as expert or otherwise capable of influencing success of the installation. Review significant aspects of requirements for the work. Record discussion and distribute as plan of action. Review procedures, distribute schedule and discuss requirements pertaining to the work. Designate responsible personnel. Conduct walkover inspection of existing site.

END OF SECTION

SECTION 01 31 23

PROJECT MANAGEMENT DATABASE (E-BUILDER)

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Summary.
- B. General Requirements.
- C. System Requirements.
- D. System Access.
- E. System Use.

1.2 SUMMARY

- A. Project Management Communications: The Owner, Contractor and Architect shall use the Internet web-based project management communications tool, E-Builder® ASP software and protocols included in that software during this project. The use of project management communications as herein described does not replace or change any contractual responsibilities of the participants.
- B. Purpose: The intent of using E-Builder® is to improve project work efforts by promoting timely initial communications and responses and to reduce the number of paper documents while providing improved record keeping by creation of electronic document files.

1.3 GENERAL REQUIREMENTS

- A. Project management communications is available through E-Builder® as provided by "E-Builder®" in the form and manner required by the Owner.
- B. The project communications database is on-line and fully functional. User registration, electronic and computer equipment, and Internet connections are the responsibility of each project participant. The sharing of user accounts is prohibited.
- C. Support: E-Builder® will provide on-going support through on-line help files.
- D. Authorized Users: Access to the web site will be by individuals who are licensed users as required by the Owner.
- E. Licenses Granted by Owner: Owner shall pay for and provide licenses for the following members of the project team:
 - 1. Lead member and backup member of Architect's design team responsible.
 - 2. Contractor's project manager or lead member and a back up member of Contractor's project staff.

3. Others as deemed appropriate by Owner.

1.4 SYSTEM REQUIREMENTS

- A. System Configuration:
 1. PC system 500 MHz Intel Pentium III or equivalent AMD processor.
 2. 128 MB Ram .
 3. Display capable of SVGA (1024 x 768 pixels) 256 colors display.
 4. 101 key Keyboard .
 5. Mouse or other pointing device.
- B. Operating system and software configuration:
 1. All software shall be properly licensed with vendors or developers. Use of “E-Builder” does not convey any rights or licensure for use of any software, hardware or internet service provider.
 2. Software Configuration:
 - a. Most current version of Microsoft Internet Explorer (current version is a free distribution for download). This specification is not intended to restrict the host server or client computers provided that industry standard HTTP clients may access the published content.
 - b. Most current version of Adobe Acrobat Reader (current version is a free distribution for download).
 - c. Other plug-ins specified by E-Builder® as applicable to the system (current versions are a free distribution for download from www.e-builder.net).
 - d. Users are recommended to have properly licensed versions of the standard Microsoft Office Suite (current version must be purchased) or the equivalent.

1.5 SYSTEM ACCESS

- A. Minimum Equipment and Internet Connection: In addition to other requirements specified in this Section, the Contractor shall be responsible for providing suitable computer systems for each licensed user at the users normal work location with high-speed Internet access, i.e. DSL, local cable company's Internet connection, or T1 connection.
- B. Authorized users will be contacted directly by the web site provider, E-Builder®, who will assign the temporary user password.
- C. Individuals shall be responsible for the proper use of their passwords and access to data as agents of the company in which they are employed.

1.6 SYSTEM USE

- A. Owner's Administrative Users: Owner administrative users have access and control of user licenses and all posted items. DO NOT POST PRIVATE OR YOUR COMPANY CONFIDENTIAL ITEMS IN THE DATABASE!
- B. Improper or abusive language toward any party or repeated posting of items intended to deceive or disrupt the work of the project will not be tolerated and will result in deletion of the

offensive items and revocation of user license at the sole discretion of the Administrative User(s). Costs incurred or associated with such issues shall be the financial responsibility of the party responsible for the transgression.

- C. Communications: Communication for this project for the items listed below shall be solely through E-Builder®:
 - 1. RFI, Requests for Information.
 - 2. Change Order Requests.
 - 3. Architect's Supplemental Instructions.
 - 4. Calendar of Events (meetings, events, open houses, public site tours etc.).
 - 5. All other communication shall be conducted in an industry standard manner.
- D. Document Integrity and Revisions:
 - 1. Documents, comments, drawings and other records posted to the system shall remain for the project record. The authorship time and date shall be recorded for each document submitted to the system. Submitting a new document or record with a unique ID, authorship, and time stamp shall be the method used to make modifications or corrections.
 - 2. The system shall identify revised or superseded documents and their predecessors.
 - 3. Server or Client-side software enhancements during the life of the project shall not alter or restrict the content of data published by the system. System upgrades shall not affect access to older documents or software.
- E. Document Security: The system shall provide a method for communication of documents. Documents shall allow security group assignment to respect the contractual parties communication except for Administrative Users.
- F. Document Integration: Documents of various types shall be logically related to one another and discoverable.
- G. Notifications and Distribution: Document distribution to project members shall be accomplished both within the extranet system and via email as appropriate. Project document distribution to parties outside of the project communication system shall be accomplished by secure email of outgoing documents and attachments, readable by a standard email client.
- H. Ownership of Documents and Information: All documents, files or other information posted on the system shall become the property of the Owner.

END OF SECTION

SECTION 01 32 00**CONSTRUCTION PROGRESS DOCUMENTATION****PART 1 GENERAL****1.1 CONSTRUCTION PROGRESS DOCUMENTATION**

- A. Progress Schedules & Reports. The Contractor, within ten calendar days after being awarded the Contract, shall prepare and submit for the information of the BSD Representative and the Consultant a Progress Schedule in critical path management (“CPM”) format satisfactory to the BSD Representative for the Work. The Progress Schedule shall conform to any requirements of the Specifications, shall not exceed time limits current under the Contract Documents, shall be revised at appropriate intervals as required by the conditions of the Work and Project, shall be related to the entire Project to the extent required by the Contract Documents, shall provide for expeditious and practicable execution of the Work, and shall be utilized and conformed to by the Contractor and its Subcontractors. Contractor shall comply with the Progress Schedule. The Progress Schedule is for District’s benefit, and to the full extent permitted by law, changes to or variations from the Progress Schedule shall not entitle the Contractor to an extension of the Contract Time or increase of Contract Sum.
- B. Meeting Minutes: Contractor shall be responsible for the preparation and distribution of meeting minutes. Submit via E-Builder.
- C. Documentation of existing conditions
 - 1. The Contractor will photograph existing conditions that could be damaged by construction. This will help the Owner and Architect to determine at the end of construction whether an area or item damage was preexisting or caused by the Contractor. Submit existing photos via E-Builder.

END OF SECTION

SECTION 01 33 00**SUBMITTAL PROCEDURES****PART 1 GENERAL****1.1 WORK INCLUDED**

- A. Submit overall construction schedule, 3-week work schedule, shop drawings, product data, samples, schedule of values, record documents, and products list as specified.
 - 1. Submit to Architect via E-Builder only through Contractor.
 - 2. Do not submit directly to Consulting Engineers without prior approval by the Architect for each individual submittal.
 - 3. The Architect/Consultant will forward a marked up set of submittals to the District Representative for review and approval after review by the Architect and Consultant(s).

1.2 QUALITY ASSURANCE

- A. Within 15 days of the Award of Contract, submit schedules of values, list of principal subcontractors and suppliers, progress schedule, copies of building permits, and similar start-up authorization via E-Builder.

PART 2 PRODUCTS**2.1 CONSTRUCTION SCHEDULE**

- A. Content: Within 20 days of the award of contract, submit a comprehensive progress schedule indicating a time bar for each significant category of work to be performed via E-Builder. Show product and installation dates for major products. Show dates for each construction activity, Substantial Completion and punch list preparation, Final Completion, and Occupancy.
- B. Designate in the Construction Schedule, the dates for submission and review of Shop Drawings, product data and samples that are needed for the product. Show critical submittal dates or prepare a separate coordinated listing of critical submittal dates.
 - 1. Any critical path submittals shall be identified as critical in the E-Builder Submittal Module.
- C. Updating: Indicate progress of each activity and show revised completion dates. Provide listing of current and anticipated accelerations and delays. Describe proposed corrective action when required. Revise at intervals matching payment requests and redistribute with each payment request.

2.2 MEETING MINUTES

- A. Meeting minutes to be prepared by Contractor and distributed to all meeting attendees via E-Builder with 2 days. Action items uploaded to E-Builder by the end of that same day.

2.3 SCHEDULE OF VALUES

- A. Submit a Schedule of Values covering various parts of work including quantities aggregating the total sum of the Contract to E-Builder. Show dollar value and percent of total for each unit of work scheduled. This Schedule will be the basis for the Contractor's Application for Payment.
- B. Submit on the latest edition of AIA Document G703, Continuation Sheet, within 15 days of Award of Contract and with each payment request. Revise each time schedule is affected by change order or other revision.
- C. Upon request by the Architect, support values given with data that will substantiate their correctness.

2.4 PAYMENT REQUESTS

- A. Submit a request each calendar month to E-Builder. Use the latest edition of AIA Document G702, Application and Certificate for Payment, fully completed, notarized, and executed and G703, Schedule of Values.

2.5 SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES

- A. General:
 - 1. Review, stamp with Contractor's stamp, and sign each submittal to certify Contractor has reviewed submittal for compliance with Contract Documents prior to submitting to the Architect. Submittals issued without the Contractor's review may be returned to the Contractor without being reviewed by the Architect. Submit to E-Builder.
 - 2. Provide 3" x 4" clear space on each submittal for the Architect's stamp.
 - 3. Provide additional copies as required by governing authorities.
- B. Shop Drawings-Submit via E-Builder.
 - 1. Submit shop drawings showing connections, details, dimensions, finishes, fasteners, etc.
 - 2. Maintain 1 print as a mark-up copy for the "Record Drawings".
 - 3. In the event that the submittal is a partial submittal, identify related shop drawings to be submitted at a later date.
- C. Product Data-Submit via E-Builder.
 - 1. Submit manufacturer's catalog sheets, brochures, diagrams, schedules, performance charts, illustrations, and other description data on manufactured products and systems.
 - 2. Mark to indicate the actual product to be provided. Show selections from among options in the manufacturer's printed product data.
 - 3. Maintain 1 copy at the project site for reference purposes.
- D. Office Samples-Submit via E-Builder:
 - 1. Maintain one returned set at the project site for purposes of quality control comparisons.
 - 2. Sample submittals are for Architect's observation of color, texture, pattern, and "kind".
- E. Miscellaneous Submittals: Submit via E-Builder of miscellaneous submittals as follows:
 - 1. Warranties: Submit executed copy for maintenance manual.

2. Field Records: Submit for inclusion in the submittal of "Record Documents".
3. Maintenance Manuals.
4. "Contractor Redlines": Submit a scanned PDF of the original maintained marked-up prints.
5. Construction Schedule and Schedule of Values.

2.6 3-WEEK WORK SCHEDULE

- A. Each week provide to the Architect a 3-Week Work Schedule on a form approved by the Architect. Submit via E-Builder. Each 3-Week Work Schedule is to show the description of all phases of the work to be accomplished during the week submitted and the 2 following weeks. The 3-Week Work Schedule is to be updated every week and presented to the Architect. Indicate any suspected utility service interruption on the 3-Week Work Schedule.

PART 3 EXECUTION

3.1 CONTRACTOR'S SUBMITTAL

- A. Review submittals prior to submission and provide stamp of approval signed or initialed by the Contractor indicating the Contractor has inspected the submittals and certifying that they are complete, correct, in compliance with the Contract Documents and suitable for the Project.
- B. Verify field measurements and other field construction criteria.
- C. Submit submittals required by each Specification Section to the Architect. Notify the Architect in writing at time of submission of deviation in submittals from requirements of the Contract Documents.
- D. The Architect/Consultant shall provide a marked up set of submittals to the District Representative for review and approval after review by the Architect/Consultant.
- E. Submittals shall be arranged by specification section with the specification sections identified on divider tabs. Product Submittals shall include catalog data sheet clearly marking the following information for the exact equipment being installed: manufacturer, type, style, complete catalog number, dimensions, physical description, and specifications for each item and each option submitted. Submittals shall reference equipment number as designated on Project Drawings, equipment schedules, or specifications for any and all equipment identified by unique designation in project documents. Contractor must submit the proposed startup documentation for the equipment upon submittal for that equipment. Include the manufacturer's recommended installation and startup procedures with associated checklists for each unique piece of equipment under a separate tab titled "Installation/Startup". These procedures and forms shall be for the specific piece of equipment to be provided.
 1. Submittals shall be divided out and listed separately in the E-Builder Submittal Register, and each submittal shall be uploaded separately to the Submittal in E-Builder.
- F. Submittals to be provided as a complete package.

3.2 ARCHITECT'S REVIEW

- A. Architect will review submittals for design concept and conformance with the Contract Documents and return submittals to the Contractor for distribution with corrections noted thereon.
- B. Stamp: The Architect will stamp each submittal to be returned with a uniform, self-explanatory action stamp, appropriately marked and executed to indicate the status of the submittal. The stamp indicates and requires the follow action:
 - 1. No Exception Taken: No further action is required.
 - 2. Make Corrections Noted: Make the corrections upon fabrication of the material only.
 - 3. Rejected: The material submitted is not acceptable and another material submission is required.
 - 4. Revise and Resubmit: The material submittal is not acceptable, and it is to be elaborated upon or corrected and resubmitted prior to material fabrication.
 - 5. Submit Specified Item: Submittal is rejected, and the material specified is to be submitted.
 - 6. Checking is only for general conformance with the design concept of the Project and general compliance with the information given in the Contract Documents. Any action shown is subject to the requirements of the plans and specifications. Contractor is responsible for dimensions which shall be confirmed and correlated at the job site, fabrication processes and techniques of construction, coordination of Contractor's work with that of all other trades and the satisfactory performance of Contractor's work.
- C. Contractor's responsibility for deviations in submittals from requirements of the Contract Documents is not relieved by the Architect's review of submittals unless the Contractor has made written request for the deviations and the Architect gives written acceptance of specific deviations requested.

3.3 CORRECTIONS

- A. Immediately incorporate all required corrections in the submittals and resubmit for further review, if required.

3.4 TIME SCHEDULE FOR SUBMITTALS

- A. Construction Schedule: Submit to the Architect via E-Builder no later than 20 calendar days after Award of Contract.
- B. Shop Drawings: Submit to the Architect via E-Builder for review. The Architect will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.
- C. Product Data: Submit to the Architect via E-Builder for review. The Architect will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.
- D. Office Samples: Submit to the Architect via E-Builder for review. The Architect will review within 15 calendar days. Schedule submissions to allow ample time for ordering and delivery of materials after review.
- E. Schedule of Values: Submit to the Architect via E-Builder no later than 15 calendar days after receipt of the Notice to Proceed.

3.5 SUBMITTAL SCHEDULE

A. Submittals required by Specifications and the Drawings shall be made regardless of whether or not they are scheduled herein. Each specification section should be reviewed for exact submittal requirements. All submittals must be reviewed by the Architect prior to being used and must be submitted in sufficient time to preclude a delay in meeting the approved Construction Schedule.

SECTION NUMBER	SECTION NAME	REQUIRED SUBMITTAL
01 29 00	Payment Procedures	Applications for Payment Schedule of Values
01 31 00	Project Management and Coordination Shop Drawings	Schedule of Values Construction Schedule Color Submittal Samples Site Staging Plan Product Data Warranties Washington County Reporting Requirements
01 32 00	Construction Progress Documentation	Progress Schedules & Reports
01 33 00	Submittal Procedures	Construction Schedule Schedule of Values 3 Week Work Schedule
01 45 00	Quality Control	Reports
01 61 00	Common Product Requirements	Manufacturer's Instructions
01 77 00	Closeout Procedures	Prerequisites to Substantial Completion Prerequisites to Contract Closeout
01 78 00	Closeout Submittals	Closeout Submittal Log Contractors Redlines/ Record Documents Contractors Redlines/ Record Specifications Record Product Data Miscellaneous Record Submittals Warranties Operation and Maintenance and Manuals Release of Liens Certificate of Occupancy
07 92 00	Joint Sealants	Product Data MSDS Sheets

BSD – SECURITY UPGRADES

Issue Set: Bid/Permit Set

Print Date: 3/29/21

		Closeout Submittals Guarantee Non-Staining Warranty
08 20 00	Solid Core Wood Doors	Shop Drawings Product Data
08 71 00	Door Hardware	Hardware Schedule Templates Surface Door Closers Factory Guarantee
09 29 00	Gypsum Board	Product Data Product Preparation Instructions and Recommendations Storage and Handling Requirements
09 51 13	Acoustical Panel Ceilings	Product Data Product Preparation Instructions and Recommendations Storage and Handling Requirements
09 65 13	Resilient Wall Base	Product Data Product Preparation Instructions and Recommendations Storage and Handling Requirements
09 91 00	Painting	Product Data Office Samples Product Preparation Instructions and Recommendations Storage and Handling Requirements Installation Methods Finish Schedule Date Schedule Closeout Submittals Extra Stock Manufacturer's Warranty
22 00 00	Basic HVAC Requirements	Performance Data and Technical Information Shop Drawings Record Drawings Warranty
26 00 00	Electrical General Provisions	Warranty Electrical Data Installation and Record Drawings Cost Breakdown of Electrical Work Record Information

END OF SECTION

SECTION 01 35 00

SPECIAL PROCEDURES

PART 1 GENERAL

1.1 SUMMARY

- A. Asbestos: No asbestos containing materials may be used in the construction or remodel of any facilities located within the Beaverton School District.
 - 1. The Beaverton School District retains an Asbestos Abatement Consultant to test presumed asbestos containing material (PACM) and to oversee all asbestos abatement work that takes place within our facilities. This consultant is to be an integral part of the construction process. They are to be notified before any asbestos abatement takes place within the designated facility. If material is found during the construction process that has not been specifically identified as asbestos containing material, but is presumed to contain asbestos, then a bulk sample must be sent for laboratory analysis before the material may be removed or repaired. The Asbestos Abatement Consultant is charged with keeping records which are forwarded to the AHERA Designated Person for the Beaverton School District. This information is crucial to the maintenance of the BSD asbestos database for all facilities.
 - 2. The Contractor must have a full-time construction project manager on site to oversee the construction takes place within the facility. It will be the responsibility of the construction project manager to notify the Asbestos Abatement Consultant in conjunction with the Abatement Contractor so that the Asbestos Abatement Consultant is on site to oversee the abatement of the asbestos and to document the material removed for the BSD asbestos database. Asbestos abatement is to be completed by the General Contractor and the cost to be incurred by the General Contractor.
 - 3. Procedures to follow if there has been an asbestos release event
 - a. Shut down all heating, ventilation and air conditioning units that supply return or draw air to, or from the area in question.
 - b. Keep the area in question closed off. Post signs to restrict any person from accidentally walking into the contaminated area.
 - c. Notify the BSD Representative and the Asbestos Abatement Consultant for the District. They will make the arrangements for the clean up of the asbestos contamination.
 - 4. Construction Contractor shall be held liable for any actions of its agent, personnel or subcontractors and all costs, expenses, damages, claims and causes of action rising out of an asbestos release that occurs during performance of their work. All costs incurred by the District to clean up the asbestos release shall be the responsibility of the Contractor.
- B. Environmental pollutants:
 - 1. Contractor shall obtain the District's written consent prior to bringing onto the work site any environmental pollutants or hazardous substances or materials.
 - 2. Properly handle, use, and dispose of all environmental pollutants and hazardous substances or materials brought onto the work site, in accordance with all applicable federal, state, or local statutes, rules, or ordinances.
 - 3. Be responsible for any and all spills, releases, discharges, or leaks of (or from) environmental pollutants or hazardous substances or materials which Contractor has brought on the work site.
 - 4. Promptly clean up, without cost to the District, such spills, releases, discharges, to the District's satisfaction and in compliance with all applicable federal, state, or local statutes, rules, or ordinances.

5. Contractor shall be liable for any and all costs, expenses, damages, claims and causes of action, or any of them related to or arising out of a spill, release, discharge or leak of (or from) any environmental pollutant or hazardous substance or material, to the extent such spill release, discharge, or leak was caused or contributed to by the Contractor's negligence or failure to perform in accordance with the contract documents.
 6. Contractor must report, when safe to do so, all quantity releases via telephone to the BSD Representative. A written follow-up report is to be submitted to the BSD Representative within 48 hours of the telephone notification. At a minimum, the report must contain the following information:
 - a. Description of times released (identity, quantity, and all other documentation required by law).
 - b. Whether amount of items released is reportable to EPA/DEQ, and if so, when it was reported.
 - c. Exact time and location of release, including a description of the area involved.
 - d. Containment procedures initiated.
 - e. Summary of communications about the release that Contractor has had with members of the press or State officials other than District.
 - f. Description of clean-up procedures employed, or to be employed at the site, including disposal location of spill residue.
 - g. Personnel injuries, if any, resulting from or aggravated by, the release.
- C. Environmental Clean-up:
1. As part of the Final Completion Notice, or as a separate written notice submitted with or before the Notice of Completion, the Contractor shall notify the District that all environmental pollution clean-up which was performed as part of this construction project has been disposed of in accordance with all applicable rules, regulations, laws and statutes of all agencies having jurisdictions over such environmental pollution. The notice shall indemnify and hold harmless the District from any claims resulting from the disposal of the environmental pollution including removal, encapsulation, transportation, handling, and disposal.
 2. Construction Contractor will be held responsible for any and all releases of environmental pollution during performance of the Contract that occur as a result of, or are contributed to, by actions of its agent, personnel, or subcontractors.
 3. All costs incurred by the District in meeting applicable regulations, in correcting any unhealthy or unsafe working conditions, or costs incurred by the District to complete any of the Contractor's work, will be charged to the Contractor.
- D. Hazardous Materials:
1. In the event that PCB ballasts, lead paint, heavy metals, underground storage tanks, or other hazardous materials are encountered during construction, contact the BSD Representative who will notify BSD Environmental Management. Separate arrangements will be made to remove the hazardous material and clean the facility in a manner that is safe and consistent with Beaverton School District policies and all regulatory authorities.
 2. Any time "assumed lead" painted surfaces are disturbed the work must be done by a certified firm with a trained and certified contractor. In addition the areas of the building that will be affected must be posted with appropriate signage warning of the potential hazard and parents and guardians of the children must receive information about the renovation work that is planned an EPA pamphlet about renovation.

- E. In the event that an event occurs contact the National Response Center and obtain a file report number that will be forwarded to the District Representative.

END OF SECTION

SECTION 01 35 26
SAFETY REQUIREMENTS

PART 1 GENERAL

1.1 SAFETY REQUIREMENTS

- A. The following requirements, as applicable, apply to Work specified herein.
1. Associated General Contractors of America, Inc., "Manual of Accident Prevention in Construction."
 2. Workmen's Compensation Board "Safety Code for Construction Work."
 3. Oregon State Employment Act Safety Requirements.
 4. Oregon Occupational Safety and Health Act (OROSHA) requirements, as applicable, apply to Work specified herein.

END OF SECTION

SECTION 01 35 53**SECURITY PROCEDURES****PART 1 GENERAL****1.1 CONSTRUCTION/MAINTENANCE BUILDING SECURITY RULES**

- A. The Contractor shall enforce strict discipline and good order among the Contractor's employees, Subcontractors, and other persons carrying out the contract on District property. The District may require that the Contractor immediately remove from the project site and District property any employee or other person carrying out the contract that the District considers objectionable.
- B. District Personnel (i.e., Building Administrator, Custodian, or a building monitor etc.) must be present when a contractor is performing work within an existing school facility.
- C. Only District Personnel will deactivate the security system upon arriving and reactivate the system when they leave the facility.
 - 1. If the responsible District Personnel for a particular day changes during the day, the District Personnel shall coordinate this change in responsibility and advise the Contractor's superintendent.
- D. Contractor personnel will not be furnished District security badges and/or access codes to the Building security system. All personnel under the employment of the Contractor and its subcontractors that travel to or spend time at the project site are to wear ID badges while on the work site. ID badges are to contain:
 - 1. Individuals full name.
 - 2. Individuals company affiliation.
- E. The Contractor shall have a responsible party such as a superintendent, foreman, or supervisor on site during any work being performed by either their own forces or that of their subcontractors.
- F. The superintendent shall check in with the responsible District Personnel upon arrival and advise when all work is complete, contract personnel have left, and the area is secure.
- G. The Contractor's superintendent shall be responsible for security in areas where work is being performed as well as ingress and egress to that area.
- H. At the BSD Representative's discretion, the superintendent may be issued a building key to allow access to area's where work is being performed.
- I. The superintendent shall maintain a daily log defining what areas within the building were accessed by Contractor personnel, which personnel from their firm were in the building, and which subcontracting firms were in the building.
- J. Each of the Contractor's employees, Subcontractors' employees, and principals/owners involved at the site may, at the option of the District, be subject to a security check, at any time, through the Beaverton Police Department or other venue.
- K. Contractor shall pay and perform or have performed criminal background checks for every employee on all active campus (i.e., children are present) projects prior to that employee's admittance to the project site. Once an employee passes the criminal background check they will create an ID badge which they must wear while they are on site at all times. Contractor

may be fined up to \$500 for every worker working on site without the proper ID badge. The following are the convicted crimes that may not appear on the background check.

CONVICTIONS RENDERING INELIGIBILITY per ORS 342.143

- Aggravated Murder or Murder
- Assault in the First Degree
- Kidnapping in the First Degree
- Rape in the First, Second, or Third Degree
- Sodomy in the First, Second, or Third Degree Second Degree
- Unlawful Sex Penetration in the First or Second Degree
- Arson in the First Degree
- Sexual Abuse in the First, Second, or Third Degree
- Contributing to the Sexual Delinquency of a Minor
- Sexual Misconduct
- Public Indecency
- Bigamy
- Incest
- Child Neglect in the First Degree
- Endangering the Welfare of a Minor
- Using Child in Display of Sexually Explicit Conduct
- Sale or Exhibition of Visual Reproduction of Sexual Conduct by a Child
- Paying for Viewing of Sexual Conduct Involving a Child
- Encouraging Child Sex Abuse in First, Second or Third Degree
- Possession of Materials Depicting Sexual Explicit Conduct of a Child in the First or Second Degree
- Arson in the First Degree
- Robbery in the First Degree
- Treason
- Abuse of a Corpse in the First Degree
- Prostitution, Promoting Prostitution, or Compelling Prostitution
- Sadomasochistic Abuse or Sexual Conduct in a Live Show
- Furnishing, Sending, or Displaying Obscene Materials to Minors
- Exhibiting an Obscene Performance to a Minor
- Disseminating Obscene Materials
- Publicly Displaying Nudity or Sex for Advertising Purposes
- Distribution of Controlled Substance to Minors
- Manufacture or Delivery of Controlled Substance to Minor or Student within 1000 Feet of a School
- Attempt to Commit Any of the Above-Listed Crimes

- L. Smoking and any use of tobacco products is not allowed within 50 feet of the campus property. Contractor may be fined up to \$500 for each incident of tobacco use within the area of work by the Contractor or Subcontractors.

- M. Firearms are not allowed on campus property. Law enforcement will be contacted if any contractor personnel are in possession of a firearm on site. (This includes firearms locked up in a vehicle.)
- N. Abusive, inappropriate, and/or foul language is strictly prohibited on active campus projects. Employees who abuse this rule will be asked to leave the project site.
- O. Contractor is responsible to maintain security of building per BSD operating procedures. Failure to do so will result in a fine being levied by BSD.

END OF SECTION

SECTION 01 41 00

REGULATORY REQUIREMENTS

PART 1 GENERAL

1.1 WORK INCLUDED

- A. Permits and Fees:
 - 1. BSD will pay the actual cost of the building permit, permanent utility connection permits and fees, and permits required for construction of work in the public right and associated bonds or assurances. Any other required permits including trade permits, deferred submittals, and governmental fees, licenses and inspections necessary for proper execution and completion of the Work, and any penalties, extensions or fines assessed to the above permits or fees shall be paid by the Contractor.
 - 2. The Contractor shall secure and closeout all permits. BSD will pay all system development charges, traffic impact fees, land use fees, building plan review and application fees applicable to the project.
 - 1. Typical Permits and Fees to be paid by Contractor as a part of the cost of the work, including but not limited to:
 - a. Deferred Submittal Fees
 - b. Demolition Permit Fee
 - c. Other permits or fees required during the construction phase
- B. The Contractor shall be responsible for securing and paying for all permits and fees in a timely manner so not to impede the progress of the Work.
- C. BSD will pay land use fees and the initial building and/or plan check fees. Contractor shall pay for design build or subsequent application and/or plan check fees.

END OF SECTION

SECTION 01 42 00

REFERENCES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Codes, Ordinances and Regulations.

1.2 RELATED DOCUMENTS

- A. Bidding Requirements.
- B. Conditions of the Contract.
- C. Drawings and Specifications.

1.3 CODES, ORDINANCES AND REGULATIONS

- A. All work shall comply with the Codes, Ordinances and Regulations
 - 1. General Construction Work:
 - a 2019 Oregon Structural Specialty Code.
 - b State of Oregon Rules and Regulations of the State Board of Health.
 - c Local Air Pollution Control and Agency and/or the Department of Environmental Quality, State of Oregon.
 - d Department of Labor and Industries, State of Oregon.
 - e Oregon Occupational Safety and Health Administration.
- B. Comply with all applicable fire codes, plumbing codes, mechanical codes and electrical codes.
- C. Comply with requirements of Washington County and State of Oregon Departments of Health. Comply with the requirements of the State of Oregon regarding the listing and handling of hazardous materials.
- D. Comply with requirements of the State of Oregon, Department of Environmental Quality.
- E. All temporary facilities and construction procedures shall comply with requirements of local and State Health codes and the United States Department of Labor, Occupational Safety and Health Administration (OSHA) Standards.

1.4 SPECIFICATION OF HIGHER STANDARD

- A. Drawings and Specifications govern whenever Drawings and Specification require higher standards than are required by referenced codes and regulations.

END OF SECTION

SECTION 01 45 00
QUALITY CONTROL

PART 1 GENERAL

1.1 WORK INCLUDED

- A. The Owner will select, employ, and pay for services of an independent testing laboratory to perform inspections, sampling, testing, and other services required by the local building code and the Project Manual.
 - 1. Special inspections by independent inspection and testing laboratory services shall be provided by the District.
 - 2. The District may contract an independent consultant to review design and construction of the building envelope with particular emphasis in the areas of water intrusion.
- B. Specific quality control requirements are specified in individual Project Manual Sections.
- C. Inspection and testing services are intended to determine compliance of the Work with requirements specified.
- D. Refer to the Structural Notes on the Drawings (Sheet S0.2) for the special inspection and testing plan.

1.2 SUBMITTALS

- A. Submit a certified written report of each inspection, test, or similar service to the Architect, Structural Engineer, Contractor, and the Owner. Include additional copies of each report to governing authorities when so directed.
- B. Report Data: Written inspection or test reports shall include:
 - 1. Name of testing agency or test laboratory.
 - 2. Date and location of samples, tests, or inspections.
 - 3. Names of individuals present.
 - 4. Complete inspection or test data.
 - 5. Test results.
 - 6. Interpretations.
 - 7. Recommendations.

PART 2 PRODUCTS

2.1 SCOPE

- A. Nature and Scope of Testing Services: In accordance with the requirements of governing authorities having jurisdiction over the work and as otherwise specified and consistent with reasonable standards of engineering practice.

PART 3 EXECUTION

3.1 TESTING LABORATORY'S RESPONSIBILITIES

- A. Conduct, interpret tests, and report deviations or conditions that may lead to deviations from the Contract Documents to the Architect immediately by telephone.

- B. State in each test report whether or not tests showed conformance with requirements of the Contract Documents and specifically note deviations, if any, from these requirements.

3.2 CONTRACTOR'S OBLIGATIONS

- A. Cooperate with any representative of the Owner or the Testing Laboratory. Furnish tools, materials, equipment, and assistance.
- B. Notify the Architect, Testing Laboratory, and Owner 48-hours prior to each expected placement, installation, or fabrication phase requiring inspection tests as indicated herein.
- C. Where tests reveal defects requiring replacement, retest as required under this Contract at no change in Contract amount and reimburse Owner, Architect, and Consultants costs for preparation and supervision.
- D. When the initial tests indicate non-compliance with the Contract Documents, any subsequent retesting occasioned by non-compliance shall be performed by the same agency and the cost thereof borne by the Contractor.
- E. Representatives of the testing agency shall have access to the work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its functions.
- F. Any testing laboratory stand-by time due to the Contractor's delays shall be paid for by the Contractor.
- G. Inspection or testing performed exclusively for the Contractor's convenience shall be the sole responsibility of the Contractor.

