

MINOR RENOVATION, MEN'S ROOM, B286  
MCAS CHERRY POINT, NORTH CAROLINA 28533-0006  
WORK ORDER #7241743

1.1 GENERAL INTENTION

The work includes removing existing toilet partitions, urinal, and lavatory and providing ABA accessible toilet partitions and lavatory, and incidental related work.

1.2 LOCATION

The work is located at MCAS Cherry Point, approximately as indicated. The exact location will be shown by the Contracting Officer.

1.3 DETAILED REQUIREMENTS.

See drawings and specifications attached.

1.4 SPECIAL SCHEDULING REQUIREMENTS

Have materials, equipment, and personnel required to perform the work at the site prior to the commencement of the work.

The building will remain in operation during the entire construction period. The Contractor must conduct his operations so as to cause the least possible interference with normal operations of the activity.

Permission to interrupt any activity roads, railroads, or utility service must be requested in writing a minimum of 15 calendar days prior to the desired date of interruption and in accordance with section 1.10.

1.5 CONTRACTOR ACCESS AND USE OF PREMISES

DBIDS has gone live at MCAS Cherry Point. In order to reduce wait time when exchanging your RapidGate credential, it is highly recommended each applicant pre-register at <https://dbids-global.dmdc.mil/enroll#!/>

Non-DoD cardholding visitors to Marine Corps Installations with a driver's license or ID issued by a state that is not compliant with the Real ID Act of 2005 will now need to provide

an alternate form of acceptable identification to gain entry, or be escorted by an authorized patron of the air station.

North Carolina now issues REAL ID compliant driver's licenses, but many drivers have yet to be issued the new license. Drivers may get a North Carolina REAL ID driver's license at any NCDMV driver's license office.

The Act established minimum security standards for license issuance and production and prohibits Federal agencies from accepting driver's licenses and identification cards from states not meeting the Act's minimum standards.

In absence of a compliant state issued driver's license or ID, one of the following federally approved forms of identification must also be provided in addition to the non-compliant driver's license or ID:

1. U.S. Passport
2. U.S. Passport Card
3. U.S. Coast Guard Merchant Mariner Card
4. Personal Identity Verification (PIV) Card
5. Personal Identity Verification - Interoperable (PIV-I)
6. U.S. State Department Driver's License
7. Veteran's Health Identification Card (Issued by the U.S. Department of Veterans Affairs)
8. U.S. Permanent Resident Card (Form I-551)
9. U.S. Certificate of Naturalization or Certificate of Citizenship (Form N-550)
10. Department of Homeland Security Employment Authorization Document (Form I-766)

#### 1.5.1 ACTIVITY REGULATIONS

Ensure that Contractor personnel employed on the Activity become familiar with and obey Activity regulations including safety, fire, traffic and security regulations. Keep within the limits of the work and avenues of ingress and egress. Wear hard hats in designated areas. Do not enter any restricted areas unless required to do so and until cleared for such entry. Mark Contractor equipment for identification.

##### 1.5.1.1 SUBCONTRACTORS AND PERSONNEL CONTACTS

Provide a list of contact personnel of the Contractor and subcontractors including addresses and telephone numbers for use in the event of an emergency. As changes occur and

additional information becomes available, correct and change the information contained in previous lists.

#### 1.5.1.3 INSTALLATION ACCESS

Obtain access to Navy and Marine Corps installations through participation in the Defense Biometrics Identification System (DBIDS). Requirements for Contractor employee registration, and transition for employees currently under Navy Commercial Access Control System (NCACS), are available at <https://www.cnmc.navy.mil/om/dbids.html>. No fees are associated with obtaining a DBIDS credential.

Participation in the DBIDS is not mandatory, and Contractor personnel may apply for One-Day Passes at the Base Visitor Control Office to access an installation.

##### 1.5.1.3.1 REGISTRATION FOR DBIDS

Registration for DBIDS is available at <https://www.cnmc.navy.mil/om/dbids.html>. Procedure includes:

- a. Present a letter or official award document (i.e. DD Form 1155 or SF 1442) from the Contracting Officer that provides the purpose for access to the Base Visitor Control Center representative.
- b. Present valid identification, such as a passport or Real ID Act-compliant state driver's license.
- c. Provide completed SECNAV FORM 5512/1 to the Base Visitor Control Center representative to obtain a background check. This form is available for download at <https://www.cnmc.navy.mil/om/dbids.html>.
- d. Upon successful completion of the background check, the Government will complete the DBIDS enrollment process, which includes Contractor employee photo, finger prints, base restriction and several other assessments.
- e. Upon successful completion of the enrollment process, the Contractor employee will be issued a DBIDS credential, and will be allowed to proceed to worksite.

##### 1.5.1.3.2 DBIDS ELIGIBILITY REQUIREMENTS

Throughout the length of the contract, the Contractor employee must continue to meet background screen standards. Periodic background screenings are conducted to verify continued DBIDS participation and installation access privileges. DBIDS access privileges will be immediately suspended or revoked if at any time a Contractor employee becomes ineligible.

An adjudication process may be initiated when a background screen failure results in disqualification from participation in the DBIDS, and Contractor employee does not agree with the reason for disqualification. The Government is the final authority.

#### 1.5.1.3.3 DBIDS NOTIFICATION REQUIREMENTS

Immediately report instances of lost or stolen badges to the Contracting Officer.

Immediately collect DBIDS credentials and notify the Contracting Officer in writing under the following circumstances:

- 1) An employee has departed the company without having properly returned or surrendered their DBIDS credentials.
- 2) There is a reasonable basis to conclude that an employee, or former employee, might pose a risk, compromise, or threat to the safety or security of the Installation or anyone therein.

#### 1.5.1.3.4 ONE-DAY PASSES

Personnel applying for One-Day passes at the Base Visitor Control Office are subject to daily mandatory vehicle inspection, and will have limited access to the installation. The Government is not responsible for any cost or lost time associated with obtaining daily passes or added vehicle inspections incurred by non-participants in the DBIDS.

#### 1.5.1.4 NO SMOKING POLICY

Smoking is prohibited within and outside of all buildings on installation, except in designated smoking areas. This applies to existing buildings, buildings under construction and buildings under renovation. Discarding tobacco materials other than into designated tobacco receptacles is considered

littering and is subject to fines. The Contracting Officer will identify designated smoking areas.

#### 1.5.2 WORKING HOURS

Regular working hours shall consist of an 8 1/2 hour period normally between the hours of 7:00 am to 3:30 pm, Monday through Friday, excluding Government holidays.

#### 1.5.3 WORK OUTSIDE REGULAR HOURS

Work outside regular working hours requires Contracting Officer approval. Make application 15 calendar days prior to such work to allow arrangements to be made by the Government for inspecting the work in progress, giving the specific dates, hours, location, type of work to be performed, contract number and project title. Based on the justification provided, the Contracting Officer may approve work outside regular hours. During periods of darkness, the different parts of the work must be lighted in a manner approved by the Contracting Officer. Make utility cutovers after normal working hours or on Saturdays, Sundays, and Government holidays unless directed otherwise.

#### 1.5.5 OCCUPIED BUILDING

The Contractor shall be working in an existing building which is occupied.

The existing buildings and their contents must be kept secure at all times. Provide temporary closures as required to maintain security as directed by the Contracting Officer.

Relocate movable furniture as required to perform the work, protect the furniture, and replace the furniture in its original location upon completion of the work. Leave attached equipment in place, and protect it against damage, or temporarily disconnect, relocate, protect, and reinstall it at the completion of the work.

#### 1.5.6 UTILITY CUTOVERS AND INTERRUPTIONS

Make utility cutovers and interruptions after normal working hours or on Saturdays, Sundays, and Government holidays. Conform to procedures required in the paragraph "Work Outside Regular Hours."

Ensure that new utility lines are complete, except for the connection, before interrupting existing service.

Interruption to water, sanitary sewer, storm sewer, telephone service, electric service, air conditioning, heating, fire alarm, and compressed air are considered utility cutovers pursuant to the paragraph entitled "Work Outside Regular Hours."

Operation of Station Utilities: The Contractor must not operate nor disturb the setting of control devices in the station utilities system, including water, sewer, electrical, and steam services. The Government will operate the control devices as required for normal conduct of the work. The Contractor must notify the Contracting Officer giving reasonable advance notice when such operation is required.

## 1.6 SECURITY REQUIREMENTS

### 1.6.1 STATION REGULATIONS

No employee or representative of the contractor will be admitted to the work site without an Identification Badge or is specifically authorized admittance to the work site by the FEAD, Facilities Engineering & Acquisition Division.

IMPORTANT NOTE: FEAD personnel (Construction Managers, Engineers/Architects, Engineering Technicians, Contract Specialists, or Contract Surveillance Representatives) will not receive, process, re-transmit or otherwise handle IN ANY WAY Personally Identifiable

### 1.6.2 CONTRACTOR ACCESS TO MCAS CHERRY POINT AND OUTLYING AREAS

Documentation requirements for granting access to MCAS Cherry Point for commercial and contract employers and employees. This document is an aid in meeting ASO 5560.6A requirements and is not a substitute for the order.

The Pass & Identification Office at Building 251 will issue credentials to authorized contractors. Sub-Contractors and suppliers must coordinate through the Prime-Contractor:

Criminal Activity. In accordance with ASO 5560.6A, the below list of criminal activities within an applicant's record are considered not in the best interest of the Marine Corps and

will be grounds for automatic denial of access aboard the Installation:

- a. Conviction of any felony offense.
- b. Conviction of any misdemeanor offense, which was the result of a plea bargain of a felony offense.
- c. Conviction of any offense involving a weapon.
- d. Conviction of any drug offense involving manufacturing or trafficking.
- e. More than one misdemeanor conviction of drug related offenses over the applicant's lifetime or one misdemeanor drug related offense within the last five years.
- f. Conviction of any assault charge.
- g. Conviction of any offense involving theft or larceny.
- h. Conviction of any offense of domestic violence.
- i. Conviction of any offense related to the abuse/neglect of a child.
- j. Conviction of any sexual in nature related offense or registration as a sex offender.
- k. Commission of any grievous criminal offense/misconduct while aboard any Federal installation, including blatant disregard for rules and regulations of the Installation, but excluding minor traffic offenses.
- l. Other than Honorable, Bad Conduct, and Dishonorable discharges from the U.S. Military.
- m. Those identified as undocumented citizens.
- n. Those on the National Terrorist Watch List.
- o. Any individual who attempts to hide or purposely fails to disclose all past criminal history during the vetting process.
- p. Any individual that the Provost Marshal's Office determines to present a risk to the security and safety

of the Installation and whose access is deemed not in the best interest of the Marine Corps.

- q. Any individual who has been debarred from the Installation by the Installation Commander or is currently listed as debarred from any other Federal installation.
- r. Any individual with an outstanding warrant for their arrest or apprehension.
- s. Any individual with a pending criminal court case that, if convicted, would result in access denial in accordance with the criteria listed above.

#### 1.6.6 STAGING AREA

The contractor staging area will be (PM to coordinate). Amount of material on site shall be kept to a minimum and shall only be material that is pertinent to the work currently being performed. All stockpiling of equipment and materials shall be closely coordinated with the Government and shall not disrupt activities at the site.

#### 1.7 MINIMUM INSURANCE REQUIREMENTS

Provide the minimum insurance coverage required by FAR 28.307-2 Liability, during the entire period of performance under this contract. Provide other insurance coverage as required by North Carolina Law.

#### 1.8 SUPERVISION

The complexity of this project will require one person to fill the roles of the Superintendent, Quality Control Manager, and Site Safety and Health Officer.

#### 1.9 SUBMITTALS

The following items shall have submittals delivered to the COR for approval by the government prior to the commencement of site work.

See attached specifications.

#### 1.10 PLANNED OUTAGES AND SERVICE DISRUPTIONS

Planned outages and service disruptions are requested by the contractor for approval by the Government when necessary to facilitate and/or accomplish contract work. Affected services include utilities (steam, water, waste water, and electrical service), communications (telephone, network, industrial control systems, and fire/security alarm systems, fire protection equipment, infrastructure, and road closures. Disruption of these services cannot be allowed without written approval of the government.

The contractor is required to 1) request the outage in writing and 2) demonstrate sufficient contingency preparedness in the event that service cannot be restored due to a failure in accomplishment of contract work.

All outages require Contractor's written request fifteen (15) days prior to commencement of such work. The request shall be submitted to the COR with the date, time, duration, and scope of the outage.

As supporting documentation for the request, the contractor is required to submit a contingency plan for all reasonably foreseen risks related to the contractor's performance of the work that would impact disrupted services in excess of the approved outage. This plan must demonstrate the following at a minimum.

1. Understanding of key personnel and communications methods to include phone numbers.
2. Analysis of reasonable risks during the contract work that would impact disrupted services in excess of the approved outage.
3. An effective recovery plan to restore minimum essential services in the event of these risks materializing.
4. Requested government support.

The government will similarly produce risk-based contingency plans for restoration of essential services caused by reasonably foreseen factors that are not related to the performance of the contract. In these cases, the government may request the contractor make additional preparations to support essential and high risk services. Such requests are considered within the scope of this contract but will be priced and negotiated via modification as conditions warrant.

Approvals will be issued by the Public Works Officer or his/her designee and transmitted via the COR.

#### 1.11 GOVERNMENTAL SAFETY REQUIREMENTS

Personal protective equipment (PPE) is governed in all areas by the nature of the work the employee is performing. Use personal hearing protection at all times in designated noise hazardous locations or when performing noise hazardous tasks. Safety glasses must be worn or carried/available on each person. Mandatory PPE includes: hard hats, long pants, appropriate safety shoes, and appropriate class reflective vest.

Comply with the Safety and Health Requirements Manual (EM 385-1-1), NFPA 70, NFPA 70E, NFPA 241, the Accident Prevention Plan (APP), the Activity Hazard Analysis (AHA), Federal and State OSHA regulations, and other related submittals and activity fire and safety regulations. The most stringent standard prevails.

An APP in accordance with EM 385-1-1, Appendix A, is required.

An AHA in accordance with EM 385-1-1, Section 1, is required for each activity or task.

The contractor is responsible for any required permits.

#### 1.12 EXECUTION

If during the course of the work, conditions are encountered which are not covered in the contract or are different from conditions that would be reasonably anticipated, the contractor shall immediately notify the Contracting Officer. If such conditions are hazardous or the continuation of work would cause a hazardous condition to develop, the contractor shall stop work and proceed as directed by the Contracting Officer as directed by provisions contained in other sections of this specification. This may include modifications to, or the development of a new, Health and Safety Plan for this project, and alternate or additional appropriate abatement procedures.

#### 1.13 CLOSEOUT SUBMITTALS

##### 1.13.1 SPARE PARTS DATA

Submit two copies of the Spare Parts Data list. Indicate manufacturer's name, part number, nomenclature, and stock level required for maintenance and repair. List those items that may be standard to the normal maintenance of the system.

#### 1.13.2 WARRANTY MANAGEMENT PLAN

Develop a warranty management plan which contains information relevant to FAR 52.246-21 Warranty of Construction. Submit two sets of the warranty management plan. Include within the warranty management plan all required actions and documents to assure that the Government receives all warranties to which it is entitled. The plan narrative must contain sufficient detail to render it suitable for use by future maintenance and repair personnel, whether tradesmen, or of engineering background, not necessarily familiar with this contract. The term "status" as indicated below must include due date and whether item has been submitted or was accomplished. Assemble approved information in a binder and turn over to the Government upon acceptance of the work. The construction warranty period must begin on the date of project acceptance and continue for the full product warranty period. The warranty management plan must include, but is not limited to, the following:

- a. Roles and responsibilities of personnel associated with the warranty process, including points of contact and telephone numbers within the organizations of the Contractors, subcontractors, manufacturers or suppliers involved.
- b. For each warranty, the name, address, telephone number, and email of each of the guarantor's representatives nearest to the project location.
- c. A list and status of delivery of Certificates of Warranty for extended warranty items, including roofs, HVAC balancing, pumps, motors, transformers, and for commissioned systems, such as fire protection and alarm systems, sprinkler systems, and lightning protection systems.
- d. As-Built Record of Equipment and Materials list for each warranted equipment, item, feature of construction or system indicating:
  - (1) Name of item.
  - (2) Model and serial numbers.
  - (3) Location where installed.
  - (4) Name and phone numbers of manufacturers or suppliers.

- (5) Names, addresses and telephone numbers of sources of spare parts.
- (6) Warranties and terms of warranty. Include one-year overall warranty of construction, including the starting date of warranty of construction. Items which have extended warranties must be indicated with separate warranty expiration dates.
- (7) Cross-reference to warranty certificates as applicable.
- (8) Starting point and duration of warranty period.
- (9) Summary of maintenance procedures required to continue the warranty in force.
- (10) Cross-reference to specific pertinent Operation and Maintenance manuals.
- (11) Organization, names and phone numbers of persons to call for warranty service.
- (12) Typical response time and repair time expected for various warranted equipment.

e. Procedure and status of tagging of equipment covered by extended warranties.

f. Copies of instructions to be posted near selected pieces of equipment where operation is critical for warranty or safety reasons.

### 1.13.3 OPERATION & MAINTENANCE MANUALS

Provide four electronic copies of the Operation and Maintenance Manual files. Submit to the Contracting Officer for approval 30 days before the Beneficial Occupancy Date (BOD). Update and resubmit files for final approval at BOD.

SECTION 01 33 00

SUBMITTAL PROCEDURES

08/18, CHG 4: 02/21

PART 1 GENERAL

1.1 DEFINITIONS

1.1.1 Submittal Descriptions (SD)

Submittal requirements are specified in the technical sections. Examples and descriptions of submittals identified by the Submittal Description (SD) numbers and titles follow:

SD-01 Preconstruction Submittals

Submittals that are required prior to or commencing with the start of work on site.

Preconstruction Submittals include schedules and a tabular list of locations, features, and other pertinent information regarding products, materials, equipment, or components to be used in the work.

Certificates Of Insurance  
Surety Bonds  
List Of Proposed Subcontractors  
List Of Proposed Products  
Baseline Construction Schedule  
Submittal Register  
Schedule Of Prices  
Accident Prevention Plan  
Work Plan  
Quality Control (QC) plan

SD-02 Shop Drawings

Drawings, diagrams and schedules specifically prepared to illustrate some portion of the work.

Diagrams and instructions from a manufacturer or fabricator for use in producing the product and as aids to the Contractor for integrating the product or system into the project.

Drawings prepared by or for the Contractor to show how multiple systems and interdisciplinary work will be coordinated.

SD-03 Product Data

Catalog cuts, illustrations, schedules, diagrams, performance charts, instructions and brochures illustrating size, physical appearance and other characteristics of materials, systems or equipment for some portion of the work.

Samples of warranty language when the contract requires extended product warranties.

SD-04 Samples

Fabricated or unfabricated physical examples of materials, equipment or workmanship that illustrate functional and aesthetic characteristics of a material or product and establish standards by which the work can be judged.

Color samples from the manufacturer's standard line (or custom color samples if specified) to be used in selecting or approving colors for the project.

Field samples and mock-ups constructed on the project site establish standards ensuring work can be judged. Includes assemblies or portions of assemblies that are to be incorporated into the project and those that will be removed at conclusion of the work.

#### SD-06 Test Reports

Report signed by authorized official of testing laboratory that a material, product or system identical to the material, product or system to be provided has been tested in accord with specified requirements. Unless specified in another section, testing must have been within three years of date of contract award for the project.

Report that includes findings of a test required to be performed on an actual portion of the work or prototype prepared for the project before shipment to job site.

Report that includes finding of a test made at the job site or on sample taken from the job site, on portion of work during or after installation.

Investigation reports  
Daily logs and checklists  
Final acceptance test and operational test procedure

#### SD-07 Certificates

Statements printed on the manufacturer's letterhead and signed by responsible officials of manufacturer of product, system or material attesting that the product, system, or material meets specification requirements. Must be dated after award of project contract and clearly name the project.

Document required of Contractor, or of a manufacturer, supplier, installer or Subcontractor through Contractor. The document purpose is to further promote the orderly progression of a portion of the work by documenting procedures, acceptability of methods, or personnel qualifications.

Confined space entry permits  
Text of posted operating instructions

#### SD-08 Manufacturer's Instructions

Preprinted material describing installation of a product, system or material, including special notices and (SDS) concerning impedances, hazards and safety precautions.

#### SD-10 Operation and Maintenance Data

Data provided by the manufacturer, or the system provider, including manufacturer's help and product line documentation, necessary to maintain and install equipment, for operating and maintenance use by facility personnel.

Data required by operating and maintenance personnel for the safe and efficient operation, maintenance and repair of the item.

Data incorporated in an operations and maintenance manual or control system.

#### SD-11 Closeout Submittals

Documentation to record compliance with technical or administrative requirements or to establish an administrative mechanism.

Special requirements necessary to properly close out a construction contract. For example, Record Drawings and as-built drawings. Also, submittal requirements necessary to properly close out a major phase of construction on a multi-phase contract.

#### 1.1.2 Approving Authority

Office or designated person authorized to approve the submittal.

#### 1.1.3 Work

As used in this section, on-site and off-site construction required by contract documents, including labor necessary to produce submittals, construction, materials, products, equipment, and systems incorporated or to be incorporated in such construction. In exception, excludes work to produce SD-01 submittals.

#### 1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Submittal Register

#### 1.3 SUBMITTAL CLASSIFICATION

##### 1.3.1 For Information Only

Submittals not requiring Government approval will be for information only. Within the terms of the Contract Clause SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION, they are not considered to be "shop drawings."

#### 1.4 FORWARDING SUBMITTALS REQUIRING GOVERNMENT APPROVAL

As soon as practicable after award of contract, and before procurement or fabrication, forward to the Commander, NAVFAC Mid-Atlantic, FEAD Cherry Point (Design Management & Engineering Branch), PSC Box 8006, Building 87, Cherry Point, North Carolina, 28533-0006 submittals required in the technical sections of this specification, including shop drawings, product

data and samples. In addition, forward a copy of the submittals to the Contracting Officer at Commander, NAVFAC Mid-Atlantic, FEAD Cherry Point (Construction Branch), PSC Box 8006, Building 87, Cherry Point, North Carolina, 28533-0006.

Forward to the Commander, NAVFAC Mid-Atlantic, FEAD Cherry Point (Construction Branch), PSC Box 8006, Building 87, Cherry Point, North Carolina, 28533-0006, submittals required in the General Requirements sections of this specification.

#### 1.4.1 O&M Data

Submit data specified for a given item within 30 calendar days after the item is delivered to the contract site.

In the event the Contractor fails to deliver O&M data within the time limits specified, the Contracting Officer may withhold from progress payments 50 percent of the price of the items to which such O&M data apply.

### 1.5 PREPARATION

#### 1.5.1 Transmittal Form

Transmit each submittal, except sample installations and sample panels to the office of the approving authority using the transmittal form prescribed by the Contracting Officer. Include all information prescribed by the transmittal form and required in paragraph IDENTIFYING SUBMITTALS. Use the submittal transmittal forms to record actions regarding samples.

#### 1.5.2 Identifying Submittals

The Contractor's Quality Control Manager must prepare, review and stamp submittals, including those provided by a subcontractor, before submittal to the Government.

Identify submittals, except sample installations and sample panels, with the following information permanently adhered to or noted on each separate component of each submittal and noted on transmittal form. Mark each copy of each submittal identically, with the following:

- a. Project title and location
- b. Construction contract number
- c. Dates of the drawings and revisions
- d. Name, address, and telephone number of Subcontractor, supplier, manufacturer, and any other Subcontractor associated with the submittal.
- e. Section number of the specification by which submittal is required
- f. Submittal description (SD) number of each component of submittal
- g. For a resubmission, add alphabetic suffix on submittal description, for example, submittal 18 would become 18A, to indicate resubmission
- h. Product identification and location in project.

### 1.5.3 Submittal Format

#### 1.5.3.1 Format of SD-01 Preconstruction Submittals

When the submittal includes a document that is to be used in the project, or is to become part of the project record, other than as a submittal, do not apply the Contractor's certification stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

#### 1.5.3.2 Format for SD-02 Shop Drawings

Provide shop drawings not less than 8 1/2 by 11 inches nor more than 30 by 42 inches, except for full-size patterns or templates. Prepare drawings to accurate size, with scale indicated, unless another form is required. Ensure drawings are suitable for reproduction and of a quality to produce clear, distinct lines and letters, with dark lines on a white background.

- a. Include the nameplate data, size, and capacity on drawings. Also include applicable federal, military, industry, and technical society publication references.
- b. Dimension drawings, except diagrams and schematic drawings. Prepare drawings demonstrating interface with other trades to scale. Use the same unit of measure for shop drawings as indicated on the contract drawings. Identify materials and products for work shown.

Submit an electronic copy of drawings in PDF format.

##### 1.5.3.2.1 Drawing Identification

Include on each drawing the drawing title, number, date, and revision numbers and dates, in addition to information required in paragraph IDENTIFYING SUBMITTALS.

Number drawings in a logical sequence. Each drawing is to bear the number of the submittal in a uniform location next to the title block. Place the Government contract number in the margin, immediately below the title block, for each drawing.

Reserve a blank space, no smaller than four inches on the right-hand side of each sheet for the Government disposition stamp.

#### 1.5.3.3 Format of SD-03 Product Data

Present product data submittals for each section. Include a table of contents, listing the page and catalog item numbers for product data.

Indicate, by prominent notation, each product that is being submitted; indicate the specification section number and paragraph number to which it pertains.

##### 1.5.3.3.1 Product Information

Supplement product data with material prepared for the project to satisfy the submittal requirements where product data does not exist. Identify this material as developed specifically for the project, with information and format as required for submission of SD-07 Certificates.

Provide product data in units used in the Contract documents. Where product data are included in preprinted catalogs with another unit, submit the dimensions in contract document units, on a separate sheet.

#### 1.5.3.3.2 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

#### 1.5.3.3.3 Data Submission

Collect required data submittals for each specific material, product, unit of work, or system into a single submittal that is marked for choices, options, and portions applicable to the submittal. Mark each copy of the product data identically. Partial submittals will not be accepted for expedition of the construction effort.

Submit the manufacturer's instructions before installation.