3.3 TEST OBSERVATIONS

- A. If the Architect wishes to observe the inspections, tests, or approvals required by this paragraph, he will do so promptly and, where practicable, at the source of supply.
- B. Neither the observations of the Architect in his Administration of the Construction Contract, nor inspections, tests, or approvals by persons other than the Contractor shall relieve the Contractor from his obligations to perform the Work in accordance with the Contract Documents.

3.4 EVALUATION OF TESTS AND INSPECTIONS

- A. Results of laboratory or field control tests and inspections shall be the principal basis upon which satisfactory completion of the Work shall be judged.
- B. If results of tests and inspections indicate the Work is below requirements of the Contract Documents, that portion of the Work is subject to condemnation.

3.5 ADJUSTMENTS

- A. Remove and replace Work so condemned at Contractor's expense including costs of subsequent tests and inspections until the Work meets requirements of the Contract Documents.

END OF SECTION

SECTION 01 51 00
TEMPORARY UTILITIES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Remodels and Renovations: BSD will provide access to water and electrical as required. Contractor to provide all other temporary utilities.
- B. Contractor to provide all temporary job site facilities, materials, systems and services as required to complete the work and as hereinafter listed. Upon completion of the work, remove all temporary structures and materials. All necessary temporary facilities shall be furnished and paid for by the subcontractor unless specifically noted herein to be paid for by the Owner. All temporary facilities to be in place prior to construction.

1.2 SITE MAINTENANCE

- A. Progress Cleaning:
 - 1. Maintain areas free of waste materials, debris and rubbish. Maintain site in a clean and orderly condition ON A DAILY BASIS.
 - 2. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces and other closed or remote spaces, prior to enclosing the space ON A DAILY BASIS.
 - 3. Broom and vacuum clean interior areas prior to start of surface finishing and continue cleaning to eliminate dust ON A DAILY BASIS.
 - 4. All construction debris and storage will be kept in an orderly, neat and organized fashion, and within the areas of work. Areas of work shall be free of construction debris ON A DAILY BASIS AT A MINIMUM.
 - 5. At existing building sites, Contractor shall provide secured construction dumpsters and shall not intermingle trash with school dumpsters.

END OF SECTION

SECTION 01 52 00
CONSTRUCTION FACILITIES

PART 1 GENERAL

1.1 DESCRIPTION

- A. Contractor to provide drawing of acceptable areas for contractor staging, trailer locations and contractor parking on site plan(s). Owner will review.
- B. Project Personal Identification. All contract personnel shall wear an ID badge that is a distinctive color with the word "Contractor" on the badge. The badge must be worn by any contract personnel within existing buildings. Contractor's Superintendent to issue badges and maintain process.

1.2 SANITARY FACILITIES

- A. Workmen will not be permitted to use existing toilet facilities of the existing building. Provide portable facilities and drinking water as required for workmen. Keep facilities clean and in sanitary condition. Remove from the site upon completion of the Work.
- B. Comply with governing regulations including safety and health codes for the type, number, location, operation, and maintenance of fixtures and facilities.
- C. Supply toilet tissue, hand sanitizer, and similar disposable materials as appropriate for each facility. Provide covered waste containers for used material.

1.3 TEMPORARY TELEPHONE

- A. Contractor shall not use existing phone service. A separate cell and network service will need to be provided by the Contractor at the job site office.

1.4 TEMPORARY WATER

- A. Existing water services may be used. Make temporary connection, as required. Exercise control over usage to conserve water.

1.5 TEMPORARY ELECTRICAL POWER SERVICE

- A. Contractor to provide temporary power, phone & data service for job trailer and for construction work. Existing electrical services not to be used if at all possible. Contractor to establish a utility allowance to cover cost of services.
- B. Provide temporary lighting throughout construction period as required by governing agencies.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 INSTALLATION

- A. Use qualified tradesmen for installation.
- B. Locate temporary services and facilities where they will serve the project adequately and result in minimum interference with the Work.
- C. Temporary Utility Installation:
 - 1. Engage the local utility company to install temporary service or to make connections to existing service.
 - 2. Arrange with the companies and existing users for an acceptable time when service can be interrupted to make connections.
 - 3. Establish a service implementation and termination schedule. As early as possible change to use of permanent service, to enable removal of the temporary utility, and to eliminate any possible interference with completion of the Work.
 - 4. Provide adequate capacity at each stage of construction.
 - 5. Prior to availability at the site, provide trucked-in services for start up of construction operations.
 - 6. Obtain and pay for easements required to bring temporary utilities to the site where the Owner's easement cannot be utilized for that purpose.

3.2 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision:
 - 1. Limit availability of temporary services and facilities to essential and intended uses to minimize waste and abuse.
 - 2. Do not permit temporary installations to be abused or endangered.
- B. Maintenance:
 - 1. Operate and maintain temporary services and facilities in good operating condition and in a safe and efficient manner until removal is authorized.
 - 2. Do not overload services or facilities.
 - 3. Protect from damage by freezing temperatures and similar elements.
 - 4. Do not allow unsanitary conditions, public nuisances, or hazardous conditions to develop or persist on the site.
 - 5. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24 hour basis where required to achieve indicated results and avoid the possibility of damage to the Work or to temporary facilities.

3.3 TERMINATION AND REMOVAL

- A. Remove each temporary service and facility promptly when need has ended, or when replaced by use of a permanent facility, but no later than Substantial Completion.
- B. Complete, or if necessary, restore permanent work delayed because of interference with the temporary service or facility.
- C. Repair damaged work, clean exposed surfaces, and replace work that cannot be repaired.
- D. At Substantial Completion, clean and renovate permanent services and facilities that have been used to provide temporary services and facilities during the construction period.

END OF SECTION

SECTION 01 53 00**TEMPORARY CONSTRUCTION****PART 1 GENERAL****1.1 SITE MAINTENANCE**

- A. Burning or burying of rubbish and waste materials on site is prohibited.
- B. Disposal of volatile fluid wastes (such as mineral spirits, oil or paint thinner) in storm or sanitary sewer systems is prohibited. The washing/ rinsing of concrete trucks is prohibited onsite.
- C. Keep site and surrounding areas clear of accumulations of waste material and rubbish resulting from operations under this Contract. Remove waste from site systematically during the progress of construction and immediately upon completion of Work.

1.2 TEMPORARY CONSTRUCTION AND SUPPORT FACILITIES INSTALLATION

- A. Provide a neat and uniform appearance in temporary construction and support facilities acceptable to the Architect and the Owner.
- B. Locate field offices, storage and fabrication sheds, and other support facilities for easy access to the Work.
- C. Make the change-over to use of permanent services and facilities at the earliest feasible date to minimize hazards and interferences with performance of the Work.
- D. Maintain field offices, storage and fabrication sheds, temporary sanitary facilities, waste collection and disposal systems, recycling bins, and project identification and temporary signs until near Substantial Completion. Immediately prior to Substantial Completion remove these facilities. Personnel remaining at the site after Substantial Completion will be permitted to use permanent facilities, under restricted use conditions.

1.3 TEMPORARY HEAT

- A. Provide temporary heat where needed for performance of the Work, for curing or drying of recently installed work, or for protection of work in place from adverse effects of low temperatures or high humidity.
- B. Provide UL or FM tested and labeled heating units known to be safe and without adverse effect upon work in place or being installed.
- C. Coordinate with ventilation requirements to produce the ambient condition and minimize fuel or energy consumption.
- D. Maintain a minimum temperature of 45°F in permanently enclosed portions of the building and areas where finished Work has been installed.

- E. Except where use of the permanent heating system is available and authorized, provide properly vented self-contained LP gas or fuel oil heaters with individual space thermostatic control for temporary heat.
- F. Do not use open burning or salamander type heating units.
- G. Minimum Interior Ventilation: Provide local exhaust ventilation to prevent harmful dispersal of hazardous substances into the atmosphere at all times. Provide ventilation for materials being cured.

1.4 STORAGE AND FABRICATION SHEDS

- A. Install storage and fabrication sheds as required to accommodate the Work. Maintain temperatures and ventilation as required for materials being stored.
- B. Sheds may be open shelters or fully enclosed spaces. Where fully enclosed, provide one ABC Type portable fire extinguisher in each shed.

1.5 FIRST AID SUPPLIES

- A. Provide required first aid facilities. Comply with governing regulations and recognized recommendations within the construction industry.

1.6 MISCELLANEOUS SERVICES AND FACILITIES

- A. Design, construct, and maintain miscellaneous services and facilities as needed to accommodate performance of the work, including temporary stairs, ramps, ladders, staging, shoring, scaffolding, temporary partitions, waste chutes, and similar items.

1.7 TEMPORARY FIRE PROTECTION

- A. Until fire protection needs may be fulfilled by permanent facilities, install and maintain temporary fire protection of the types needed to protect against losses.
- B. Comply with recommendations of NFPA Standard 10.
- C. Locate fire extinguishers where most effective. Provide not less than one on each floor at or near each stairwell.
- D. Provide type "A" fire extinguishers for temporary offices and spaces where there is minimal danger of electrical or flammable liquid fires. Provide type "ABC" dry chemical extinguishers elsewhere.
- E. Store combustible materials in containers in fire-safe locations.
- F. Review fire prevention and protection needs with local fire department officials and establish procedures to be followed in the event of fire.

- G. At temporary water outlets, provide hoses of sufficient length to reach construction areas. Hang hoses with a warning sign indicating that hoses are for fire protection purposes and are not to be removed.
- H. At the earliest feasible date, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel at the site on how to use facilities that may not be self-explanatory.

1.8 ENVIRONMENTAL PROTECTION

- A. Conduct construction activities, and by methods that comply with environmental regulations, minimize the possibility that air, waterways, and subsoil might be contaminated or polluted, or that other undesirable effects might result from the performance of work at the site.
- B. Avoid the use of tools and equipment that produce harmful noise.
- C. Restrict the use of noise making tools and equipment to hours of use that will minimize complaints.

END OF SECTION

SECTION 01 55 00

VEHICULAR ACCESS AND PARKING

PART 1 GENERAL

1.1 ACCESS, PARKING, AND TRAFFIC

- A. Parking area for project visitors and construction personnel shall be at location designated by the Owner's Designated Representative.
- B. Provide barricades, warning signs, flagmen, or other traffic regulators that may become necessary for protection of the public, construction personnel, or property.
- C. Street/Parking Lot work to not impede flow of traffic.
- D. The provision of designation signage and temporary traffic flow signage is required if construction changes parking and/or access flow.

END OF SECTION

SECTION 01 56 00

TEMPORARY ENCLOSURES

PART 1 GENERAL

1.1 TEMPORARY ENCLOSURE

- A. Provide temporary enclosure of materials, equipment, work in progress, and completed portions of the Work to provide protection from exposure, foul weather, other construction operations, and similar activities.
 - 1. Subcontractor is solely responsible for security of their own tools and equipment.
- B. Coordinate with ventilating, material drying, or curing requirements to avoid dangerous conditions.
- C. Close openings through the floor or roof decks and other horizontal surfaces with substantial load-bearing wood-framed or similar construction.

1.2 COLLECTION AND DISPOSAL OF WASTES

- A. Establish a system for daily collection and disposal of waste materials.
- B. Enforce requirements strictly.
- C. Do not retain collected materials longer than 7 days during normal weather or 3 days when the daily temperature is expected to rise above 80 degrees F.
- D. Handle waste materials that are hazardous, dangerous or unsanitary separately from other waste by containerizing.
- E. Dispose of waste material in a lawful manner.
- F. Burying or burning of waste materials on the site or washing waste material down sewers will not be permitted.
- G. Provide silt bags in catch basins and biobags around the basins adjacent to construction work.
- H. Offsite Disposal: Disposal of all waste materials caused by the construction will be off the site and will be the responsibility of the Contractor. Provide paperwork to landfill stating that no hazardous material is present in trash being dumped.

1.3 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Provide a neat and uniform appearance in security and protection facilities acceptable to the Architect and the Owner.
- B. Maintain site in a safe, lawful and publicly acceptable manner.

1.4 BARRICADES, WARNING SIGNS AND LIGHTS

- A. Comply with recognized standards and code requirements for erection of substantial barricades where needed to prevent accidents.
- B. Paint with appropriate colors and provide warning signs to inform personnel at the site and the public of the hazard being protected against.
- C. Provide lighting where needed including flashing red lights where appropriate.

1.5 ENCLOSURE FENCE

- A. Install an enclosure fence with lockable entrance gates to enclose the entire site or portion sufficient to accommodate the construction operation.
- B. Install so as to prevent persons, dogs, and similar animals from entering the site except through the entrance gates.
- C. Provide No. 11 gage galvanized open-mesh, chain-link fabric fencing 6 feet high with galvanized barbed wire top strand and galvanized steel pipe posts, 1-1/2" for line posts and 2-1/2" for corner posts.
- D. Set posts in precast post blocks.

1.6 CONSTRUCTION AID BARRIERS

- A. Provide ramps, ladders, stairs, guardrails, chutes and material hoists as required. Construct and maintain to requirements of governing agencies. Furnish for safety of public and construction personnel.
- B. Provide barriers to protect materials, equipment, new and existing work, construction personnel and the public.
- C. Provide temporary dust barriers and other appropriate protection, as required, to prevent dust from entering the existing portions of the building.
- D. Completely remove temporary materials and equipment upon completion of construction.
- E. Repair damage caused by installation of temporary items and restore finishes to specified condition.

END OF SECTION

SECTION 01 58 00

PROJECT IDENTIFICATION

PART 1 GENERAL

1.1 DESCRIPTION

- A. The BSD Representative will direct the type of project identification signage to be placed at each project. General contractor to install BSD provided sign. No sign or advertising media of any nature shall be permitted on the site of Work or enclosing structures without the written approval of the BSD Representative. Any approved signs shall comply with the applicable laws, ordinances, and/or rules. Contractor shall not use in its external advertising, marketing programs, or other promotional efforts, any data, pictures or other representation of the District, except with prior specific written authorization from the BSD Representative.

END OF SECTION

SECTION 01 61 00**COMMON PRODUCT REQUIREMENTS****PART 1 GENERAL****1.1 MATERIAL AND EQUIPMENT SELECTION**

- A. Comply with Standards and these Specifications including size, make, type, and quality specified, or as accepted in writing by the Architect.
- B. All products shall be new and of current manufacture unless otherwise specified.
- C. All similar products shall be of the same manufacturer.
- D. Manufactured and Fabricated Products:
 - 1. Design, fabricate, and assemble in accordance with the best engineering and shop practices.
 - 2. Manufacture like parts of duplicate units to standard sizes and gauges and to be interchangeable.
 - 3. All similar products shall be of the same manufacturer. Two or more items of the same kind shall be considered identical and by the same manufacturer.
 - 4. Provide products suitable for service conditions.
 - 5. Adhere to equipment capacities, sizes, and dimensions shown or specified unless variations are specifically approved in writing.
- E. Do not use material or equipment for any purpose other than that for which it is designed or is specified.
- F. Fabricate and install equipment to deliver its full rated capacity at the efficiency for which it was designed.
- G. Select and install equipment to operate at full capacity without excessive noise or vibration.
- H. Provide electrical products with Underwriter's Laboratories Label or as approved by the local inspection authority.
- I. Any software provided with products shall be provided with appropriate licensing and use agreements for a minimum of 10 years.

1.2 MANUFACTURER'S INSTRUCTIONS

- A. Perform work in accordance with manufacturer's printed installation instructions, obtain and distribute copies of such instructions to parties involved in the installation, including 3 copies to the Architect.
- B. Maintain one set of complete instructions at the job site during installation and until completion.

- C. Handle, install, connect, clean, condition, and adjust products in strict accordance with manufacturer's printed instructions and in conformity with specified requirements.
 - 1. Consult with the Architect for further instructions should job conditions or specified requirements conflict with manufacturer's instructions.
 - 2. Do not proceed with work without clear instructions.
- D. Do not omit any preparatory step or installation procedure unless specifically modified or exempted by the Contract Documents.

END OF SECTION

**SECTION 01 62 00
PRODUCT OPTIONS****PART 1 GENERAL****1.1 PRODUCT OPTIONS**

- A. Specifications for public improvement contracts may not expressly or implicitly require any product by any brand name or mark, nor the product of any particular manufacturer or seller unless the product meets exemption criteria under ORS 279C.345. Consult with BSD representative if seeking an exception.
- B. “Any brand” with standard of quality, performance and other characteristics clearly described, is the preferred specification and requires no specific approval by the BSD representative.
- C. Single Product Named: For products specified by naming one product or manufacturer and "or accepted substitute", the Contractor must submit a request for substitution for any product or manufacturer not specifically named. Submittal is to be in accordance with this Section. “Brand X” or approved equal specification may be used, when the use is advantageous for the District, because the brand name describes the standard of quality, performance and other characteristics of the product needed by the District. Specific approval by BSD representative is required.
- D. Two or More Products Named: For products specified by naming several products or manufacturers and "or accepted substitute", select any one of the products or manufacturers named, provided the product selected complies with the specifications. If another product or manufacturer not named is to be used, the Contractor must submit a request for substitution for that product or manufacturer in accordance with this Section.
- E. “Or Accepted Substitute” and “Or Equal” Provisions: Where products or manufacturers are specified by name accompanied by the term “or accepted substitute” or “or equal”, provide either the product named or comply with the requirements for gaining approval of “substitutions” for the use of an unnamed product. BSD approval is required. May be used when the use is advantageous to the District, because the brand name describes the standard of quality, performance, and other characteristics of the product needed by the District. “Brand X” only specifications should rarely be used and only under conditions listed in ORS 279C.345 Specifications for contracts; exemptions.
 - 1. It is unlikely that the exemption will encourage favoritism in the awarding of public improvement contracts or substantially diminish competition for public improvement contracts;
 - 2. The specification of a product by brand name or mark, or the product of a particular manufacturer or seller, would result in substantial cost savings to the contracting agency;
 - 3. There is only one manufacturer or seller of the product of the quality required; or
 - 4. Efficient utilization of existing equipment or supplies requires the acquisition of compatible equipment or supplies.
- F. No materials or products containing any hazardous materials are to be used in the construction of this project. If any material or product specified in this Project Manual is known

BSD – SECURITY UPGRADES

Print Date: 3/29/21

Issue Set: Bid/Permit Set

to contain hazardous materials, it shall be brought to the attention of the Architect and Owner before ordering or fabricating that material or product.

END OF SECTION

SECTION 01 1 00
PRODUCT TRANSPORTATION, STORAGE, AND HANDLING
REQUIREMENTS

PART 1 GENERAL

1.1 TRANSPORTATION

- A. Arrange deliveries of products in accord with construction schedules; coordinate to avoid conflict with work and conditions at the site.
 - 1. Deliver products in undamaged condition and in manufacturer's original containers or packaging with identifying labels intact and legible.
 - 2. Immediately upon delivery, inspect shipments to assure compliance with requirements of the Contract Documents and to assure products are properly protected and undamaged.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage to products or packaging.

1.2 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions with their seals and labels intact and legible.
 - 1. Store products subject to damage by the elements in weather tight enclosures.
 - 2. Maintain temperature and humidity within the ranges required by the manufacturer's instructions.
 - 3. Protect equipment and systems from moisture, chemical, or mechanical damage before and after installation.
 - 4. Protect shafts and bearing housings from rust.
- B. Exterior Storage:
 - 1. Store fabricated products above the ground on blocking or skids to prevent soiling or staining. Cover products that are subject to deterioration with impervious sheet covering. Provide adequate ventilation to avoid condensation.
 - 2. Store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.
- C. Inspection: Arrange storage in a manner to provide easy access for inspection. Make periodic inspections of stored products to assure that products are maintained under specified conditions and free from damage or deterioration.
- D. Protection after Installation:
 - 1. Provide substantial coverings as necessary to protect installed products from damage by traffic or subsequent construction operations.
 - 2. Plug or cap pipe and conduit openings to prevent the entrance of foreign matter.
 - 3. Remove when no longer needed.

END OF SECTION

SECTION 01 71 00

EXAMINATION AND PREPARATION

PART 1 GENERAL

1.1 SUMMARY

- A. Comply with requirements in individual Specification Sections for examination and preparation of work areas prior to installation of new work.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

- A. Examine areas of work prior to demolition or construction activities. Report the condition of the roof substrate and other deterioration encountered to the Architect.
- B. See additional requirements in:
 - 1. Section 02 41 19 SELECTIVE DEMOLITION.
 - 2. Part 3 of individual Sections within these Specifications.

END OF SECTION

SECTION 01 74 00

CLEANING AND WASTE MANAGEMENT

PART 1 GENERAL

1.1 CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

- A. District sustainability goals require that this Project generate the least amount of waste possible. Every effort shall be made to minimize waste generated due to poor planning, breakage, mishandling, contamination, or other factors. Waste that is generated shall be reused, salvaged, or recycled when economically feasible. Waste disposal in landfills shall be minimized in accordance with Metro requirements.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION

3.1 FINAL CLEANING

- A. Contractor to provide final cleaning of Work prior to Substantial Completion Inspection.
 - 1. Use cleaning materials that are non-hazardous.
 - 2. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and materials being cleaned.
 - 3. Clean debris from roofs, gutters, downspouts, and drainage systems.
 - 4. Clean site; sweep paved areas, rake clean landscaped surfaces.
 - 5. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner, do not burn or bury.
 - 6. Re-clean areas or equipment; after Substantial Completion Inspection, or if dirtied as result of Contractor's work in preparing for final inspection or completion of punch list.

END OF SECTION

SECTION 01 76 00

PROTECTING INSTALLED CONSTRUCTION

PART 1 GENERAL

1.1 DESCRIPTION

- A. Contractor shall adequately protect materials being stored, completed construction, and/or construction in progress so as to prevent damage from subsequent operations or vandalism. This would include but is not be limited to control of traffic to prevent damage to equipment and surfaces and providing coverings to protect finished surfaces from damage.
- B. If materials or construction is damaged due to inadequate protection or vandalism, the Contractor shall clean and repair the Work and/or, at the BSD's representative's direction, replace the Work.

END OF SECTION

SECTION 01 77 00**CLOSEOUT PROCEDURES****PART 1 GENERAL****1.1 CONTRACT CLOSEOUT**

- A. Prerequisites to Substantial Completion:
 - 1. Obtain and submit releases enabling Owner's full and unrestricted use of the work and access to services and utilities, including (where required) occupancy permits, operating certificates, and similar releases.
 - 2. Complete final cleaning up requirements, including touch up of marred surfaces.
 - 3. Upon receipt of Contractor's written request for substantial completion inspection, Architect will either proceed with inspection or advise Contractor of prerequisites not fulfilled.
 - 4. Following initial inspection, Architect will either prepare certificate of substantial completion, or advise Contractor of work which must be performed prior to issuance of certificate; and repeat inspection when requested and assured that work has been substantially completed.
 - 5. Results of completed inspection will form initial "punch list" for final acceptance.
- B. Prerequisites to Contract Closeout:
 - 1. Letter referencing the Architect's last punch list by date, stating that all items listed have been completed and requesting a contract completion inspection.
 - 2. Submit final payment request with final releases and supporting documentation not previously submitted and accepted. Include releases and waivers of liens from Contractors subcontractors and material suppliers, in form approved by the Owner. Include certificates of insurance for projects and completed operations where required.
 - 3. Submit updated final statement, accounting for additional (final) changes to Contract sum.
 - 4. Submit certified copy of Architect's final punch list of itemized work to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, endorsed and dated by Architect.
 - 5. Submit consent of surety.
 - 6. Revise and submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 7. Submit specific warranties, workmanship/ maintenance bonds, maintenance agreements, final certification and similar documents, all complete in final form.
- C. Reobservation Fees: Should Architect perform more than one reobservation due to failure of the Work to comply with the claims of status of completion made by the Contractor,
 - 1. Owner will compensate Architect for such additional services, and
 - 2. Owner will deduct the amount of such compensation from the final payment to the Contractor.
- D. Submissions to E-builder: Submit all closeout submittals to E-builder.

END OF SECTION

SECTION 01 78 00**CLOSEOUT SUBMITTALS****PART 1 GENERAL****1.1 WARRANTY, MAINTENANCE, AND OPERATIONAL MANUALS**

- A. General:
 - 1. The purpose is to provide BSD with record information necessary for future operation and maintenance of the Project. Organize warranty and operating and maintenance data into suitable sets of manageable size.
 - 2. Include the following types of information:
 - a. Emergency instructions
 - b. Spare parts list
 - c. Summary schedule of all warranties
 - d. Copies of warranties and contact information
 - e. Wiring diagrams
 - f. Recommended "turn around" cycles
 - g. Inspection procedures
 - h. Record Shop Drawings and Installed Product Data
 - i. Fixture lamping schedule
 - j. Ballast and driver schedule
- B. Format: PDF each manual, make them searchable and selectable.
- C. Manual will generally include:
 - 1. A table of contents for each volume.
 - 2. A list of all Subcontractors with contact information including emergency phone number at the beginning of each volume.
 - 3. All information needed to operate and maintain systems and equipment provided in the Project presented and arranged in a logical manner for efficient use by the BSD's operating personnel.
 - 4. A list of manufacturers with phone numbers and addresses of local distributors, services representatives, parts dealers, etc. Include 24-hour service representatives when available.
 - 5. Equipment manufacturer, make, model number, size, and nameplate data.
 - 6. Description of system, configuration and operation, including component identification and interrelations. A master control schematic drawings(s) will normally be required for this purpose.
 - 7. Dimensional and performance data for specific unit provided. Extraneous catalog data must be eliminated.
 - 8. Manufacturer's recommended cleaning methods and materials.
 - 9. Manufacturer's recommended operating instructions as appropriate.
 - 10. Manufacturer's recommended maintenance requirements and preventative maintenance recommendations including lubrication and other servicing data.
 - 11. Complete parts list, including reordering information, recommended spares, and anticipated useful life (if available). Include name, telephone, and fax numbers of manufacturer's authorized service/parts distribution outlets nearest to Project.
 - 12. Emergency instructions.
 - 13. Warranties/guarantees.

- 14. Extra stock receipts.
- 15. Training schedule.
- D. Documents to be filed in e-Builder:
 - 1. Table of contents
 - 2. Contact list
 - 3. Certificate of substantial completion
 - 4. Contractor statement of warranty
 - 5. Lead free certification letter
 - 6. Asbestos free certification letter
 - 7. Certificate of occupancy
 - 8. Final permit inspection approvals
 - 9. Product data and warranties
 - a. Product data, warranty and shop drawings to be included.
 - b. Electronic Manuals: For each product, provide a pdf for the O&M and a pdf for the warranty, each named according to CSI/Specification number and title. Include a pdf of shop drawings if applicable.
- E. Review Procedures:
 - 1. Submit an electronic O&M Manual for review/acceptance; submit via E-Builder. Only submit final versions with the intent of the most expedient review process possible.
- F. Provide final O&M Manual, final and complete as built files, redlined record drawings, and specifications set in PDF format. Submit via E-Builder.
 - 1. Final and complete sets of as built drawings shall accurately and clearly reflect as-built conditions.
- G. Submissions to E-Builder: Submit all closeout submittals to E-Builder.

1.2 CERTIFICATIONS

- A. Asbestos Free Certification:
 - 1. Absolutely no materials containing asbestos are to be provided or installed as part of this Project. The Contractor shall ensure that no subcontractor or any of Contractor's own forces installs any materials containing asbestos. At final closeout of the Project, the Contractor shall provide to the School District certification that no materials containing asbestos have been installed in the Project and that the Project is asbestos free as required by the State of Oregon.
- B. Certificate of Occupancy.
- C. Final permit inspection and approvals.

1.3 PROJECT RECORD DOCUMENTS

- A. General:
 - 1. Contractor shall not use redlined record documents for construction purposes; protect from deterioration and loss in a secure location; provide access to redlined record documents for BSD's reference during normal working hours.
- B. Contractor Redlines/ Record Documents:

1. Contractor to maintain a clean, undamaged set of prints of Contract Drawings and Shop Drawings as the redline drawings and specs. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.
2. Mark Record Sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
3. Mark new information that is important to the BSD, but was not shown on Contract Drawings or Shop Drawings.
4. Note related Change Order numbers where applicable.
5. Record Sets shall be digital PDF format.
6. Organize sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates, and other identification on the cover of each set.
7. Create copy of mechanical, electrical, and plumbing “As Built” Record Sets and submit directly to BSD Representative at Substantial Completion via E-Builder.
 - a. Final and complete sets of as built drawings shall accurately and cleanly reflect as-built conditions.
8. Deliver complete Record Documents to the Architect. An electronic copy of Record Documents to be given to the Owner at the end of the Project via E-Builder.
 - a. Final and complete sets of as built drawings shall accurately and cleanly reflect as-built conditions.

C. Contractor Redline/ Record Specifications:

1. Contractor to maintain one complete copy of the Project Manual, including addenda, and one copy of other written construction documents such as Change Orders and modifications issued in printed form during construction. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications. Give particular attention to substitutions, selection of options and similar information on elements that are concealed or cannot otherwise be readily discerned later by direct observation. Note related Record Drawing information and Product Data.
2. Upon completion of the Work, submit Record Specifications for the BSD's records. Submit electronic copy via E-Builder at end of Project.

D. Record Product Data

1. Contractor to maintain one copy of each Product Data submittal. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site, and from the manufacturer's installation instructions and recommendations. Give particular attention to concealed products and portions of the Work which cannot otherwise be readily discerned later by direct observation. Note related Change Orders and mark-up of Record Drawings and Specifications.
2. Upon completion of mark-up, submit complete set of Record Product Data to the Architect for the BSD's records. An electronic copy on a thumb drive of Record Product Data to be given to the Owner at the end of the Project.
3. Any marked up data to be provided in O&M manual. Do not submit varying versions of the same product data.

E. Miscellaneous Record Submittals:

1. Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect for the BSD's records.
- F. Submit 1 hard copy, and one PDF set, of Permit Drawing Set with original stamp, signature and date to BSD Representative.

END OF SECTION

SECTION 02 41 20
SELECTIVE BUILDING DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Removal of designated building construction, equipment, and fixtures.
 - 2. Identification of utilities.
- B. Related Sections:
 - 1. Division 01 - Administrative, procedural, and temporary work requirements.

1.2 SUBMITTALS

- A. None

1.3 REGULATORY REQUIREMENTS

- A. Conform to applicable code for demolition work, safety of structure, and dust control.
- B. Obtain required permits from authorities.
- C. Notify affected utility companies before starting work and comply with their requirements.
- D. Conform to applicable codes when hazardous or contaminated materials are discovered.
- E. Do not close or obstruct exits.
- F. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

1.4 PROJECT CONDITIONS

- A. Minimize interference with streets, walks, public right-of-ways, and adjacent facilities.
- B. If hazardous materials are discovered, notify Architect and await instructions.
- C. See attached hazardous materials report for testing locations, results, and remedial actions.
- D. If any of the following conditions are encountered, cease work immediately, notify Architect and await instructions:
 - 1. Materials or conditions encountered differ from those designated in the Contract Documents.
- E. Coordinate salvage and disposal with BSD.

PART 2 PRODUCTS
Not used.

PART 3 EXECUTION

3.1 PREPARATION

- A. Erect temporary partitions, barricades, warning devices, and controls.
- B. Provide protective coverings, shoring, bracing, and supports for construction designated to remain.
- C. Temporarily or permanently disconnect utilities as required.

3.2 DEMOLITION

- A. Remove existing construction to extent indicated and as necessary to join new work to existing. Do not remove more than is necessary to allow for new construction.
- B. Do not damage work designated to remain.
- C. Minimize noise and spread of dirt and dust.
- D. Assign work to trades skilled in procedures involved.
- E. Plug ends of disconnected utilities with threaded or welded caps.
- F. Protect and support active utilities designated to remain. Post warning signs showing location and type of utility and type of hazard.
- G. Store items designated to remain property of Owner where directed by Owner
 - 1. Wall partitions to be saved and delivered to Owner.
- H. Remove and dispose of waste materials off site.

END OF SECTION

SECTION 05 40 00
COLD-FORMED METAL FRAMING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Non-load-bearing steel stud wall framing.
 - 2. Steel ceiling joist framing.NOTE: NO EQ STUDS.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. American Iron and Steel Institute (AISI) www.steel.org - Specification for the Design of Cold-Formed Steel Structural Members.
- B. American Society of Civil Engineers (ASCE) www.asce.org - Minimum Design Loads for Buildings and Other Structures.
- C. American Welding Society (AWS) www.aws.org D1.3/D1.3M - Structural Welding Code - Sheet Steel.
- D. ASTM International (ASTM) www.astm.org:
 - 1. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 - 2. A780 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.
 - 3. A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
 - 4. C955 - Standard Specification for Load-Bearing (Transverse and Axial) Steel Studs, Runners (Tracks), and Bracing or Bridging for Screw Application of Gypsum Board and Metal Plaster Bases.
 - 5. C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
 - 6. C1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
- E. Steel Framing Industry Association (SFIA) www.sfia.memberclicks.net - Member Directory.
- F. Steel Stud Manufacturer's Association (SSMA) www.ssma.com - Member Directory.
- G. Society for Protective Coatings (SSPC) www.sspc.org - Painting Manual.