#### 1.5.3.4 Format of SD-04 Samples

##### 1.5.3.4.1 Sample Characteristics

Furnish samples in the following sizes, unless otherwise specified or unless the manufacturer has prepackaged samples of approximately the same size as specified:

- a. Sample of Equipment or Device: Full size.
- b. Sample of Materials Less Than 2 by 3 inches: Built up to 8 1/2 by 11 inches.
- c. Sample of Materials Exceeding 8 1/2 by 11 inches: Cut down to 8 1/2 by 11 inches and adequate to indicate color, texture, and material variations.
- d. Sample of Linear Devices or Materials: 10 inch length or length to be supplied, if less than 10 inches. Examples of linear devices or materials are conduit and handrails.
- e. Sample Volume of Nonsolid Materials: Pint. Examples of nonsolid materials are sand and paint.
- f. Color Selection Samples: 2 by 4 inches. Where samples are specified for selection of color, finish, pattern, or texture, submit the full set of available choices for the material or product specified. Sizes and quantities of samples are to represent their respective standard unit.

- g. Sample Panel: 4 by 4 feet.
- h. Sample Installation: 100 square feet.

#### 1.5.3.4.2 Sample Incorporation

Reusable Samples: Incorporate returned samples into work only if so specified or indicated. Incorporated samples are to be in undamaged condition at the time of use.

Recording of Sample Installation: Note and preserve the notation of any area constituting a sample installation, but remove the notation at the final clean-up of the project.

#### 1.5.3.4.3 Comparison Sample

Samples Showing Range of Variation: Where variations in color, finish, pattern, or texture are unavoidable due to nature of the materials, submit sets of samples of not less than three units showing extremes and middle of range. Mark each unit to describe its relation to the range of the variation.

When color, texture, or pattern is specified by naming a particular manufacturer and style, include one sample of that manufacturer and style, for comparison.

#### 1.5.3.5 Format of SD-05 Design Data

Provide design data and certificates on 8 1/2 by 11 inch paper.

#### 1.5.3.6 Format of SD-06 Test Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

#### 1.5.3.7 Format of SD-07 Certificates

Provide design data and certificates on 8 1/2 by 11 inch paper.

#### 1.5.3.8 Format of SD-08 Manufacturer's Instructions

Present manufacturer's instructions submittals for each section. Include the manufacturer's name, trade name, place of manufacture, and catalog model or number on product data. Also include applicable federal, military, industry, and technical-society publication references. If supplemental information is needed to clarify the manufacturer's data, submit it as specified for SD-07 Certificates.

Submit the manufacturer's instructions before installation.

#### 1.5.3.8.1 Standards

Where equipment or materials are specified to conform to industry or technical-society reference standards of such organizations as the American National Standards Institute (ANSI), ASTM International (ASTM), National Electrical Manufacturer's Association (NEMA), Underwriters Laboratories (UL), or Association of Edison Illuminating Companies (AEIC), submit proof of such compliance. The label or listing by the specified organization

will be acceptable evidence of compliance. In lieu of the label or listing, submit a certificate from an independent testing organization, competent to perform testing, and approved by the Contracting Officer. State on the certificate that the item has been tested in accordance with the specified organization's test methods and that the item complies with the specified organization's reference standard.

#### 1.5.3.9 Format of SD-09 Manufacturer's Field Reports

By prominent notation, indicate each report in the submittal. Indicate the specification number and paragraph number to which each report pertains.

#### 1.5.3.10 Format of SD-10 Operation and Maintenance Data (O&M)

Comply with the requirements specified in Streamline SOW for O&M Data format.

#### 1.5.3.11 Format of SD-11 Closeout Submittals

When the submittal includes a document that is to be used in the project or is to become part of the project record, other than as a submittal, do not apply the Contractor's certification stamp to the document itself, but to a separate sheet accompanying the document.

Provide data in the unit of measure used in the contract documents.

### 1.5.4 Source Drawings for Shop Drawings

#### 1.5.4.1 Source Drawings

The entire set of source drawing files (DWG) will not be provided to the Contractor. Request the specific Drawing Number for the preparation of shop drawings. Only those drawings requested to prepare shop drawings will be provided. These drawings are provided only after award.

#### 1.5.4.2 Terms and Conditions

Data contained on these electronic files must not be used for any purpose other than as a convenience in the preparation of construction data for the referenced project. Any other use or reuse is at the sole risk of the Contractor and without liability or legal exposure to the Government. The Contractor must make no claim, and waives to the fullest extent permitted by law any claim or cause of action of any nature against the Government, its agents, or its subconsultants that may arise out of or in connection with the use of these electronic files. The Contractor must, to the fullest extent permitted by law, indemnify and hold the Government harmless against all damages, liabilities, or costs, including reasonable attorney's fees and defense costs, arising out of or resulting from the use of these electronic files.

These electronic source drawing files are not construction documents. Differences may exist between the source drawing files and the corresponding construction documents. The Government makes no representation regarding the accuracy or completeness of the electronic source drawing files, nor does it make representation to the compatibility of these files with the Contractor hardware or software. The Contractor is responsible for determining if any conflict exists. In the event that a conflict arises between the signed and sealed construction documents prepared by the Government and the furnished source drawing files, the

signed and sealed construction documents govern. Use of these source drawing files does not relieve the Contractor of the duty to fully comply with the contract documents, including and without limitation the need to check, confirm and coordinate the work of all contractors for the project. If the Contractor uses, duplicates or modifies these electronic source drawing files for use in producing construction data related to this contract, remove all previous indication of ownership (seals, logos, signatures, initials and dates).

#### 1.5.5 Electronic File Format

Provide submittals in electronic format, with the exception of material samples required for SD-04 Samples items. Compile the submittal file as a single, complete document, to include the Transmittal Form described within. Name the electronic submittal file specifically according to its contents, and coordinate the file naming convention with the Contracting Officer. Electronic files must be of sufficient quality that all information is legible. Use PDF as the electronic format, unless otherwise specified or directed by the Contracting Officer. Generate PDF files from original documents with bookmarks so that the text included in the PDF file is searchable and can be copied. If documents are scanned, optical character resolution (OCR) routines are required. Index and bookmark files exceeding 30 pages to allow efficient navigation of the file. When required, the electronic file must include a valid electronic signature or a scan of a signature.

E-mail electronic submittal documents smaller than 10MB to an e-mail address as directed by the Contracting Officer. Provide electronic documents over 10 MB on an optical disc or through an electronic file sharing system such as the DoD SAFE Web Application located at the following website: <https://safe.apps.mil/>.

#### 1.6 QUANTITY OF SUBMITTALS

##### 1.6.1 Number of SD-01 Preconstruction Submittal Copies

Unless otherwise specified, submit three sets of administrative submittals.

##### 1.6.2 Number of SD-04 Samples

- a. Submit two samples, or two sets of samples showing the range of variation, of each required item. One approved sample or set of samples will be retained by the approving authority and one will be returned to the Contractor.
- b. Submit one sample panel or provide one sample installation where directed. Include components listed in the technical section or as directed.
- c. Submit one sample installation, where directed.
- d. Submit one sample of nonsolid materials.

#### 1.7 INFORMATION ONLY SUBMITTALS

Submittals not requiring approval by the Government must be certified by the QC manager and submitted to the Contracting Officer for information-only. Approval of the Contracting Officer is not required on information only submittals. The Contracting Officer will mark "receipt

acknowledged" on submittals for information and will return only the transmittal cover sheet to the Contractor. Normally, submittals for information only will not be returned. However, the Government reserves the right to return unsatisfactory submittals and require the Contractor to resubmit any item found not to comply with the contract. This does not relieve the Contractor from the obligation to furnish material conforming to the plans and specifications; will not prevent the Contracting Officer from requiring removal and replacement of nonconforming material incorporated in the work; and does not relieve the Contractor of the requirement to furnish samples for testing by the Government laboratory or for check testing by the Government in those instances where the technical specifications so prescribe.

## 1.8 PROJECT SUBMITTAL REGISTER

A sample Project Submittal Register showing items of equipment and materials for when submittals are required by the specifications is provided at the end of this section.

### 1.8.1 Submittal Management

Prepare and maintain a submittal register, as the work progresses. Do not change data that is output in columns (c), (d), (e), and (f) as delivered by Government; retain data that is output in columns (a), (g), (h), and (i) as approved. As an attachment, provide a submittal register showing items of equipment and materials for which submittals are required by the specifications. This list may not be all-inclusive and additional submittals may be required.

Column (c): Lists specification section in which submittal is required.

Column (d): Lists each submittal description (SD Number. and type, e.g., SD-02 Shop Drawings) required in each specification section.

Column (e): Lists one principal paragraph in each specification section where a material or product is specified. This listing is only to facilitate locating submitted requirements. Do not consider entries in column (e) as limiting the project requirements.

Thereafter, the Contractor is to track all submittals by maintaining a complete list, including completion of all data columns and all dates on which submittals are received by and returned by the Government.

### 1.8.2 Preconstruction Use of Submittal Register

Submit the submittal register. Include the QC plan and the project schedule. Verify that all submittals required for the project are listed and add missing submittals. Coordinate and complete the following fields on the register submitted with the QC plan and the project schedule:

Column (a) Activity Number: Activity number from the project schedule.

Column (g) Contractor Submit Date: Scheduled date for the approving authority to receive submittals.

Column (h) Contractor Approval Date: Date that Contractor needs approval of submittal.

Column (i) Contractor Material: Date that Contractor needs material delivered to Contractor control.

### 1.8.3 Contractor Use of Submittal Register

Update the following fields with each submittal throughout the contract.

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (j) Action Code (k): Date of action used to record Contractor's review when forwarding submittals to QC.

Column (l) Date submittal transmitted.

Column (q) Date approval was received.

### 1.8.4 Approving Authority Use of Submittal Register

Update the following fields:

Column (b) Transmittal Number: List of consecutive, Contractor-assigned numbers.

Column (l) Date submittal was received.

Column (m) through (p) Dates of review actions.

Column (q) Date of return to Contractor.

### 1.8.5 Action Codes

#### 1.8.5.1 Government Review Action Codes

"A" - "Approved as submitted"  
"AN" - "Approved as noted"  
"RR" - "Disapproved as submitted"; "Completed"  
"NR" - "Not Reviewed"  
"RA" - "Receipt Acknowledged"

### 1.8.6 Delivery of Copies

Submit an updated electronic copy of the submittal register to the Contracting Officer with each invoice request. Provide an updated Submittal Register monthly regardless of whether an invoice is submitted.

## 1.9 VARIATIONS

Variations from contract requirements require Contracting Officer approval pursuant to contract Clause FAR 52.236-21 Specifications and Drawings for Construction, and will be considered where advantageous to the Government.

### 1.9.1 Considering Variations

Discussion of variations with the Contracting Officer before submission will help ensure that functional and quality requirements are met and

minimize rejections and resubmittals. For variations that include design changes or some material or product substitutions, the Government may require an evaluation and analysis by a licensed professional engineer hired by the contractor.

Specifically point out variations from contract requirements in a transmittal letter. Failure to point out variations may cause the Government to require rejection and removal of such work at no additional cost to the Government.

#### 1.9.2 Proposing Variations

When proposing variation, deliver a submittal, clearly marked as a "VARIATION" to the Contracting Officer, with documentation illustrating the nature and features of the variation including any necessary technical submittals and why the variation is desirable and beneficial to Government. If lower cost is a benefit, also include an estimate of the cost savings. In addition to documentation required for variation, include the submittals required for the item. Clearly mark the proposed variation in all documentation.

The Contracting Officer will indicate an approval or disapproval of the variation request; and if not approved as submitted, will indicate the Government's reasons therefore. Any work done before such approval is received is performed at the Contractor's risk.

#### 1.9.3 Warranting that Variations are Compatible

When delivering a variation for approval, the Contractor warrants that this contract has been reviewed to establish that the variation, if incorporated, will be compatible with other elements of work.

#### 1.9.4 Review Schedule Extension

In addition to the normal submittal review period, a period of 10 working days will be allowed for the Government to consider submittals with variations.

#### 1.10 SCHEDULING

Schedule and submit concurrently product data and shop drawings covering component items forming a system or items that are interrelated. Submit pertinent certifications at the same time. No delay damages or time extensions will be allowed for time lost in late submittals.

- a. Coordinate scheduling, sequencing, preparing, and processing of submittals with performance of work so that work will not be delayed by submittal processing. The Contractor is responsible for additional time required for Government reviews resulting from required resubmittals. The review period for each resubmittal is the same as for the initial submittal.
- b. Submittals required by the contract documents are listed on the submittal register. If a submittal is listed in the submittal register but does not pertain to the contract work, the Contractor is to include the submittal in the register and annotate it "N/A" with a brief explanation. Approval by the Contracting Officer does not relieve the Contractor of supplying submittals required by the contract documents but that have been omitted from the register or marked "N/A."

- c. Resubmit the submittal register and annotate it monthly with actual submission and approval dates. When all items on the register have been fully approved, no further resubmittal is required.

Contracting Officer review will be completed within 20 working days after the date of submission.

- d. Except as specified otherwise, allow a review period, beginning with receipt by the approving authority, that includes at least 20 working days for submittals where the Contracting Officer is the approving authority. The period of review for submittals with Contracting Officer approval begins when the Government receives the submittal from the QC organization.

#### 1.10.1 Reviewing, Certifying, and Approving Authority

The QC Manager is responsible for reviewing all submittals and certifying that they are in compliance with contract requirements. The approving authority on submittals is the Contracting Officer unless otherwise specified.

#### 1.10.2 Constraints

Conform to provisions of this section, unless explicitly stated otherwise for submittals listed or specified in this contract.

Submit complete submittals for each definable feature of the work. At the same time, submit components of definable features that are interrelated as a system.

When acceptability of a submittal is dependent on conditions, items, or materials included in separate subsequent submittals, the submittal will be returned without review.

Approval of a separate material, product, or component does not imply approval of the assembly in which the item functions.

#### 1.10.3 QC Organization Responsibilities

- a. Review submittals for conformance with project design concepts and compliance with contract documents.
- b. Process submittals based on the approving authority indicated in the submittal register.
  - (1) When the Contracting Officer is the approving authority or when variation has been proposed, forward the submittal to the Government, along with a certifying statement, or return the submittal marked "not reviewed" or "revise and resubmit" as appropriate. The QC organization's review of the submittal determines the appropriate action.
- c. Ensure that material is clearly legible.
- d. Stamp each sheet of each submittal with a QC certifying statement, except that data submitted in a bound volume or on one sheet printed on two sides may be stamped on the front of the first sheet only.

- (1) When the approving authority is the Contracting Officer, the QC organization will certify submittals forwarded to the Contracting Officer with the following certifying statement:

"I hereby certify that the (equipment) (material) (article) shown and marked in this submittal is that proposed to be incorporated with Contract Number (\_\_\_\_\_) is in compliance with the contract drawings and specification, can be installed in the allocated spaces, and is submitted for Government approval.

Certified by Submittal Reviewer \_\_\_\_\_, Date \_\_\_\_\_  
(Signature when applicable)

Certified by QC Manager \_\_\_\_\_, Date \_\_\_\_\_"  
(Signature)

- e. Sign the certifying statement. The QC organization member designated in the approved QC plan is the person signing certifying statements.
- f. Update the submittal register as submittal actions occur, and maintain the submittal register at the project site until final acceptance of all work by the Contracting Officer.
- g. Retain a copy of approved submittals and approved samples at the project site.

#### 1.11 GOVERNMENT APPROVING AUTHORITY

When the approving authority is the Contracting Officer, the Government will:

- a. Note the date on which the submittal was received from the QC manager.
- b. Review submittals for approval within the scheduling period specified and only for conformance with project design concepts and compliance with contract documents.
- c. Identify returned submittals with one of the actions defined in paragraph REVIEW NOTATIONS and with comments and markings appropriate for the action indicated.

Upon completion of review of submittals requiring Government approval, stamp and date submittals. Three copies of the submittal will be retained by the Contracting Officer and four copies of the submittal will be returned to the Contractor.

##### 1.11.1 Review Notations

Submittals will be returned to the Contractor with the following notations:

- a. Submittals marked "approved" or "accepted" authorize proceeding with the work covered.
- b. Submittals marked "approved as noted" or "approved, except as noted, resubmittal not required", authorize proceeding with the work covered provided that the Contractor takes no exception to the corrections.
- c. Submittals marked "not approved", "disapproved", or "revise and

resubmit" indicate incomplete submittal or noncompliance with the contract requirements or design concept. Resubmit with appropriate changes. Do not proceed with work for this item until the resubmittal is approved.

- d. Submittals marked "not reviewed" indicate that the submittal has been previously reviewed and approved, is not required, does not have evidence of being reviewed and certified by Contractor, or is not complete. A submittal marked "not reviewed" will be returned with an explanation of the reason it is not reviewed. Resubmit submittals returned for lack of review by Contractor or for being incomplete, with appropriate action, coordination, or change.
- e. Submittals marked "receipt acknowledged" indicate that submittals have been received by the Government. This applies only to "information-only submittals" as previously defined.

#### 1.12 DISAPPROVED SUBMITTALS

Make corrections required by the Contracting Officer. If the Contractor considers any correction or notation on the returned submittals to constitute a change to the contract drawings or specifications, give notice to the Contracting Officer as required under the FAR clause titled CHANGES. The Contractor is responsible for the dimensions and design of connection details and the construction of work. Failure to point out variations may cause the Government to require rejection and removal of such work at the Contractor's expense.

If changes are necessary to submittals, make such revisions and resubmit in accordance with the procedures above. No item of work requiring a submittal change is to be accomplished until the changed submittals are approved.

#### 1.13 APPROVED SUBMITTALS

The Contracting Officer's approval of submittals is not to be construed as a complete check, and indicates only that the general method of construction, materials, detailing, and other information are satisfactory.

Approval or acceptance by the Government for a submittal does not relieve the Contractor of the responsibility for meeting the contract requirements or for any error that may exist, because under the Quality Control (QC) requirements of this contract, the Contractor is responsible for ensuring information contained within each submittal accurately conforms with the requirements of the contract documents.

After submittals have been approved or accepted by the Contracting Officer, no resubmittal for the purpose of substituting materials or equipment will be considered unless accompanied by an explanation of why a substitution is necessary.

#### 1.14 APPROVED SAMPLES

Approval of a sample is only for the characteristics or use named in such approval and is not to be construed to change or modify any contract requirements. Before submitting samples, provide assurance that the materials or equipment will be available in quantities required in the project. No change or substitution will be permitted after a sample has been approved.

Match the approved samples for materials and equipment incorporated in the work. If requested, approved samples, including those that may be damaged in testing, will be returned to the Contractor, at its expense, upon completion of the contract. Unapproved samples will also be returned to the Contractor at its expense, if so requested.

Failure of any materials to pass the specified tests will be sufficient cause for refusal to consider, under this contract, any further samples of the same brand or make as that material. The Government reserves the right to disapprove any material or equipment that has previously proved unsatisfactory in service.

Samples of various materials or equipment delivered on the site or in place may be taken by the Contracting Officer for testing. Samples failing to meet contract requirements will automatically void previous approvals. Replace such materials or equipment to meet contract requirements.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

-- End of Section --

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION		CONTRACTOR										CONTRACT NO.						
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT OR A/E REVIEW CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY			REMARKS			
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	ACTION CODE	DATE OF ACTION	DATE FWD TO APPR AUTH/ FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	ACTION CODE		DATE OF ACTION	MAILED TO CONTR/ DATE RCD FRM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
	01 33 00		SD-01 Preconstruction Submittals															
			Submittal Register	1.8														
	02 83 00		SD-01 Preconstruction Submittals															
			Competent Person	1.5.1.1														
			Training Certification	1.5.1.2														
			Occupational and Environmental Assessment Data Report	1.5.2.3														
			Medical Examinations	1.5.2.4														
			Lead, Cadmium, Chromium	1.5.2.8														
			Waste Management Plan															
			Licenses, Permits and Notifications	1.5.4														
			Occupant Protection Plan	1.5.5														
			Lead, Cadmium, Chromium	1.5.2.2														
			Compliance Plan															
			Lead, Cadmium, Chromium	3.1.1.6														
			Compliance Plan															
			Written Evidence of TSD Approval	3.5.2.1														
			SD-03 Product Data															
			Respirators	1.6.1														
			Vacuum Filters	1.6.4														
			Negative Air Pressure System	1.6.7														
			Materials and Equipment	2.1														
			Expendable Supplies	2.1.1														
			Local Exhaust Equipment	3.1.1.5														

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION		CONTRACTOR										CONTRACT NO.						
ACTIVITY NO	TRANSMITTAL NO	SPECIES	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT OR A/E REVIEW CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY			REMARKS			
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	DATE FWD TO APPR AUTH/	DATE RCD FROM CONTR	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	DATE OF ACTION	DATE OF ACTION		DATE OF ACTION	DATE RCD FROM APPR AUTH	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
	02 83 00		Pressure Differential Automatic Recording Instrument	3.1.1.5														
			Pressure Differential Log	3.1.1.6														
			SD-06 Test Reports	1.3.3														
			Sampling and Analysis	1.5.2.3														
			Occupational and Environmental Assessment Data Report	1.5.2.3														
			Sampling Results	1.5.3														
			Pressure Differential Recordings For Local Exhaust System															
			SD-07 Certificates															
			Testing Laboratory	1.5.1.3														
			Occupant Notification	3.1.1.1														
			Clearance Certification	3.5.1.1														
			SD-11 Closeout Submittals															
			Hazardous Waste Manifest	3.5.2.1														
	07 92 00		SD-03 Product Data															
			Sealants	2.1														
			Primers	2.2														
			Bond Breakers	2.3														
			Field Adhesion	3.1														
			SD-07 Certificates															
			Indoor Air Quality For Interior	2.1.1														
			Sealants															
	09 90 00		SD-03 Product Data															
			Coating	2.1														

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION		CONTRACTOR										CONTRACT NO.						
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT OR A/E REVIEW CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY			REMARKS			
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	DATE FWD TO APPR AUTH/	DATE FWD TO OTHER REVIEWER	DATE RCD FROM OTH REVIEWER	DATE OF ACTION	DATE OF ACTION	DATE OF ACTION		DATE RCD FROM APPR AUTH		
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
	09 90 00		Product Data Sheets	2.1														
			SD-04 Samples	2.2														
			Color															
			SD-07 Certificates															
			Qualification Testing	1.5.5.2														
			Indoor Air Quality for Paints and Primers	1.5.4														
			SD-08 Manufacturer's Instructions															
			Application Instructions	3.2.1														
			Mixing	2.1														
			Manufacturer's Safety Data Sheets	1.7.1														
			SD-10 Operation and Maintenance Data															
			Coatings	2.1														
	10 21 13		SD-02 Shop Drawings															
			Fabrication Drawings	2.1														
			Installation Drawings	3.3														
			SD-03 Product Data															
			Cleaning and Maintenance Instructions	2.1														
			Colors And Finishes	2.7														
			Anchoring Devices and Fasteners	2.2.2														
			Hardware and Fittings	2.2.4														
			Brackets	2.2.3														

# SUBMITTAL REGISTER

CONTRACT NO.

TITLE AND LOCATION		CONTRACTOR										CONTRACT NO.						
ACTIVITY NO	TRANSMITTAL NO	SPEC SECT	DESCRIPTION ITEM SUBMITTED	PARAGRAPH	GOVT OR A/E REVIEW CLASSIFICATION	CONTRACTOR SCHEDULE DATES			CONTRACTOR ACTION			APPROVING AUTHORITY			REMARKS			
						SUBMIT	APPROVAL NEEDED BY	MATERIAL NEEDED BY	DATE FWD TO APPR AUTH/	DATE FWD TO OTHER REVIEWER	DATE FWD TO OTHER REVIEWER	DATE OF ACTION	DATE OF ACTION	DATE OF ACTION		DATE RCD FROM APPR AUTH	DATE RCD FROM APPR AUTH	DATE RCD FROM APPR AUTH
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	(q)	(r)	
	10 21 13		Door Hardware	2.2.5														
			Toilet Enclosures	2.3.1														
			Pilaster Shoes	2.5														
			Finishes	2.2.4.2														
			Finishes	2.7.2														
			SD-04 Samples															
			Colors and Finishes	2.7														
			Hardware and Fittings	2.2.4														
			Anchoring Devices and Fasteners	2.2.2														
			SD-07 Certificates															
			Warranty	1.6														
			SD-10 Operation and Maintenance															
			Data															
			Plastic Identification	2.1.1														
	10 28 13		SD-02 Shop Drawings															
			Product Schedule	2.1														
			SD-03 Product Data															
			Item A5109	2.1.3														
			Item A5200	2.1.5														
			Mirror, Wall Mounted	2.1.4														
			SD-10 Operation and Maintenance															
			Data															
			Item A5109	2.1.3														
			Item A5200	2.1.5														
	22 00 00		SD-03 Product Data															



## SECTION 01 42 00

## SOURCES FOR REFERENCE PUBLICATIONS

02/19

## PART 1 GENERAL

## 1.1 REFERENCES

Various publications are referenced in other sections of the specifications to establish requirements for the work. These references are identified in each section by document number, date and title. The document number used in the citation is the number assigned by the standards producing organization (e.g., ASTM B564 Standard Specification for Nickel Alloy Forgings). However, when the standards producing organization has not assigned a number to a document, an identifying number has been assigned for reference purposes.

## 1.2 ORDERING INFORMATION

The addresses of the standards publishing organizations whose documents are referenced in other sections of these specifications are listed below, and if the source of the publications is different from the address of the sponsoring organization, that information is also provided.