1.3 QUALITY ASSURANCE

- A. Manufacturer: Current member of SFIA or SSMA.
- B. Installer Qualifications: Minimum 5 years experience in work of this Section.
- C. Calculate structural properties of framing members in accordance with AISI Specifications.

- D. Design wall stud system to withstand:
 - 1. Minimum 1/2 inch vertical deflection of structure unless noted otherwise.
- E. Design system to accommodate construction tolerances, deflection of building structural members, and clearances at openings.
- F. Welder Qualifications: AWS D1.3/D1.3M.

1.4 DELIVERY, STORAGE AND HANDLING

- A. In accordance with ASTM C1007.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Clark Dietrich.
 - 2. SCAFCO Corporation.
 - 3. Steeler, Inc.
 - 4. Or accepted substitute
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

- A. Framing Materials:
 - 1. ASTM A653/A653M or A1003/A1003M, galvanized sheet steel, G60 coating class.
 - 2. Fabricate components to ASTM C955.
 - 3. Studs: SSMA stud profile, C-shaped, punched for utility access.
 - 4. Tracks:
 - a. SSMA stud track profile, C-shaped, same gage, and depth as studs, unpunched.
 - b. Top track: Deflection type, deep leg track with slotted screw holes; permit plus or minus 1/2 inch movement of overhead structure without damage to framing.
 - c. Rim track: Provide closure for ends of joists.

2.3 ACCESSORIES

- A. Bracing, Furring, Bridging and Web Stiffeners: Formed sheet steel, thickness determined by performance requirements specified.
- B. Plates, Gussets, Clips: Formed sheet steel, thickness determined by performance requirements specified.
- C. Fasteners: ASTM C1513; self-drilling, self-tapping screws.
- D. Touch Up Paint: SSPC Paint 20, Type I or II.

2.4 FABRICATION

- A. Framing components may be prefabricated using templates.
- B. Cut members square and with tight fit to adjacent framing.

- C. Assemble components using screw connection, welding, or clinching methods. Welding to conform to AWS D1.3/D1.3M.
- D. Fabricate straight, level, and true, without warp or rack.
- E. Fabrication Tolerances: In accordance with ASTM C955.

PART 3 EXECUTION

3.1 INSTALLATION - GENERAL

- A. Install framing components in accordance with ASTM C1007, manufacturer's instructions, and construction documents.
- B. Welding: In accordance with AWS D1.3/D1.3M.
- C. Make provisions for erection stresses. Provide temporary alignment and bracing.

3.2 INSTALLATION - NON-AXIALLY LOADED STUD FRAMING

- A. Place top and bottom tracks in straight lines with ends butted. Fasten tracks at maximum 12 inches on center.
- B. Place studs at spacing indicated and not more than 2 inches from abutting walls and at each side of openings.
- C. Install deflection compensating top track at framing extending to underside of structure.
- D. Connect studs to top and bottom tracks.
- E. Construct corners using minimum of three studs.
- F. Do not splice studs.
- G. Erect, brace, and reinforce stud framing to develop strength to achieve design requirements.
- H. Install headers above openings and intermediate studs above and below openings to align with wall stud spacing.
- I. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
- J. Laterally brace walls at locations indicated.

3.3 INSTALLATION TOLERANCES

- A. In accordance with ASTM C1007.

3.4 FIELD QUALITY CONTROL

- A. Testing and Inspection Services: Inspect and test shop and field welds in accordance with AWS D1.3/D1.3M.

3.5 ADJUSTING

- A. Clean and touch up galvanized coatings at welded and abraded surfaces in accordance with ASTM A780, Annex A2.

END OF SECTION

SECTION 06 10 00

WOOD CARPENTRY

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide solid blocking or backing in framing for attachment of wall mounted casework.

1.2 REFERENCES

- A. American Plywood Association: PS 1, Construction and Industrial Softwood Plywood, latest edition.
- B. APA PRP-108: Performance Standards and Policies for Structural Use Panels, latest edition.

1.3 SUBMITTALS

- A. Shop Drawings:
 - 1. Show layout, dimensions, profiles, joint details, and other pertinent items.
 - 2. Show connections to adjacent work, and complete assembly.
 - 3. Include the manufacturer's descriptive literature for specialty items.
 - 4. Identify each item as to location, material grade, workmanship grade, wood species, finish, and location of casework

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Deliver sheathing with edges protected from bundling strap damage and store above grade, protected from moisture.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. B. Screw Fasteners: Bugle head screws in accordance with ICC-ES ER-0126.
- C. Lumber: Construction Grade, S-dry, Douglas Fir. Moisture content shall conform to WCLIB Rules #16, latest edition, General Grading Provisions, paragraph 3, Seasoning Provisions.
- D. Fire Treatment: Osmose "Flame Proof" treated meeting flame spread 25 or less, bearing UL FR-S label. All lumber products are to be pressure impregnated with fire retardant chemicals.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Blocking:
 - 1. Secure blocking to the building structural frame or to wall studding with appropriate fasteners to support accessory items being mounted to the blocking material.
 - 2. Use templates furnished with accessory items to determine the location of blocking or backing materials.
 - 3. Verify fastening devices furnished with accessory items to determine the appropriate backing material size and shape.

4. Check hardware schedule for locations where wall door bumpers are called for. Do not fasten solely to wall finish materials.

- B. Wood Contacting Concrete: Wherever wood makes end or side contact against concrete, install 2 layers of No. 30 pound roofing felt so there will be no contact between wood and concrete.

3.2 ADJUSTMENTS, CLEANING, AND REPAIRING

- A. Adjust moving parts to operate satisfactorily at time of project Substantial Completion and during warranty period.
- B. Damage Adjustments: Repair damaged or defective work as directed. Touch up finish as required. Remove and refinish damaged areas of finish.
- C. Cleaning: Clean exposed and semi-exposed surfaces.
- D. Including work of other trades, clean, repair, and touch-up or replace, when directed, any products that have been soiled, discolored, or damaged by work of this Section.
- E. Leave surfaces ready for finishing specified in other Sections.
- F. Remove debris from project site upon work completion or sooner, if directed.

END OF SECTION

SECTION 07 23 00

INTERIOR PARTITION ACOUSTICAL INSULATION

PART 1 GENERAL

1.1 SUMMARY

- A. Provide glass fiber acoustical insulation for interior partitions as indicated in drawings.

1.2 REFERENCES

- A. Section 092900 Gypsum Board
- B. Section 054000 Cold-formed Framing

1.3 QUALITY ASSURANCE

- A. Product Data: Submit product literature, samples and installation instructions for specified insulation.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Protect insulation from physical damage and from becoming wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.
- B. Label insulation packages to include material name, production date and/or product code.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. Owens-Corning
 - 2. Certain Teed
 - 3. Johns Manville
 - 4. Or approved equal
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

- A. Sound Attenuation Batts:
 - 1. Type: Unfaced glass fiber acoustical insulation complying with ASTM C 665 Type I.
 - 2. Size: As required to fill partition cavities completely.
 - 3. Surface Burning Characteristics:
 - a. Maximum flame spread: 10
 - b. Maximum smoke developed: 10 When tested in accordance with ASTM E 84
 - 4. Combustion Characteristics: Passes ASTM E 136.
 - 5. Fire Resistance Ratings: Passes ASTM E 119 as part of a complete fire tested wall assembly.
 - 6. Dimensional Stability: Linear Shrinkage less than 0.1%

PART 3 EXECUTION

3.1 INSPECTION AND PREPARATION

- A. Examine substrates and conditions under which insulation work is to be performed. A satisfactory substrate is one that complies with requirements of the section in which substrate and related work is specified.
- B. Verify mechanical and electrical services within the shaftwall have been tested and inspected.
- C. Obtain installer's written report listing conditions detrimental to performance of work in this section. Do not proceed with installation of insulation until unsatisfactory conditions have been corrected.
- D. Clean substrates of substances harmful to insulation.

3.2 INSTALLATION - GENERAL

- A. Comply with manufacturer's instructions for particular conditions of installation in each case.
- B. Batts may be friction-fit in place until the interior finish is applied.
 - 1. Install batts to fill entire stud cavity. If stud cavity is less than 96" in height, cut lengths to friction-fit against floor and ceiling tracks.
 - 2. Walls with penetrations require that insulation be carefully cut to fit around outlets, junction boxes and other irregularities.
- C. Where walls are not finished on both sides or insulation does not fill the cavity depth, supplementary support must be provided to hold product in place.
- D. Where insulation must extend higher than 8 feet, temporary support can be provided to hold product in place until the finish material is applied.

3.3 PROTECTION

- A. Protect installed insulation as recommended by manufacturer.

END OF SECTION

SECTION 079200

JOINT SEALERS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Joint backup materials.
 - 2. Joint sealers.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. C510 - Standard Test Method for Staining and Color Change of Single- or Multicomponent Joint Sealants.
 - 2. C719 - Standard Test Method for Adhesion and Cohesion of Elastomeric Joint Sealants Under Cyclic Movement (Hockman Cycle).
 - 3. C794 - Standard Test Method for Adhesion-In-Peel of Elastomeric Joint Sealants.
 - 4. C834 - Standard Specification for Latex Sealing Compounds.
 - 5. C920 - Standard Specification for Elastomeric Joint Sealants.
 - 6. C1193 - Standard Guide for Use of Joint Sealants.
 - 7. C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants.
 - 8. C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid Applied Sealants.
 - 9. C1472 - Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width.
 - 10. D2203 - Standard Test Method for Staining from Sealants.
 - 11. E 84 – Standard Test for Surface Burning Characteristics of Building Materials.
 - 12. E 814 – Standard Test Method for Fire Tests of Penetration Firestop System.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data: Indicate sealers, primers, backup materials, bond breakers, and accessories proposed for use.
 - 2. Warranty: Sample warranty form.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Minimum 5 years experience in work of this Section.
- B. Maximum Volatile Organic Compound (VOC) Content; interior sealers and accessories:
 - 1. Sealers: 250 grams per liter.
 - 2. Primers for non-porous substrates: 250 grams per liter.
 - 3. Primers for porous substrates: 775 grams per liter.
- C. Field Pre-Construction Testing:

1. Install sealers using joint preparation methods and materials recommended by sealer manufacturer.
2. When tests indicate sealant adhesion failure, modify joint preparation, primer, or both and retest until joint passes sealant adhesion test.

1.5 PROJECT CONDITIONS

- A. Do not apply sealers at temperatures below 40 degrees F unless approved by sealer manufacturer.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 1. BASF Building Systems. (www.buildingsystems.basf.com)
 2. Dow Corning Corp. (www.dowcorning.com)
 3. GE Silicones. (www.siliconeforbuilding.com)
 4. Pecora Corp. (www.pecora.com)
 5. Sika Corp. (www.sikausa.com)
 6. Tremco, Inc. (www.tremcosealants.com)
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

- A. Joint Sealer Type 6:
 1. ASTM C834, single component acrylic latex, non sag.
 2. Movement capability: Plus or minus 7-1/2 percent.
 3. Color: White.
- B. Joint Sealer Type 7:
 1. ASTM C920, Grade NS, single component silicone, non sag, mildew resistant.
 2. Movement capability: Plus or minus 25 percent.
 3. Color: To be selected from manufacturer's full color range.
- C. Joint Sealer Type 8:
 1. ASTM E 84 Flame Spread- 0 Smoke Development-0
 2. ASTM E814
 3. Intumescent acrylic sealant.

2.3 ACCESSORIES

- A. Primers, Bondbreakers, and Solvents: As recommended by sealer manufacturer.
- B. Joint Backing:
 1. ASTM C1330, closed cell polyethylene foam, preformed round joint filler, non absorbing, non staining, resilient, compatible with sealer and primer, recommended by sealer manufacturer for each sealer type.
 2. Size: Minimum 1.25 times joint width.

2.4 MIXES

- A. Mix multiple component sealers in accordance with manufacturer's instructions.

1. Mix with mechanical mixer; prevent air entrainment and overheating.
2. Continue mixing until color is uniform.

PART 3 EXECUTION

3.1 PREPARATION

- A. Remove loose and foreign matter that could impair adhesion. If surface has been subject to chemical contamination, contact sealer manufacturer for recommendation.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Protect adjacent surfaces with masking tape or protective coverings.
- D. Calculate joint dimensions in accordance with ASTM C1472.

3.2 APPLICATION

- A. Apply products in accordance with manufacturer's instructions.
- B. Install sealers and accessories in accordance with ASTM C1193.
- C. Install joint backing to maintain required sealer dimensions. Compress backing approximately 25 percent without puncturing skin. Do not twist or stretch.
- D. Use bondbreaker tape where joint backing is not installed.
- E. Fill joints full without air pockets, embedded materials, ridges, and sags.
- F. Tool sealer to smooth profile.
- G. Apply sealer within manufacturer's recommended temperature range.

3.3 CLEANING

- A. Remove masking tape and protective coverings after sealer has cured.
- B. Clean adjacent surfaces.

3.4 SCHEDULE

JOINT LOCATION OR TYPE	SEALER TYPE
------------------------	-------------

Interior Joints:

Joints and penetrations in fire rated assemblies	8
Other joints	6

END OF SECTION

SECTION 081113

HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Hollow steel doors and frames.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 087100 - Door Hardware.
 - 3. Section 082000 – Wood Doors
 - 4. Section 099100 - Painting

1.2 REFERENCES

- A. American National Standards Institute (ANSI)/Steel Door Institute (SDI):
 - 1. A250.3 - Test Procedure and Acceptance Criteria for Factory Applied Finished Painted Steel for Steel Doors and Frames.
 - 2. A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames, Frame Anchors and Hardware Reinforcings.
 - 3. A250.8 - Recommended Specifications for Standard Steel Doors and Frames.
 - 4. A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames.
 - 5. A250.11 - Recommended Erection Instructions for Steel Frames.
- B. ASTM International (ASTM):
 - 1. A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.
 - 2. A924 - Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process.
 - 3. A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 - 4. C518 - Standard Test Method for Steady State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 5. E413 - Classification for Rating Sound Insulation.
- C. National Fire Protection Association (NFPA) 80 - Standard for Fire Doors and Fire Windows.
- D. Steel Door Institute (SDI) 117 - Manufacturing Tolerances for Standard Steel Doors and Frames.
- E. Underwriters Laboratories (UL):
 - 1. 10B - Standard for Fire Tests of Door Assemblies.
 - 2. 10C - Standard for Positive Pressure Fire Tests of Door Assemblies.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Show locations, elevations, dimensions, model designations, fire ratings, preparation for hardware, and anchoring details.

2. Product Data: Show elevations, dimensions, gages of metal, hardware reinforcing gages and locations, and anchor types.

B. Quality Control Submittals:

1. Certificates of Compliance: Certification that products furnished comply with ANSI/SDI A250.3, ANSI/SDI 250.4, and ANSI/SDI A250.10.

1.4 QUALITY ASSURANCE

A. Doors: ANSI/SDI A250.8.

1. Grade: II - Heavy Duty
2. Model: 1 - Full Flush.

B. Frames: ANSI/SDI A250.8, Grade II - Heavy Duty.

C. Fire Door and Frame Construction: Conform to UL 10C.

D. Installed Fire Rated Door and Frame Assemblies: Conform to NFPA 80.

E. Installed by qualified tradesmen with no less than 2 years of experience in installing similar doors.

1.5 DELIVERY, STORAGE AND HANDLING

A. Ship door frames with removable angle spreader; do not remove until frame is installed.

B. Store doors upright in protected, dry area, off ground or floor, with at least 1/4 inch space between individual units.

C. Do not cover with non vented coverings that create excessive humidity.

D. Remove wet coverings immediately.

1.6 CLOSEOUT DELIVERABLES

A. Closeout Deliverables for Doors and Frames.

1. Drawings and specifications updated to show changes that occurred during construction.
2. Shop drawings updated to show changes that occurred during construction.
3. Operation and maintenance information.

1.7 WARRANTY

A. Provide 10-year warranties on door frames.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers:

1. Curries. (www.curries.com)

B. Substitutions: None accepted.

2.2 DOOR TYPE:

- A. Curries 747 T with 2" face frame designed for Curries 747 T doors.

2.3 MATERIALS

- A. Steel Sheet:
 - 1. ASTM A1008/1008M, cold rolled.
- B. Core:
 - 1. Interior non-fire rated doors: 8 lb. density mineral wool.

2.4 ACCESSORIES

- A. Primer: Zinc rich type.

2.5 FABRICATION

- A. Fabricate doors and frames in accordance with ANSI/SDI A250.8.
 - 1. Fabricate vertical door edges as vertical seam edge filled, dressed smooth, intermittently welded seams, edge filled, dressed smooth, or continuously welded seam, dressed smooth.
- B. Frames:
 - 1. Fabricate from minimum 16 gage sheets.
 - 2. Provide self aligning tabs and slots to hold corners in alignment.
- C. Accurately form to required sizes and profiles.
- D. Grind and dress exposed welds to form smooth, flush surfaces.
- E. Do not use metallic filler to conceal manufacturing defects.
- F. Fabricate with internal reinforcement for hardware specified in Section 087100; weld in place.
- G. Design Clearances:
 - 1. Between door and frame: Maximum 1/8 inch.
 - 2. Undercut:
 - a. Non-fire rated doors: Maximum 3/4 inch.
 - 3. Between face of door and stop: 1/16 to 3/32 inch.
- H. Manufacturing Tolerances: In accordance with SDI-117.

2.6 FINISHES

- A. Dress tool marks and surface imperfections to smooth surfaces.
- B. Clean and chemically treat steel surfaces.
- C. Touch up damaged metallic coatings.
- D. Apply manufacturer's standard rust inhibiting primer paint, air-dried or baked on, meeting requirements of ANSI/SDI A250.10.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install doors and frames in accordance with ANSI/SDI A250.11.
- B. Set plumb and level.
- C. Secure to adjacent construction using fastener type best suited to application.
- D. Install hardware in accordance with Section 087100.

3.2 ADJUSTING

- A. Touch up minor scratches and abrasions in primer paint to match factory finish.

END OF SECTION

SECTION 08 20 00
WOOD DOORS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Solid-core wood doors
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 081113 - Hollow Metal Doors and Frames
 - 3. Section 087100 - Door Hardware
 - 4. Section 099100 - Painting

1.2 REFERENCES

- A. Window and Door Manufacturers Association (WDMA).

1.3 SUBMITTALS

- A. Shop Drawings: Indicate location, size, and hand of each door; elevation of each kind of door; construction details not covered in Product Data; and the following:
 - 1. Dimensions and locations of mortises and holes for hardware.
 - 2. Dimensions and locations of cutouts.
 - 3. Undercuts.
 - 4. Doors to be factory primed for field finishing doors.
 - 5. Location and size of glass viewing panels (lites) for factory installation.

1.4 QUALITY ASSURANCE

- A. Frames: Hollow metal frames per Section 08 11 13, Hollow Metal Doors and Frames.
- B. Fire Door and Frame Construction: Conform to UL 10C.
- C. Installed Fire Rated Door: Conform to NFPA 80.
- D. Installed by qualified tradesmen with no less than 2 years of experience in installing similar doors.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Store doors upright in protected, dry area, off ground or floor, with at least 1/4 inch space between individual units.
- B. Do not cover with non-vented coverings that create excessive humidity.
- C. Remove wet coverings immediately.

1.6 CLOSEOUT DELIVERABLES

- A. Closeout Deliverables for Doors and Frames.
 - 1. Drawings and specifications updated to show changes that occurred during construction.
 - 2. Shop drawings updated to show changes that occurred during construction.

3. Operation and maintenance information.

1.7 WARRANTY

- A. Special Warranty: Manufacturer agrees to repair or replace doors that fail in materials or workmanship within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Warping (bow, cup, or twist) more than 1/4 inch in a 42-by-84- inch section of a 1.75 inch thick door.
 - b. Telegraphing of core construction in face veneers exceeding 0.01 inch in a 3-inch span.
 2. Warranty shall also include installation and finishing that may be required due to repair or replacement of defective doors.
 3. Warranty Period for Solid-Core Interior Doors: Life of installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 1. Basis of design Oregon Door
 2. Lynden Door
 3. VT Industries
 4. Vancouver Door
- B. Substitutions: Under provisions of Division 01.

2.2 DOOR TYPE:

- A. WDMA I.S.1-A Performance Grade:
 1. Extra Heavy Duty, 1.75 inches thick. Classrooms
 - a. All doors must meet specified WDMA performance duty level, including face screw holding requirement. Surface applied hardware shall be installed with screws or through-bolts.

2.3 MATERIALS

- A. Interior Solid-Core Doors:
 1. Grade: Premium (Grade AA faces).
 2. Faces: Any closed-grain hardwood of mill option ready to receive field paint.
 3. Finish: Paint per Section 099100 – Painting
 4. Glazing: For all interior doors designated with lites, 1/4 inch clear float, tempered as required by current code and regulation.
 5. Vision lite frames: Shall be 18 gauge, cold-rolled steel, factory primed for paint.
 6. Exposed Vertical Edges: Same closed-grain hardwood as faces
 7. Core: Structural composite lumber core.
 8. Construction: Seven plies. Stiles and rails are bonded to core, then entire unit is abrasive planed before veneering.
 9. Adhesives: Type I WDMA T.M.-6.
 10. WDMA I.S.1-A Performance Grade: Extra Heavy Duty

2.4 FABRICATION

- A. Factory fit doors to suit frame-opening sizes indicated. Comply with clearance requirements of referenced quality standard for fitting unless otherwise indicated.
- B. Factory machine doors for hardware that is not surface applied. Locate hardware to comply with

DHI-WDHS-3. Comply with final hardware schedules, door frame Shop Drawings, BHMA-156.115-W, and hardware templates.

1. Coordinate with hardware mortises in metal frames to verify dimensions and alignment before factory machining.
- C. Openings: Factory cut and trim openings through doors.
 1. Light Openings: Trim openings with moldings of material and profile indicated.
 2. Glazing: Factory install glazing in doors indicated.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Examine doors and installed door frames, with Installer present, before hanging doors.
 1. Verify that installed frames comply with indicated requirements for type, size, location, and swing characteristics and have been installed with level heads and plumb jambs. Any deficiencies must be corrected prior to door installation.
 2. Reject doors with defects.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Hardware: For installation, see Section 087100 Door Hardware.
- B. Installation Instructions: Install doors to comply with manufacturer's written instructions and referenced quality standard, and as indicated.
- C. Job-Fitted Doors: Align and fit doors in frames with uniform clearances and bevels as indicated below; do not trim stiles and rails in excess of limits set by manufacturer or permitted for fire-rated doors. Machine doors for hardware. Seal edges of doors, edges of cutouts, and mortises after fitting and machining.
 1. Clearances: Provide 1/8 inch (3.2 mm) at heads, jambs, and between pairs of doors. Provide 1/4 inch (6.4 mm) from bottom of door to top of decorative floor finish or covering unless otherwise indicated. Where threshold is shown or scheduled, provide 1/4 inch (6.4 mm) from bottom of door to top of threshold unless otherwise indicated.
 2. Bevel non-fire-rated doors 1/8 inch in 2 inches (3 degrees) at lock and hinge edges.

3.3 ADJUSTING

- A. Operation: Correct any deficiency that prohibits doors from swinging or operating freely. Do not remove hinge screws after initial insertion. Shims used for alignment purposes must be inserted between hinge and frame. Do not insert shims between hinge and door.
- B. To prevent stile failure, ensure that door closers are properly adjusted and do not limit the door opening swing. Limit door opening swing only with a properly located stop.
- C. Finished Doors: Replace doors that are damaged or that do not comply with requirements. Doors may be repaired or refinished if Work complies with requirements and shows no evidence of repair or refinishing.

END OF SECTION

SECTION 08 71 00

DOOR HARDWARE

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Hardware for steel doors.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 061000 - Wood Carpentry
 - 3. Section 082000 - Solid Core Wood Doors

1.2 REFERENCES

- A. American National Standards Institute/Builders Hardware Manufacturers Association (ANSI/BHMA):
 - 1. A156.1 - Butts and Hinges.
 - 2. A156.2 - Bored and Preamsembled Locks and Latches.
 - 3. A156.4 - Door Controls - Closers.
 - 4. A156.5 - Auxiliary Locks and Associated Products.
 - 5. A156.18 - Materials and Finishes.
- B. National Fire Protection Association (NFPA):
 - 1. 80 - Standard for Fire Doors and Windows.
 - 2. 105 - Installation of Smoke Control Door Assemblies.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Shop Drawings: Schedule hardware by door type and location; show door size, hand, thickness, edge bevel, hardware components and quantities, keying, and finishes.
 - 2. Product Data: Manufacturer's descriptive data for each component.
 - 3. Warranty: Sample warranty form.
- B. Closeout Submittals:
 - 1. Copy of approved hardware schedule.
 - 2. Drawings and specifications updated to show changes that occurred during construction
 - 3. Shop drawings updated to show changes that occurred during construction.
 - 4. Operation and maintenance information
 - 5. Provide 3-year warranty on doors
 - 6. Keys; tag with mark corresponding to keying schedule.

1.4 QUALITY ASSURANCE

- A. Installer Qualifications: Minimum 5 years documented experience in work of this Section.
- B. Provide hardware labeled by recognized independent testing laboratory and meeting requirements of NFPA 80 for fire rated doors.
- C. Provide smoke gasketing at fire rated doors in accordance with NFPA 105.
- D. Conform to OSSC 2019 for locating hardware and for door opening force requirements.

- E. Labels:
 - 1. Provide hardware for fire-rated openings in compliance with NFPA Standard No. 80.
 - 2. Provide hardware that has been tested and listed by UL for the types and sizes of doors required and complies with the requirements for the door and door frame labels.
- F. ADA Compliance:
 - 1. Interior Doors: All interior doors are required to meet ADAAG requirement that the force for pushing or pulling open interior swinging egress doors, other than fire doors, shall not exceed 5-pounds. Any interior swinging egress door not meeting this requirement will not be allowed.
 - 2. Exterior Doors: The maximum opening force allowed is to not exceed 8-1/2-pounds.
 - 3. Interior Fire Doors: Conform to NFPA 101 for the opening forces for interior side-hinged or pivoted-swinging door leaves without closers. These forces shall not exceed 5-pounds while the forces required to fully open any door leaf manually in a means of egress shall not exceed 15-pounds to release the latch, 30-pounds to set the leaf in motion, and 15-pounds to open the leaf to the minimum required width.
- G. Pre-occupancy adjustments.
 - 1. No less than 30 days before Substantial Completion (occupancy), Contractor, aided by door hardware Supplier, shall adjust all locks, door hinges, door swings, door wall stops, thresholds, door sweeps, door alarms, and any door powering devices for smooth and effective operation.
- H. Post-occupancy adjustments.
 - 1. At six months following Substantial Completion, Contractor, aided by door hardware Supplier, shall again adjust all locks, door hinges, door swings, door wall stops, thresholds, door sweeps, door alarms, and any door powering devices for smooth and effective operation.

1.1 DELIVERY, STORAGE AND HANDLING

- A. Pack hardware items separately, with fasteners, installation instructions, and templates.
- B. Mark containers with item number corresponding to hardware schedule.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers - Butt Hinges:
 - 1. Ives by Allegion (www.allegion.com)
- B. Acceptable Manufacturers – Locksets and Cylinders:
 - 1. Schlage. (<http://www.schlage.com>)
- C. Acceptable Manufacturers - Closers:
 - 1. LCN by Allegion (www.allegion.com)
- D. Acceptable Manufacturers - Door Seals:
 - 1. Hager Companies. (www.hagerco.com)
 - 2. National Guard Products, Inc. (www.ngpinc.com)
 - 3. Pemko Manufacturing Co., Inc. (www.pemko.com)
- E. Acceptable Manufacturers – Thresholds and Wall Mounted Door Stop:
 - 1. Pemko Manufacturing Co., Inc. (www.pemko.com)
- F. Acceptable Manufacturers - Kickplates:

1. Ives by Allegion (www.allegion.com)

G. Substitutions: Under provisions of Division 01.

2.2 MANUFACTURED UNITS

A. Butt Hinges:

1. Description: ANSI/BHMA A156.1, full mortis type, five knuckle, NRP.
2. Weight: Heavy weight.
3. Bearing type: Ball bearing.
4. Size: 4-1/2 x 4-1/2 inches.

B. Locksets, and Cylinders:

1. Locksets: Schlage ND92PD Vanguard Classroom Lever Lock
2. Strike plates: Curved lip, minimum lip projection necessary to protect door frame and trim and to conceal edges of strike cutout.
3. Strike boxes: Steel.
4. 6 pin with interchangeable core.
5. Keying:
 - a. Schlage Classic FSIC cores 23-030-626 in the designated keyways:
 - 1) Bethany Elementary School "CE"
 - 2) Oak Hills Elementary School "CE"
 - 3) West Tualatin View Elementary School "F"
 - 4) Montclair Elementary School "EF"

C. Closers:

1. Description: ANSI/BHMA A156.4, overhead exposed, metal cover, sized to door conditions.
2. Construction: Cast aluminum or iron body, rack and pinion operation with compression spring, fully hydraulic.
3. Closing and latching speeds: Controlled by independently adjustable concealed valves.
4. Mounting: Surface mounted, non handed with universal regular or parallel arm. Suitable for mounting on 1-3/4 inch minimum door top rail or transom bar without drop plate.
5. Adjustable opening force and delayed closing in accordance with applicable accessibility code.

D. Door Stops: As scheduled.

E. Kick Plates:

1. Type: 18 gage, square edges, secured with flathead countersunk screws.
2. Size: 10 inches high x door width less 2 inches.

F. Thresholds: Provide thresholds conforming to ANSI/BHMA A156.21, extruded aluminum, clear anodized finish, BHMA 628. Provide neoprene or silicon foot seals, 1" wider than frame depth.

2.3 FINISHES

A. Finishes: To ANSI/BHMA A156.18.

B. Door Closers: Finish No. 689, aluminum/ silver enamel.

C. Hinges at Fire-Rated Doors: Finish No. 626, satin chrome plated.

D. Thresholds and Door Seal Housings: Clear.

E. Other: Finish No. 626, satin chrome plated unless noted otherwise

F. Substitutions: Under provisions of Division 01.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install hardware in accordance with approved hardware schedule and manufacturer's instructions.
- B. Install locksets, closers, and trim after finish painting.
- C. Set thresholds in mastic and secure.
- D. Mount closers so that closers and closer arms are not visible on corridor or public side of doors.
- E. Mounting Heights - Finished Floor to Center Line of:
 - 1. Locksets: 38 inches.
 - 2. Top hinge: Verify in field match existing spacing.
 - 3. Bottom hinge: Verify in field match existing spacing.
 - 4. Intermediate hinges: Verify in field match existing spacing.
 - 5. Wall stop: to protect wall.

3.2 PROTECTION

- A. Remove or protect hardware until painting is completed.

3.3 ADJUSTING

- A. Test and adjust hardware for quiet, smooth operation, free from binding and rattling.
- B. Adjust doors to operate with maximum opening forces in accordance with applicable accessibility code.

3.4 SCHEDULE

SET NO.	QTY	DESCRIPTION	MFR	MODEL	FINISH	NOTES
H1	3	HINGES		5HBB1HW 4.5 X 4.5 NRP	626	4.5"X4.5"
	1	WALL STOP	IVES	WS406/407CCV	630	
	2	KICKPLATE	IVES	8400 10" x 2" LDW B-CS	630	10" x 2"
	1	LOCKSET	SCHLAGE	ND92PD	626	
H2	1	SURFACE CLOSER	LCN	4111 EDA TBWMS	689	NO SCUSH REQ.
	4	HINGES		5B1HW 5" X 4.5" NRP	626	5"X4.5"
	1	WALL STOP	IVES	WS406/407CVX	630	
	2	KICKPLATE	IVES	8400 10" x 2" LDW B-CS	630	10" X 2"
	1	PANIC HARDWARE	VON	LD-99-NL-996L RHR	626	
	1	PANIC HARDWARE	VON	LD-99-EO LHR	626	
	3	SPECIAL SCREWS		10-24 X 1-1/4" FHMS		
	1	WALL MOUNT MAG	LCN	SEM7580	689	
H3	1	LOCKSET	SCHLAGE	ND92PD	626	
H4	1	THRESHOLD	PEMKO	252x3 FGV	628	
	1	DOOR BOTTOM	PEMKO	2212APK773	628	

BSD – SECURITY UPGRADES

Issue Set: Bid/Permit Set

Print Date: 3/29/21

H5	3	HINGES		5HBB1HW 4.5 X 4.5 NRP	626	4.5"X4.5"
	1	OVERHEAD DOOR	PEMKO	OH104S		HEAVY DUTY
		STOP				CONCEAL
	2	KICKPLATE	IVES	8400 10" x 2" LDW B-CS	630	10" x 2"
	1	LOCKSET	SCHLAGE	ND92PD	626	

END OF SECTION

SECTION 09 29 00

GYPSUM BOARD

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Acoustical insulation.
 - 2. Gypsum board.
 - 3. Taping and bedding of gypsum board.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 079200 - Joint Sealers.

1.2 REFERENCES

- A. American National Standards Institute (ANSI):
 - 1. A108.11 - Interior Installation of Cementitious Backer Units.
 - 2. A118.9 - Test Methods and Specifications for Cementitious Backer Units.
- B. ASTM International (ASTM):
 - 1. C475 - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board.
 - 2. C514 - Standard Specification for Nails for the Application of Gypsum Wallboard.
 - 3. C665 - Standard Specification for Mineral Fiber Blanket Thermal Insulation for Wood Frame and Light Construction Buildings.
 - 4. C1002 - Standard Specification for Steel Drill Screws for the Application of Gypsum Board.
 - 5. C1047 - Standard Specifications for Accessories for Gypsum Wallboard and Gypsum Veneer Base.
 - 6. C1178 - Standard Specification for Glass Mat Water-Resistant Gypsum Backing Panel.
 - 7. C1396 - Standard Specification for Gypsum Board.
 - 8. C1629 - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels.
 - 9. D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber.
 - 10. E90 - Standard Test Method for Airborne Sound Transmission Loss of Building Partitions.
 - 11. E413 - Standard Test Method for Classification for Rating Sound Insulation.
- C. Gypsum Association (GA):
 - 1. GA-214 - Levels of Gypsum Board Finish.
 - 2. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.
 - 3. GA-600 - Fire Resistance Design Manual.
- D. Underwriters Laboratories, Inc. (UL) - Fire Resistance Directory.

1.3 QUALITY ASSURANCE

- A. Fire Resistance Ratings:
 - 1. Construct assemblies to achieve fire resistance ratings indicated on Drawings, in accordance with referenced GA or UL design number.
 - 2. If requirements of assembly numbers referenced conflict with Contract Document requirements, conform to assembly requirements.

1.4 PROJECT CONDITIONS

- A. Maintain temperature in spaces in which work is being performed above 50 degrees F during and after installation.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers - Gypsum Panels:
 - 1. CertainTeed Gypsum, Inc. (www.certainteed.com)
 - 2. GP Gypsum Corporation. (www.gp.com)
 - 3. National Gypsum Co. (www.nationalgypsum.com)
 - 4. USG Corporation. (www.usg.com)
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS - GYPSUM PANELS

- A. Fire Resistant Gypsum Board: ASTM C1396, Type X; 48 inches wide x thickness indicated, maximum practical length, tapered edge; apply to fire rated assemblies.

2.3 ACCESSORIES

- A. Fasteners: ASTM C1002, Type S screws, minimum 5/8 inch penetration into framing.
- B. Adhesive:
 - 1. Type recommended by gypsum panel manufacturer.
 - 2. Maximum volatile organic compound VOC content: 50 grams per liter.
- C. Trim Accessories: ASTM C1047.
 - 1. Material: Formed steel, minimum 26 gage core steel, hot dip galvanized finish, expanded flanges.
 - 2. Corner reinforcement: GA-216, Type CB-100 x 100.
 - 3. Casing: GA-216, Type LC.
 - 4. Control joint.
- D. Joint Treatment Materials:
 - 1. Reinforcing tape and joint compound; ASTM C475.
 - 2. Joint compound; maximum volatile organic compound (VOC) content: 250 grams per liter.
- E. Pocket Trim:
 - 1. Product: Stockton DMPT 75: Pocket Trim
 - 2. Material: Aluminum Alloy (6063 T-5)
 - 3. Size: 1" Y and Z sizing. Lengths appropriate for wall height.

PART 3 EXECUTION

3.1 INSTALLATION OF GYPSUM PANELS

- A. Install panels and accessories in accordance with ASTM C754, GA-216, and manufacturer's instructions.

- B. Accurately cut panels to fit around openings and projections. Do not tear face paper or break gypsum core.
- C. Apply panels in most economical manner, with ends and edges occurring over supports.
- D. Apply panels at fire-rated assemblies as required by design assembly.
- E. Stagger joints on opposite sides of partitions.
- F. Do not locate joints to align with edges of openings unless a control joint is installed.
- G. Mechanically fasten panels to framing. Place fasteners minimum 3/8 inch from edges of panels; drive heads slightly below surface. Stagger fasteners at abutting edges.
- H. Apply face layer of double layer applications with joints offset from those in base layer; secure with mechanical fasteners to framing or with adhesive to base layer.
- I. At deflection compensating head tracks, cut panels 1/2 inch short of structure at head; do not secure panels to top runner channel.
- J. Treat cut edges and holes in moisture resistant gypsum board with joint sealer.
- K. Where recessed items occur in fire rated partitions, box item on all sides with gypsum board as required to maintain continuity of fire rating.

3.2 INSTALLATION OF ACCESSORIES

- A. Install in accordance with manufacturer's instructions.
- B. Install corner reinforcement at outside corners. Use single lengths where length of corner does not exceed standard length.
- C. Install casings where indicated and where gypsum board abuts dissimilar materials or stops with edge exposed.
- D. Install control joints at ceilings:
 - 1. At maximum 50 feet on center.
 - 2. Where ceiling framing changes direction.
 - 3. Additional locations as indicated.
- E. Install control joints at walls and partitions:
 - 1. At changes in backup material.
 - 2. At maximum 30 feet on center.

3.3 JOINT TREATMENT

- A. Treat joints and fasteners in gypsum board in accordance with GA-214.
- B. Levels of Finish:
 - 1. Surfaces to receive tile, wall panels, or FRP Level 2 finish.
 - 2. Surfaces to receive flat, satin or eggshell paints: Level 4 finish.
 - 3. Surfaces to receive semigloss or gloss paints, or applied graphics: Level 5 finish.

END OF SECTION

SECTION 09 51 13
ACOUSTICAL PANEL CEILINGS

PART 1 GENERAL

1.1 SUMMARY

Section includes suspended ceiling system(s) with the following:

Acoustical Panels.

1. Exposed suspension system.
2. Metal edge moldings and trim.

2.1 ACTION SUBMITTALS

Product Data: For each type of product.

- A. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.

Acoustical Panel: Set of 6-inch square Samples of each type, color, pattern, and texture.

1. Exposed Suspension-System Members, Moldings, and Trim: Set of 6-inch long Samples of each type, finish, and color.

3.1 INFORMATIONAL SUBMITTALS

- A. Evaluation Reports: For each acoustical panel ceiling suspension system and anchor and fastener type, from ICC-ES, indicating conformance with Seismic Design Category indicated on Structural Drawings for Project.

4.1 CLOSEOUT SUBMITTALS

Maintenance Data: For finishes to include in maintenance manuals.

5.1 MAINTENANCE MATERIAL SUBMITTALS

Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Acoustical Ceiling Panels: Full-size panels equal to 2 percent of quantity installed.

1. Suspension-System Components: Quantity of each exposed component equal to 2 percent of quantity installed.

6.1 DELIVERY, STORAGE, AND HANDLING

Deliver acoustical panels, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

- A. Before installing acoustical panels, permit them to reach room temperature and a stabilized moisture content.
- B. Handle acoustical panels carefully to avoid chipping edges or damaging units in any way.

7.1 FIELD CONDITIONS

Environmental Limitations: Do not install acoustical panel ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

PART 2 PRODUCTS

1.1 PERFORMANCE REQUIREMENTS

- A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7; see Structural Drawings for Project Seismic Design Category.
- B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
 - 1. Class A: Flame spread index 0 - 25; smoke developed index 0 - 450.

2.1 ACOUSTICAL PANELS, GENERAL

- A. Source Limitations: Obtain each type of acoustical ceiling panel and supporting suspension system from single source from single manufacturer.
- B. Acoustical Panel Standard: Provide manufacturer's standard panels of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.
 - 1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches away from test surface according to ASTM E 795.
- C. Acoustical Panel Colors and Patterns: Match appearance characteristics indicated for each product type.

1. Where appearance characteristics of acoustical panels are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

3.1 ACOUSTICAL PANELS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong World Industries, Inc.; School Zone Fine Fissured, Item No. 1714 or comparable product by one of the following:
 1. CertainTeed Corp.
 2. USG Interiors, Inc.; Subsidiary of USG Corporation.
- B. Color: White .
- C. LR: Not less than 0.90.
- D. NRC: Not less than 0.60 .
- E. CAC: Not less than 40.
- F. Edge/Joint Detail: Reveal sized to fit flange of exposed suspension-system members .
- G. Modular Size: 24 by 48 inches.

4.1 METAL SUSPENSION SYSTEMS, GENERAL

- A. Metal Suspension-System Standard: Provide manufacturer's standard direct-hung metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.
- B. Attachment Devices: Size for five times the design load indicated in ASTM C 635/C 635M, Table 1, "Direct Hung," unless otherwise indicated. Comply with seismic design requirements.
 1. Anchors in Concrete: Anchors of type and material indicated below, with holes or loops for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to five times that imposed by ceiling construction, as determined by testing according to ASTM E 488 or ASTM E 1512 as applicable, conducted by a qualified testing and inspecting agency.
 - a. Type: Postinstalled expansion anchors.
 - b. Corrosion Protection: Carbon-steel components zinc plated to comply with ASTM B 633, Class Fe/Zn 5 (0.005 mm) for Class SC 1 service condition.
 - c. Corrosion Protection: Stainless-steel components complying with ASTM F 593 and ASTM F 594, Group 1 Alloy 304 or 316 for bolts; Alloy 304 or 316 for anchor.
 - d. Corrosion Protection: Components fabricated from nickel-copper-alloy rods complying with ASTM B 164 for UNS No. N04400 alloy.

2. Power-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers of type indicated and with capability to sustain, without failure, a load equal to 10 times that imposed by ceiling construction, as determined by testing according to ASTM E 1190, conducted by a qualified testing and inspecting agency.
- C. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:
1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.
 2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.106-inch diameter wire.
- D. Seismic Stabilizer Bars: Manufacturer's standard perimeter stabilizers designed to accommodate seismic forces.
- E. Seismic Struts: Manufacturer's standard compression struts designed to accommodate seismic forces.
- F. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical panels in place.

5.1 METAL SUSPENSION SYSTEM

- A. Narrow-Face, Capped, Double-Web, Steel Suspension System: Main and cross runners roll formed from cold-rolled steel sheet; prepainted, electrolytically zinc coated, or hot-dip galvanized according to ASTM A 653/A 653M, not less than G30 coating designation; with prefinished 9/16-inch wide metal caps on flanges.
1. Structural Classification: Heavy-duty system.
 2. End Condition of Cross Runners: Override (stepped) or butt-edge type.
 3. Face Design: Flat, flush.
 4. Cap Material: Steel or aluminum cold-rolled sheet.
 5. Cap Finish: Painted white.

6.1 METAL EDGE MOLDINGS AND TRIM

- A. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations that comply with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.
1. Provide manufacturer's standard edge moldings that fit acoustical panel edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.
 2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

PART 3 EXECUTION

1.1 EXAMINATION

- A. Examine substrates, areas, and conditions, including structural framing to which acoustical panel ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and with requirements for installation tolerances and other conditions affecting performance of acoustical panel ceilings.
- B. Examine acoustical panels before installation. Reject acoustical panels that are wet, moisture damaged, or mold damaged.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

2.1 PREPARATION

- A. Measure each ceiling area and establish layout of acoustical panels to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width panels at borders, and comply with layout shown on reflected ceiling plans.

3.1 INSTALLATION

- A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."
- B. Suspend ceiling hangers from building's structural members and as follows:
 - 1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
 - 2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
 - 3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
 - 4. Secure wire hangers to ceiling-suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.
 - 5. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
 - 6. Fasten hangers to concrete filled metal decks using power-actuated fasteners or post-installed expansion anchors that extend through metal decking into concrete.
 - 7. Space hangers not more than 48 inches o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches from ends of each member.
 - 8. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

- C. Install edge moldings and trim of type indicated at perimeter of acoustical ceiling area and where necessary to conceal edges of acoustical panels.
 - 1. Attach moldings to substrate at intervals not more than 16 inches o.c. and not more than 3 inches from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet. Miter corners accurately and connect securely.
 - 2. Do not use exposed fasteners, including pop rivets, on moldings and trim.
 - a. Where use of exposed fasteners is unavoidable, use only pop rivets with heads factory finished to match moldings and trim.
- D. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.
- E. Install acoustical panels with undamaged edges and fit accurately into suspension-system runners and edge moldings. Scribe and cut panels at borders and penetrations to provide a neat, precise fit.
 - 1. For reveal-edged panels on suspension-system runners, install panels with bottom of reveal in firm contact with top surface of runner flanges.
 - 2. Paint cut edges of panel remaining exposed after installation; match color of exposed panel surfaces using coating recommended in writing for this purpose by acoustical panel manufacturer.

4.1 CLEANING

- A. Clean exposed surfaces of acoustical panel ceilings, including trim, edge moldings, and suspension-system members. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

END OF SECTION

SECTION 09 65 13
RESILIENT WALL BASE

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Resilient Wall Base

1.2 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Provide resilient wall base materials manufactured in the United States of America by a firm with a minimum of 10 years' experience with resilient rubber materials of type equivalent to those specified.
- B. Provide resilient wall base, flooring materials, adhesives, accessories, and subfloor preparation products from one manufacturer to ensure color matching and compatibility.
- C. Manufacturer shall be capable of providing technical training and technical field service representation.

1.3 RELATED WORK

- A. Installer must be professional, licensed, insured and acceptable to manufacturer of resilient flooring materials. Project Managers or Field Supervisors must be INSTALL (International Standards & Training Alliance)certified CFI (Certified Floorcovering Installers) Certified and/or an FCICA (The Flooring Contractors Association) CIM (Certified Installation Manager) for the requirements of the project or equivalent.

1.4 DELIVERY, STORAGE AND HANDLING

- A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within the range recommended by Flexco of 55 degrees F (13 degrees C) and 85 degrees F (29 degrees C).

1.5 PROJECT CONDITIONS

- A. Install resilient products after other finishing operations, including painting, have been completed.
- B. Maintain ambient temperatures within range of (\pm 10 degrees F) 65 degrees (18 degrees C) and 85 degrees F (29 degrees C) in the spaces to receive the resilient products during:
 - 1. 48 hours before installation.
 - 2. During installation.
 - 3. 48 hours after installation.
- C. Maintain relative humidity between 40% and 65% during installation.
- D. Avoid conditions in which dew point causes condensation on the installation surface.

1.6 WARRANTY

- A. Provide manufacturer's standard limited commercial warranty to cover manufacturing defects

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Basis-of-Design: Flexco Floors | 1401 East 6th Street | Tuscumbia, AL 35674 | P: (800) 633-3151
- B. Substitutions: Under provisions of Division 01.

2.2 PRODUCTS

A. TRADITIONAL WALL BASE

1. Meets the performance requirements for the following Industry Standards:
 - a. ASTM F1861, Standard Specification for Resilient Wall Base, Type TP (rubber, thermoplastic), Group 2 (layered), Style A&B(straight, cove)
 - b. ASTM E84, Standard Test Method for Surface Burning Characteristics of Building Materials, Class A.
 - c. ASTM E648 (NFPA 253), Standard Test Method for Critical Radiant Flux, Class 1, >0.45 W/cm².
 - d. ASTM E662 (NFPA 258), Standard Test Method for Smoke Density, Passes, <450
 - e. ASTM F137, Standard Test Method for Flexibility of Resilient Flooring Materials protocols, Passes
 - f. ASTM F386, Standard Test Method for Thickness of Resilient Flooring Materials Having Flat Surfaces, Passes
 - g. ASTM F925, Standard Test Method for Resistance to Chemicals of Resilient Flooring, Excellent
 - h. ASTM F1515, Standard Test Method for Measuring Light Stability of Resilient Flooring protocols, Passes National Fire Protection Association (NFPA):
 - i. NFPA 253, Test Method for Critical Radiant Flux of Floor Covering Systems Using a Radiant Energy Source
 - j. NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials
 - k. NFPA 258, Test Method for Specific Density of Smoke Generated by Solid Materials

B. RUBBER WALL BASE

1. Flexco Base 2000, or approved substitution.
2. 4" height (match existing)
3. Coved
4. Color: Match existing.

2.3 INSTALLATION AND MAINTENANCE MATERIALS

A. Substrate/Background Preparation Products:

1. Adhesives: Adhesives should be selected based on the site conditions and use of the space being installed.

B. Recommended Adhesive Products:

1. Excelsior WB-600 Acrylic Wall Base Adhesive by Flexco
2. Excelsior C-630 Contact Adhesive by Flexco

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verification of Conditions: Inspect all substrates/backgrounds to ensure they are clean, smooth, permanently dry, structurally sound and without voids. Confirm all areas are properly sealed and acclimated per manufacturer's requirements.
- B. Verification of Products: In accordance with manufacturer's installation requirements, visually inspect material for size, style, color or visual defects prior to installing. Any material that is incorrect or visually defective shall not be installed.

3.2 SUBSTRATE/BACKGROUND PREPARATION

- A. General: Follow guidelines laid out in Division 01, Section 017100 – Examination and preparation. All work required ensuring substrate/background meets manufacturers' guidelines are the responsibility of the general contractor.

- B. Preparation: Ensure substrate/background meets the requirements of ASTM F1861 for resilient wall base and/or manufacturer's Technical Data Sheets.
 - 1. Substrates/backgrounds must be free of visible water or moisture, dust, sealers, paint, residual adhesives and adhesive removers, solvents, wax, oil, grease, mold, mildew and any other extraneous coating, film, material or foreign matter.
 - 2. Acclimate all products to be used during the installation and the installation environment prior to installation according to the manufacturers written instructions.
 - 3. Fill cracks, holes, depressions and irregularities in the substrate/background to prevent transferring through to the surface of the resilient wall base.
- 3.3 **INSTALLATION**
 - A. General: Follow all relevant guidelines detailed in Division 01, as well as wall base and adhesive manufacturer's technical data sheets.
 - B. Resilient Vinyl Wall Base: Install material in accordance with manufacturer's recommendations.
 - 1. Select the appropriate adhesive for the application and job site conditions.
 - 2. Install material according to roll sequence or with like run numbers.
 - 3. Ensure material is rolled appropriately into the adhesive using a hand roller.
- 3.4 **CLEANING & MAINTENANCE**
 - A. General: Clean up installation area and vacuum dust or wipe material to remove any dirt, dust, or debris.
 - B. Initial Maintenance: Conduct initial maintenance per the manufacturer's recommended procedures stated in the Maintenance Documents.
 - C. Regular Maintenance: Conduct maintenance on regular intervals as needed. Insufficient cleaning will reduce the wear life of the wall base and alter the aesthetic properties of the wall base. The amount of maintenance depends directly upon the amount of dirt and particulates the area is subjected to.

END OF SECTION

SECTION 09 68 00
CARPET FLOORING

PART 1 GENERAL

1.1 SUMMARY

- A. This Section includes OFCI Broadloom carpet.
- B. Carpet cushion.

1.2 RELATED SECTIONS

- A. None.

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 30 00 - Administrative Requirements.

1.4 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Minimum 5 year experience manufacturing similar products.
- B. Installer Qualifications: Minimum 2 year experience installing similar products.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Owner to supply stock of OFCI Broadloom carpet.
- B. Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.6 PROJECT CONDITIONS

- A. Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F and a maximum temperature of 85°F for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances.

1.7 SEQUENCING

- A. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.

1.8 MAINTENANCE

- A. Extra Materials: Return extra materials to Owner. Packaged with protective covering for storage and identified with appropriate labels.

1. Furnish quantity of flooring units minimum of 4 square feet.
2. Comply with Owner's requirements for delivery, storage and protection of extra material.

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Adhesives, and subfloor preparation products and accessories:

1. Armstrong Flooring Inc. (Basis of Design)
2. Johnsonite (Tarkett)
3. Congoleum Corporation

2.2 CARPET FLOORING MATERIALS

1. OFCI. BSD to provide carpet stock for patching.

2.3 PRODUCT SUBSTITUTION

A. None.

2.4 ADHESIVES

- A. Full Spread: Provide Armstrong S-288 Flooring Adhesive under the carpet suitable for high moisture. Zero VOC.

2.5 ACCESSORIES

- A. For patching, smoothing, and leveling monolithic subfloors (concrete), provide Armstrong S-456 High Performance Patching and Smoothing compound. Zero VOC.
- B. For priming porous substrates to aid in adhesive bond strength and reducing subfloor porosity, provide S-454 Prime Strong™ acrylic primer for porous substrates. For non-porous substrates, provide S-455 Prime Strong™ acrylic primer for non-porous substrates.

PART 3 EXECUTION

3.1 EXAMINATION

- B. Do not begin installation until substrates have been properly prepared.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the

best result for the substrate under the project conditions.

3.3 INSTALLATION

- A. Install in accordance with manufacturer's instructions and in proper relationship with adjacent construction. Test for proper operation and adjust until satisfactory results are obtained.
- B. Comply with recommendations of Carpet and Rug Institute 'Specifier's Handbook'.

3.4 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 09 72 00

WALL COVERINGS

PART 1 GENERAL

1.1 SUMMARY

- A. Contractor shall furnish, install and finish a vinyl wallcovering as specified in the contract documents.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.
 - 2. Section 092900 – Gypsum Board.

1.2 QUALITY ASSURANCE

- A. Delivery, Storage and Handling
 - 1. All necessary materials for installation including wallcovering, primer, and adhesives must be delivered to the job site undamaged. All containers are to be clearly marked with the manufacturer's identification label. Store vinyl wallcovering rolls and materials in a clean, dry area where temperature and humidity remain constant and within the manufacturer's specifications.

1.3 PROJECT CONDITIONS

- A. Maintain temperature in spaces in which work is being performed above 65 degrees F during and for at least 48 hours after installation.
- B. Walls shall be finished to the Architect's specification and be free of surface defects and dirt. The Contractor for the installation process must provide sufficient lighting and access.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers – Vinyl Wall Covering:
 - 1. Koroseal. (www.koroseal.com)
 - 2. Wolf Gordon (www.wolfgordon.com/)
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS – VINYL WALL COVERING

- A. Contractor to match approximate style, gauge and finish of existing vinyl wallcovering material.
- B. All vinyl wallcoverings installed shall meet the latest GSA Federal Specification *CCC-W-408-D. In addition, wallcoverings must meet or exceed Wallcovering Association Quality Standard *W-101-2013 for Vinyl Coated Fabric Wallcovering.
- C. All Type I (15 oz) and Type II (20 oz) wallcoverings specified shall pass the ASTM-G21 testing for mold and mildew resistance. *The ASTM-E84 test must be passed with the wallcovering mounted to common gypsum wallboard.

PART 3 EXECUTION

3.1 INSPECTION

- A. The Contractor shall provide a complete copy of the manufacturers hanging instructions to the installer pertaining to the installation of the wallcovering. ALL INSTALLATIONS MUST CONFORM TO THE MANUFACTURERS CURRENT INSTALLATION INSTRUCTIONS AND PRODUCT TECHNICAL INFORMATION.
- B. All Labels shall be checked for accuracy by the installer to insure that the shipment is received as ordered.
- C. If no defect is evident before installation, the material should be inspected after the product is installed. If any defect is evident at this time (or at any point of the installation) no further material should be applied and the Contractor should be contacted IMMEDIATELY.

3.2 SURFACE PREPARATION

- A. All hanging surfaces must be clean, smooth, dry, undamaged, free of mold, mildew, grease, or stains and structurally intact. All loose paint and other wallcoverings must be removed. If moisture is present, immediately identify and eliminate the source(s) of the moisture and verify that all wall surfaces are completely dry before proceeding.
- B. Any mold or mildew must be removed from walls and hanging surfaces prior to installation. Walls should not contain in excess of 4% residual moisture content. Moisture infiltration and accumulation can lead to mold or mildew growth and must be corrected prior to the installation of the wallcovering.
- C. Proper surface preparation is key to getting results. To prepare the surface properly, it is recommended that a universal, white-pigmented mold inhibiting wallcovering primer is applied to wall surfaces prior to installation.
- D. Use only a lead pencil for marking walls and back of wallcovering. Do not use ballpoint or marking pen, they will bleed through the surface.
- E. Do not install wallcovering unless a temperature above 65 degrees F is maintained in both areas of installation and storage for at least 48 hours prior to installation.

3.3 INSTALLATION

- A. If the application is a textured or non-matched wallcovering pattern, reverse hanging of alternate panels is required to ensure color continuity from strip to strip. If the application is a mural it is recommended that every other panel is rotated 180 degrees when printing to minimize the side-to-side color shift that may occur with each printer.
- B. Determine whether the pattern match is random, straight across, or drop match. Measure the wall height, allowing for pattern match, add 4 inches, and then cut the wallcovering. It will overlap onto the ceiling and the base approximately 2 inches. Apply the recommended adhesive to the back using either a pasting machine or a paint roller. Work the adhesive in, to cover the back completely, especially near the edges. Fold each end toward the middle, pasted sides together, aligning the edges carefully so they do not dry out. CAUTION: Do not crease wallcovering. Allow to “relax” for ten minutes (booking). This will allow the adhesive to penetrate the wallcovering fabric, which is important to a successful installation.
- C. WITH ALL DIRECTIONAL PATTERNS, IT IS IMPORTANT TO LINE UP PATTERNS AT EYE LEVEL ALLOWING ANY DRIFT IN LINEUP TO RUN OFF TOWARD CEILING AND FLOOR. THE STANDARD ALLOWANCE IS ONE QUARTER OF AN INCH UP OR DOWN. IF PATTERN IS LINED UP AT THE CEILING THE PATTERN WILL BEGIN MISALIGNMENT SOONER AND THE GAP WILL BE LARGER. ALSO, MOST PATTERNS WILL BE VIEWED AT EYE LEVEL THEREFORE IT IS THAT AREA THAT NEEDS TO LOOK ALIGNED. IF THERE ARE ANY QUESTIONS ABOUT PATTERN LINEUP, CONTACT SUPPLIER. BE SURE FIRST DROP OF WALLCOVERING IS SQUARE ON WALL BY PLUMBING THE WALL AND USING A LEVEL.
- D. Avoid burnishing the face of the material. Use a wallcovering brush or a plastic scraper to smooth the wallcovering onto the wall. For optimal durability we recommend the use of a liquid topcoat to protect the surface of the wallcovering pattern from stain and abrasion.

- E. Do not rub. Do not allow vinyl adhesive to dry on surface as it may leave a white residue. Wash off excess paste from face of wallcovering as you hang it with a cellulose sponge. The cellulose sponge must be rinsed in clean water after every use. Blot dry with a clean cloth.
- F. Place the second strip to the edge of the first strip. Tape seams before overlapping and double cutting to avoid getting adhesive on the wallcovering. If paste does get on the vinyl, clean it off immediately with clean warm water and blot dry with a clean lint less towel. Use a soft bristle brush to wash the ceiling and the baseboard to remove any paste residue. Do not leave any overlap on the seams since vinyl will not adhere to itself. *Seams should be vertical, have a tight fit, and be free from air and paste bubbles. Seams should not be located closer than 6" to corners.
- G. Examine the installed panels for color uniformity. Any objectionable variations in colormatch, pattern match, etc should be immediately communicated to the printer for inspection before proceeding further with installation.
- H. After installation, the walls and wallcovering should be monitored for potential moisture or vapor infiltration or accumulation. Any such infiltration/accumulation after installation must be promptly eliminated in order to reduce the risk of mold/mildew growth.

3.4 CLEAN UP AND COMPLETION

- A. Upon completion of work, remove all surplus material and debris from work site. All work sites must be clean and orderly upon installation crew departure.

END OF SECTION

SECTION 09 91 00

PAINTING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Surface preparation and field application of paints.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. D4442 - Standard Test Method for Direct Moisture Content Measurement of Wood and Wood-Base Materials.
 - 2. D6886 - Standard Test Method for Speciation of the Volatile Organic Compounds (VOCs) in Low VOC Content Waterborne Air-Dry Coatings by Gas Chromatography.
- B. Green Seal, Inc. (GS) 11 - Standard for Paints and Coatings.
- C. Master Painters Institute (MPI)- Architectural Painting Specification Manual.
- D. Society for Protective Coatings (SSPC) - Painting Manual.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data: Manufacturer's data on materials proposed for use including:
 - a. Product designation and grade.
 - b. Product analysis and performance characteristics.
 - c. Standards compliance.
 - d. Material content.
 - e. Mixing and application procedures.
 - f. MSDS Information Sheet.
 - 2. Samples:
 - a. 5 x 8 inch samples of each coating system on representative substrate. Step back successive coats so that all coats remain exposed. Indicate type of material used for each coat.
 - 3. Paint Schedule: Indicate types and locations of each surface, paint materials, and number of coats to be applied.

1.4 QUALITY ASSURANCE

- A. Applicator Qualifications: Minimum 5 years documented experience in work of this Section.
- B. Materials, Preparation, and Workmanship: Conform to MPI Painting Manual.

1.5 DELIVERY, STORAGE AND HANDLING

- A. Container Labels: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage rates, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- B. Paint Materials: Store at ambient temperature from 45 to 90 degrees F in ventilated area, or as required by manufacturer's instructions.
- C. Comply with requirements of authorities having jurisdiction, in regard to the use, handling, storage and disposal of hazardous materials.
- D. All surplus latex paint shall be recycled using a local latex paint recycling program. Surplus paint includes all latex paint in excess of quantities stored for touch-up purposes. Latex paint stored for touch-up purposes may not exceed 5% or 5 gallons, whichever is smaller, by volume, to the nearest gallon.

1.6 PROJECT CONDITIONS

- A. Do not apply materials when surface and ambient temperatures or relative humidity are outside ranges required by paint manufacturer.
- B. Maintain ambient and substrate temperatures above manufacturer's minimum requirements for 24 hours before, during, and after paint application.
- C. Do not apply materials when relative humidity is above 85 percent or when dew point is less than 5 degrees F different than ambient or surface temperature.
- D. Provide lighting level of 30 foot candles at substrate surface.

1.7 MAINTENANCE

- A. Extra Materials: Minimum of 1/2 gallon of each color and sheen, clearly labeled, provided to owner at project closeout.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design: Rodda Paint Unique II | 6107 N. Marine Drive | Portland, OR 97203 | P: (800) 452-2315
 - 1. Rodda Paint. (www.Roddapaint.com)
- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

- A. Paints:
 - 1. Color to be selected by Owner per manufacturers standard line.
 - 2. As scheduled at end of Section, or approved substitute.
 - 3. Free from all forms of lead and mercury.
- B. Maximum Volatile Organic Compound (VOC) Content for interior paints, coatings, and accessories: In accordance with GS-11 and SCAQMD 1113.

2.3 ACCESSORIES

- A. Accessory Materials: Paint thinners and other materials required to achieve specified finishes; commercial quality.
- B. Patching Materials: Latex filler.
- C. Fastener Head Cover Materials: Latex filler.

2.4 MIXES

- A. Deliver paints pre-mixed and pre-tinted.
- B. Uniformly mix to thoroughly disperse pigments.
- C. Do not thin in excess of manufacturer's recommendations.
- D. Re-mix paint during application; ensure complete dispersion of settled pigment and uniformity of color and gloss.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Test shop applied primer for compatibility with subsequent coatings.
- B. Measure moisture content of surfaces using electronic moisture meter. Do not apply coatings unless moisture content of surfaces are below following maximums:
 - 1. Gypsum board and plaster: 12 percent.
 - 2. Wood: 15 percent, measured to ASTM D4442.

3.2 PREPARATION

- A. General:
 - 1. Protect adjacent and underlying surfaces and work from other trades.
 - 2. Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
 - 3. Correct defects and clean surfaces capable of affecting work of this section.
 - 4. Seal marks that may bleed through surface finishes with waterborne stain blocker.
 - 5. Patch and repair all surfaces to be painted.
- B. Impervious Surfaces: Remove mildew by scrubbing with solution of trisodium phosphate and bleach. Rinse with clean water and allow to dry.
- C. Gypsum Board:
 - 1. Fill minor defects with filler compound. Spot prime defects after repair.
- D. Galvanized Steel: SSPC Method SP1 - Solvent Cleaning.
- E. Aluminum: SSPC Method SP1 - Solvent Cleaning.

- F. Uncoated Ferrous Metals: SSPC Method SP2 - Hand Tool Cleaning or Method SP3 - Power Tool Cleaning.
- G. Shop Primed Ferrous Metals:
 - 1. SSPC Method SP2 - Hand Tool Cleaning or Method SP3 - Power Tool Cleaning.
 - 2. Feather edges to make patches inconspicuous.
 - 3. Prime bare steel surfaces.
- H. Existing Surfaces:
 - 1. Remove loose, flaking, powdery, and peeling paints.
 - 2. Lightly sand glossy painted surfaces.
 - 3. Fill holes, cracks, depressions and other imperfections with patching compound; sand flush with surface.
 - 4. Remove oil, grease, and wax by scraping; solvent wash and thoroughly rinse.
 - 5. Remove rust by wire brushing to expose base metal.
- I. Single Source Responsibility: If used, provide primers and undercoat paint produced by the same manufacturer as the finish coat.