ALUMINUM ASSOCIATION (AA)  
1400 Crystal Drive  
Suite 430  
Arlington, VA 22202  
Ph: 703-358-2960  
E-Mail: [info@aluminum.org](mailto:info@aluminum.org)  
Internet: <https://www.aluminum.org/>

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)  
1330 Kemper Meadow Drive  
Cincinnati, OH 45240  
Ph: 513-742-2020  
Fax: 513-742-3355  
Internet: <https://www.acgih.org/>

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)  
Two Park Avenue  
New York, NY 10016-5990  
Ph: 800-843-2763  
Fax: 973-882-1717  
E-mail: [customercare@asme.org](mailto:customercare@asme.org)  
Internet: <https://www.asme.org/>

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)  
520 N. Northwest Highway  
Park Ridge, IL 60068  
Ph: 847-699-2929  
E-mail: [customerservice@assp.org](mailto:customerservice@assp.org)  
Internet: <https://www.assp.org/>

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)  
18927 Hickory Creek Drive, Suite 220  
Mokena, IL 60448

Ph: 708-995-3019  
Fax: 708-479-6139  
Internet: <http://www.asse-plumbing.org>

AMERICAN WELDING SOCIETY (AWS)  
8669 NW 36 Street, #130  
Miami, FL 33166-6672  
Ph: 800-443-9353  
Internet: <https://www.aws.org/>

ASTM INTERNATIONAL (ASTM)  
100 Barr Harbor Drive, P.O. Box C700  
West Conshohocken, PA 19428-2959  
Ph: 610-832-9500  
Fax: 610-832-9555  
E-mail: [service@astm.org](mailto:service@astm.org)  
Internet: <https://www.astm.org/>

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)  
PO Box 997377, MS 0500  
Sacramento, CA 95899-7377  
Ph: 916-558-1784  
Internet: <https://www.cdph.ca.gov/>

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)  
1600 Clifton Road  
Atlanta, GA 30329-4027  
Ph: 800-232-4636  
TTY: 888-232-6348  
Internet: <https://www.cdc.gov>

COPPER DEVELOPMENT ASSOCIATION (CDA)  
Internet: <https://www.copper.org/>

INTERNATIONAL CODE COUNCIL (ICC)  
500 New Jersey Avenue, NW  
6th Floor, Washington, DC 20001  
Ph: 800-786-4452 or 888-422-7233  
Fax: 202-783-2348  
E-mail: [order@iccsafe.org](mailto:order@iccsafe.org)  
Internet: <https://www.iccsafe.org/>

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS  
INDUSTRY (MSS)  
127 Park Street, NE  
Vienna, VA 22180-4602  
Ph: 703-281-6613  
E-mail: [info@msshq.org](mailto:info@msshq.org)  
Internet: <http://msshq.org>

MASTER PAINTERS INSTITUTE (MPI)  
2800 Ingleton Avenue  
Burnaby, BC CANADA V5C 6G7  
Ph: 1-888-674-8937  
Fax: 1-888-211-8708  
E-mail: [info@paintinfo.com](mailto:info@paintinfo.com) or [techservices@mpi.net](mailto:techservices@mpi.net)  
Internet: <http://www.mpi.net/>

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)  
1 Batterymarch Park  
Quincy, MA 02169-7471  
Ph: 800-344-3555  
Fax: 800-593-6372  
Internet: <https://www.nfpa.org>

NSF INTERNATIONAL (NSF)  
789 North Dixboro Road  
P.O. Box 130140  
Ann Arbor, MI 48105  
Ph: 734-769-8010 or 800-NSF-MARK  
Fax: 734-769-0109  
E-mail: [info@nsf.org](mailto:info@nsf.org)  
Internet: <http://www.nsf.org>

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)  
2000 Powell Street, Suite 600  
Emeryville, CA 94608  
Ph: 510-452-8000  
Fax: 510-452-8001  
E-mail: [info@SCSglobalservices.com](mailto:info@SCSglobalservices.com)  
Internet: <https://www.scsglobalservices.com/>

SOCIETY FOR PROTECTIVE COATINGS (SSPC)  
800 Trumbull Drive  
Pittsburgh, PA 15205  
Ph: 877-281-7772 or 412-281-2331  
Fax: 412-444-3591  
E-mail: [customerservice@sspc.org](mailto:customerservice@sspc.org)  
Internet: <http://www.sspc.org>

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)  
21865 Copley Drive  
Diamond Bar, CA 91765  
Ph: 909-396-2000  
E-mail: [webinquiry@aqmd.gov](mailto:webinquiry@aqmd.gov)  
Internet: <http://www.aqmd.gov>

U.S. ARMY CORPS OF ENGINEERS (USACE)  
CRD-C DOCUMENTS available on Internet:  
<http://www.wbdg.org/ffc/army-coe/standards>  
Order Other Documents from:  
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E-mail: [hqpublications@usace.army.mil](mailto:hqpublications@usace.army.mil)  
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or  
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U.S. DEPARTMENT OF DEFENSE (DOD)  
Order DOD Documents from:  
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Obtain Military Specifications, Standards and Related Publications  
from:

Acquisition Streamlining and Standardization Information System  
(ASSIST)

Department of Defense Single Stock Point (DODSSP)

Document Automation and Production Service (DAPS)

Building 4/D

700 Robbins Avenue

Philadelphia, PA 19111-5094

Ph: 215-697-6396 - for account/password issues

Internet: <https://assist.dla.mil/online/start/>; account  
registration required

Obtain Unified Facilities Criteria (UFC) from:

Whole Building Design Guide (WBDG)

National Institute of Building Sciences (NIBS)

1090 Vermont Avenue NW, Suite 700

Washington, DC 20005

Ph: 202-289-7800

Fax: 202-289-1092

Internet:

<https://www.wbdg.org/ffc/dod/unified-facilities-criteria-ufc>

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD User

P.O. Box 23268

Washington, DC 20026-3268

Ph: 800-245-2691 or 202-708-3178

TDD: 800-927-7589

Fax: 202-708-9981

E-mail: [helpdesk@huduser.gov](mailto:helpdesk@huduser.gov)

Internet: <https://www.huduser.gov>

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

1200 Pennsylvania Avenue, N.W.

Washington, DC 20004

Ph: 202-564-4700

Internet: <https://www.epa.gov>

--- Some EPA documents are available only from:

National Technical Information Service (NTIS)

5301 Shawnee Road

Alexandria, VA 22312

Ph: 703-605-6060 or 1-800-363-2068

Fax: 703-605-6880

TDD: 703-487-4639

E-mail: [info@ntis.gov](mailto:info@ntis.gov)

Internet: <https://www.ntis.gov/>

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

General Services Administration

1800 F Street, NW

Washington, DC 20405

Ph: 1-844-472-4111

Internet: <https://www.gsa.eplibrary.gsa.gov/ElibMain/home.do>

Obtain documents from:

Acquisition Streamlining and Standardization Information System  
(ASSIST)

Internet: <https://assist.dla.mil/online/start/>; account  
registration required

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)  
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Internet: <https://www.gpo.gov/>

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)  
1322 Patterson Ave. SE, Suite 1000  
Washington Navy Yard, DC 20374-5065  
Ph: 202-685-9387  
Internet: <http://www.navfac.navy.mil>

UNDERWRITERS LABORATORIES (UL)  
2600 N.W. Lake Road  
Camas, WA 98607-8542  
Ph: 877-854-3577 or 360-817-5500  
E-mail: [CustomerExperienceCenter@ul.com](mailto:CustomerExperienceCenter@ul.com)  
Internet: <https://www.ul.com/>  
UL Directories available through IHS at <https://ihsmarkit.com/>

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

Not used

-- End of Section --

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SECTION 01 80 00

REPORTS

04/15

PART 1 GENERAL

1.1 REPORTS INCLUDED

1.1.1 Asbestos and Lead Paint Inspection Report

CE&I Lead Inspection Report (415) - Building B286 MCAS Cherry Point, Havelock, NC

CE&I Limited Asbestos Assessment - Building B286 MCAS Cherry Point, Havelock, NC

1.2 USE OF INFORMATION

1.2.1 Warranty

The information disclosed in the referenced reports is based on data obtained in specific locations and is assumed to be representative of conditions throughout the site. This information is furnished without warranty and is only for general information to be used by the contractor in the preparation of his bid and work schedule. It is not intended as a replacement for personal investigation and judgment, or interpretation of the information furnished, as required of the contractor in the performance of this contract.

1.2.2 Site Visit

Bidders should visit the site and acquaint themselves with all existing conditions prior to preparing their bid. This will include a review of the conditions contained in the enclosed report as they relate to the site. The contractor is responsible for including in his bid and work schedule, procedures for handling existing site conditions delineated in the included reports in accord with applicable laws and regulations as those conditions may affect the work.

1.2.3 Application of Information

Recommendations contained in the reports are to be used by the contractor only to the extent that these recommendations comply with applicable laws, regulations, and other sections of the these specifications.

PART 2 PRODUCTS

Not used.

PART 3 EXECUTION

3.1 VARYING CONDITIONS

If during the course of the work, conditions are encountered which are not covered in the included reports or are different from conditions that would be reasonably anticipated from the included reports, the contractor shall immediately notify the Contracting Officer. If such conditions are

hazardous or the continuation of work would cause a hazardous condition to develop, he shall stop work and proceed as directed by the Contracting Officer as directed by provisions contained in other sections of this specification. This may include modifications to, or the development of a new, Health and Safety Plan for this project, and alternate or additional appropriate abatement procedures.

### 3.2 CHANGES TO THE CONTRACT

Any changes to the contract made as a result of site conditions which differ from those delineated in the report may result in an adjustment of the contract amount. The adjustment will be an increase or decrease depending on the scope and nature of the change and will be in accord with other provisions of these specifications.

-- End of Section --

# Coastal Environmental and Inspections, LLC

November 16, 2022

CE&I Project #: 415-ASB-Pb-22

GCR  
Attn: Kris Nicholls  
25 Jackson Drive  
Havelock, NC 28532

## Re: Building B286 MCAS Cherry Point, Havelock, NC 28533; Men's Restroom Lead Assessment Results

On November 9, 2022, Coastal Environmental and Inspections, LLC (CE&I) was contracted to complete a lead paint assessment at the above referenced location. The purpose of this inspection was to determine if lead-containing paint is present prior to repairs and renovations.

The front side directional reference is determined by facing 5<sup>th</sup> Street from within the building. The right side, rear side, and left side directional references follow clockwise from the front side orientation.

### Lead Paint Chip Sample Collection and Laboratory Analysis

The collected paint chip samples were placed in individual centrifuge tubes, assigned unique sample identification numbers, logged onto a chain of custody, and shipped to Accurate Analytical Testing (AAT). Lead analysis of the paint chip samples was performed utilizing the EPA SW-846 7420 and 3050B methodologies.

### Federal Regulations

The Occupational Safety and Health Administration (OSHA) defines any detectable level of lead in paint a concern when repair, renovation, or demolition work will impact lead coated surfaces.

### Lead Paint Chip Sample Results

The lead paint chip sample results are reported as percent by weight (% by weight). The following lists the sample numbers, sample descriptions and locations, sample results, and calculated reporting limits:

Lead Paint Chip Sample Results			
Sample #	Sample Description and Locations	Results (% by weight)	Calculated Reporting Limit (% by weight)
110922-NF-101	Off-white paint on the front right wall within the Men's Restroom	0.0023	0.0006
110922-NF-102	Off-white paint on the rear wall within the Men's Restroom	0.0024	0.0007
110922-NF-103	Off-white paint on the left side partition wall within the Men's Restroom	0.0007	0.0037
110922-NF-104	Off-white paint on the right side partition wall within the Men's Restroom	0.0008	0.0011

### Conclusions:

Based on the AAT analytical results, the following components were identified as being coated with lead-containing paint:

- Off-white paint on the walls
- Off-white paint on the partition walls

Repair or renovation activities that will impact the above outlined component shall be completed by lead certified firms utilizing certified lead trained personnel. Lead control measures should utilize "lead safe work practices" as outlined by OSHA.

Should you have any questions regarding this lead report, please do not hesitate to contact me.

Thank you,

Warren Plautz

Warren Plautz, CIEC, Industrial Hygienist

Enclosures: AAT Laboratory Results

**Certificate of Analysis: Lead In Paint by EPA SW-846 Method 7000B/3050B\***

<b>Client :</b> Coastal Environmental and Inspections LLC 202 Nantucket Court Wilmington, NC 28412	<b>AAT Project :</b> 855521
<b>Attn :</b> Warren Plautz <b>Email :</b> coastal.eai@gmail.com	<b>Sampling Date :</b> 11/09/2022
<b>Phone :</b> 910-233-7208 <b>Fax :</b>	<b>Date Received :</b> 11/11/2022
	<b>Date Analyzed :</b> 11/11/2022
	<b>Date Reported :</b> 11/11/2022
<b>Client Project :</b> 415-ASB-PB-22	
<b>Project Location :</b> BUILDING B286 MCAS CHERRY POINT HAVELOCK	

Lab Sample ID	Client Code	Sample Description	PPM	Result Lead (% by weight)	Calculated R L (% by weight)
7956221	110922-NF-101	FRT RGHT MNS BATH FRT WALL OFF WP	23	0.0023	0.0006
7956222	110922-NF-102	FRT RGHT MNS BATH REAR WALL OFF WP	24	0.0024	0.0007
7956223	110922-NF-103	FRT RGHT MNS BATH LFT PAR WALL O WP	7	0.0007	0.0037
7956224	110922-NF-104	MNS FRT RGHT BATHR RGHT PAR W O WP	8	0.0008	0.0011

Analyst Signature



Alexis Pheeneey

ND = Not Detected, N/A = Not Available, RL = Reporting Limit, Analytical Reporting Limit is 5 ug/sample. For true values assume (2) significant figures. The method, batch, and sample Quality Control are acceptable unless otherwise stated. AAT internal SOP S218. The laboratory operates in accord with ISO 17025 guidelines and holds limited scopes of accreditation under AIHA-LAP and NY State DOH ELAP programs. These results are submitted pursuant to AAT, LLC current terms and conditions of sale, including the company's standard warranty and limitation of liability provisions. Analytical results relate to the samples as received by the lab. Results in mg/cm2 are calculated based on sample area dimensions supplied by the client. AAT will not assume any liability or responsibility for the manner in which the results are used or interpreted. Reproduction of this document other than in its entirety is not authorized by AAT, LLC. AAT does not blank correct reported values. Sample data apply only to items analyzed. Current EPA/HUD Interim Standard for lead in paint samples is: 5000 PPM (parts per million) or ug/g which is equivalent to 0.5% by weight. EPA definition of lead-based paint: 1.0 mg/cm2. New York City Regulatory Limits: 0.25% by weight or 0.5 mg/cm2 for investigations for a child. MD and Philadelphia definition of lead-based paint: 0.7 mg/cm2. Note: Samples are stored for 15 days following report date. \* = Validated modified method

AIHA LAP- Lab ID #100986. NY State DOH ELAP -Lab ID #11864. State of Ohio- Lab ID # 10042





30105 Beverly Road  
Romulus, MI 48174  
Ph: 734-629-8161; Fax: 734-629-8431

To : Coastal Environmental and Inspections LLC  
202 Nantucket Court  
Wilmington, NC 28412

AAT Project : 855521  
Client Project : 415-ASB-PB-22  
Date Reported : 11/11/2022

Attn : Warren Plautz                      Email : coastal.eai@gmail.com  
Phone : 910-233-7208

Project Location : BUILDING B286 MCAS CHERRY POINT HAVELOCK

Sample	Client Code	Analysis Requested	Completed	Analyst
7956221	110922-NF-101	Lead Paint	11/11/2022	Alexis Pheeneey
7956222	110922-NF-102	Lead Paint	11/11/2022	Alexis Pheeneey
7956223	110922-NF-103	Lead Paint	11/11/2022	Alexis Pheeneey
7956224	110922-NF-104	Lead Paint	11/11/2022	Alexis Pheeneey

Reviewed By

Elyse Bidle  
Quality Assurance Coordinator

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30105 BEVERLY RD.  
 ROMULUS MI 48174  
 (734) 699-LABS (5227)  
 FAX: (734) 699-8407  
[www.accurate-test.com](http://www.accurate-test.com)



**SUBMITTING COMPANY**  
 Coastal Environmental & Inspections, LLC  
 202 Nantucket Court  
 Wilmington, NC 28412

**CONTACT INFORMATION**  
 Office:  
 Fax:  
 Cell: (910) 233-7208  
 Email: [coastal.eai@gmail.com](mailto:coastal.eai@gmail.com)

PO # \_\_\_\_\_

PROJECT NUMBER	415-ASB-PB-22	SAMPLING DATE:	11 / 09 / 22	REQUESTED ANALYSIS	LEAD	Request Turnaround time (please check one) SAME DAY ( ) 24 Hour ( X ) 48 Hour ( ) 72 hours ( ) If none indicated, default is 72 hours.
PROJECT ADDRESS	Building B286 MCAS Cherry Point, Havelock			SINGLE WIPE DUST	( )	
SAMPLE START TIME	SAMPLE END TIME			COMPOSITE SOIL	( )	
RISK ASSESSOR	Nicholas Fravel			PAINT CHIP	% By Wt ( X ) mg/cm <sup>2</sup> ( )	

LAB ID	CLIENT SAMPLE ID	DESCRIPTION	WS, WT, F	WIPE AREA (e.g. 12in X 12in)	CLIENT COMMENTS
	110922-NF-101	Front Right Mens Bathroom-Front Wall-Off White Paint			Risk Assessor: _____ Nicholas Fravel Samples shipped
	110922-NF-102	Front Right Mens Bathroom-Rear Wall-Off White Paint			
	110922-NF-103	Front Right Mens Bathroom-Left Partitian wall-Off White Paint			
	110922-NF-104	Mens Front Right Bathroom-Right Partitian wall-Off White Paint			
					<b>SAMPLE CONDITION</b>
					SEALS INTACT Y N
					CONTAINERS LABELED Y N
					RECVD & ACCEPTED Y N
					<b>LAB REMARKS</b>
					2662
					85321
					LAB PROJECT NUMBER

SAMPLES RELINQUISHED BY	SAMPLES RECEIVED BY	Date	TIME
<i>N Fravel</i>		11/9/2022	AM PM
	<i>[Signature]</i>		AM PM
			AM PM

By submitting samples to AAT, the client agrees to AAT's terms and conditions.

# Coastal Environmental and Inspections, LLC

November 16, 2022

CE&I Project #: 415-ASB-Pb-22

GCR  
Attn: Kris Nicholls  
25 Jackson Drive  
Havelock, NC 28532

## **Re: Building B286 MCAS Cherry Point, Havelock, NC 28533; Asbestos PLM Bulk Sample Results – Men’s Restroom**

On November 9, 2022, Coastal Environmental and Inspections, LLC (CE&I) representative Nick Fravel (NC Asbestos Inspector Accreditation #: 12946) was contracted to complete a limited asbestos assessment at the above referenced location. The purpose of this assessment was to determine if asbestos-containing materials (ACMs) are present prior to renovations.

CE&I completed the asbestos assessment in general accordance with the Environmental Protection Agency (EPA) Standard 40 CFR 763 Subpart E, Asbestos Hazard Emergency Response Act (AHERA) and the Occupational Safety and Health Administration (OSHA) Standard 29 CFR 1926.1101 Inspection Protocol. Per the National Emission Standards for Hazardous Air Pollutants (NESHAP) regulations, the identification of ACMs is required prior to renovation or demolition activities.

The front side directional reference is determined by facing *5<sup>th</sup> Street* from within the building. The right side, rear side, and left side directional references follow clockwise from the front side orientation.

At the initiation of the assessment, a visual inspection was conducted to determine Homogeneous Areas (HGAs), functional spaces, and sample locations. HGAs are suspect ACMs that are denoted by their color, texture, date of installation, and installation within the same functional space or spaces. Functional spaces are rooms, groups of rooms, or areas defined by the inspector, such as kitchens, restrooms, crawlspaces, or attics. The collection of suspect asbestos-containing materials, similar in appearance and texture, is required in all locations if they are installed in different functional spaces or on different dates.

Each HGA is further categorized as a surfacing material (e.g. plaster, ceiling texture, fire proofing), miscellaneous material (e.g. vinyl flooring, mastics, ceiling tiles), or thermal system insulation (e.g. pipe and tank insulation). Once categorized as surfacing material (SM), miscellaneous material (MM), or thermal system insulation (TSI), these materials are identified as friable or non-friable. Friable materials are defined as materials that can be pulverized or reduced to powder by hand pressure.

Per federal regulations, the collection of multiple samples is required for each homogenous suspect asbestos-containing material. CE&I collected ten (10) bulk samples of the suspect asbestos-containing materials. Each asbestos bulk sample was placed in an individual sample bag, assigned a unique sample identification number, logged onto a chain of custody, and shipped to a third-party laboratory, Eurofins CEI (ECEI). Asbestos analysis of the bulk samples was performed utilizing the Polarized Light Microscopy (PLM) EPA 600/R93/116 and EPA 600/M4-82/020 methodologies (ECEI National Voluntary Laboratory Accreditation Plan (NVLAP) Lab Code 101768-0).

Federal regulations also require laboratories to separately analyze each homogeneous material within a submitted bulk sample. If a material is identified as asbestos containing, a positive stop instruction was issued to omit sample analysis of the same materials. Upon completion of the laboratory analysis, a total of ten (10) samples were analyzed from the ten (10) submitted bulk samples.

An asbestos-containing material is defined, by the EPA, as any material containing greater than one percent (>1%) asbestos as outlined in Appendix A, Subpart F, 40 CFR Part 763 Section 1, PLM.

### **Summary of the Asbestos Results**

The following lists the sample numbers, sample descriptions/locations, results, and estimated quantities of the

materials:

<b>CE&amp;I Summary Table - Asbestos PLM Analytical Results</b>						
Sample #	Material Description and Location	Category	F/NF	Analytical Result	Total Estimated Quantity	
110922-NF-01	First Layer	Brown, orange vinyl sheet flooring within the Men's Restroom - Front side	MM	NF	Chrysotile Asbestos 20%	150 SF
	Second Layer	Tan mastic	MM	NF	Chrysotile Asbestos 2%	
110922-NF-02	Sample Not Analyzed Per COC					
110922-NF-03	Gray cinder block mortar within the Men's Restroom - Front side	MM	NF	None Detected	390 SF	
110922-NF-04	Gray cinder block mortar within the Men's Restroom - Rear side	MM	NF	None Detected		
110922-NF-05	White caulking encompassing the toilets - Left side	MM	NF	None Detected	20 LF	
110922-NF-06	White caulking encompassing the toilets - Right side	MM	NF	None Detected		
110922-NF-07	White cinder block sealant within the Men's Restroom - Front side	MM	NF	None Detected	290 SF	
110922-NF-08	White cinder block sealant within the Men's Restroom - Rear side	MM	NF	None Detected		
110922-NF-09	White, gray ceiling tile within the Men's Restroom - Front side	MM	NF	None Detected	150 SF	
110922-NF-10	White, gray ceiling tile within the Men's Restroom - Rear side	MM	NF	None Detected		

Category: MM – Miscellaneous Material; SM – Surfacing Material; TSI – Thermal System Insulation  
 F/NF: F – Friable; NF – Non-Friable

Total Estimated Quantity: Reflects the approximate square feet (SF) or linear feet (LF) of all the areas where the material was observed, including the sampling locations

**Conclusions:**

**Asbestos-Containing Materials - Greater Than One Percent Asbestos**

Based on the ECEI analytical results, the following materials were identified as asbestos-containing materials (>1% asbestos):

Men's Restroom

- Brown, orange vinyl sheet flooring and the associated tan mastic

Asbestos abatement of the above listed materials is required prior to any demolition, renovation, or maintenance activity that will impact these materials. This abatement shall be performed in accordance with all Federal, State, and local asbestos regulations, utilizing North Carolina accredited personnel.

Note: It is the responsibility of the abatement contractor to get an exact measurement of the asbestos-containing material(s) prior to submitting an asbestos abatement proposal.

**Non-Asbestos-Containing Materials**

Based on the ECEI analytical results, the following materials were not identified as asbestos-containing materials (None Detected):

Men's Restroom

- Gray cinder block mortar

- White caulking encompassing the toilets
- White cinder block sealant
- White, gray ceiling tiles

### **Recommendations and Regulatory Requirements**

The ECEI laboratory results identified one or more building materials that contain >1% asbestos on the exterior of Building B1372. All homogenous building materials that are the same in appearance, texture, installation date, and installed within the same functional space(s) are considered asbestos-containing. Per EPA regulations, one lab analysis result of greater than one percent identifies a material as asbestos-containing, regardless of additional sample results.

### **Federal Renovation or Demolition Requirements**

The EPA's NESHAP asbestos regulation, (40 CFR 61, Subpart M, Section 61.145), requires that friable asbestos-containing materials, nonfriable asbestos-containing materials which may become friable, and non-friable materials be removed properly prior to renovation or demolition activities. Additionally, the Occupational Safety and Health Administration (OSHA) asbestos standards (29 CFR 1910 and 1926) address general industry and construction industry employees' asbestos exposure. These standards set asbestos exposure limits which, if exceeded, require medical surveillance and training programs for the employees. Engineering controls, such as proper work practices, respiratory protection and protective clothing are also outlined to achieve compliance with potential exposures. The OSHA asbestos standards also require posting of danger signs in regulated areas, attaching danger labels on products containing asbestos, and attaching warning labels to waste containers. Based on the survey results, CE&I recommends the following actions prior to demolition, renovation, or maintenance activities that will impact this material:

- The vinyl sheet flooring and mastic can be removed utilizing non-friable methods by North Carolina accredited asbestos personnel. If abatement methods will render these materials friable, these materials shall be abated within a negative pressure containment utilizing critical barriers, HEPA filtration and wet methods, by North Carolina asbestos accredited personnel.
- An accredited asbestos air monitor shall conduct all air monitoring (during abatement and clearance) if required and the visual assessments following abatement.

### **North Carolina Renovation or Demolition Requirements**

North Carolina regulations (G.S. 130A-444 through 451) require accreditation of personnel who work in the asbestos field and notification and removal permit fees for asbestos removal projects. Additionally, for projects requiring the removal of more than three thousand (3,000) square feet require a removal design and an air monitoring plan. The air clearance criterion prior to building re-occupancy is 0.01 fibers per cubic centimeter analyzed using Phase Contrast Microscopy.

CE&I collected samples from accessible suspect ACMs utilizing hand tools. This process limits the amount of destructive means that may be necessary to expose some potential suspect ACMs. Additionally, this asbestos assessment did not include the collection of suspect asbestos-containing materials on the interior or exterior of mechanical equipment. Any suspect material on the interior or exterior of mechanical equipment must be assumed as asbestos-containing or proven non-asbestos-containing by laboratory analysis. If additional suspect asbestos-containing materials are identified during construction activities or on the interior or exterior of mechanical equipment, these materials shall be assumed to be asbestos-containing and handled in accordance with all federal, state, and local regulations or assessed by a certified asbestos inspector by sample collection and lab analysis at the time of their discovery.

### **Limitations**

This document is not a specification for asbestos removal and does not contain means and methods for asbestos abatement. Contact CE&I prior to scheduling the abatement of the asbestos-containing materials referenced in this

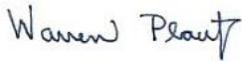
assessment. Use of this document without written consent by a CE&I representative is at the sole risk of the user and/or abatement contractor.

No warranty is made with regards to the conclusions and recommendations within this asbestos assessment. This report is provided for the exclusive use of the client or owner. It is not intended to be used or relied upon in conjunction with other projects or by third-parties without written consent of CE&I and the client or owner.

The recommendations are based in general accordance with federal, state, and local regulations and guidelines. Compliance and response actions are the sole responsibility of the client or owner and should be conducted in accordance with all federal, state, and local regulations or guidelines.