3.3 APPLICATION

- A. Apply paints in accordance with manufacturer's instructions and MPI Painting Manual, Premium Grade finish requirements.
- B. Apply primer or first coat closely following surface preparation to prevent recontamination.
- C. Do not apply finishes to surfaces that are not dry.
- D. Apply coatings to minimum dry film thickness recommended by manufacturer.
- E. Apply each coat of paint slightly darker than preceding coat unless specified otherwise.
- F. Apply coatings to uniform appearance without laps, sags, curtains, holidays, and brush marks.
- G. Allow applied coats to dry before next coat is applied.
- H. When required on deep and bright colors apply an additional finish coat to ensure color consistency.
- I. Continue paint finishes behind wall-mounted accessories.
- J. Sand between coats on interior wood and metal surfaces.
- K. Match final coat to approved color samples.
- L. Prime concealed surfaces of interior wood in contact with masonry or cementitious materials with one coat primer paint.
- M. Mechanical and Electrical Components:
 - 1. Paint factory primed equipment.
 - 2. Remove unfinished and primed louvers, grilles, covers, and access panels; paint separately.
 - 3. Paint exposed and insulated pipes, conduit, boxes, ducts, hangers, brackets, collars, and supports unless factory finished.
 - 4. Do not paint name tags or identifying markings.
 - 5. Paint exposed conduit and electrical equipment in finished areas.

6. Paint duct work behind louvers, grilles, and diffusers flat black to minimum of 18 inches or beyond sight line.

N. Do not Paint:

1. Surfaces indicated on Drawings or specified to be unpainted or unfinished.
2. Surfaces with factory applied finish coat or integral finish.
3. Architectural metals, including brass, bronze, stainless steel, and chrome plating.

- O. At the end of each work day, remove empty cans, rags, rubbish, and other discarded materials from the site. Provide "Wet Paint" signs to protect newly painted surfaces. After completing painting, clean all surfaces from paint splatter.

3.4 ADJUSTING

- A. Touch up or refinish disfigured surfaces.

3.5 CLEANING

- A. Remove paint from adjacent surfaces.

3.6 PAINT SCHEDULE

Bethany Elementary School

- A. P-1: (To Match Existing)
1. Manufacturer: Rodda
 2. Color: #LW91 Snowdrift
 3. Sheen: Satin
 4. Installation: 2 finish coats over 1 coat of primer
- B. P-2: (To Match Existing)
1. Manufacturer: Rodda
 2. Color: #8296 Diamond Heights
 3. Sheen: Semi-gloss
 4. Installation: 2 finish coats over 1 coat of primer
- C. P-3: (To Match Existing)
1. Manufacturer: Rodda
 2. Color: #8296 Diamond Heights
 3. Sheen: Semi-gloss
 4. Installation: 2 finish coats over 1 coat of primer
- D. P-4: (To Match Existing)
1. Manufacturer: Rodda
 2. Color: #CH-2132 Linen
 3. Sheen: Satin
 4. Installation: 2 finish coats over 1 coat of primer

Montclair Elementary School

- A. P-1: (To Match Existing)
1. Manufacturer: Rodda
 2. Color: #CH-2132 Linen
 3. Sheen: Satin

- 4. Installation: 2 finish coats over 1 coat of primer
- B. P-2: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #CH-2132 Linen
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer
- C. P-3: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #601 Linden
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer

Oak Hills Elementary School

- A. P-1: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #GR10H10780
 - 3. Sheen: Satin
 - 4. Installation: 2 finish coats over 1 coat of primer
- B. P-2: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #138 Stage
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer
- C. P-3: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #CH-2451 Blue
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer
- D. P-4: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: Custom Color Match to Existing Wainscot
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer

West Tualatin View Elementary School

- A. P-1: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: #910 Coconut Cream
 - 3. Sheen: Satin
 - 4. Installation: 2 finish coats over 1 coat of primer
- B. P-2: (To Match Existing)
 - 1. Manufacturer: Rodda
 - 2. Color: To match existing adjacent interior door frames.
 - 3. Sheen: Semi-gloss
 - 4. Installation: 2 finish coats over 1 coat of primer
- C. P-3: (To Match Existing)

1. Manufacturer: Rodda
2. Color: To match existing adjacent interior doors.
3. Sheen: Semi-gloss
4. Installation: 2 finish coats over 1 coat of primer

1. Re-paint:	Paint applied over existing painted finish in good condition.
2. Primer:	One coat of type recommended by coating manufacturer for maximum coating adhesion.
3. Finish:	Sheen and material as appropriate for space. Doors and other areas requirement semi-gloss finish shall be 100% acrylic
4. Drywall:	Select finish according to use of space. Minimum acceptable finish is one coat of heavy bodied Acrylic wall board sealer as primer and two coat Interior Latex sheen per Finish Schedule.
9. Gypsum Wallboard, Interior:	Primer: PVA Finish: Acrylic latex, Rodda Paint Lasyn, or equal
14. Non-ferrous Metal:	Primer: Vinyl wash primer Finish: Industrial enamel, two coats

END OF SECTION

SECTION 10 28 13
TOILET ACCESSORIES

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Toilet accessories for Bethany Elementary School.
- B. Related Sections:
 - 1. Division 01: Administrative, procedural, and temporary work requirements.

1.2 REFERENCES

- A. ASTM International (ASTM):
 - 1. A123/A123M - Standard Specification for Zinc (Hot-Galvanized) Coatings on Iron and Steel Products.
 - 2. A269 - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service.
 - 3. A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.
 - 4. A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.
 - 5. B456 - Standard Specification for Electrodeposited Coatings of Copper Plus Nickel Plus Chromium and Nickel Plus Chromium.
 - 6. C1036 - Standard Specification for Flat Glass.
- B. Underwriters Laboratories, Inc. (www.ul.com) - Listed Products.

1.3 SUBMITTALS

- A. Submittals for Review:
 - 1. Product Data:
 - a. Schedule accessories by room; show plans and elevations and mounting heights.
 - b. Include manufacturer's brochures showing sizes, details of function, finishes, and attachment methods.
 - 2. Warranty: Sample warranty form.

1.4 QUALITY ASSURANCE

- A. Conform to OSSC 2014 and ADA for accessibility requirements.
- B. See drawings for locations and mounting heights of accessories.

1.5 WARRANTIES

- A. Furnish manufacturer's standard warranty.
- B. Comply with warranty requirements in Division 00-01.

PART 2 PRODUCTS

2.1 MANUFACTURERS

- A. Acceptable Manufacturers:
 - 1. American Specialties, Inc. (www.americanspecialties.com)
 - 2. Bobrick Washroom Equipment, Inc. (www.bobrick.com)
 - 3. Bradley Corp. (www.bradleycorp.com)
 - 4. AmeraProducts Inc. (www.ameraproducts.com)

- B. Substitutions: Under provisions of Division 01.

2.2 MATERIALS

- A. Stainless Steel:
 - 1. Sheet: ASTM A666, Type 304, rollable temper.
 - 2. Tubing: ASTM A269.
- B. Galvanized Steel:
 - 1. ASTM A1008/A1008M.

2.3 ACCESSORIES

- A. Fasteners: Stainless steel where exposed, hot dip galvanized where concealed; type best suited to substrate conditions.

2.4 FABRICATION

- A. Use stainless steel for exposed surfaces; galvanized steel may be used in concealed locations.
- B. Form exposed surfaces from single sheet of stock, free from joints, and flat, without distortion.
- C. Weld joints of fabricated components and grind smooth.
- D. Fabricate grab bars of tubing, free of visible joints, return to wall with end attachment flanges.
- E. Provide hangers, adapters, anchor plates, and accessories required for installation.
- F. Shop assemble units and package complete with anchors and fittings.

2.5 FINISHES

- A. Stainless Steel: No. 4 satin.
- B. Galvanizing: ASTM A123/A123M to 1.25 ounces per square foot.
- C. Chrome Plating: ASTM B456, Type SC 2, polished.

PART 3 EXECUTION

3.1 INSTALLATION

- A. Install in accordance with manufacturer's instructions.
- B. Set plumb, level, square, and rigid with Fire Retardant Treated concealed, fixed, wood blocking and frames where required.

3.2 SCHEDULE

MARK	DESCRIPTION	MANUFACTURER	MODEL NO.
A	Grab Bars	ASI	3800 Series

END OF SECTION

SECTION 26 00 00

GENERAL ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. General electrical requirements.

1.2 PERMITS, FEES AND SERVICE CHARGES

- A. The CONTRACTOR shall obtain all electrical permits required to complete the work and pay all associated fees.
- B. The CONTRACTOR shall coordinate and provide for the installation and operation of franchise utility service (including any telephone and/or leased lines specified) as required during construction, startup, testing, and operation of the work until substantial completion.

1.3 CONTRACTORS RESPONSIBILITY FOR FIELD VERIFICATION OF EXISTING CONDITIONS

- A. The CONTRACTOR shall be responsible for performing field verification of the existing conditions prior to bidding. The nature of this work inherently requires field observation to understand the existing conditions and scope of work.
- B. Failure to observe the existing conditions or ignorance of existing conditions shall be the responsibility of the CONTRACTOR alone. Additional services may not be authorized due to the CONTRACTOR'S lack of understanding of the existing conditions.

1.4 CONTRACTOR'S RESPONSIBILITY FOR SHUTDOWNS AND MAINTAINING EXISTING SYSTEMS

- A. Shutdowns of any Division 26, 27, 28 system shall be coordinated with the OWNER prior to performing the shutdown. The CONTRACTOR shall provide the OWNER with a written schedule identifying the system, duration, and impact on the OWNER'S facility.
- B. Existing Division 26, 27, 28 systems not impacted by the work in this project shall be protected and maintained during construction. Any system not identified on the Drawings or within these Specifications shall be brought immediately to the attention of the ENGINEER and OWNER.
 - 1. The CONTRACTOR shall be responsible for bearing the cost of repairing or restoring all electrical systems that are disrupted or damaged during construction. The system shall be repaired and restored to their original condition.

1.5 INTENT OF DRAWINGS AND SPECIFICATIONS

- A. Riser and other diagrams are schematic and are intended to show the approximate location of equipment, and the general alignment of conduits and piping, and shall not be used for obtaining quantities. Dimensions given on the plans shall take precedence over scaled dimensions and all dimensions whether in figures or scaled, shall be verified in the field.

- B. The electrical drawings do not show complete details of the site conditions. The CONTRACTOR shall check actual conditions.
- C. The exact location of apparatus, fixtures, equipment, conduit and piping shall be ascertained by the CONTRACTOR in the field, and the work shall be laid out accordingly. Should the CONTRACTOR fail to ascertain such locations or coordinate with work performed by other trades, the work shall be changed at no additional cost to the OWNER when so ordered by the ENGINEER. The ENGINEER reserves the right to make minor changes in the location of conduit, piping and equipment up to the time of installation without additional cost to OWNER.
- D. CONTRACTOR shall provide all labor, materials, equipment, machinery, and tools necessary to provide all electrical equipment specified and shown on the Drawings. All items not specified in detail or shown on the Drawings but necessary for complete installation shall be provided by the CONTRACTOR.

1.6 SUBMITTALS

- A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
 - 1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
 - 2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260000.A01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
 - 3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.
- B. Submittals shall be in accordance with the requirements of these Contract Documents and shall include the following:
 - 1. Submittals shall include information and literature as required for all equipment and materials provided under this and related sections.
 - 2. Shop Drawings: Shop drawings shall include the following along with any special requirements listed in the individual Specification Sections:
 - a. Installation instructions and drawings
 - b. Wiring schematics with termination point identification
 - c. Materials of construction
 - d. Manufacturer's name and model
 - e. Manufacturer's catalog data
 - 3. Manufacturers' Literature: Literature indicating the compliance of the products with the Specifications shall be included with all submittals. This shall include catalogs and other descriptive bulletins. Relevant portions of the literature shall be clearly identified by highlighting or underlining.
 - 4. Test Logs: The CONTRACTOR shall submit test logs as outlined below and as specified in subsequent electrical sections and drawings.
 - a. A log of the complete results of tests for shorts and grounds for each circuit. All circuits and tests shall be clearly identified.

- b. A log of complete results of insulation resistance measurements of each circuit. All circuits and tests shall be clearly identified.
 - 5. Operation and maintenance information for all equipment furnished and/or installed.
 - 6. Programming instructions for any controllers or other programmable equipment. Copies of the any required software, including registration cards, shall be provided with the O&M manuals.
 - C. Deferred Submittals
 - 1. Submittals for seismic bracing/anchoring and wind loads shall be a deferred submittals. Engineering of the seismic bracing and anchoring system shall be provided by a licensed Engineer in the State of Oregon. Submittals shall include calculations and drawings, including connection types/materials/sizes, load, maximum load, dimensions, etc.
 - D. The CONTRACTOR shall indicate on the submittals all variances from the Specifications.
 - E. Record Drawings. After the completion of construction, the CONTRACTOR shall provide one set of “as-built” drawings to the ENGINEER as specified herein showing the location of buried conduits and all changes or deviations from the original drawings.
 - F. Final inspection certificates shall be submitted prior to final payment.
- 1.7 COORDINATION OF WORK
- A. The CONTRACTOR shall plan his work in coordination with the other trades and with the power and telephone utility authorities.
 - B. The CONTRACTOR shall field verify all dimensions of equipment to be installed or provided by others so that correct clearances and connections may be made between the work installed by the CONTRACTOR and equipment installed or provided by others.
 - C. The CONTRACTOR shall arrange all conduit runs so that they do not interfere with piping, structural members, etc.
 - D. All working measurements shall be taken from the sites, checked with those shown on the drawings, and if they conflict, reported to the ENGINEER at once, and before proceeding with the work. Should the CONTRACTOR fail to comply with this procedure, he shall alter his work at his own expense as directed by the ENGINEER.
 - E. No additional payments will be allowed where obstructions in the work of other trades, or work under this contract requires offsets to conduit runs.
 - F. The CONTRACTOR is responsible for all alterations in the work to accommodate equipment differing in dimensions or other characteristics from that shown or specified.
 - G. The CONTRACTOR shall provide all temporary power necessary for existing site equipment and for all construction needs.
- 1.8 SUPERVISION
- A. The CONTRACTOR shall maintain adequate supervision of the work and shall have a responsible person in charge at the site during all times that work under this contract is in progress, or when necessary for coordination with other work.

1.9 CODES

- A. Work shall conform to the National Electrical Code (NEC), and State Codes and other applicable codes, even though not specifically mentioned for each item. These shall be regarded as the minimum standard of quality for materials and workmanship.

1.10 CONTRACTOR'S RECORD DRAWINGS & AS-BUILTS

- A. The CONTRACTOR shall maintain a neatly marked set of record drawings showing the locations of all buried conduits and other utilities encountered or installed during construction. The final locations of panels, field mounted instruments and panels, terminal boxes, junction boxes, receptacles, light switches and other materials included in the work shall be shown, as well as conduit routing between them to the extent it differs from the design drawings. Record drawings shall be kept current with the work as it progresses and shall be subject to inspection by the OWNER's Representative at any time. Failure to keep field record drawings current may result in the issuance of a stop work order or delay in the processing of pay requests until the record drawings are made current.
- B. The CONTRACTOR shall provide one complete set of as-built electrical schematics for all panels and equipment provided, including PLC I/O schematics as applicable, panel elementary diagrams, interconnecting wiring diagrams, wire numbers, termination strip locations and numbers. These shall be in the same format and style as those in the Contract Documents and submittal requirements.
- C. All information shown on the CONTRACTOR's field record drawings and as-built schematics shall be subject to verification by the OWNER's Representative. If significant errors or deviations are noted by the OWNER's Representative, new as-builts shall be completed at the CONTRACTOR's expense.

PART 2 - PRODUCTS

2.1 PORTABLE OR DETACHABLE PARTS

- A. All equipment shall be demonstrated to operate in accordance with the requirements of this specification and the manufacturer's recommendations.

2.2 NEW PRODUCTS

- A. All products shall be new without defects and covered by Manufacturer's warranty. Products shall be re-used only where indicated on the Drawings.
- B. All products shall be listed, labeled, and certified by a testing agency approved by the state of Oregon.
- C. All equipment of the same type and capacity shall be by the same manufacturer.

PART 3 - EXECUTION

3.1 WORKMANSHIP & COORDINATION

- A. All work shall be performed by personnel skilled in the particular trade in a workmanlike manner. Workmanship shall conform to the standards of the NEC and the National Electrical Installation Standards (NEIS).

- B. The ENGINEER shall be the sole judge as to whether or not the finished work is satisfactory; and if in his judgment any material or equipment has not been properly installed or finished, the CONTRACTOR shall replace the material or equipment whenever required, and reinstall it in a manner entirely satisfactory to the ENGINEER without any increase in cost to the OWNER.
- C. The CONTRACTOR shall coordinate and verify the installation of all equipment furnished by him to other trades, or equipment provided and installed by other trades that is connected to the electrical or control systems. Work shall include the furnishing of all labor, materials, and equipment required for the installation of a complete and operable system as hereinafter specified and as indicated on the drawings. The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. Unless otherwise specifically stipulated, the term "furnished and installed complete" shall be considered a part of this section.

3.2 SUPPORT BACKING

- A. Provide any necessary backing required to properly support all fixtures and equipment installed under this contract.

3.3 CUTTING, PATCHING AND FRAMING

- A. The CONTRACTOR shall determine in advance the locations and sizes of all sleeves, chases, and openings necessary for the proper installation of his work.
- B. Whenever practical, inserts or sleeves shall be installed prior to covering work. Cutting and patching shall be held to a minimum. All required holes in concrete construction shall be made with a core drill and patched with non-metallic non-shrink grout.
- C. Cutting, fitting repairing and finishing of carpentry work, metal work, or concrete work, and the like, which may be required for this work shall be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors; and holes required to be cut in floors must be drilled without breaking out around the holes.

3.4 ACCESS PANELS

- A. The CONTRACTOR shall provide all access panels in hard ceilings to allow NEC-required access to junction boxes, pull boxes, and light fixtures. The CONTRACTOR shall submit to the ENGINEER for approval floor plans (1/8" = 1'-0" scale minimum) which clearly indicate proposed access panel locations.

3.5 TESTS

- A. The CONTRACTOR shall furnish all labor, material, instruments and tools to make all connections for testing of the electrical and instrumentation installation. All equipment shall be demonstrated as operating properly prior to the acceptance of the work. All protective devices shall be operative during testing of equipment. The tests shall be made under the supervision of the ENGINEER. All deficiencies or unsatisfactory conditions as determined by the ENGINEER or inspecting authorities shall be corrected by the CONTRACTOR in a satisfactory manner at his own expense.
- B. After visual inspection of joints and connections and the application of tape and other insulating materials, all sections of the entire wiring system shall be thoroughly tested for shorts and grounds. A log of results for each circuit shall be kept by the CONTRACTOR and presented to the ENGINEER.

- C. A phase rotation check shall be made to demonstrate that all power receptacles, service feeders, main power feeders and auxiliary power generators have the same A - B - C phase rotation and ground relationships.
- D. Equipment shall be tested by operating all switches, etc., sufficiently to demonstrate proper installation and electrical connections. Control and emergency conditions shall be artificially simulated where necessary for complete system or subsystem.

3.6 CLEANING AND TOUCH-UP PAINT

- A. Upon completion of work, all electrical equipment shall be cleaned.
 - 1. Vacuum all dirt, metal shavings, and foreign materials from all enclosures. The use of compressed air shall not be acceptable.
 - 2. All stains, dirt, and fingerprints shall be removed from switchboards, motor control centers, panelboards, light fixtures, enclosures, and all other electrical equipment covers.
- B. Provide touch-up paint on equipment that has been scraped, scratched, or chipped during construction. Paint color shall match color of equipment.

END OF SECTION

SECTION 26 05 19

LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes.

1. The section includes the requirements for conductors and cables used to conduct potentials of 600 volts and less.
2. All conductors and cables shall be installed in conduit or approved raceways regardless of which Division the conductors or cables are specified.

1.2 REFERENCES

A. The following is a list of Standards which may be referenced in the Section.

1. American Society for Testing and Materials (ASTM).
 - a. B8, Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard or Soft.
2. National Electrical Contractors Association, Inc. (NECA): National Electrical Installation Standards (NEIS).
3. National Electrical Manufacturers Association (NEMA).
 - a. WC 3, Rubber-Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - b. WC 5, Thermoplastic Insulated Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - c. WC 7, Cross Linked-Thermosetting Polyethylene Wire and Cable for the Transmission and Distribution of Electrical Energy.
 - d. WC 55, Instrumentation Cables and Thermocouple Wire.
4. National Fire Protection Association (NFPA). 70, National Electrical Code (NEC).
5. Underwriters Laboratories, Inc. (UL).
 - a. 13, Standard for Power-Limited Circuit Cables.
 - b. 44, Standard for Safety Rubber-Insulated Wires and Cables.
 - c. 62, Standard for Safety Flexible Cord and Fixture Wire.
 - d. 510, Standard for Safety Insulating Tape.
 - e. 854, Standard for Safety Service-Entrance Cables.
 - f. 910, Standard for Safety Test Method for Fire and Smoke Characteristics of Electrical and Optical Fiber Cables Used in Air Handling Spaces.
 - g. 1277, Standard for Safety Electrical Power and Control Tray Cables.
 - h. 1581, Standard for Safety References for Electrical Wires, Cables and Flexible Cords.

1.3 SUBMITTALS

- A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.**

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260519.C01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 01300 Submittal Procedures.
2. Manufacturer's data including materials of construction, weight, and related information for each item specified in PART 2 PRODUCTS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Single Conductors (260519.C01).

1. Conductors shall be rated for 600 volts and conform to applicable requirements of NEMA.
2. Conductors shall be stranded copper.
3. Insulation type shall be THWN-2. XHHW-2 in #10 AWG or smaller.
4. Conductors shall be sized per the Drawings and the NEC, whichever is greater.
5. Rome Cable Corporation, Southwire Company, Okonite Company, or approved equal.

B. MC (Metal Clad) Cables (260519C25).

1. Shall be rated 600 volts and conform to applicable requirements of NEMA.
2. Conductors shall be stranded copper and shall be no larger than 10AWG.
3. Insulation type shall be THHN/THWN.
4. Armor material shall be high strength flexible galvanized steel.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General.

1. Conductor and cable installations shall meet or exceed the NECA National Electrical Installation Standards.
2. CONTRACTOR shall not exceed the manufacturer's recommendations for maximum pulling tensions or minimum bending radii for respective conductors or cables.
3. Pulling compound is recommended for all conductor or cable installations and shall be used on all installations requiring a mechanical pulling device.
4. CONTRACTOR shall furnish and use a dynamometer on all conductor or cable installations requiring the use of a mechanical pulling device. The dynamometer shall be used to verify the maximum pulling tensions are not exceeded. Should the pulling tensions be exceeded, the conductor or cable shall be removed from the raceway and discarded. It shall not be reused under any circumstance on the project. The

CONTRACTOR shall be responsible to make the alterations necessary before attempting to re-pull new conductors or cables.

5. Immediately after pulling in conductors or cables, the pulling compound shall be completely removed from the conductors or cables, from boxes, enclosures, floors, walls, etc.
6. Conductor and cable installations shall be continuous without splices or intermediate terminations unless specifically identified on the Drawings or prior written approval from the ENGINEER.
7. Where conductors or cables are routed in boxes enclosures or cable tray they shall be neatly bundled with cable ties at intervals not to exceed 12 inches on center. The tension for the cable ties shall be set with a tool specifically manufactured for that purpose and of the same manufacturer as the cable tie. Side cutters, linemen pliers and similar tools shall not be used to cut the tail end of the cable tie. The CONTRACTOR shall only use the tool specifically manufactured for this purpose and of the same manufacturer as the cable tie.
8. Conductors and cables shall not be installed until the raceway, boxes, enclosures, conduit bushings, etc. have all been installed. Where conductors or cables have been installed prior to meeting this requirement, the ENGINEER shall at their discretion elect to have the conductors or cables removed, disposed of and replaced with new product.
9. Should the outer jacket of any conductor or cable be damaged in any way, they shall be removed, disposed of and replaced with new product.
10. An equipment grounding conductor shall be installed in all raceways. Size shall be as identified on the Drawings or the NEC, whichever is greater, but in no case shall it be less than # 16 AWG for under 50 volts and no less than # 14 for 50 volts or above.
11. Shared neutrals in any multi-wire branch circuits are not permitted.

B. MC Cable

1. MC Cable shall be used for branch circuits within a room space with accessible ceiling only. Homeruns are not allowed to utilize MC cable.

END OF SECTION

SECTION 26 05 33

RACEWAY AND BOXES FOR ELECTRICAL SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes

1. The Section includes the requirements pertaining to conduits and fittings used to contain electrical conductors and cables.
2. All conductors and cables shall be installed in conduit or approved raceways regardless of which Division the conductors or cables are specified.

1.2 REFERENCES

A. The following is a list of standards which may be referenced in this Section.

1. American National Standards Institute (ANSI).
 - a. C80.1, Rigid Steel Conduit-Zinc Coated.
2. American Society for Testing Materials (ASTM).
 - a. A123 E1, Standard Specification for Zinc-Coated (Galvanized) Coatings on Iron and Steel Products.
3. National Electrical Contractors Association (NECA).
 - a. National Electrical Installation Standards (NEIS).
4. National Electrical Manufacturers Association (NEMA).
 - a. TC 3, PVC Fittings for use with Rigid PVC Conduit and Tubing.
 - b. TC 6, PVC and ABS plastic Utilities Duct for Underground Installation.
5. Nation Fire Protection Association (NFPA).
 - a. 70, National Electrical Code (NEC).
6. Underwriters Laboratories, Inc. (UL).
 - a. 6, Standard for Safety Rigid Metal Conduit.
 - b. 514B, Standards for Safety Fittings for Conduit and Outlet Boxes.
 - c. 651, Standard for Safety Schedule 40 and 80 PVC Conduit.
 - d. 651A, Standard for Safety Type EB and Rigid PVC Conduit and HDPE Conduit.
 - e. 1660, Standard for Safety Liquid-Tight Flexible Nonmetallic Conduit.
 - f. 360, Standard for Safety Liquid-Tight Flexible Metallic Conduit.
 - g. 797, Standard for Safety Electrical Metallic Conduit.

1.3 SUBMITTALS

A. Product data

1. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
2. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
3. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260501.S01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
4. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.
5. Pursuant to Section 01 33 00 Submittal Procedures.
6. Manufacturer's data including materials of construction, equipment weight and related information for each item specified in PART 2 PRODUCTS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. **Galvanized Sheet Metal Boxes (260553.B15).**

1. Shall comply with NEMA specifications for sheet metal boxes.
2. All boxes shall be hot dipped galvanized, concrete tight with interlocking ring
3. All boxes shall be deep, no shallow boxes shall be permitted.
4. Provide mud rings or industrial covers for the devices installed and a depth to match the sheetrock where applicable.
5. Minimum box size for receptacles shall be 4" square, 1-1/2" deep.
6. Minimum box size for signal system outlet shall be 4" square, 2-1/8" deep.
7. All boxes shall be one piece.
8. All device covers shall be one piece.
9. Shall be Hubbell or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Boxes

1. Install boxes and enclosures in accordance with the schematic representation as indicated on the Drawings.
2. Boxes and enclosures shall be mounted level and plumb.
3. Boxes and enclosures shall not be altered, holes drilled, etc. in any way that may compromise the NEMA rating of the enclosure or box.
4. Boxes and enclosures shall be bonded to the equipment grounding conductor.
5. Provide a divider whenever a box contains conductors of different potentials that the code requires separation.
6. Surface mounted enclosures and boxes shall be spaced off the surface at least 1/4 inch in damp or wet locations.

END OF SECTION

SECTION 26 05 53

ELECTRICAL AND CONTROL IDENTIFICATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes.

1. The section includes requirements for identification of electrical, safety, fire alarm and related components and equipment.

1.2 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260519.C01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 01300 Submittal Procedures.
2. The initial submittal shall contain all the products, samples and data base specified. An initial submittal that does not contain all the specified data shall be returned as incomplete.

C. SAMPLE

1. Provide a sample of each type and size of nameplate, label, tag and means of attachment specified for approval by the OWNER.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Device & Faceplate Identification Labels (260553.F01).

1. Shall be BLACK letters on clear background.
2. 3/8" high block lettering.
3. Adhesive label.
4. Brother P-Touch or approved equal.

B. Conductor and Cable Identification Sleeves (260553.T31).

1. The identification sleeves shall be properly sized for the cable or conductor.
2. Shall be adhesive style.
3. Sleeves shall be white with black machine generated characters.
4. Provide Brady wire and cable sleeves or approved equal.

C. Conductor Color Coding (260553.C89).

1. Conductors shall be colored as specified in the table below. The technical specification requirements for the conductors are specified elsewhere.

Conductor Color Coding

System	Conductor	Color
All Systems	Equipment Grounding	Green
IT / Data	Data Cable Sheath (outer cover)	Reference Division 27
120 Volt AC Control	Hot Leg	Red
	Neutral	White
	Discrete Input Line (hot leg) Side	Red
	Discrete Input Switch Leg	Red w/White Stripe
	Discrete Output Line (hot leg) Side	Red
	Discrete Output Switch Leg	Red w/Orange Stripe
120/240 Volt Single Phase	Hot Leg # 1	Black
	Hot Leg # 2	Red
	Neutral	White
120/208 Volt Three Phase	Phase A	Black
	Phase B	Red
	Phase C	Blue
	Neutral	White
120, 208, 277 Volt	Switch Legs	Pink
480 Volt Three Phase	Phase A	Brown
Wye or Delta Corner Tap	Phase B	Orange
	Phase C	Yellow
	Neutral	Gray

System	Conductor	Color
120/240 Delta Three Phase	Phase A	Brown
	Phase B	Orange
	Phase C	Yellow
	Neutral	Gray

PART 3 - EXECUTION

3.1 INSTALLATION

A. General.

1. Device and Faceplate Identification Labels.

- a. Devices, faceplates, small electrical boxes 4 inches or less located indoors and similar equipment shall be identified utilizing flexible identification tape. Typically, the CONTRACTOR shall provide machine generated, white labels with black characters except as specified otherwise. Explanation is provided below on how various systems shall be identified. In many cases the information necessary to develop the unique identification labels will be provide on the Contract Drawings. The verbiage required for the identification shall be as identified on the Contract Drawings. The CONTRACTOR shall request the required verbiage from the ENGINEER should it not be available or clear based on the information provided on the Contract Drawings.
- b. Power receptacles faceplates (cover plates) shall state the panel and circuit number. A typical label might read "PNL208-1-CKT 15".
- c. Light switches faceplate shall state the panel and circuit number(s). A typical label might read "PNL208-2-CKT 15&17".
- d. Interior emergency light fixtures shall have a unique 0.5 inch adhesive dot applied to facilitate tracking routine maintenance required for emergency lighting. The dots shall be red when they have an integral battery back-up.
- e. Low Voltage Face plates will be labeled per Beaverton School District Standards.
- f. Fire alarm notification devices will be labeled per Beaverton School District Standards.

2. Conductor and Cable Identification Sleeves.

- a. Provide adhesive, machine generated, white labels with black characters for all cables and conductors. Explanation is provided below on how various systems shall be identified. In many cases the information necessary to develop the unique identification labels will be provided on the Contract Drawings. The verbiage required for the identification shall be as identified on the Contract Drawings. The CONTRACTOR shall request the required verbiage from the ENGINEER should it not be available or clear based on the information provided on the Contract Drawings.
- b. The labels shall be installed between 6 to 8 inches from the end. Conductors shall be labeled at all splices and points of termination.
- c. Power conductors and cables, including the neutral and the ground conductors shall all be identified individually. The identification label will be developed as follows: The

first set of characters will be the equipment code identifying the source of power “PNL208” followed by the circuit number “CKT 12”. For example, the label would read “PNL208-CKT 12”.

END OF SECTION

SECTION 26 05 83
WIRING CONNECTIONS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes.

1. The section includes requirements for conductor termination methods.

1.2 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 260519.C01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 01300 Submittal Procedures.
2. Manufacturer's data including materials of construction, weight, and related information for each item specified in PART 2 PRODUCTS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Electrical Spring Connectors (Wire Nuts) (260583.W01).

1. Provide properly sized 18awg – 8awg spring connector wire nuts for the size and number of conductors spliced.
2. Quick push-in wire connectors are prohibited.
3. Ideal, 3M, Thomas and Betts, or approved equal.

2.2 ACCESSORIES

A. Electrical Tape (260583.T40).

1. General electrical tape shall be premium grade, all weather vinyl electrical insulating tape.
2. 3M - Scotch 33+, or approved equal.

PART 3 - EXECUTION**3.1 INSTALLATION****A. General.**

1. All splices, taps, and terminations shall be made in outlet, junction, or pull boxes. Wire to 8AWG shall be spliced using spring connector wire nuts. 6AWG and larger, use indent compression or split bolt connectors for all conductors. Splices 6AWG and larger shall be insulated to voltage rating of feeder or circuit. Splices shall not be permitted in automation input and output wiring.
2. All identification shall be in compliance with Section 260553 Electrical and Control Identification.
3. Care shall be taken when terminating conductors to avoid kinking, cutting or puncturing the jacket or allowing contamination by grease, oil, or water.
4. Care shall be taken when terminating conductors to properly support the conductors and to avoid undue pressure on the connector or utilization equipment.
5. Conductors shall be terminated by use of pressure type connectors wire nuts. Wrapping conductors around a screw type terminal is not acceptable.
6. Connectors shall be installed as per the manufacturer's directions.
7. Wire nuts shall be used on conductors #10QWG or less and only for splicing conductors at light fixtures or receptacles. No other splicing of conductors with wire nuts are permitted unless specifically identified on the Drawings.

END OF SECTION

SECTION 26 27 26

WIRING DEVICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes.

1. This Section includes the requirements for wiring devices such as receptacles, toggle switches and devices plates.

1.2 REFERENCES

A. The following is a list of Standards which may be references in the Section.

1. National Electrical Contractors Association (NECA): National Electrical Installation Standards (NEIS).
2. National Electrical Manufacturers Association (NEMA).
 - a. WD1 – General Requirements for Wiring Devices.
 - b. WD6 – Wiring Device Dimensional Requirements.
3. National Fire Protection Association (NFPA): 70.
4. Underwriters Laboratories, Inc. (UL): 1070.

1.3 SUBMITTALS

A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 262726.R01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data.

1. Pursuant to Section 01300 Submittal Procedures.
2. Manufacturer's data including materials of construction, equipment weight, and related information for each item specified in PART 2 PRODUCTS.

PART 2 - PRODUCTS

2.1 MATERIALS

A. **Tamper Resistant Receptacles (262726.R15).**

1. Shall be tamper-resistant, two-pole, three wire grounding type with screw type terminals suitable for number 10 American Wire Gauge (AWG).
2. Shall be NEMA 5-20R, rated for 20 amperes, 125 volt configuration.
3. Provide duplex or single receptacles as shown on the Drawings.
4. Shall be gray in color.
5. Provide Hubbell BG20 tamper resistant receptacles, or approved equal.

B. **Ground Fault Circuit Interrupter Receptacles (262726.R10).**

1. Shall be specification grade, feed-through, two-pole, three wire grounding type with screw type terminals suitable for number 10 American Wire Gauge (AWG).
2. Shall be NEMA 5-20R, rated for 20 amperes, 125 volt configuration.
3. Provide duplex receptacles as shown on the Drawings.
4. Shall be gray in color.
5. Provide Hubbell GFG8300S or approved equal.

C. **General Purpose Toggle Switches (262726.S01).**

1. Shall be heavy duty specification grade with grounding screw, 20 amperes, 120-277 volt rated with screw type terminals suitable for number 10 American Wire Gauge (AWG).
2. Single or double throw, single pole, three-way or four-way as shown on the Drawings.
3. Shall be gray in color.
4. Provide Hubbell CSB120 Specification Grade Commercial Series or approved equal.

D. **Stainless Steel Device Plates (262726.P01).**

1. Install stainless steel device plates where called out on the drawings.
2. Provide Hubbell smooth metal 302/304 super stainless steel or approved equal.

E. **Device Plate Identification Label (262726.D01).**

1. Label all device plates with a vinyl, super adhesive label rated for outdoor use and that is white, 0.375 inches high with 0.25 inch black characters.
2. Provide Brothers product or approved equal.

PART 3 - EXECUTION

3.1 INSTALLATION

A. **General.**

1. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
2. Devices shall be bonded to their enclosure and the equipment grounding conductor with a separate grounding conductor attached to the device which will allow the device to be detached from the enclosure without disconnecting the equipment grounding conductor from the enclosure.
3. The use of the mounting yoke as the only method for bonding is unacceptable.

4. Devices that are not installed at the end of the line (circuit) shall be pig-tailed out and the pig-tails shall be connected to the line and load conductors.
5. After the pigtailed conductors are terminated on the device and before it is installed in the enclosure the exposed energized parts shall be wrapped with electrical insulating tape with a minimum of three wraps.
6. As the device is installed in the enclosure, care shall be taken to neatly fold the conductors inside the enclosure so as to not kink, bind or otherwise damage the sheath of the conductors.
7. Terminations on all devices shall be via pressure or compression type connectors. Wrapping conductors around a termination screw and tightening is unacceptable.
8. Mounting heights for receptacles shall be 18 inches to center from finished floor unless called out otherwise on the Drawings or specified at different height to meet minimum code requirements. Where countertops are present, receptacles shall be mounted horizontally and mounted 4 inches to center above the back-splash. The CONTRACTOR is responsible to coordinate with the approved casework submittals. Failure to do so will require the CONTRACTOR to relocate devices at their expense.
9. Mounting height for switches shall be 46 inches to center above finished grade unless called out otherwise on the Drawings or specified at different height to meet minimum code requirements. Where countertops are present, switches shall be mounted 5 inches to center above the back-splash. The CONTRACTOR is responsible to coordinate with the approved casework submittals. Failure to do so will require the CONTRACTOR to relocate devices at their expense.
10. Coordination is the responsibility of the CONTRACTOR. If a conflict exists for the mounting location of devices, the CONTRACTOR shall bring it to the ENGINEER's attention during the rough-in phase and the ENGINEER shall provide direction. Failure to coordinate conflicts during the rough-in phase will result in relocation of devices at the CONTRACTOR's expense.
11. Devices shall be installed level and plumb. Devices shall be brought out plumb with the wall surface via UL listed spacers approved for this purpose if necessary.
12. Devices shall be tested for voltage, polarity, ground integrity and in the case of GFCI receptacles, that they operate as intended.
13. The position of devices, as shown on the Drawings, are general locations only unless dimensioned. The CONTRACTOR is responsible to coordinate with various trades to ensure no conflict exists.

END OF SECTION

SECTION 27 00 00

GENERAL COMMUNICATION SYSTEM REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Section Includes

1. General communications system requirements.

1.2 REFERENCES

1. The following is a list of Standards that may be referenced in the Section.
2. American National Standards Institute (ANSI)
 - a. ANSI-J-STD 607, Commercial Building Grounding (Earthing) and Bonding Requirements for Telecommunications
3. Building Industries Consulting Services International (BICSI)
4. Electronics Industries Alliance (EIA)
5. International Building Code (IBC)
6. Institute of Electrical and Electronics Engineers (IEEE)
 - a. Std. 110, Recommended Practice for Powering Grounding Sensitive Equipment
7. National Fire Protection Association (NFPA)
 - a. 70, National Electrical Code
 - b. 75, Protection of Electronic Computer and Data Processing Equipment
8. Telecommunication Industry Standard (TIA)
 - a. TIA/EIA 455-A , Standard Test Procedure for Fiber Optic Fibers, Cables, Transducers, Sensors, Connection and Terminating Devices, and Other Fiber Optic Components
 - b. ANSI/TIA/EIA 568-B, Commercial Building Telecommunications Cabling Standard
 - c. ANSI/TIA/EIA 569-B, Commercial Building Standard for Telecommunications Pathways and Spaces
 - d. ANSI/TIA/EIA 606, Administration Standard for Commercial Telecommunications Infrastructure
 - e. TIA/EIA 758 , Customer-Outside Plant Telecommunications Cabling Standard

1.3 PERMITS, FEES AND SERVICE CHARGES

- A.** The CONTRACTOR shall obtain all electrical permits required to complete the work and pay all associated fees.

1.4 CONTRACTORS RESPONSIBILITY FOR FIELD VERIFICATION OF EXISTING CONDITIONS

- A.** The CONTRACTOR shall be responsible for performing field verification of the existing conditions prior to bidding. Then nature of this work inherently requires field observation to understand the existing conditions and scope of work.

- B. Failure to observe the existing conditions or ignorance of existing conditions shall be the responsibility of the CONTRACTOR alone. Additional services may not be authorized due to the CONTRACTOR'S lack of understanding of the existing conditions.

1.5 CONTRACTOR'S RESPONSIBILITY FOR SHUTDOWNS AND MAINTAINING EXISTING SYSTEMS

- A. Shutdowns of any Division 26, 27, 28 system shall be coordinated with the OWNER prior to performing the shutdown. The CONTRACTOR shall provide the OWNER with a written schedule identifying the system, duration, and impact on the OWNER'S facility.
- B. Existing Division 26, 27, 28 systems not impacted by the work in this project shall be protected and maintained during construction. Any system not identified on the Drawings or within these Specifications shall be brought immediately to the attention of the ENGINEER and OWNER.
 - 1. The CONTRACTOR shall be responsible for bearing the cost of repairing or restoring all electrical systems that are disrupted or damaged during construction. The system shall be repaired and restored to their original condition.

- 1.6 The CONTRACTOR shall coordinate and provide for the installation and operation of franchise utility service (including any telephone and/or leased lines specified) as required during construction, startup, testing, and operation of the work until substantial completion.

1.7 INTENT OF DRAWINGS AND SPECIFICATIONS

- A. Riser and other diagrams are schematic and are intended to show the approximate location of equipment, and the general alignment of conduits and piping, and shall not be used for obtaining quantities. Dimensions given on the plans shall take precedence over scaled dimensions and all dimensions whether in figures or scaled, shall be verified in the field.
- B. The electrical drawings do not show complete details of the site conditions. The CONTRACTOR shall check actual conditions.
- C. The exact location of apparatus, fixtures, equipment, conduit and piping shall be ascertained by the CONTRACTOR in the field, and the work shall be laid out accordingly. Should the CONTRACTOR fail to ascertain such locations or coordinate with work performed by other trades, the work shall be changed at no additional cost to the OWNER when so ordered by the ENGINEER. The ENGINEER reserves the right to make minor changes in the location of conduit, piping and equipment up to the time of installation without additional cost to OWNER.
- D. CONTRACTOR shall provide all labor, materials, equipment, machinery, and tools necessary to provide all electrical equipment specified and shown on the Drawings. All items not specified in detail or shown on the Drawings but necessary for complete installation shall be provided by the CONTRACTOR.

1.8 DESIGN / BUILD REQUIREMENTS

- A. The CONTRACTOR shall be responsible for providing all boxes and raceways for the low voltage communication.
- B. The low voltage contractor shall provide the following on this project:
 - 1. Low voltage horizontal cabling, j-hooks, cable straps, cable supports, terminations, labeling, and testing.
 - 2. Low voltage outlet faceplates, jacks, connectors, and labeling

- C. The CONTRACTOR shall provide the following:
 - 1. All hardware, supports, boxes, mudrings, conduits, and conduit bushings for the low voltage systems.
 - 2. Installation shall comply with 260529 Hangers & Supports and 260533 Raceways and Boxes for Electrical Systems.
 - 3. Communications systems grounding.

1.9 SUBMITTALS

- A. Contractor shall submit all the product data in Division 26 at the same time. Piecemeal submittals will be rejected as incomplete.
 - 1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
 - 2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 270000.A01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
 - 3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.
- B. Deferred Submittals
 - 1. Submittals for seismic bracing and anchoring shall be a deferred submittals. Engineering of the seismic bracing and anchoring system shall be provided by a licensed Engineer in the State of Oregon. Submittals shall include calculations and drawings, including connection types/materials/sizes, load, maximum load, dimensions, etc.
- C. The CONTRACTOR shall indicate on the submittals all variances from the Specifications.
- D. Record Drawings. After the completion of construction, the CONTRACTOR shall provide one set of "as-built" drawings to the ENGINEER as specified herein showing all changes or deviations from the original drawings.
- E. Final inspection certificates shall be submitted prior to final payment.

1.10 COORDINATION OF WORK

- A. The CONTRACTOR shall plan his work in coordination with the other trades and with the power and telephone utility authorities.
- B. The CONTRACTOR shall field verify all dimensions of equipment to be installed or provided by others so that correct clearances and connections may be made between the work installed by the CONTRACTOR and equipment installed or provided by others.
- C. The CONTRACTOR shall arrange all conduit runs so that they do not interfere with piping, structural members, etc.
- D. All working measurements shall be taken from the sites, checked with those shown on the drawings, and if they conflict, reported to the ENGINEER at once, and before proceeding with

the work. Should the CONTRACTOR fail to comply with this procedure, he shall alter his work at his own expense as directed by the ENGINEER.

- E. No additional payments will be allowed where obstructions in the work of other trades, or work under this contract requires offsets to conduit runs.
- F. The CONTRACTOR is responsible for all alterations in the work to accommodate equipment differing in dimensions or other characteristics from that shown or specified.
- G. The CONTRACTOR shall provide all temporary power necessary for existing site equipment and for all construction needs.

1.11 SUPERVISION

- A. The CONTRACTOR shall maintain adequate supervision of the work and shall have a responsible person in charge at the site during all times that work under this contract is in progress, or when necessary for coordination with other work.

1.12 CODES

- A. Work shall conform to the National Electrical Code (NEC), and State Codes and other applicable codes, even though not specifically mentioned for each item. These shall be regarded as the minimum standard of quality for materials and workmanship.

1.13 CONTRACTOR'S RECORD DRAWINGS & AS-BUILTS

- A. The CONTRACTOR shall maintain a neatly marked set of record drawings showing the locations of all buried conduits and other utilities encountered or installed during construction. The final locations of equipment racks, panels, field mounted instruments and panels, terminal boxes, junction boxes, cable trays, wiring devices and other materials included in the work shall be shown, as well as conduit routing between them to the extent it differs from the design drawings. Record drawings shall be kept current with the work as it progresses and shall be subject to inspection by the OWNER's Representative at any time. Failure to keep field record drawings current may result in the issuance of a stop work order or delay in the processing of pay requests until the record drawings are made current.
- B. The CONTRACTOR shall provide one complete set of as-built electrical schematics for all patch panels and equipment provided, including horizontal cabling schematics as applicable, panel elementary diagrams, interconnecting wiring diagrams, wire numbers, termination strip locations and numbers. These shall be in the same format and style as those in the Contract Documents and submittal requirements.
- C. All information shown on the CONTRACTOR's field record drawings and as-built schematics shall be subject to verification by the OWNER's Representative. If significant errors or deviations are noted by the OWNER's Representative, new as-builts shall be completed at the CONTRACTOR's expense.

PART 2 - PRODUCTS

2.1 NEW PRODUCTS

- A. All products shall be new without defects and covered by Manufacturer's warranty. Products shall be re-used only where indicated on the Drawings.

- B. All products shall be listed, labeled, and certified by a testing agency approved by the state of Oregon.
- C. All equipment of the same type and capacity shall be by the same manufacturer.

PART 3 - EXECUTION

3.1 IDENTIFICATION

- A. All identification labeling shall be in compliance with the OWNER'S labeling standards.

3.2 WORKMANSHIP & COORDINATION

- A. All work shall be performed by personnel skilled in the particular trade in a workmanlike manner. Workmanship shall conform to the standards of the NEC and the National Electrical Installation Standards (NEIS).
- B. The ENGINEER shall be the sole judge as to whether or not the finished work is satisfactory; and if in his judgment any material or equipment has not been properly installed or finished, the CONTRACTOR shall replace the material or equipment whenever required, and reinstall it in a manner entirely satisfactory to the ENGINEER without any increase in cost to the OWNER.
- C. The CONTRACTOR shall coordinate and verify the installation of all equipment furnished by him to other trades, or equipment provided and installed by other trades that is connected to the electrical or control systems. Work shall include the furnishing of all labor, materials, and equipment required for the installation of a complete and operable system as hereinafter specified and as indicated on the drawings. The Contract Documents are complementary and what is called for by any one shall be as binding as if called for by all. Unless otherwise specifically stipulated, the term "furnished and installed complete" shall be considered a part of this section.

3.3 SUPPORT BACKING

- A. Provide any necessary backing required to properly support all fixtures and equipment installed under this contract.

3.4 CUTTING, PATCHING AND FRAMING

- A. The CONTRACTOR shall determine in advance the locations and sizes of all sleeves, chases, and openings necessary for the proper installation of his work.
- B. Whenever practical, inserts or sleeves shall be installed prior to covering work. Cutting and patching shall be held to a minimum. All required holes in concrete construction shall be made with a core drill and patched with non-metallic non-shrink grout.
- C. Cutting, fitting repairing and finishing of carpentry work, metal work, or concrete work, and the like, which may be required for this work shall be done by craftsmen skilled in their respective trades. When cutting is required, it shall be done in such a manner as not to weaken walls, partitions, or floors; and holes required to be cut in floors must be drilled without breaking out around the holes.

3.5 CLEANING AND TOUCH-UP PAINT

- A. Upon completion of work, all electrical equipment shall be cleaned.

1. Vacuum all dirt, metal shavings, and foreign materials from all enclosures. The use of compressed air shall not be acceptable.
 2. All stains, dirt, and fingerprints shall be removed from enclosures, and all other electrical and communications equipment covers.
- B. Provide touch-up paint on equipment that has been scraped, scratched, or chipped during construction. Paint color shall match color of equipment.

END OF SECTION

SECTION 27 15 00

COMMUNICATIONS HORIZONTAL CABLING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes.

1. The section includes requirements for communication horizontal cabling.

1.2 SUBMITTALS

A. Contractor shall submit all the product data in Division 27 at the same time. Piecemeal submittals will be rejected as incomplete.

1. The product data shall be bound in a three ring binder with tabs for each Section. The tabs shall be numbered to match the specification Section numbers. Submittals not bound and labeled as specified will be rejected as incomplete.
2. A submittal is required for each product specified. Each individual product submittal shall have the corresponding Reference Keynote Number (example - 271500.G01) typewritten in the upper right hand corner of the submittal. The submittals within each Section tab shall be in the same sequential order as they are listed in the specification Section. Submittals not containing the Reference Keynote Number will be rejected as incomplete.
3. No typical submittals will be accepted. Each submittal shall be project specific and clearly identify specifically which components or parts are being submitted for approval. Any product submittals, such as a catalog sheet, which do not clearly identify which components or parts are being submitted for approval, will be rejected as incomplete.

B. Product Data

1. Pursuant to Section 01300 Submittal Procedures.
2. Manufacturer's data including materials of construction, methods of installation and related information for each item specified in PART 2 PRODUCTS.

PART 2 PRODUCTS

2.1 MATERIALS

A. RJ45 Jacks (271500.J45)

1. Jacks shall be keystone design.
2. One jack shall be ivory in color, one jack shall be orange in color.
3. Shall be CAT6A compliant.
4. Jacks shall be Hubbell HXJ6 Series, Panduit, or approved equal.

B. Low Voltage Device Plates (271500.W01)

1. Shall be single gang.
2. Shall accept keystone connections.
3. Shall have two ports, and two identification windows.
4. Shall be provided with blank covers for all unused ports.
5. Shall be stainless steel.
6. Shall be Hubbell or approved equal.

PART 3 INSTALLATION

3.1 General.

- A. All identification labeling shall be in compliance with Section 260553 Electrical and Control Identification.
- B. Cable shall not be secured to ceiling hanger wire.
- C. Cable installation shall maintain the following clearances:
 - 1. Power conduits - 12 inches.
 - 2. Luminaires - 12 inches.
 - 3. Mechanical equipment - 48 inches.

3.2 Testing

- A. All existing cables which are re-terminated on this project shall be tested.
- B. The permanent link shall be tested.
- C. All test results shall be used by the CONTRACTOR to determine any polarity and noise anomalies and CONTRACTOR shall take immediate corrective action for all anomalies.
- D. Test results shall be used by the CONTRACTOR and the Authorized Representative to determine the viability of each sheath for transmission in accordance with the specifications of the cable manufacturer and the requirements imposed by the transmission system. This shall form part of the acceptance procedure for the cable plant. All results obtained by use of pair-scanner testing shall be collated by terminal outlet number and or riser pair number and presented to the Authorized Representative at the conclusion of the testing. Test compilation shall be initialed and dated by the CONTRACTOR's technician performing the test.
- E. The CONTRACTOR shall utilize a level-III Fluke, PentaScanner, Wavetek or equal, twisted pair test instrument for the testing of all System Category 6 copper cabling. All Category 6 cable paths shall be tested at each jack for the following parameters and meet the requirements imposed by the TIA/EIA 568-B3 building wiring standard, ANSI/TIA-568-C.4 Broadband Coaxial Cabling and Components Standard, and the manufacturer's written specification.
- F. A complete cable certification report shall be provided covering all locations.

END OF SECTION

SECTION 28 30 00

FIRE DETECTION AND ALARM

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes.

1. The section includes requirements for fire alarm detection and alarm.

1.2 REFERENCES

A. The following is a list of standards which may be referenced in this Section.

1. National Fire Protection Association (NFPA)
 - a. NFPA 13 – Sprinkler Systems.
 - b. NFPA 70 – National Electrical Code.
 - c. NFPA 72 – National Fire Alarm Signaling Code
 - d. NFPA 101 – Life Safety Code
2. International Fire Code – 2009 Version:
3. Underwriters Laboratories (UL):
 - a. UL 268 - Smoke Detectors for Fire Alarm Signaling Systems
 - b. UL 497 B – Protectors for Data Communications and Fire Alarm Circuits
 - c. UL 864 - Control Units and Accessories for Fire Alarm Systems
 - d. UL 1424 – Cables for Power-Limited Fire Alarm Circuit
 - e. UL 1971 - Signaling Devices for the Hearing Impaired

1.3 SUBMITTALS

1. None required.

1.4 PERMITTING AND SUBMITTALS TO THE AUTHORITY HAVING JURISDICTION (AHJ)

- A. Permitting, permitting drawings, and associated submittals shall be provided by the OWNER's low voltage contractor.
- B. A copy of the Product Data and Quality Assurance/Control Submittals shall be provided to the AHJ. In addition, a copy of the Contract Documents shall be included. The Contractor shall make clarifications or revisions as directed by the AHJ. All comments received from the AHJ shall be submitted immediately to the Engineer for review.

1.5 DESIGN BUILD REQUIREMENTS

- A. The CONTRACTOR shall be responsible for providing all boxes and raceways for the fire alarm system. The fire alarm system will be provided by the OWNER's low voltage contractor.
- B. The final location of all fire alarm devices shall be determined by the approved permitting drawings. The CONTRACTOR shall be responsible for coordinating final device quantities and locations with the approved permitting set.

- C. The CONTRACTOR shall be an authorized representative and installer of Simplex Fire Alarm Systems.
- D. The OWNER's low voltage contractor shall provide the following:
 - 1. Permitting drawings, submittals to AHJ, and permit
 - 2. Fire alarm control panel
 - 3. Remote annunciator
 - 4. All fire alarm devices, wiring, and terminations.
 - 5. Device labeling
 - 6. Testing and commissioning

PART 2 - PRODUCTS

2.1 MATERIALS

A. General

- 1. OWNER'S standard manufacturer is Simplex. All devices shall be from this manufacturer, no substitutions allowed.

B. Horn Strobe (2833000.H02)

- 1. Shall be UL 1971 listed.
- 2. Wall or ceiling mount style.
- 3. Suitable for indoor and outdoor installations.
- 4. Strobes shall match specifications for visual strobes.
- 5. Color shall be red.
- 6. Shall be compatible with existing fire alarm system.

C. Smoke Detector (28300.S01)

- 1. Smoke detectors shall be photoelectric type.
- 2. Smoke detectors shall be addressable.
- 3. Smoke detectors shall be two-wire style.
- 4. Shall be constantly monitored for changes in sensitivity due to dirt, humidity, and temperature.
- 5. Shall provide advance notice to the FACP when requiring maintenance.
- 6. Color shall be red.
- 7. Shall be compatible with existing fire alarm system.

D. Boxes (283000.B01).

- 1. Shall be comply with 260533 Raceways & Boxes.
- 2. Color shall be RED.
- 3. Shall be provided for all fire alarm devices shown on the Drawings.
- 4. Sizes of boxes for fire alarm devices and annunciators shall be the responsibility of the CONTRACTOR and shall be coordinated with the OWNER's low voltage contractor.
- 5. Mudrings, if required, shall be provided by the CONTRACTOR and coordinated with the OWNER's low voltage contractor

E. EMT Conduit (283000.C01).

1. Shall comply with 260533 Raceways & Boxes.
2. Shall be installed between fire alarm device in walls and stubbed into accessible ceilings.
3. Shall be provided in all exposed applications, such as fire sprinkler rooms, elevator machine rooms, elevator pits, electrical rooms, etc.
4. Bushings shall be provided.
5. Shall be 3/4" trade size minimum.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General.

1. The CONTRACTOR shall coordinate the installation of the 120 VAC power with the Fire Alarm installer. Care shall be taken to ensure that the 120 VAC branch circuit conduit is installed according to the Manufacturer's requirements and the NEC. The 120 VAC branch circuit conductors shall be installed within the FACP such that Code required separation is maintained between Class 1 conductors and the power limited conductors. Installing Class 1 conductors across power limited conductors or over the batteries shall not be acceptable.
2. All Fire Alarm System junction boxes shall be red.

3. Coordination is the responsibility of the CONTRACTOR. If a conflict exists for the mounting location of devices, the CONTRACTOR shall bring it to the ENGINEER's attention during the rough-in phase and the ENGINEER shall provide direction. Failure to coordinate conflicts during the rough-in phase will result in relocation of devices at the CONTRACTOR's expense.
4. Devices shall be installed level and plumb. Devices shall be brought out plumb with the wall surface via UL listed spacers approved for this purpose if necessary.
5. The position of devices, as shown on the Drawings, are general locations only unless dimensioned. The CONTRACTOR is responsible to coordinate with various trades to ensure no conflict exists.
6. All testing and demonstration shall be performed to the satisfaction of the AHJ and the Fire Marshal.

END OF SECTION

LIMITED ASBESTOS SURVEY REPORT

Bethany Elementary School Security Upgrades Project

**3305 NW 174th Avenue
Beaverton, OR 97006**

Prepared for:

Beaverton School District

16550 SW Merlo Road
Beaverton, OR 97006

Report Date: February 26, 2021

Prepared By:



4105 SE International Way, Suite 505, Milwaukie, OR 97222

TRC Project: 432557.0001

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	1
Asbestos Containing Materials	1
Asbestos Sampling Procedures.....	2
Laboratory Analysis	2
FINDINGS	2
RECOMMENDATIONS.....	3
Asbestos Containing Materials	3
DISCLAIMER	3

Appendices

Appendix A – Sample Location Diagrams

Appendix B – Representative Photographs

Appendix C – Laboratory Results and Chain of Custody

Appendix D – Certifications

EXECUTIVE SUMMARY

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Bethany Elementary School located at 3305 NW 174th Avenue, Beaverton, Oregon 97006. Mr. Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector, performed the survey on February 22, 2021. The survey activities included the review of prior sampling documentation and reports provided by the District, inspection and assessment of accessible suspect building materials, collection of bulk samples of suspect asbestos containing building materials that had previously not been sampled, and submission of bulk samples for laboratory analysis. This survey was conducted in response to expected security upgrades.

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation or demolition activities that are not addressed in this inspection report, or presumed asbestos containing materials (PACM), must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as ACM.

INTRODUCTION

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Bethany Elementary School located at 3305 NW 174th Avenue, Beaverton, Oregon 97006. The survey activities were initiated on February 22, 2021, by Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector and included the review of prior sampling documentation and reports as well as the inspection, assessment and bulk sampling of suspect asbestos containing building materials that had not previously been sampled in the work area. Sample locations are presented on the Sample Location Diagrams in Appendix A.

Mr. Jason Stone, AHERA accredited building inspector, conducted the survey inspection and sampling activities. Copies of training certificates and state licenses (where applicable) are presented in Appendix C, Inspector Certifications.

BACKGROUND

Asbestos Containing Materials

Occupational Safety and Health Administration (OSHA) defines asbestos-containing material (ACM), as any material containing more than one percent asbestos.

The Environmental Protection Agency (EPA) defines ACM as follows:

1. Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.
2. Nonfriable ACM is any material containing more than one percent (1%) asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. The EPA further defines two categories of nonfriable ACM:
 - a. Category I (Cat I) - Category I nonfriable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, and
 - b. Category II (Cat II) - Category II nonfriable ACM is any material, excluding Category I nonfriable ACM, containing more than one percent (1%) asbestos as determined using PLM according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
3. Regulated Asbestos-Containing Material (RACM) is (a) friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Asbestos Sampling Procedures

The survey was conducted in accordance with the sample collection protocols established in 40 CFR 763 (AHERA), 40 CFR 61 Subpart M (NESHAP). A summary of survey activities is provided below.

Survey activities began with visual observation of the project area to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color and texture that does not extend to other buildings or floors. Visual assessments were conducted in accessible areas of the building. Building materials identified as glass, wood or metal were not considered suspect ACM.

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. Friability was assessed by physically touching suspect materials.

Based on results of the visual observation, bulk samples of suspect ACM were collected in accordance with applicable Federal Local and State sampling protocols sampling protocols. Samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

All asbestos bulk samples were submitted under proper COC documentation to the laboratory. Bulk samples were analyzed by PLM utilizing the EPA's, Method for the Determination of Asbestos in Bulk Building Materials, EPA 600/M4-82-020. Analysis by PLM was performed by visual observation of the bulk sample and slides prepared of the bulk sample for microscopic examination and identification. The samples were analyzed for asbestos (Chrysotile, Amosite, Crocidolite, Anthophyllite, and Actinolite/Tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated the relative amounts of each constituent by determining the estimated area of the asbestos compared with the area estimate of the total sample.

Laboratory Analysis

Laboratory services were provided by EMC Labs, Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory (NVLAP code #101424-0) located in Phoenix, Arizona.

FINDINGS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method.

Negative Materials (No Asbestos Detected)

Results of the bulk sampling indicated none of the following sampled materials contained detectable levels of asbestos, based on the PLM method:

BSD-Bethany Elementary School			
Sample No.	Materials / Areas	Material Location	Estimated Quantity
BES-01A BES-01B BES-01C BES-01D	Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue, Beige	B112, B114, B116, & Staff Break Room	2,000 SF
BES-02A BES-02B BES-02C BES-02D	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B112, B114, B116, & Staff Break Room	1,000 SF
BES-03A BES-03B BES-03C BES-03D	4" Black Cove Base & Associated Glue, Black	B112, B114, B116, & Staff Break Room	200 LF
BES-04A BES-04B BES-04C	12" x 12" Floor Tile & Associated Glue, Blue, Green, Orange, White	Staff Break Room	300 SF

RECOMMENDATIONS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation/demolition activities that are not addressed in this inspection report, or assumed asbestos-containing material, must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as asbestos containing.

DISCLAIMER

The content presented in this report is based on data collected during the site inspection and survey, review of pertinent regulations, requirements, guidelines and commonly followed industry standards, and information provided by Client, their clients, agents, and representatives.

The work has been conducted in an objective and unbiased manner and in accordance with generally accepted professional practice for this type of work. TRC believes the data and analysis to be accurate and relevant but cannot accept responsibility for the accuracy or completeness of available documentation or possible withholding of information of other parties.

This limited asbestos survey report is designed to aid the property owner, architect, construction manager, general contractor, remediation contractor and/or asbestos abatement contractor in locating asbestos containing materials, and is not to be used as a bidding document.