Should you have any questions regarding this asbestos report, please do not hesitate to contact me.

Thank you,

A handwritten signature in black ink that reads "Warren Plautz". The signature is written in a cursive, slightly slanted style.

Warren Plautz, CIEC, Industrial Hygienist

Enclosures: ECEI Analytical Results and the Inspector's NC Asbestos Accreditation

November 14, 2022

Coastal Environmental and Inspections  
202 Nantucket Ct.  
Wilmington, NC 28412

**CLIENT PROJECT:** Building B286 MCAS Cherry Point, Havelock, 415-ASB-Pb-22  
**CEI LAB CODE:** B2215935

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on November 11, 2022. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations.

Kind Regards,



Tianbao Bai, Ph.D., CIH  
Laboratory Director

---

## ASBESTOS ANALYTICAL REPORT

### By: Polarized Light Microscopy

Prepared for

**Coastal Environmental and Inspections**

---

CLIENT PROJECT: Building B286 MCAS Cherry Point, Havelock, 415-ASB-Pb-22

LAB CODE: B2215935

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 11/14/22

TOTAL SAMPLES ANALYZED: 9

# SAMPLES >1% ASBESTOS: 2



CEI

# Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

**PROJECT:** Building B286 MCAS Cherry Point,  
Havelock, 415-ASB-Pb-22

**LAB CODE:** B2215935

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
110922-NF-01		B2215935.01A	Brown,Orange	Vinyl Sheet Flooring	<b>Chrysotile 20%</b>
		B2215935.01B	Tan	Mastic	<b>Chrysotile 2%</b>
110922-NF-02		B2215935.02		Sample Not Analyzed per COC	
110922-NF-03		B2215935.03	Gray	Mortar	None Detected
110922-NF-04		B2215935.04	Gray	Mortar	None Detected
110922-NF-05		B2215935.05	White	Caulking	None Detected
110922-NF-06		B2215935.06	White	Caulking	None Detected
110922-NF-07		B2215935.07	White	Sealant	None Detected
110922-NF-08		B2215935.08	White	Sealant	None Detected
110922-NF-09		B2215935.09	White,Gray	Ceiling Tile	None Detected
110922-NF-10		B2215935.10	White,Gray	Ceiling Tile	None Detected

# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Coastal Environmental and Inspections  
 202 Nantucket Ct.  
 Wilmington, NC 28412

**Lab Code:** B2215935  
**Date Received:** 11-11-22  
**Date Analyzed:** 11-14-22  
**Date Reported:** 11-14-22

**Project:** Building B286 MCAS Cherry Point, Havelock, 415-ASB-Pb-22

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %	
			Fibrous	Non-Fibrous			
<b>110922-NF -01</b> B2215935.01A	Vinyl Sheet Flooring	Heterogeneous	10%	Cellulose	50%	20% Chrysotile	
		Brown, Orange Fibrous Bound			20%		Binder
B2215935.01B	Mastic	Heterogeneous Tan Non-fibrous Bound			98%	Mastic	2% Chrysotile
Analyst opinion: Possible contamination from adjacent sheet vinyl flooring backing.							
<b>110922-NF -02</b> B2215935.02	Sample Not Analyzed per COC						
<b>110922-NF -03</b> B2215935.03	Mortar	Homogeneous			55%	Silicates	None Detected
		Gray Non-fibrous Bound			45%	Binder	
<b>110922-NF -04</b> B2215935.04	Mortar	Homogeneous			55%	Silicates	None Detected
		Gray Non-fibrous Bound			45%	Binder	
<b>110922-NF -05</b> B2215935.05	Caulking	Homogeneous			100%	Caulk	None Detected
		White Non-fibrous Bound					
<b>110922-NF -06</b> B2215935.06	Caulking	Homogeneous			100%	Caulk	None Detected
		White Non-fibrous Bound					

# ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

**Client:** Coastal Environmental and Inspections  
 202 Nantucket Ct.  
 Wilmington, NC 28412

**Lab Code:** B2215935  
**Date Received:** 11-11-22  
**Date Analyzed:** 11-14-22  
**Date Reported:** 11-14-22

**Project:** Building B286 MCAS Cherry Point, Havelock, 415-ASB-Pb-22

## ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous		Non-Fibrous		
<b>110922-NF-07</b> B2215935.07	Sealant	Heterogeneous	75%	Cellulose	15%	Binder	None Detected
		White	15%	Fiberglass	5%	Calc Carb	
		Non-fibrous	10%			Paint	
		Bound					
<b>110922-NF-08</b> B2215935.08	Sealant	Heterogeneous	75%	Cellulose	15%	Binder	None Detected
		White	15%	Fiberglass	5%	Calc Carb	
		Non-fibrous	10%			Paint	
		Bound					
<b>110922-NF-09</b> B2215935.09	Ceiling Tile	Heterogeneous	65%	Cellulose	15%	Perlite	None Detected
		White, Gray	15%	Fiberglass	5%	Paint	
		Fibrous					
		Loosely Bound					
<b>110922-NF-10</b> B2215935.10	Ceiling Tile	Heterogeneous	65%	Cellulose	15%	Perlite	None Detected
		White, Gray	15%	Fiberglass	5%	Paint	
		Fibrous					
		Loosely Bound					

---

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**LEGEND:**    Non-Anth        = Non-Asbestiform Anthophyllite  
                 Non-Trem        = Non-Asbestiform Tremolite  
                 Calc Carb        = Calcium Carbonate

---

**METHOD:** EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

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**REPORTING LIMIT:** <1% by visual estimation

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**REPORTING LIMIT FOR POINT COUNTS:** 0.25% by 400 Points or 0.1% by 1,000 Points

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**REGULATORY LIMIT:** >1% by weight

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Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. *Estimated measurement of uncertainty is available on request.*

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by Eurofins CEI. Eurofins CEI makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

Information provided by customer includes customer sample ID and sample description.

**ANALYST:**

  
Nicholas Moore

**APPROVED BY:**

  
Tianbao Bai, Ph.D., CIH  
Laboratory Director



730 SE Maynard Road, Cary, NC 27511  
 Tel: 866-481-1412; Fax: 919-481-1442

LAB USE ONLY:

ECEI Lab Code: **B2215935**

ECEI Lab I.D. Range:

COMPANY INFORMATION	PROJECT INFORMATION
ECEI CLIENT #: 29277	Job Contact: Warren Plautz
Company: Coastal Environmental and Inspections, LLC	Email / Tel: coastal.eai@gmail.com - (910) 233-7208
Address: 202 Nantucket Court	Project Name: Building B286 MCAS Cherry Point, Havelock
Wilmington, NC 28412	Project ID#: 415-ASB-Pb-22
Email: coastal.eai@gmail.com	PO #:
Tel: (910) 233-7208 Fax: N/A	<b>STATE SAMPLES COLLECTED IN: NC</b>

IF TAT IS NOT MARKED STANDARD 3 DAY TAT APPLIES.

ASBESTOS	METHOD	TURN AROUND TIME					
		4 HR	8 HR	1 DAY	2 DAY	3 DAY	5 DAY
PLM BULK	EPA 600		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (400)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM POINT COUNT (1000)	EPA 600	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM GRAV w POINT COUNT	EPA 600		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PLM BULK	CARB 435		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PCM AIR*	NIOSH 7400	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	EPA AHERA	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	NIOSH 7402	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR (PCME)	ISO 10312	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM AIR	ASTM 6281-15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM BULK	CHATFIELD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST WIPE	ASTM D6480-05 (2010)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM DUST MICROVAC	ASTM D5755-09 (2014)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM SOIL	ASTM D7521-16			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM VERMICULITE	CINCINNATI METHOD			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
TEM QUALITATIVE	IN-HOUSE METHOD		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
OTHER:		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*Blanks should be taken from the same sample lot as field samples.

REMARKS / SPECIAL INSTRUCTIONS: Positive stop for each homogeneous area (HGA) number. Do not analyze ceramic tile.

Accept Samples  
 Reject Samples

Relinquished By:	Date/Time	Received By:	Date/Time
<i>Nash w Paul</i>	11/10/2022	<i>CS</i>	11/11 9:50

By submitting samples, you are agreeing to ECEI's Terms and Conditions.  
 Samples will be disposed of 30 days after analysis





NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

ROY COOPER • Governor
KODY H. KINSLEY • Secretary
MARK T. BENTON • Deputy Secretary for Health
SUSAN KANSANGRA • Assistant Secretary for Public Health
Division of Public Health

November 1, 2022

Nicholas Fravel
110 Parsley Lane
Leland, NC 28451

Dear Mr. Fravel:

Based upon the review of your accreditation application, the Health Hazards Control Unit (HHCU) has determined that you have fulfilled the requirements and are eligible for asbestos accreditation as a(n) INSPECTOR. Your assigned North Carolina accreditation number is 12946, which is reflected on your enclosed North Carolina Accreditation card. Please be sure to take this card with you to any asbestos work site where you are employed. The State requires that all persons conducting asbestos abatement or asbestos management activities be accredited and have their identification card on site.

Your North Carolina Inspector accreditation will expire on SEPTEMBER 30, 2023. It is NOT the policy of the HHCU to issue renewal notices. If you wish to continue working as a(n) Inspector after this expiration date, you must successfully complete the required training and submit a completed application to this office prior to September 30, 2023. If you should continue to perform asbestos management activities as a(n) Inspector without a valid North Carolina accreditation, you will be in violation of State regulations and may be cited for noncompliance.

North Carolina Asbestos Accreditation card for Nicholas Fravel. Includes photo, address, and a table with fields: EXPIRATION (09-30-2023), DOB (09-08-1986), SEX (M), HT (5'11"), WT (180), CLASS (AIR MONITOR, INSPECTOR), # (80951, 12946), and EXP (05-23, 09-23).

Sincerely,

Ed Norman (signature)

Ed Norman
Program Manager
Health Hazards Control Unit

Enclosure

NC DEPARTMENT OF HEALTH AND HUMAN SERVICES . DIVISION OF PUBLIC HEALTH

LOCATION: 5505 Six Forks Road, Building 1, Raleigh, NC 27609
MAILING ADDRESS: 1912 Mail Service Center, Raleigh, NC 27699-1912
www.ncdhhs.gov . TEL: 919-707-5950 . FAX: 919-870-4808

AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

SECTION 02 83 00

LEAD REMEDIATION

11/18

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN SOCIETY OF SAFETY PROFESSIONALS (ASSP)

ASSP Z9.2 (2018) Fundamentals Governing the Design and Operation of Local Exhaust Ventilation Systems

ASTM INTERNATIONAL (ASTM)

ASTM E1727 (2016) Standard Practice for Field Collection of Soil Samples for Subsequent Lead Determination

ASTM E1792 (2020) Standard Specification for Wipe Sampling Materials for Lead in Surface Dust

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 701 (2019) Standard Methods of Fire Tests for Flame Propagation of Textiles and Films

U.S. ARMY CORPS OF ENGINEERS (USACE)

EM 385-1-1 (2014) Safety -- Safety and Health Requirements Manual

U.S. DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT (HUD)

HUD 6780 (1995; Errata Aug 1996; Rev Ch. 7 - 1997) Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1926.21 Safety Training and Education

29 CFR 1926.33 Access to Employee Exposure and Medical Records

29 CFR 1926.55 Gases, Vapors, Fumes, Dusts, and Mists

29 CFR 1926.59 Hazard Communication

29 CFR 1926.62 Lead

29 CFR 1926.65 Hazardous Waste Operations and Emergency

Response

- 29 CFR 1926.103 Respiratory Protection
- 29 CFR 1926.1126 Chromium
- 29 CFR 1926.1127 Cadmium
- 40 CFR 260 Hazardous Waste Management System: General
- 40 CFR 261 Identification and Listing of Hazardous Waste
- 40 CFR 262 Standards Applicable to Generators of Hazardous Waste
- 40 CFR 263 Standards Applicable to Transporters of Hazardous Waste
- 40 CFR 264 Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 265 Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities
- 40 CFR 268 Land Disposal Restrictions
- 40 CFR 745 Lead-Based Paint Poisoning Prevention in Certain Residential Structures
- 49 CFR 172 Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
- 49 CFR 178 Specifications for Packagings

U.S. NAVAL FACILITIES ENGINEERING COMMAND (NAVFAC)

- ND OPNAVINST 5100.23 (2005; Rev G) Navy Occupational Safety and Health (NAVOSH) Program Manual

UNDERWRITERS LABORATORIES (UL)

- UL 586 (2009; Reprint Dec 2017) UL Standard for Safety High-Efficiency Particulate, Air Filter Units

1.2 DEFINITIONS

1.2.1 Abatement

Measures defined in 40 CFR 745, Section 223, designed to permanently eliminate lead-based paint hazards.

### 1.2.2 Action Level

Employee exposure, without regard to use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter of air averaged over an 8-hour period; to an airborne concentration of cadmium of 2.5 micrograms per cubic meter of air averaged over an 8-hour period; to an airborne concentration of chromium (VI) of 2.5 micrograms per cubic meter of air averaged over an 8-hour period.

### 1.2.3 Area Sampling

Sampling of lead, cadmium, chromium concentrations within the lead, cadmium, chromium control area and inside the physical boundaries which is representative of the airborne lead, cadmium, chromium concentrations but is not collected in the breathing zone of personnel (approximately 5 to 6 feet above the floor).