Sincerely,
TRC Environmental Corporation

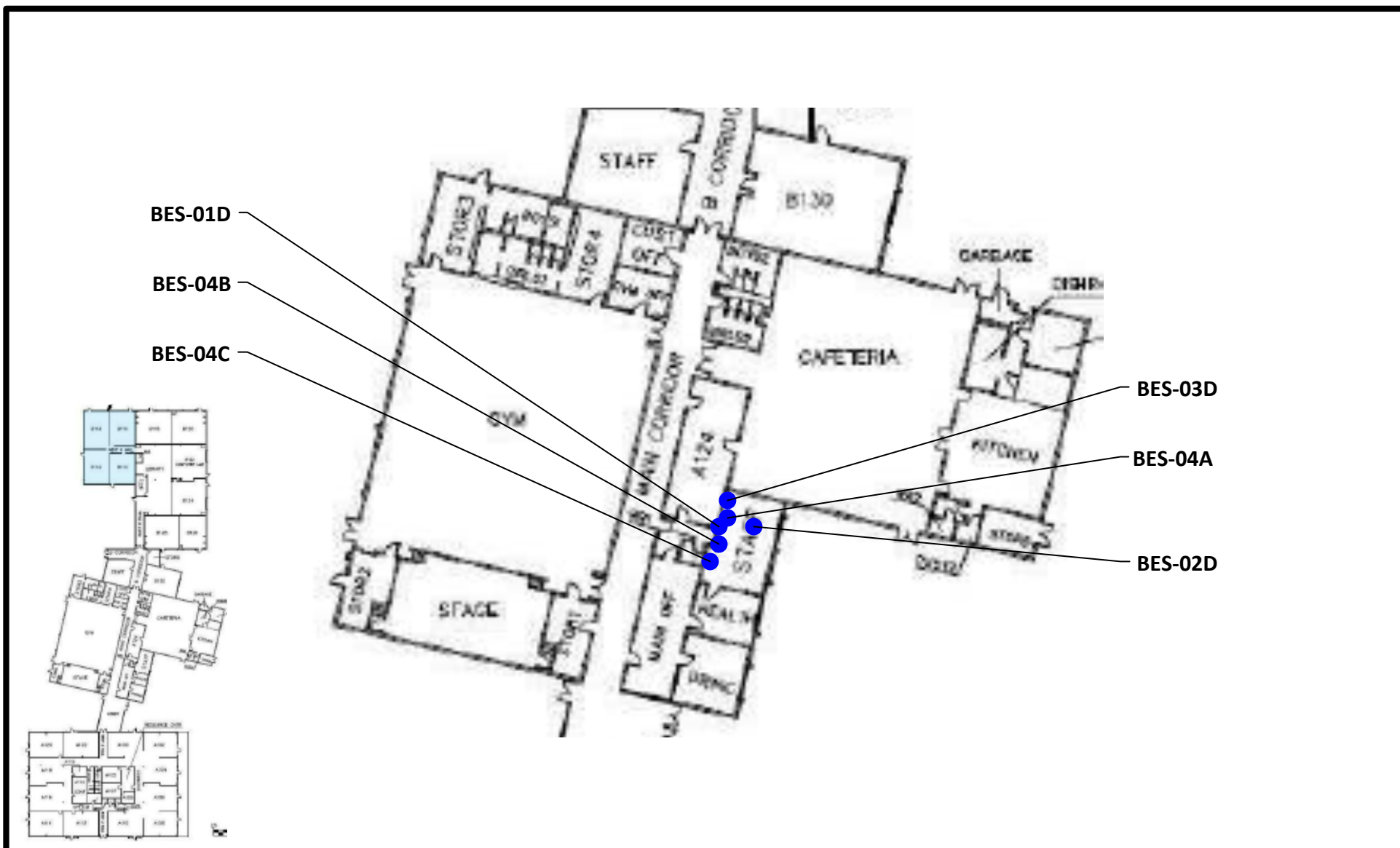


Jason Stone
Project Manager



Ron Landolt, CAC
NW Region BSI Practice Manager

APPENDIX A – SAMPLE LOCATION DIAGRAMS



LEGEND

● — Non-Asbestos Sample Location

LIMITED ASBESTOS SURVEY REPORT SAMPLE LOCATION DIAGRAM BETHANY ELEMENTARY SCHOOL SECURITY UPGRADES 3305 NW 174TH AVENUE BEAVERTON, OREGON 97006

TRC Project No.: 432557.0003

Figure: 1.2

Drawn by: JS

Reviewed by: RAL

Date: February 2021



4105 SE International Way, Suite 505
Milwaukie, Oregon 97222
Phone: (503) 387-3251 Fax: (503) 908-1318

APPENDIX B – REPRESENTATIVE PHOTOGRAPHS

BSD-BETHANY ELEMENTARY SCHOOL – OVERVIEW PHOTOGRAPHIC LOG



BSD-BETHANY ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: BES-01A, BES-01B, BES-01C, & BES-01D
Material Description: Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue
Material Color: Beige
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: B112, B114, B116, & Staff Break Room
Total Approximate Quantity: 2,000 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



Sample Numbers: BES-02A, BES-02B, BES-02C, & BES-02D
Material Description: 2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures)
Material Color: White
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: B112, B114, B116, Staff Break Room
Total Approximate Quantity: 1,000 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



BSD-BETHANY ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: BES-03A, BES-03B, BES-03C, & BES-03D
Material Description: 4" Black Cove Base & Associated Glue
Material Color: Black
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: B112, B114, B116, & Break Room
Total Approximate Quantity: 200 LF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



Sample Numbers: BES-04A, BES-04B, & BES-04C
Material Description: 12" x 12" Floor Tile & Associated Associated Glue
Material Color: Gold/Blue/Green/Orange/White
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: Staff Break Room
Total Approximate Quantity: 300 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



APPENDIX C – LABORATORY RESULTS AND CHAIN OF CUSTODY

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249836

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0001
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-BETHANY ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249836-001 BES-01A	B112, B114, B116 & STAFF BREAK RM	LAYER 1 Gypsum Wallboard, White/ Brown Note: No Fabric Covering or Glue Present	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
0249836-002 BES-01B	B112, B114, B116 & STAFF BREAK RM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
		LAYER 3 Fabric Covering, Beige	No	None Detected	Synthetic Fiber 60% Carbonates Binder/Filler 40%
		LAYER 4 Glue, Yellow	No	None Detected	Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249836

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0001
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-BETHANY ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249836-003 BES-01C	B112, B114, B116 & STAFF BREAK RM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
		LAYER 3 Fabric Covering, Beige	No	None Detected	Synthetic Fiber 60% Carbonates Binder/Filler 40%
		LAYER 4 Glue, Clear	No	None Detected	Cellulose Fiber 1% Carbonates Quartz Binder/Filler 99%
0249836-004 BES-01D	B112, B114, B116 & STAFF BREAK RM	LAYER 1 Gypsum Wallboard, White/ Brown Note: No Fabric Covering or Glue Present	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
0249836-005 BES-02A	B112, B114, B116 & STAFF BREAK RM	2"x4" Drop-In Ceiling Tile, White W/Pinhole & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 40% Perlite Carbonates Binder/Filler 15%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249836

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0001
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-BETHANY ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249836-006 BES-02B	B112, B114, B116 & STAFF BREAK RM	2"x4" Drop-In Ceiling Tile, White W/Pinhole & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 40% Perlite Carbonates Binder/Filler 15%
0249836-007 BES-02C	B112, B114, B116 & STAFF BREAK RM	2"x4" Drop-In Ceiling Tile, White W/Pinhole & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 40% Perlite Carbonates Binder/Filler 15%
0249836-008 BES-02D	B112, B114, B116 & STAFF BREAK RM	2"x4" Drop-In Ceiling Tile, White W/Pinhole & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 40% Perlite Carbonates Binder/Filler 15%
0249836-009 BES-03A	B112, B114, B116 & BREAK RM	LAYER 1 4" Covebase, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber 5% Carbonates Quartz Binder/Filler 95%
0249836-010 BES-03B	B112, B114, B116 & BREAK RM	LAYER 1 4" Covebase, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber 5% Carbonates Quartz Binder/Filler 95%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249836

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0001
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-BETHANY ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249836-011 BES-03C	B112, B114, B116 & BREAK RM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber 3%
					Carbonates Quartz Binder/Filler 97%
0249836-012 BES-03D	B112, B114, B116 & BREAK RM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber <1%
					Carbonates Quartz Binder/Filler 99%
0249836-013 BES-04A	STAFF BREAK RM	LAYER 1 12"x12" Floor Tile, Blue/Green/Orange/White	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber <1%
					Carbonates Quartz Binder/Filler 99%
		LAYER 3 Leveling Compound, Gray	No	None Detected	
					Carbonates Quartz Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

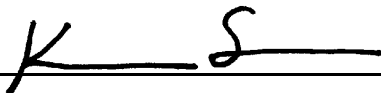
Laboratory Report
0249836

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0001
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-BETHANY ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249836-014 BES-04B	STAFF BREAK RM	LAYER 1 12"x12" Floor Tile, Blue/Green/Orange/White	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler 99%
		LAYER 3 Leveling Compound, Gray	No	None Detected	Carbonates Quartz Binder/Filler 100%
0249836-015 BES-04C	STAFF BREAK RM	LAYER 1 12"x12" Floor Tile, Blue/Green/Orange/White	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Cellulose Fiber Carbonates Quartz Binder/Filler 99%
		LAYER 3 Leveling Compound, Gray	No	None Detected	Carbonates Quartz Binder/Filler 100%

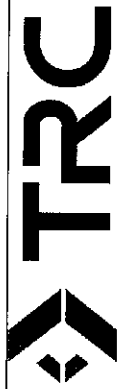


Analyst - Kenneth Scheske



Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.






ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM

Client: Beaverton School District		Project Number: 432557.0001		Sampling Technician: Jason Stone	
Project Name: BSD-Bethany Elementary School Bethany Elementary School		Tracking Number:		Requested TAT: 48 HR	
ASBESTOS BULK SAMPLE INFORMATION					
Sample Date	Sample Identification	Material Description	Homogeneous Area	Sample Location	Lab Identification (Lab Use Only)
02/22/21	BES-01A	Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue, Beige	B112, B114, B116, & Staff Break Room	See Diagram	
02/22/21	BES-01B	Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue, Beige	B112, B114, B116, & Staff Break Room	See Diagram	
02/22/21	BES-01C	Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue, Beige	B112, B114, B116, & Staff Break Room	See Diagram	
02/22/21	BES-01D	Gypsum Wallboard with Joint Compound, Fabric Covering & Associated Glue, Beige	B112, B114, B116, & Staff Break Room	See Diagram	
02/22/21	BES-02A	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B112, B114, B116, Staff Break Room	See Diagram	
02/22/21	BES-02B	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B112, B114, B116, Staff Break Room	See Diagram	
02/22/21	BES-02C	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B112, B114, B116, Staff Break Room	See Diagram	
02/22/21	BES-02D	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B112, B114, B116, Staff Break Room	See Diagram	
02/22/21	BES-03A	4" Black Cove Base & Associated Glue, Black	B112, B114, B116, & Break Room	See Diagram	
02/22/21	BES-03B	4" Black Cove Base & Associated Glue, Black	B112, B114, B116, & Break Room	See Diagram	
02/22/21	BES-03C	4" Black Cove Base & Associated Glue, Black	B112, B114, B116, & Break Room	See Diagram	
02/22/21	BES-03D	4" Black Cove Base & Associated Glue, Black	B112, B114, B116, & Break Room	See Diagram	

1
2
3
4
5
6
7
8
9
10
11
12

432557.0001

2-44836

02/22/21	BES-04A	12" x 12" Floor Tile & Associated Associated Glue, Blue, Green, Orange, White	Staff Break Room	See Diagram	
02/22/21	BES-04B	12" x 12" Floor Tile & Associated Associated Glue, Blue, Green, Orange, White	Staff Break Room	See Diagram	
02/22/21	BES-04C	12" x 12" Floor Tile & Associated Associated Glue, Blue, Green, Orange, White	Staff Break Room	See Diagram	
Special Instruction to Laboratory: N/A					
CHAIN OF CUSTODY INFORMATION AND LABORATORY INFORMATION					
Relinquished By:		Received By:		Date and Time	
1. (Print): Jason Stone		Diana Federico		2/23/21 1MS an	
(Sign): 		Diana Federico			
II. (Print): Diana Federico		KEN SCHESSKE		2 23 21 1515	
(Sign): 					
Email Results To: jstone@trccompanies.com, mcuda@trccompanies.com, rlandolt@trccompanies.com		Analytical Method: PLM EPA 600/R-93/116		Lab Comments:	

(3

14

(5

APPENDIX D – CERTIFICATIONS

Certificate of Completion

This is to certify that

Jason Stone

has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

179818

Certificate Number



Dec 16, 2020 Expires in 1 year.

Date(s) of Training

Exam Score: N/A
(if applicable)

A handwritten signature in black ink, appearing to read "Ed Edinger".

Instructor: Ed Edinger

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

LIMITED ASBESTOS SURVEY REPORT

Montclair Elementary School Security Upgrades Project

**7250 S. Vermont Street
Portland, OR 97223**

Prepared for:

Beaverton School District

16550 SW Merlo Road
Beaverton, OR 97006

Report Date: February 26, 2021

Prepared By:



4105 SE International Way, Suite 505, Milwaukie, OR 97222

TRC Project: 432557.0005

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	1
Asbestos Containing Materials	1
Asbestos Sampling Procedures.....	2
Laboratory Analysis	2
FINDINGS	2
RECOMMENDATIONS.....	3
Asbestos Containing Materials	3
DISCLAIMER	3

Appendices

Appendix A – Sample Location Diagrams

Appendix B – Representative Photographs

Appendix C – Laboratory Results and Chain of Custody

Appendix D – Certifications

EXECUTIVE SUMMARY

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Montclair Elementary School located at 7250 S. Vermont Street, Portland, Oregon 97223. Mr. Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector, performed the survey on February 22, 2021. The survey activities included the review of prior sampling documentation and reports provided by the District, inspection and assessment of accessible suspect building materials, collection of bulk samples of suspect asbestos containing building materials that had previously not been sampled, and submission of bulk samples for laboratory analysis. This survey was conducted in response to expected security upgrades.

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation or demolition activities that are not addressed in this inspection report, or presumed asbestos containing materials (PACM), must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as ACM.

INTRODUCTION

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Montclair Elementary School located at 7250 S. Vermont Street, Portland, Oregon 97223. The survey activities were initiated on February 22, 2021, by Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector and included the review of prior sampling documentation and reports as well as the inspection, assessment and bulk sampling of suspect asbestos containing building materials that had not previously been sampled in the work area. Sample locations are presented on the Sample Location Diagrams in Appendix A.

Mr. Jason Stone, AHERA accredited building inspector, conducted the survey inspection and sampling activities. Copies of training certificates and state licenses (where applicable) are presented in Appendix C, Inspector Certifications.

BACKGROUND

Asbestos Containing Materials

Occupational Safety and Health Administration (OSHA) defines asbestos-containing material (ACM), as any material containing more than one percent asbestos.

The Environmental Protection Agency (EPA) defines ACM as follows:

1. Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.
2. Nonfriable ACM is any material containing more than one percent (1%) asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. The EPA further defines two categories of nonfriable ACM:
 - a. Category I (Cat I) - Category I nonfriable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, and
 - b. Category II (Cat II) - Category II nonfriable ACM is any material, excluding Category I nonfriable ACM, containing more than one percent (1%) asbestos as determined using PLM according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
3. Regulated Asbestos-Containing Material (RACM) is (a) friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Asbestos Sampling Procedures

The survey was conducted in accordance with the sample collection protocols established in 40 CFR 763 (AHERA), 40 CFR 61 Subpart M (NESHAP). A summary of survey activities is provided below.

Survey activities began with visual observation of the project area to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color and texture that does not extend to other buildings or floors. Visual assessments were conducted in accessible areas of the building. Building materials identified as glass, wood or metal were not considered suspect ACM.

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. Friability was assessed by physically touching suspect materials.

Based on results of the visual observation, bulk samples of suspect ACM were collected in accordance with applicable Federal Local and State sampling protocols sampling protocols. Samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

All asbestos bulk samples were submitted under proper COC documentation to the laboratory. Bulk samples were analyzed by PLM utilizing the EPA's, Method for the Determination of Asbestos in Bulk Building Materials, EPA 600/M4-82-020. Analysis by PLM was performed by visual observation of the bulk sample and slides prepared of the bulk sample for microscopic examination and identification. The samples were analyzed for asbestos (Chrysotile, Amosite, Crocidolite, Anthophyllite, and Actinolite/Tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated the relative amounts of each constituent by determining the estimated area of the asbestos compared with the area estimate of the total sample.

Laboratory Analysis

Laboratory services were provided by EMC Labs, Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory (NVLAP code #101424-0) located in Phoenix, Arizona.

FINDINGS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method.

Negative Materials (No Asbestos Detected)

Results of the bulk sampling indicated none of the following sampled materials contained detectable levels of asbestos, based on the PLM method:

BSD-Montclair Elementary School			
Sample No.	Materials / Areas	Material Location	Estimated Quantity
MES-01A MES-01B MES-01C	Gypsum Wallboard with Joint Compound, Wall Covering & Associated Glue, White	M100, M102, M104, & M106	2,000 SF
MES-02A MES-02B MES-02C	4" Cove Base & Associated Glue, Black	M100, M102, M104, & M106	200 LF
MES-03A MES-03B MES-03C	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	M100, M102, M104, & M106	1,000 SF

RECOMMENDATIONS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation/demolition activities that are not addressed in this inspection report, or assumed asbestos-containing material, must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as asbestos containing.

DISCLAIMER

The content presented in this report is based on data collected during the site inspection and survey, review of pertinent regulations, requirements, guidelines and commonly followed industry standards, and information provided by Client, their clients, agents, and representatives.

The work has been conducted in an objective and unbiased manner and in accordance with generally accepted professional practice for this type of work. TRC believes the data and analysis to be accurate and relevant but cannot accept responsibility for the accuracy or completeness of available documentation or possible withholding of information of other parties.

This limited asbestos survey report is designed to aid the property owner, architect, construction manager, general contractor, remediation contractor and/or asbestos abatement contractor in locating asbestos containing materials, and is not to be used as a bidding document.

Sincerely,
TRC Environmental Corporation

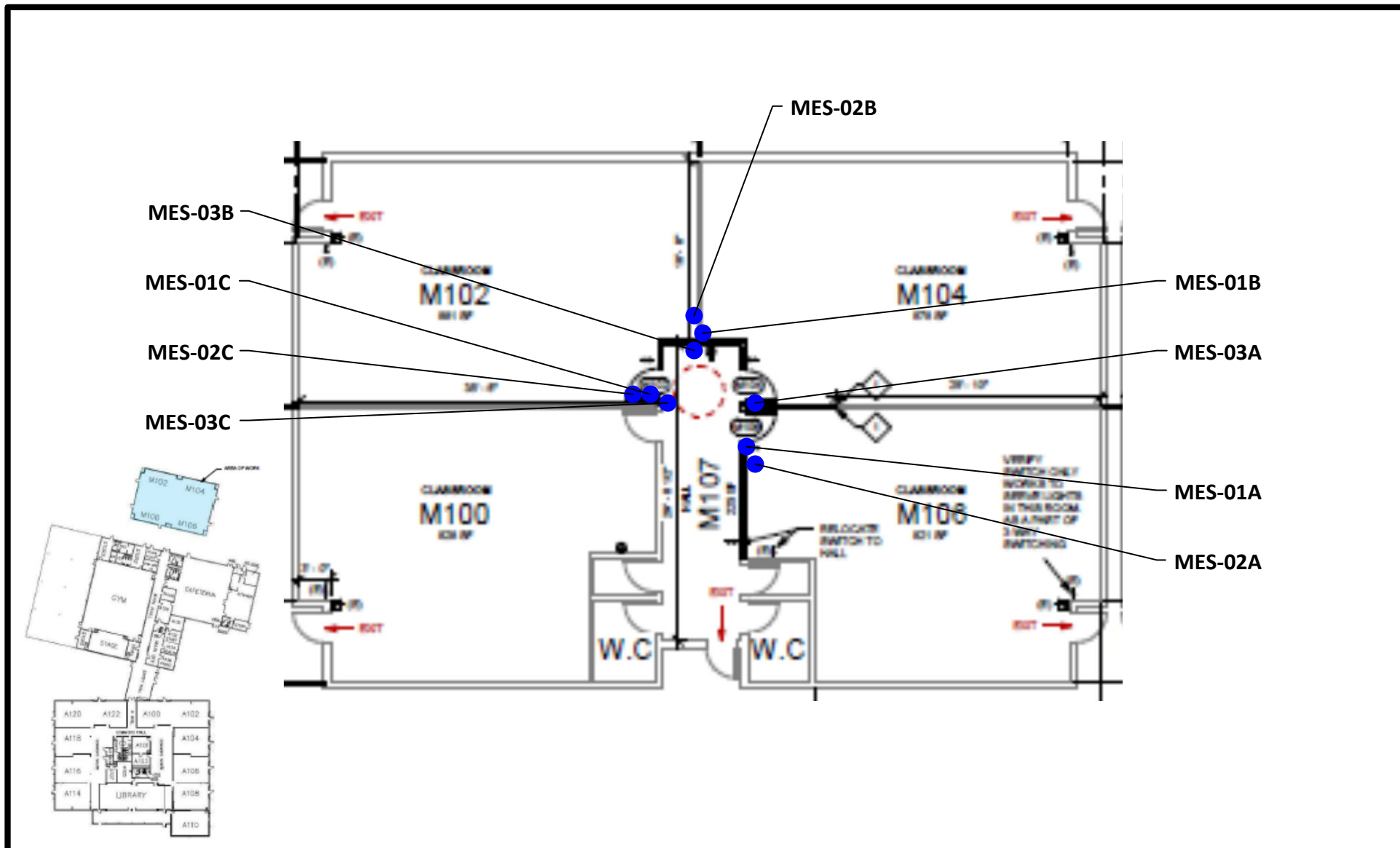



Jason Stone
Project Manager



Ron Landolt, CAC
NW Region BSI Practice Manager

APPENDIX A – SAMPLE LOCATION DIAGRAMS



LEGEND		<div>LIMITED ASBESTOS SURVEY REPORT</div> <div>SAMPLE LOCATION DIAGRAM</div> <div>MONTCLAIR ELEMENTARY SCHOOL</div> <div>SECURITY UPGRADES PROJECT</div> <div>7250 S. VERMONT STREET</div> <div>PORTLAND, OREGON 97223</div>		<div></div> <div>4105 SE International Way, Suite 505</div> <div>Milwaukie, Oregon 97222</div> <div>Phone: (503) 387-3251 Fax: (503) 908-1318</div>	
●	Non-Asbestos Sample Location				
★	Asbestos-Containing Sample Location				
TRC Project No.: 432557.0005		Figure: 1			
Drawn by: JS		Reviewed by: RAL		Date: February 2021	

APPENDIX B – REPRESENTATIVE PHOTOGRAPHS

BSD-MONTCLAIR ELEMENTARY SCHOOL – OVERVIEW PHOTOGRAPHIC LOG



BSD-MONTCLAIR ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: MES-01A, MES-01B, & MES-01C

Material Description: Gypsum Wallboard with Joint Compound and Wall Covering & Associated Glue

Material Color: White

Accessible Material: Accessible

Reason Inaccessible: N/A

Asbestos Detected: Negative

Asbestos Type: No Asbestos Detected

Homogeneous Area: M100, M102, M104, & M106

Total Approximate Quantity: 2,000 SF

Condition: Good

Material Type: Misc.

NESHAP Category: N/A

Notes: Not Applicable



Sample Numbers: MES-02A, MES-02B, & MES-02C

Material Description: 4" Cove Base & Associated Glue

Material Color: Black

Accessible Material: Accessible

Reason Inaccessible: N/A

Asbestos Detected: Negative

Asbestos Type: No Asbestos Detected

Homogeneous Area: M100, M102, M104, & M106

Total Approximate Quantity: 200 LF

Condition: Good

Material Type: Misc.

NESHAP Category: N/A

Notes: Not Applicable



BSD-MONTCLAIR ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: MES-03A, MES-03B, & MES-03C
Material Description: 2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures)
Material Color: White
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: M100, M102, M104, & M106
Total Approximate Quantity: 1,000 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



APPENDIX C – LABORATORY RESULTS AND CHAIN OF CUSTODY

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249837

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0005
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-MONTCLAIR ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249837-001 MES-01A	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Off White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
		LAYER 3 Wall Covering, Beige	No	None Detected	Synthetic Fiber 45% Cellulose Fiber 40% Carbonates Binder/Filler 15%
0249837-002 MES-01B	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 4 Glue, Yellow/ White	No	None Detected	Cellulose Fiber <1% Carbonates Binder/Filler 99%
		LAYER 1 Gypsum Wallboard, White/ Brown Note: No Wall Covering or Glue Present	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Off White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249837

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0005
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-MONTCLAIR ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249837-003 MES-01C	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White/ Brown Note: No Wall Covering Present	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Off White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
		LAYER 3 Glue, Yellow	No	None Detected	Carbonates Quartz Binder/Filler 100%
0249837-004 MES-02A	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 4 Paint, Off White	No	None Detected	Carbonates Binder/Filler 100%
0249837-004 MES-02A	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Off White	No	None Detected	Carbonates Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249837

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0005
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-MONTCLAIR ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249837-005 MES-02B	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Off White	No	None Detected	
					Carbonates Binder/Filler 100%
0249837-006 MES-02C	M100, M102, M104, & M106-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Off White	No	None Detected	
					Carbonates Binder/Filler 100%
0249837-007 MES-03A	M100, M102, M104, & M106-SEE DIAGRAM	2x4 Drop Ceiling Tile, White/ Gray	No	None Detected	Mineral Wool 45%
					Cellulose Fiber 40%
					Carbonates Perlite Binder/Filler 15%
0249837-008 MES-03B	M100, M102, M104, & M106-SEE DIAGRAM	2x4 Drop Ceiling Tile, White/ Gray	No	None Detected	Mineral Wool 45%
					Cellulose Fiber 40%
					Carbonates Perlite Binder/Filler 15%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

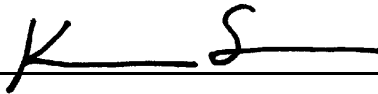
Laboratory Report
0249837

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0005
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-MONTCLAIR ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249837-009 MES-03C	M100, M102, M104, & M106-SEE DIAGRAM	2x4 Drop Ceiling Tile, White/ Gray	No	None Detected	Mineral Wool 45% Cellulose Fiber 40% Carbonates Perlite Binder/Filler 15%

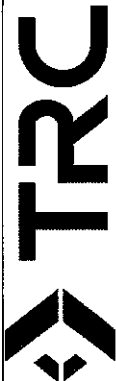



Analyst - Kenneth Scheske



Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

		ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM			
Client: Beaverton School District		Project Number: 432557.0005		Sampling Technician: Jason Stone	
Project Name: BSD-Montclair Elementary School Montclair Elementary School		Tracking Number:		Requested TAT: 48 HR	
ASBESTOS BULK SAMPLE INFORMATION					
Sample Date	Sample Identification	Material Description	Homogeneous Area	Sample Location	Lab Identification (Lab Use Only)
02/22/21	MES-01A	Gypsum Wallboard with Joint Compound and Wall Covering & Associated Glue, White	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-01B	Gypsum Wallboard with Joint Compound and Wall Covering & Associated Glue, White	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-01C	Gypsum Wallboard with Joint Compound and Wall Covering & Associated Glue, White	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-02A	4" Cove Base & Associated Glue, Black	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-02B	4" Cove Base & Associated Glue, Black	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-02C	4" Cove Base & Associated Glue, Black	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-03A	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-03B	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	M100, M102, M104, & M106	See Diagram	
02/22/21	MES-03C	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	M100, M102, M104, & M106	See Diagram	
Special Instruction to Laboratory: N/A					
CHAIN OF CUSTODY INFORMATION AND LABORATORY INFORMATION					
Relinquished By:		Received By:		Date and Time	
1. (Print): Jason Stone		Dana Federico		2/23/21 1145am	

(Sign): <i>[Signature]</i> II. (Print):		Diana Federico	2/23/21 1145 Pan
(Sign): <i>Diana Federico</i>	2/23/21 3:15pm	KEN SCHEKKE 	2.23.21 1515
Email Results To: jstone@trccompanies.com,mcuda@trccompanies.com,rlandolt@trccompanies.com	Analytical Method: PLM EPA 600/R-93/116	Lab Comments:	

APPENDIX D – CERTIFICATIONS

Certificate of Completion

This is to certify that

Jason Stone

has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

179818

Certificate Number



Dec 16, 2020 Expires in 1 year.

Date(s) of Training

Exam Score: N/A
(if applicable)

A handwritten signature in black ink, appearing to read "Ed Edinger".

Instructor: Ed Edinger

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

LIMITED ASBESTOS SURVEY REPORT

Oak Hills Elementary School Security Upgrades Project

**2625 NW 153rd Avenue
Beaverton, OR 97006**

Prepared for:

Beaverton School District

16550 SW Merlo Road
Beaverton, OR 97006

Report Date: February 26, 2021

Prepared By:



4105 SE International Way, Suite 505, Milwaukie, OR 97222

TRC Project: 432557.0006

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	1
Asbestos Containing Materials	1
Asbestos Sampling Procedures.....	2
Laboratory Analysis	2
FINDINGS	2
RECOMMENDATIONS.....	3
Asbestos Containing Materials	3
DISCLAIMER	3

Appendices

Appendix A – Sample Location Diagrams

Appendix B – Representative Photographs

Appendix C – Laboratory Results and Chain of Custody

Appendix D – Certifications

EXECUTIVE SUMMARY

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Oak Hills Elementary School located at 2625 NW 153rd Avenue, Beaverton, Oregon 97006. Mr. Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector, performed the survey on February 22, 2021. The survey activities included the review of prior sampling documentation and reports provided by the District, inspection and assessment of accessible suspect building materials, collection of bulk samples of suspect asbestos containing building materials that had previously not been sampled, and submission of bulk samples for laboratory analysis. This survey was conducted in response to expected security upgrades.

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation or demolition activities that are not addressed in this inspection report, or presumed asbestos containing materials (PACM), must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as ACM.

INTRODUCTION

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for Oak Hills Elementary School located at 2625 NW 153rd Avenue, Beaverton, Oregon 97006. The survey activities were initiated on February 22, 2021, by Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector and included the review of prior sampling documentation and reports as well as the inspection, assessment and bulk sampling of suspect asbestos containing building materials that had not previously been sampled in the work area. Sample locations are presented on the Sample Location Diagrams in Appendix A.

Mr. Jason Stone, AHERA accredited building inspector, conducted the survey inspection and sampling activities. Copies of training certificates and state licenses (where applicable) are presented in Appendix C, Inspector Certifications.

BACKGROUND

Asbestos Containing Materials

Occupational Safety and Health Administration (OSHA) defines asbestos-containing material (ACM), as any material containing more than one percent asbestos.

The Environmental Protection Agency (EPA) defines ACM as follows:

1. Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.
2. Nonfriable ACM is any material containing more than one percent (1%) asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. The EPA further defines two categories of nonfriable ACM:
 - a. Category I (Cat I) - Category I nonfriable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, and
 - b. Category II (Cat II) - Category II nonfriable ACM is any material, excluding Category I nonfriable ACM, containing more than one percent (1%) asbestos as determined using PLM according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
3. Regulated Asbestos-Containing Material (RACM) is (a) friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Asbestos Sampling Procedures

The survey was conducted in accordance with the sample collection protocols established in 40 CFR 763 (AHERA), 40 CFR 61 Subpart M (NESHAP). A summary of survey activities is provided below.

Survey activities began with visual observation of the project area to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color and texture that does not extend to other buildings or floors. Visual assessments were conducted in accessible areas of the building. Building materials identified as glass, wood or metal were not considered suspect ACM.

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. Friability was assessed by physically touching suspect materials.

Based on results of the visual observation, bulk samples of suspect ACM were collected in accordance with applicable Federal Local and State sampling protocols sampling protocols. Samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

All asbestos bulk samples were submitted under proper COC documentation to the laboratory. Bulk samples were analyzed by PLM utilizing the EPA's, Method for the Determination of Asbestos in Bulk Building Materials, EPA 600/M4-82-020. Analysis by PLM was performed by visual observation of the bulk sample and slides prepared of the bulk sample for microscopic examination and identification. The samples were analyzed for asbestos (Chrysotile, Amosite, Crocidolite, Anthophyllite, and Actinolite/Tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated the relative amounts of each constituent by determining the estimated area of the asbestos compared with the area estimate of the total sample.

Laboratory Analysis

Laboratory services were provided by EMC Labs, Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory (NVLAP code #101424-0) located in Phoenix, Arizona.

FINDINGS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method.

Negative Materials (No Asbestos Detected)

Results of the bulk sampling indicated none of the following sampled materials contained detectable levels of asbestos, based on the PLM method:

BSD-Oak Hills Elementary School			
Sample No.	Materials / Areas	Material Location	Estimated Quantity
OHES-01A OHES-01B OHES-01C	Gypsum Wallboard with Joint Compound & Wall Covering & Associated Glue, White	B100, B102, B104, & B106	2,000 SF
OHES-02A OHES-02B OHES-02C	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B100, B102, B104, & B106	1,000 SF
OHES-03A OHES-03B OHES-03C	4" Cove Base & Associated Glue, Black	B100, B102, B104, & B106	200 LF

RECOMMENDATIONS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. Any materials uncovered during future renovation/demolition activities that are not addressed in this inspection report, or assumed asbestos-containing material, must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as asbestos containing.

DISCLAIMER

The content presented in this report is based on data collected during the site inspection and survey, review of pertinent regulations, requirements, guidelines and commonly followed industry standards, and information provided by Client, their clients, agents, and representatives.

The work has been conducted in an objective and unbiased manner and in accordance with generally accepted professional practice for this type of work. TRC believes the data and analysis to be accurate and relevant but cannot accept responsibility for the accuracy or completeness of available documentation or possible withholding of information of other parties.

This limited asbestos survey report is designed to aid the property owner, architect, construction manager, general contractor, remediation contractor and/or asbestos abatement contractor in locating asbestos containing materials, and is not to be used as a bidding document.

Sincerely,
TRC Environmental Corporation

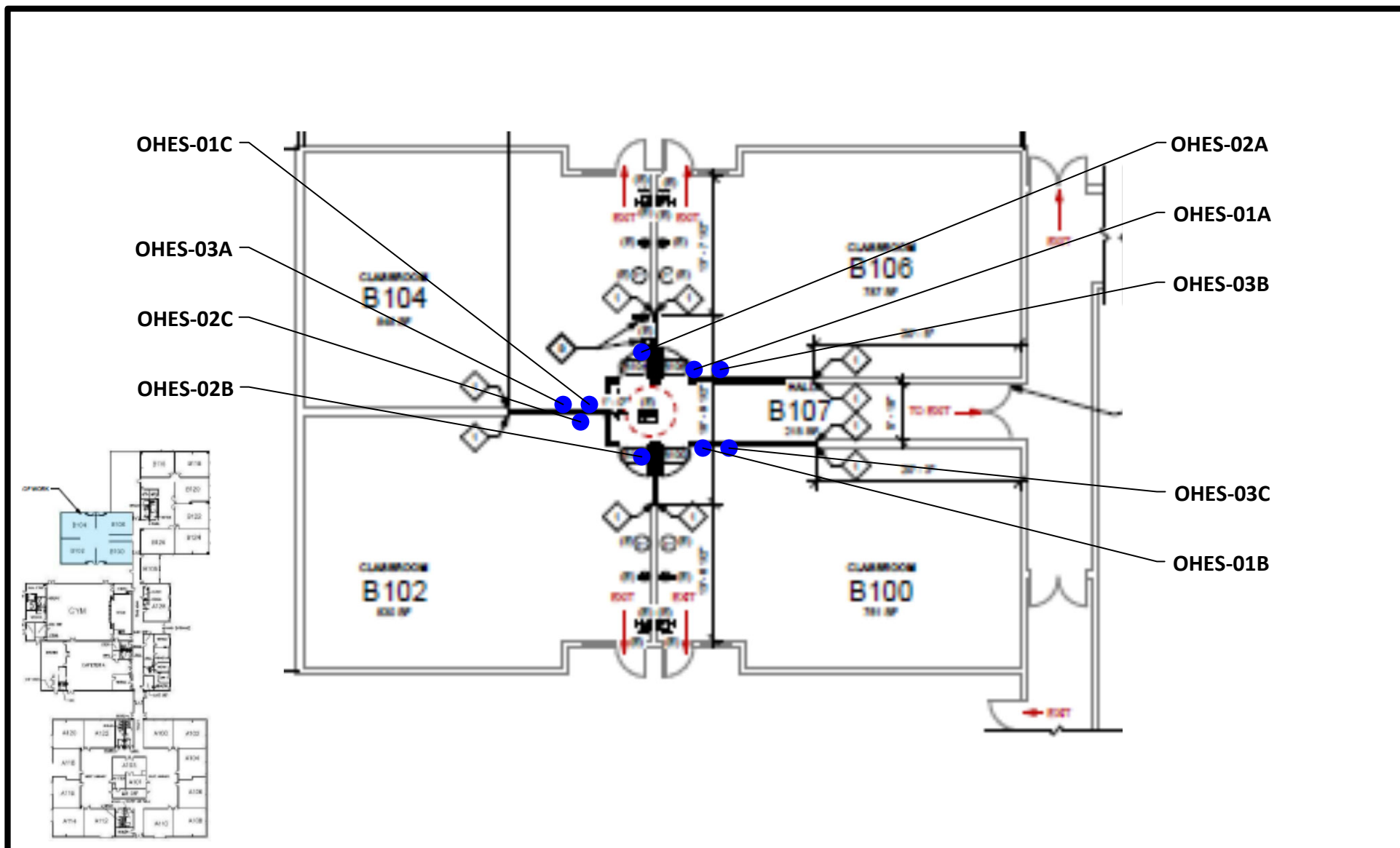


Jason Stone
Project Manager



Ron Landolt, CAC
NW Region BSI Practice Manager

APPENDIX A – SAMPLE LOCATION DIAGRAMS



LEGEND

- — Non-Asbestos Sample Location
- ★ — Asbestos-Containing Sample Location

LIMITED ASBESTOS SURVEY REPORT SAMPLE LOCATION DIAGRAM

OAK HILLS ELEMENTARY SCHOOL
SECURITY UPGRADES PROJECT
2625 NW 153RD AVENUE
BEAVERTON, OREGON 97006

TRC Project No.: 432557.0006

Figure: 1

Drawn by: JS

Reviewed by: RAL

Date: February 2021



4105 SE International Way, Suite 505
Milwaukie, Oregon 97222
Phone: (503) 387-3251 Fax: (503) 908-1318

APPENDIX B – REPRESENTATIVE PHOTOGRAPHS

BSD-OAK HILLS ELEMENTARY SCHOOL – OVERVIEW PHOTOGRAPHIC LOG



BSD-OAK HILLS ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: OHES-01A, OHES-01B, & OHES-01C

Material Description: Gypsum Wallboard with Joint Compound & Wall Covering & Associated Glue

Material Color: White

Accessible Material: Accessible

Reason Inaccessible: N/A

Asbestos Detected: Negative

Asbestos Type: No Asbestos Detected

Homogeneous Area: B100, B102, B104, & B106

Total Approximate Quantity: 2,000 SF

Condition: Good

Material Type: Misc.

NESHAP Category: N/A

Notes: Not Applicable



Sample Numbers: OHES-02A, OHES-02B, & OHES-02C

Material Description: 2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures)

Material Color: Not Indicated

Accessible Material: Accessible

Reason Inaccessible: N/A

Asbestos Detected: Negative

Asbestos Type: No Asbestos Detected

Homogeneous Area: B100, B102, B104, & B106

Total Approximate Quantity: 1,000 SF

Condition: Good

Material Type: Misc.

NESHAP Category: N/A

Notes: Not Applicable



BSD-OAK HILLS ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: OHES-03A, OHES-03B, & OHES-03C
Material Description: 4" Cove Base & Associated Glue
Material Color: Black
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: B100, B102, B104, & B106
Total Approximate Quantity: 200 LF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



APPENDIX C – LABORATORY RESULTS AND CHAIN OF CUSTODY

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249834

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0006
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-OAK HILLS ELEMENTARY SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249834-001 OHES-01A	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Quartz Mica 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Mica Quartz Binder/Filler 100%
		LAYER 3 Wall Covering, Off White	No	None Detected	Synthetic Fiber 60% Carbonates Binder/Filler 40%
		LAYER 4 Glue, Yellow/ White	No	None Detected	Cellulose Fiber <1% Carbonates Binder/Filler 99%
0249834-002 OHES-01B	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Quartz Mica 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Gypsum Mica Quartz Binder/Filler 100%
		LAYER 3 Wall Covering, Off White	No	None Detected	Synthetic Fiber 60% Carbonates Binder/Filler 40%
		LAYER 4 Glue, Yellow/ White	No	None Detected	Cellulose Fiber 1% Carbonates Binder/Filler 99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249834

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0006
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-OAK HILLS ELEMENTARY SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249834-003 OHES-01C	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White/ Brown	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2% Gypsum Carbonates Quartz Mica 88%
		LAYER 2 Joint Compound, White	No	None Detected	Carbonates Gypsum Mica Quartz Binder/Filler 100%
		LAYER 3 Wall Covering, Off White	No	None Detected	Synthetic Fiber 60% Carbonates Binder/Filler 40%
		LAYER 4 Glue, Yellow/ White	No	None Detected	Cellulose Fiber 1% Carbonates Binder/Filler 99%
0249834-004 OHES-02A	B100, B102, B104 & B106-SEE DIAGRAM	2x4 Drop -In Ceiling Tile, White w/Pinholes & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 35% Carbonates Quartz Perlite Binder/Filler 20%
0249834-005 OHES-02B	B100, B102, B104 & B106-SEE DIAGRAM	2x4 Drop -In Ceiling Tile, White w/Pinholes & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 35% Carbonates Quartz Perlite Binder/Filler 20%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249834

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client: TRC SOLUTIONS Job# / P.O. #: 432557.0006
Address: 4105 SE INTERNATIONAL WAY Date Received: 02/23/2021
STE 505 Date Analyzed: 02/25/2021
MILWAUKIE OR 97222
Collected: 02/22/2021 Date Reported: 02/25/2021
Project Name: BSD-OAK HILLS ELEMENTARY SCHOOL EPA Method: EPA 600/R-93/116
Address: Submitted By: JASON STONE
Collected By:

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249834-006 OHES-02C	B100, B102, B104 & B106-SEE DIAGRAM	2x4 Drop -In Ceiling Tile, White w/Pinholes & Fissures	No	None Detected	Mineral Wool 45% Cellulose Fiber 35% Carbonates Quartz Perlite Binder/Filler 20%
0249834-007 OHES-03A	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 4" Cove Base, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Carbonates Quartz Binder/Filler 100%
0249834-008 OHES-03B	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 4" Cove Base, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Carbonates Quartz Binder/Filler 100%
0249834-009 OHES-03C	B100, B102, B104 & B106-SEE DIAGRAM	LAYER 1 4" Cove Base, Black	No	None Detected	Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	Carbonates Quartz Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249834

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0006
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-OAK HILLS ELEMENTARY SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID	Sample	Layer Name /	Asbestos	Asbestos Type	Non-Asbestos
Client ID	Location	Sample Description	Detected	(%)	Constituents



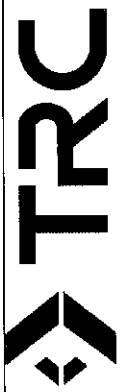
Analyst - Matt Kettler



Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

2-19834

			ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM			
Client: Beaverton School District			Project Number: 432557.0006		Sampling Technician: Jason Stone	
Project Name: BSD-Oak Hills Elementary School Oak Hills Elementary School			Tracking Number:		Requested TAT: 48 HR	
ASBESTOS BULK SAMPLE INFORMATION						
Sample Date	Sample Identification	Material Description	Homogeneous Area	Sample Location	Lab Identification (Lab Use Only)	
02/22/21	OHES-01A	Gypsum Wallboard with Joint Compound & Wall Covering & Associated Glue, White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-01B	Gypsum Wallboard with Joint Compound & Wall Covering & Associated Glue, White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-01C	Gypsum Wallboard with Joint Compound & Wall Covering & Associated Glue, White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-02A	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-02B	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-02C	2' x 4' Drop-in Ceiling Tile (Pinholes & Fissures), White	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-03A	4" Cove Base & Associated Glue, Black	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-03B	4" Cove Base & Associated Glue, Black	B100, B102, B104, & B106	See Diagram		
02/22/21	OHES-03C	4" Cove Base & Associated Glue, Black	B100, B102, B104, & B106	See Diagram		
Special Instruction to Laboratory: N/A						
CHAIN OF CUSTODY INFORMATION AND LABORATORY INFORMATION						
Relinquished By:			Received By:		Date and Time	
1. (Print): Jason Stone			Diana Federico		2/23/21 1145a	

1
2
3
4
5
6
7
8
9

(Sign): <i>[Signature]</i> II. (Print):		Diana Federico	
(Sign): Diana Federico	2/23/21 310pm	Mat Kettler	2/23/21 310pm
Email Results To: jstone@trccompanies.com, mcuda@trccompanies.com, rtandolt@trccompanies.com	Analytical Method: PLM EPA 600/R-93/116	Lab Comments:	

APPENDIX D – CERTIFICATIONS

Certificate of Completion

This is to certify that

Jason Stone

has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

179818

Certificate Number



Dec 16, 2020 Expires in 1 year.

Date(s) of Training

Exam Score: N/A
(if applicable)

A handwritten signature in black ink, appearing to read "Ed Edinger".

Instructor: Ed Edinger

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM

LIMITED ASBESTOS SURVEY REPORT

West Tualatin View Elementary School Security Upgrades Project

**8800 SW Leahy Road
Portland, OR 97225**

Prepared for:

Beaverton School District

**16550 SW Merlo Road
Beaverton, OR 97006**

Report Date: February 26, 2021

Prepared By:



4105 SE International Way, Suite 505, Milwaukie, OR 97222

TRC Project: 432557.0007

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
INTRODUCTION	1
BACKGROUND	1
Asbestos Containing Materials	1
Asbestos Sampling Procedures.....	2
Laboratory Analysis	2
FINDINGS	2
RECOMMENDATIONS.....	3
Asbestos Containing Materials	3
DISCLAIMER	3

Appendices

Appendix A – Sample Location Diagrams

Appendix B – Representative Photographs

Appendix C – Laboratory Results and Chain of Custody

Appendix D – Certifications

EXECUTIVE SUMMARY

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for West Tualatin View Elementary School located at 8800 SW Leahy Road, Portland, Oregon 97225. Mr. Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector, performed the survey on February 22, 2021. The survey activities included the review of prior sampling documentation and reports provided by the District, inspection and assessment of accessible suspect building materials, collection of bulk samples of suspect asbestos containing building materials that had previously not been sampled, and submission of bulk samples for laboratory analysis. This survey was conducted in response to expected security upgrades.

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method. However, any materials uncovered during future renovation or demolition activities that are not addressed in this inspection report, or presumed asbestos containing materials (PACM), must be sampled by an accredited asbestos inspector prior to any disturbance, or they must be treated as ACM.

INTRODUCTION

TRC Environmental Corporation (TRC) was contracted by the Beaverton School District to conduct a limited asbestos survey, including collection of bulk asbestos samples, laboratory analysis, and preparation of a report for West Tualatin View Elementary School located at 8800 SW Leahy Road, Portland, Oregon 97225. The survey activities were initiated on February 22, 2021, by Jason Stone, Asbestos Hazard Emergency Response Act (AHERA) accredited Asbestos Building Inspector and included the review of prior sampling documentation and reports as well as the inspection, assessment and bulk sampling of suspect asbestos containing building materials that had not previously been sampled in the work area. Sample locations are presented on the Sample Location Diagrams in Appendix A.

Mr. Jason Stone, AHERA accredited building inspector, conducted the survey inspection and sampling activities. Copies of training certificates and state licenses (where applicable) are presented in Appendix C, Inspector Certifications.

BACKGROUND

Asbestos Containing Materials

Occupational Safety and Health Administration (OSHA) defines asbestos-containing material (ACM), as any material containing more than one percent asbestos.

The Environmental Protection Agency (EPA) defines ACM as follows:

1. Friable asbestos-containing material (ACM), is defined by the Asbestos NESHAP, as any material containing more than one percent (1%) asbestos as determined using the method specified in Appendix A, Subpart F, 40 CFR Part 763, Section 1, Polarized Light Microscopy (PLM), that, when dry, can be crumbled, pulverized or reduced to powder by hand pressure.
2. Nonfriable ACM is any material containing more than one percent (1%) asbestos as determined using the PLM method that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure. The EPA further defines two categories of nonfriable ACM:
 - a. Category I (Cat I) - Category I nonfriable ACM is any asbestos-containing packing, gasket, resilient floor covering or asphalt roofing product which contains more than one percent (1%) asbestos as determined using PLM according to the method specified in Appendix A, Subpart F, 40 CFR Part 763, and
 - b. Category II (Cat II) - Category II nonfriable ACM is any material, excluding Category I nonfriable ACM, containing more than one percent (1%) asbestos as determined using PLM according to the methods specified in Appendix A, Subpart F, 40 CFR Part 763 that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.
3. Regulated Asbestos-Containing Material (RACM) is (a) friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.

Asbestos Sampling Procedures

The survey was conducted in accordance with the sample collection protocols established in 40 CFR 763 (ASHERA), 40 CFR 61 Subpart M (NESHAP). A summary of survey activities is provided below.

Survey activities began with visual observation of the project area to identify homogeneous areas of suspect ACM. A homogeneous area consists of building materials that appear similar throughout in terms of color and texture that does not extend to other buildings or floors. Visual assessments were conducted in accessible areas of the building. Building materials identified as glass, wood or metal were not considered suspect ACM.

A physical assessment of each homogeneous area of suspect ACM was conducted to assess the friability and condition of the materials. Friability was assessed by physically touching suspect materials.

Based on results of the visual observation, bulk samples of suspect ACM were collected in accordance with applicable Federal Local and State sampling protocols sampling protocols. Samples of suspect materials were collected in each homogeneous area. Bulk samples were collected using wet methods as applicable to reduce the potential for fiber release. Samples were placed in sealable containers and labeled with unique sample numbers using an indelible marker.

All asbestos bulk samples were submitted under proper COC documentation to the laboratory. Bulk samples were analyzed by PLM utilizing the EPA's, Method for the Determination of Asbestos in Bulk Building Materials, EPA 600/M4-82-020. Analysis by PLM was performed by visual observation of the bulk sample and slides prepared of the bulk sample for microscopic examination and identification. The samples were analyzed for asbestos (Chrysotile, Amosite, Crocidolite, Anthophyllite, and Actinolite/Tremolite), fibrous non-asbestos constituents (mineral wool, cellulose, etc.) and non-fibrous constituents. Using a stereoscope, the microscopist visually estimated the relative amounts of each constituent by determining the estimated area of the asbestos compared with the area estimate of the total sample.

Laboratory Analysis

Laboratory services were provided by EMC Labs, Inc., a National Voluntary Laboratory Accreditation Program (NVLAP) certified laboratory (NVLAP code #101424-0) located in Phoenix, Arizona.

FINDINGS

Asbestos Containing Materials

Results of the bulk sampling indicated none of the materials sampled during this survey contained detectable levels of asbestos, based on the PLM method.

Negative Materials (No Asbestos Detected)

Results of the bulk sampling indicated none of the following sampled materials contained detectable levels of asbestos, based on the PLM method:

BSD-West Tualatin View Elementary School			
Sample No.	Materials / Areas	Material Location	Estimated Quantity
WTVES-01A WTVES-01B WTVES-01C	Gypsum Wallboard & Joint Compound, Beige	M100, M102, M106, & M108	2,000 SF
WTVES-02A WTVES-02B WTVES-02C	4" Cove Base & Associated Glue, Black	M100, M102, M106, & M108	600 LF
WTVES-03A WTVES-03B WTVES-03C	Wood Wall Paneling & Associated Glue	M100, M102, M106, & M108	1,000 SF

RECOMMENDATIONS

Asbestos Containing Materials

All identified asbestos containing materials from this investigation and previous investigations must be removed by a licensed asbestos abatement contractor prior to them being impacted by any renovation or demolition activities. Additionally, any materials uncovered during renovation or demolition activities that are not addressed in this inspection report or prior reports for the building are considered presumed asbestos containing materials and must be sampled by an accredited asbestos inspector prior to disturbance, or they must be treated as asbestos containing.

DISCLAIMER

The content presented in this report is based on data collected during the site inspection and survey, review of pertinent regulations, requirements, guidelines and commonly followed industry standards, and information provided by Client, their clients, agents, and representatives.

The work has been conducted in an objective and unbiased manner and in accordance with generally accepted professional practice for this type of work. TRC believes the data and analysis to be accurate and relevant but cannot accept responsibility for the accuracy or completeness of available documentation or possible withholding of information of other parties.

This limited asbestos survey report is designed to aid the property owner, architect, construction manager, general contractor, remediation contractor and/or asbestos abatement contractor in locating asbestos containing materials, and is not to be used as a bidding document.

Sincerely,
TRC Environmental Corporation

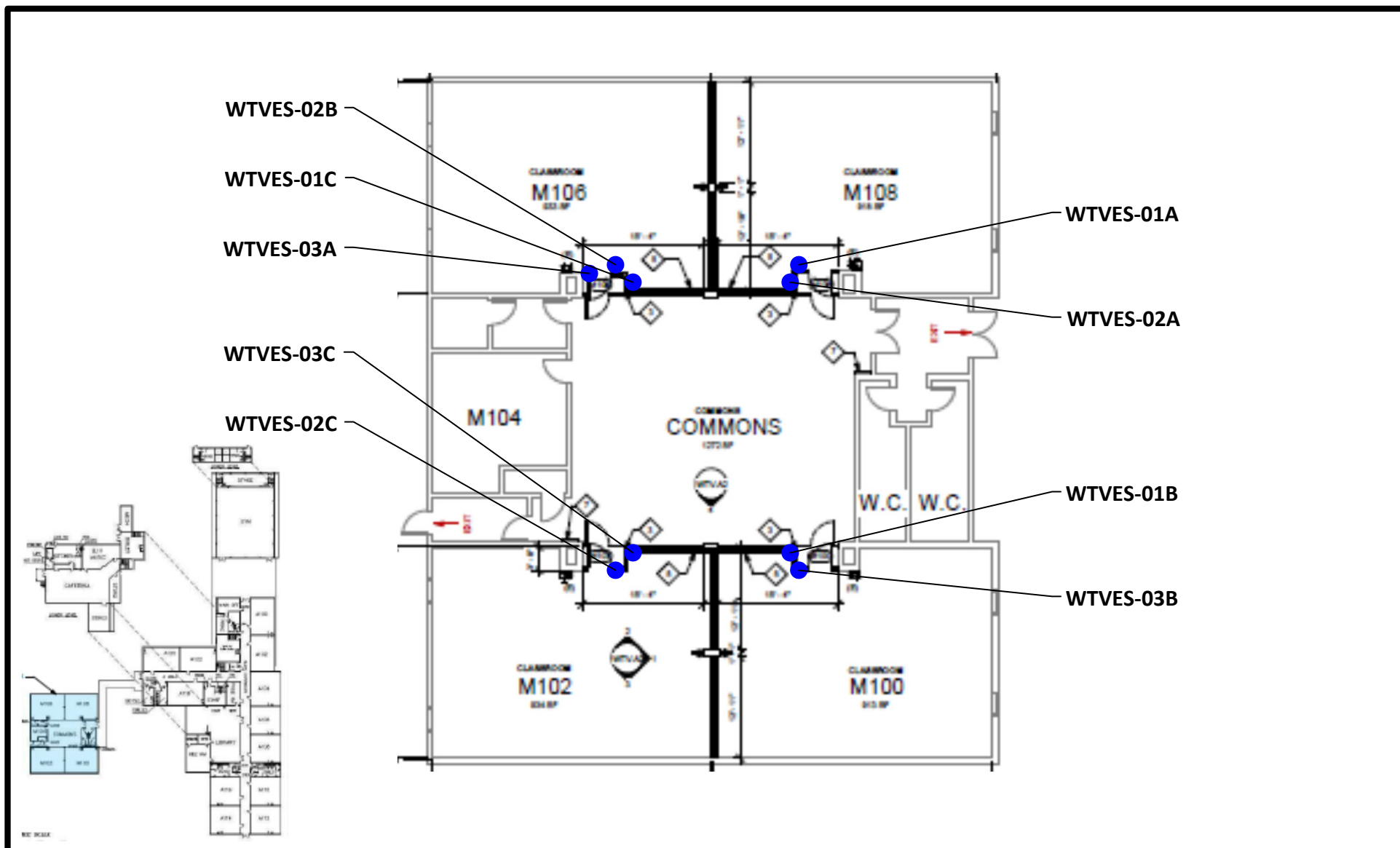



Jason Stone
Project Manager



Ron Landolt, CAC
NW Region BSI Practice Manager

APPENDIX A – SAMPLE LOCATION DIAGRAMS



LEGEND		LIMITED ASBESTOS SURVEY REPORT SAMPLE LOCATION DIAGRAM WEST TUALATIN VIEW ELEMENTARY SCHOOL SECURITY UPGRADES PROJECT 8800 SW LEAHY ROAD PORTLAND, OREGON 97225		 4105 SE International Way, Suite 505 Milwaukie, Oregon 97222 Phone: (503) 387-3251 Fax: (503) 908-1318
● — Non-Asbestos Sample Location ★ — Asbestos-Containing Sample Location				
TRC Project No.: 432557.0007		Figure: 1		
Drawn by: JS	Reviewed by: RAL	Date: February 2021		

APPENDIX B – REPRESENTATIVE PHOTOGRAPHS

BSD-WEST TUALATIN VIEW ELEMENTARY SCHOOL – OVERVIEW PHOTOGRAPHIC LOG



BSD-WEST TUALATIN VIEW ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: WTVES-01A, WTVES-01B, & WTVES-01C
Material Description: Gypsum Wallboard & Joint Compound
Material Color: White
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: M100, M102, M106, & M108
Total Approximate Quantity: 2,000 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



Sample Numbers: WTVES-02A, WTVES-02B, & WTVES-02C
Material Description: 4" Cove Base & Associated Glue
Material Color: Black
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: M100, M102, M106, & M108
Total Approximate Quantity: 600 LF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



BSD-WEST TUALATIN VIEW ELEMENTARY SCHOOL – SUSPECT ASBESTOS CONTAINING MATERIALS PHOTOGRAPHIC LOG

Sample Numbers: WTVES-03A, WTVES-03B, & WTVES-03C
Material Description: Wood Wall Paneling & Associated Glue
Material Color: Gray
Accessible Material: Accessible
Reason Inaccessible: N/A
Asbestos Detected: Negative
Asbestos Type: No Asbestos Detected
Homogeneous Area: M100, M102, M106, & M108
Total Approximate Quantity: 1,000 SF
Condition: Good
Material Type: Misc.
NESHAP Category: N/A
Notes: Not Applicable



APPENDIX C – LABORATORY RESULTS AND CHAIN OF CUSTODY

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249835

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0007
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-TUALATIN VIEW ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249835-001 WTVES-01A	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Beige	No	None Detected	Fibrous Glass 2%
					Carbonates Mica Quartz Binder/Filler 98%
0249835-002 WTVES-01B	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Beige	No	None Detected	Fibrous Glass 2%
					Carbonates Mica Quartz Binder/Filler 98%
0249835-003 WTVES-01C	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Gypsum Wallboard, White	No	None Detected	Cellulose Fiber 10% Fibrous Glass 2%
					Gypsum Carbonates Mica Quartz 88%
		LAYER 2 Joint Compound, Beige	No	None Detected	Fibrous Glass 2%
					Carbonates Mica Quartz Binder/Filler 98%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249835

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0007
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-TUALATIN VIEW ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents
0249835-004 WTVES-02A	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
0249835-005 WTVES-02B	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	
					Cellulose Fiber <1% Carbonates Quartz Binder/Filler 99%
0249835-006 WTVES-02C	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 4" Covebase, Black	No	None Detected	
					Carbonates Quartz Binder/Filler 100%
		LAYER 2 Glue, Yellow	No	None Detected	
					Carbonates Quartz Binder/Filler 100%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

Laboratory Report

0249835

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0007
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-TUALATIN VIEW ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID Client ID	Sample Location	Layer Name / Sample Description	Asbestos Detected	Asbestos Type (%)	Non-Asbestos Constituents	
0249835-007 WTVES-03A	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Wood Wall Paneling, Gray	No	None Detected	Cellulose Fiber	95%
					Gypsum Binder/Filler	5%
		LAYER 2 Glue, Gold	No	None Detected	Cellulose Fiber	<1%
					Carbonates Binder/Filler	99%
0249835-008 WTVES-03B	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Wood Wall Paneling, Gray	No	None Detected	Cellulose Fiber	95%
					Gypsum Binder/Filler	5%
		LAYER 2 Glue, Gold	No	None Detected	Cellulose Fiber	<1%
					Carbonates Binder/Filler	99%
0249835-009 WTVES-03C	M100, M102, M106 & M108-SEE DIAGRAM	LAYER 1 Wood Wall Paneling, Gray	No	None Detected	Cellulose Fiber	95%
					Gypsum Binder/Filler	5%
		LAYER 2 Glue, Gold	No	None Detected	Cellulose Fiber	<1%
					Carbonates Binder/Filler	99%

EMC LABS, INC.

9830 S. 51st Street, Suite B109, Phoenix, AZ 85044
Phone: 800-362-3373 or 480-940-5294 - Fax: (480) 893-1726

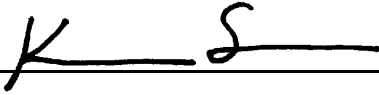
Laboratory Report
0249835

Bulk Asbestos Analysis by Polarized Light Microscopy

NVLAP#101926-0

Client:	TRC SOLUTIONS	Job# / P.O. #:	432557.0007
Address:	4105 SE INTERNATIONAL WAY	Date Received:	02/23/2021
	STE 505	Date Analyzed:	02/25/2021
	MILWAUKIE OR 97222		
Collected:	02/22/2021	Date Reported:	02/25/2021
Project Name:	BSD-TUALATIN VIEW ELEM. SCHOOL	EPA Method:	EPA 600/R-93/116
Address:		Submitted By:	JASON STONE
		Collected By:	

Lab ID	Sample	Layer Name /	Asbestos	Asbestos Type	Non-Asbestos
Client ID	Location	Sample Description	Detected	(%)	Constituents




Analyst - Kenneth Scheske




Signatory - Lab Director - Kurt Kettler

Distinctly stratified, easily separable layers of samples are analyzed as subsamples of the whole and are reported separately for each discernible layer. All analyses are derived from calibrated visual estimate and measured in area percent unless otherwise noted. The report applies to the standards or procedures identified and to the sample(s) tested. The test results are not necessarily indicated or representative of the qualities of the lot from which the sample was taken or of apparently identical or similar products, nor do they represent an ongoing quality assurance program unless so noted. These reports are for the exclusive use of the addressed client and that they will not be reproduced wholly or in part for advertising or other purposes over our signature or in connection with our name without special written permission. The report shall not be reproduced except in full, without written approval by our laboratory. The samples not destroyed in testing are retained a maximum of thirty days. The laboratory measurement of uncertainty for the test method is approximately less than 1 by area percent. Accredited by the National Institute of Standards and Technology, Voluntary Laboratory Accreditation Program for selected test method for asbestos. The accreditation or any reports generated by this laboratory in no way constitutes or implies product certification, approval, or endorsement by the National Institute of Standards and Technology. The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Polarized Light Microscopy may not be consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials.

TRC		ASBESTOS BULK SAMPLE CHAIN OF CUSTODY FORM			
Client: Beaverton School District		Project Number: 432557.0007		Sampling Technician: Jason Stone	
Project Name: BSD-West Tualatin View Elementary School West Tualatin View Elementary School		Tracking Number:		Requested TAT: 48 HR	
ASBESTOS BULK SAMPLE INFORMATION					
Sample Date	Sample Identification	Material Description	Homogeneous Area	Sample Location	Lab Identification (Lab Use Only)
02/22/21	WTVES-01A	Gypsum Wallboard & Joint Compound, White	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-01B	Gypsum Wallboard & Joint Compound, White	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-01C	Gypsum Wallboard & Joint Compound, White	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-02A	4" Cove Base & Associated Glue, Black	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-02B	4" Cove Base & Associated Glue, Black	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-02C	4" Cove Base & Associated Glue, Black	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-03A	Wood Wall Paneling & Associated Glue	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-03B	Wood Wall Paneling & Associated Glue	M100, M102, M106, & M108	See Diagram	
02/22/21	WTVES-03C	Wood Wall Paneling & Associated Glue	M100, M102, M106, & M108	See Diagram	
Special Instruction to Laboratory: N/A					
CHAIN OF CUSTODY INFORMATION AND LABORATORY INFORMATION					
Relinquished By:		Received By:		Date and Time	
1. (Print): Jason Stone		Diana Federico		2/23/21	
		Diana Federico		11:45am	
(Sign): 		02/22/2021 9:17 am America/Los_Angeles			

1
2
3
4
5
6
7
8
9

II. (Print): Diana Fedorin	2/23/21 3:12pm	KEN SCHESSKE	2.23.21 1812
(Sign): Diana Fedorin			
Email Results To: jstone@trccompanies.com, mcuda@trccompanies.com, rlandolt@trccompanies.com	Analytical Method: PLM EPA 600/R-93/116	Lab Comments:	

APPENDIX D – CERTIFICATIONS

Certificate of Completion

This is to certify that

Jason Stone

has satisfactorily completed
4 hours of refresher training as an
AHERA Building Inspector

to comply with the training requirements of
TSCA Title II, 40 CFR 763 (AHERA)

EPA Provider # 1085

179818

Certificate Number



Dec 16, 2020 Expires in 1 year.

Date(s) of Training

Exam Score: N/A
(if applicable)

A handwritten signature in black ink, appearing to read "Ed Edinger".

Instructor: Ed Edinger

ARGUS PACIFIC, INC / 21905 64th AVE W, SUITE 100 / MOUNTLAKE TERRACE, WASHINGTON 98043 / 206.285.3373 / ARGUSPACIFIC.COM