### 1.2.4 Cadmium Permissible Exposure Limit (PEL)

Five micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.1127. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 40/\text{No. hrs worked per day}$$

### 1.2.5 Certified Industrial Hygienist (CIH)

As used in this section refers to a person retained by the Contractor who is certified as an industrial hygienist and who is trained in the recognition and control of lead, cadmium and chromium hazards in accordance with current federal, State, and local regulations. CIH must be certified for comprehensive practice by the American Board of Industrial Hygiene. The Certified Industrial Hygienist must be independent of the Contractor and must have no employee or employer relationship which could constitute a conflict of interest.

### 1.2.6 Chromium Permissible Exposure Limit (PEL)

Five micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.1126. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 40/\text{No. hrs worked per day}$$

### 1.2.7 Competent Person (CP)

As used in this section, refers to a person employed by the Contractor who is trained in the recognition and control of lead, cadmium and chromium hazards in accordance with current federal, State, and local regulations and has the authority to take prompt corrective actions to control the lead, cadmium and chromium hazard. The Contractor may provide more than one CP as required to supervise and monitor the work. The CP must be a Certified Industrial Hygienist (CIH) certified by the American Board of Industrial Hygiene or a Certified Safety Professional (CSP) certified by the Board of Certified Safety Professionals or a licensed lead-based paint abatement Supervisor/Project Designer in the State of North Carolina.

#### 1.2.8 Contaminated Room

Refers to a room for removal of contaminated personal protective equipment (PPE).

#### 1.2.9 Decontamination Shower Facility

That facility that encompasses a clean clothing storage room, and a contaminated clothing storage and disposal rooms, with a shower facility in between.

#### 1.2.10 Deleading

Activities conducted by a person who offers to eliminate lead-based paint or lead-based paint hazards or paints containing cadmium/chromium or to plan such activities in commercial buildings, bridges or other structures.

#### 1.2.11 Eight-Hour Time Weighted Average (TWA)

Airborne concentration of lead, cadmium, chromium to which an employee is exposed, averaged over an 8-hour workday as indicated in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

#### 1.2.12 High Efficiency Particulate Air (HEPA) Filter Equipment

HEPA filtered vacuuming equipment with a UL 586 filter system capable of collecting and retaining lead, cadmium, chromium contaminated particulate. A high efficiency particulate filter demonstrates at least 99.97 percent efficiency against 0.3 micron or larger size particles.

#### 1.2.13 Lead

Metallic lead, inorganic lead compounds, and organic lead soaps. Excludes other forms of organic lead compounds. The use of the term Lead in this section also refers to paints which contain detectable concentrations of Cadmium and Chromium. For the purposes of the section lead-based paint (LBP) and paint with lead (PWL) also contains cadmium and chromium.

#### 1.2.14 Lead-Based Paint (LBP)

Paint or other surface coating that contains lead in excess of 1.0 milligrams per centimeter squared or 0.5 percent by weight.

#### 1.2.15 Lead-Based Paint Activities

In the case of target housing or child occupied facilities, lead-based paint activities include; a lead-based paint inspection, a risk assessment, or abatement of lead-based paint hazards.

#### 1.2.16 Lead-Based Paint Hazards

Paint-lead hazard, dust-lead hazard or soil-lead hazard as identified in 40 CFR 745, Section 65. Any condition that causes exposure to lead from lead-contaminated dust, lead-contaminated soil, lead-based paint that is deteriorated or present in accessible surfaces, friction surfaces, or impact surfaces that would result in adverse human health effects.

### 1.2.17 Lead, Cadmium, Chromium Control Area

A system of control methods to prevent the spread of lead paint chips or debris to adjacent areas that may include temporary containment, floor or ground cover protection, physical boundaries, and warning signs to prevent unauthorized entry of personnel. HEPA filtered local exhaust equipment may be used as engineering controls to further reduce personnel exposures or building/outdoor environmental contamination.

### 1.2.18 Lead Permissible Exposure Limit (PEL)

Fifty micrograms per cubic meter of air as an 8-hour time weighted average as determined by 29 CFR 1926.62. If an employee is exposed for more than 8-hours in a work day, determine the PEL by the following formula:

$$\text{PEL (micrograms/cubic meter of air)} = 400/\text{No. hrs worked per day}$$

### 1.2.19 Material Containing Lead/Paint with Lead (MCL/PWL)

Any material, including paint, which contains lead as determined by the testing laboratory using a valid test method. The requirements of this section does not apply if no detectable levels of lead are found using a quantitative method for analyzing paint or MCL using laboratory instruments with specified limits of detection (usually 0.01 percent). An X-Ray Fluorescence (XRF) instrument is not considered a valid test method.

### 1.2.20 Personal Sampling

Sampling of airborne lead, cadmium, chromium concentrations within the breathing zone of an employee to determine the 8-hour time weighted average concentration in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Samples must be representative of the employees' work tasks. Breathing zone must be considered an area within a hemisphere, forward of the shoulders, with a radius of 6 to 9 inches and centered at the nose or mouth of an employee.

### 1.2.21 Physical Boundary

Area physically roped or partitioned off around lead, cadmium, chromium control area to limit unauthorized entry of personnel.

### 1.2.22 Target Housing

Residential real property which is housing constructed prior to 1978, except housing for the elderly or persons with disabilities (unless any one or more children age 6-years or under resides or is expected to reside in such housing for the elderly or persons with disabilities) or any zero bedroom dwelling.

## 1.3 DESCRIPTION

Construction activities impacting PWL or material containing lead, cadmium, chromium which are covered by this specification include the demolition or removal of material containing lead in good condition, located in the wall paint in the men's room indicated on the drawings. The work covered by this section includes work tasks and the precautions specified in this section for the protection of building occupants and the environment during and after the performance of the hazard abatement activities.

1.3.1 Protection of Existing Areas To Remain

Project work including, but not limited to, lead, cadmium, chromium hazard abatement work, storage, transportation, and disposal must be performed without damaging or contaminating adjacent work and areas. Where such work or areas are damaged or contaminated, restore work and areas to the original condition.

1.3.2 Coordination with Other Work

Coordinate with work being performed in adjacent areas to ensure there are no exposure issues. Explain coordination procedures in the Lead, Cadmium, Chromium Compliance Plan and describe how the Contractor will prevent lead, cadmium and chromium exposure to other contractors and Government personnel performing work unrelated to lead, cadmium and chromium activities.

1.3.3 Sampling and Analysis

Submit a log of the analytical results from sampling conducted during the abatement. Keep the log of results current with project activities and brief the results to the Contracting Officer as analytical results are reported.

1.3.3.1 Dust Wipe Materials, Sampling and Analysis

Sampling must conform to ASTM E1792.

1.3.3.2 Soil Sampling and Analysis

Sampling must conform to ASTM E1727.

1.4 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-01 Preconstruction Submittals

Competent Person Qualifications

Training Certification

Occupational and Environmental Assessment Data Report

Medical Examinations

Lead, Cadmium, Chromium Waste Management Plan

Licenses, Permits and Notifications

Occupant Protection Plan

Lead, Cadmium, Chromium Compliance Plan

Written Evidence of TSD Approval

SD-03 Product Data

Respirators

Vacuum Filters

Negative Air Pressure System

Materials and Equipment

Expendable Supplies

Local Exhaust Equipment

Pressure Differential Automatic Recording Instrument

Pressure Differential Log

SD-06 Test Reports

Sampling and Analysis

Occupational and Environmental Assessment Data Report

Sampling Results

Pressure Differential Recordings For Local Exhaust System

SD-07 Certificates

Testing Laboratory

Occupant Notification

Clearance Certification

SD-11 Closeout Submittals

Hazardous Waste Manifest

1.5 QUALITY ASSURANCE

1.5.1 Qualifications

1.5.1.1 Competent Person (CP)

Submit name, address, and telephone number of the CP selected to perform responsibilities specified in paragraph COMPETENT PERSON (CP) RESPONSIBILITIES. Provide documented construction project-related experience with implementation of OSHA's Lead in Construction standard ( 29 CFR 1926.62), Chromium standard (29 CFR 1926.1126), Cadmium standard ( 29 CFR 1926.1127) which shows ability to assess occupational and environmental exposure to lead, cadmium, chromium; experience with the use of respirators, personal protective equipment and other exposure reduction methods to protect employee health. Demonstrate a minimum of 3 years experience implementing OSHA's Lead in Construction standard (29 CFR 1926.62 ), Chromium standard (29 CFR 1926.1126), and Cadmium standard ( 29 CFR 1926.1127). Submit proper documentation that the CP is trained and certified in accordance with federal, State of North Carolina and local laws. The competent person must be a licensed lead-based paint abatement Supervisor/Project Designer in the State of North Carolina.

#### 1.5.1.2 Training Certification

Submit a certificate for each worker and supervisor, signed and dated by the training provider, stating that the employee has received the required lead, cadmium and chromium training specified in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 40 CFR 745 and is certified to perform or supervise deleading, lead removal or demolition activities.

#### 1.5.1.3 Testing Laboratory

Submit the name, address, and telephone number of the testing laboratory selected to perform the air and wipe analysis, testing, and reporting of airborne concentrations of lead, cadmium and chromium. Use a laboratory participating in the EPA National Lead Laboratory Accreditation Program (NLLAP) by being accredited by either the American Association for Laboratory Accreditation (A2LA) or the American Industrial Hygiene Association (AIHA) and that is successfully participating in the Environmental Lead Proficiency Analytical Testing (ELPAT) program to perform sample analysis. Laboratories selected to perform blood lead analysis must be OSHA approved.

#### 1.5.1.4 Certified Risk Assessor

The Certified Risk Assessor must be certified pursuant to 40 CFR 745, Section 226 and be responsible to perform the clearance sampling, clearance sample data evaluation and summarize clearance sampling results in a section of the abatement report. The risk assessor must sign the abatement report to indicate clearance requirements for the contract have been met.

### 1.5.2 Requirements

#### 1.5.2.1 Competent Person (CP) Responsibilities

- a. Verify training meets all federal, State, and local requirements.
- b. Review and approve Lead, Cadmium, Chromium Compliance Plan for conformance to the applicable referenced standards.
- c. Continuously inspect LBP/PWL or MCL work for conformance with the approved plan.
- d. Perform (or oversee performance of) air sampling. Recommend upgrades or downgrades (whichever is appropriate based on exposure) on the use of PPE (respirators included) and engineering controls.
- e. Ensure work is performed in strict accordance with specifications at all times.
- f. Control work to prevent hazardous exposure to human beings and to the environment at all times.
- g. Supervise final cleaning of the lead, cadmium, chromium control area, take clearance wipe samples if necessary; review clearance sample results and make recommendations for further cleaning.
- h. Certify the conditions of the work as called for elsewhere in this specification.

- i. The CP must be certified pursuant to 40 CFR 745, Section 226 and is responsible for development and implementation of the occupant protection plan, the abatement report and supervise lead, cadmium and chromium hazard abatement work activities.

#### 1.5.2.2 Lead, Cadmium, Chromium Compliance Plan

Submit a detailed job-specific plan of the work procedures to be used in the disturbance of lead, cadmium and chromium, LBP/PWL or MCL. Include in the plan a sketch showing the location, size, and details of lead, cadmium, chromium control areas, critical barriers, physical boundaries, location and details of decontamination facilities, viewing ports, and mechanical ventilation system. Include a description of equipment and materials, work practices, controls and job responsibilities for each activity from which lead, cadmium, chromium is emitted. Include in the plan, eating, drinking, smoking, hygiene facilities and sanitary procedures, interface of trades, sequencing of lead, cadmium, chromium related work, collected waste water and dust containing lead, cadmium, chromium and debris, air sampling, respirators, personal protective equipment, and a detailed description of the method of containment of the operation to ensure that lead, cadmium, chromium is not released outside of the lead, cadmium, chromium control area. Include site preparation, cleanup and clearance procedures. Include occupational and environmental sampling, training and strategy, sampling and analysis strategy and methodology, frequency of sampling, duration of sampling, and qualifications of sampling personnel in the air sampling portion of the plan. Include a description of arrangements made among contractors on multicontractor worksites to inform affected employees and to clarify responsibilities to control exposures.

The plan must be developed and signed by a certified Lead Project Designer in the State of North Carolina. The plan must include the name and certification number of the person signing the plan.

In occupied buildings, the plan must also include an occupant protection program that describes the measures that will be taken during the work to notify and protect the building occupants.

#### 1.5.2.3 Occupational and Environmental Assessment Data Report

If initial monitoring is necessary, submit occupational and environmental sampling results to the Contracting Officer within three working days of collection, signed by the testing laboratory employee performing the analysis, the employee that performed the sampling, and the CP.

In order to reduce the full implementation of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 the Contractor must provide documentation. Submit a report that supports the determination to reduce full implementation of the requirements of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and supporting the Lead, Cadmium, Chromium Compliance Plan.

- a. The initial monitoring must represent each job classification, or if working conditions are similar to previous jobs by the same employer, provide previously collected exposure data that can be used to estimate worker exposures per 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. The data must represent the worker's regular daily exposure to lead, cadmium, chromium for stated work.
- b. Submit worker exposure data gathered during the task based trigger operations of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 with a

complete process description. This includes manual demolition, manual scraping, manual sanding, heat gun, power tool cleaning, rivet busting, cleanup of dry expendable abrasives, abrasive blast enclosure removal, abrasive blasting, welding, cutting and torch burning where lead, cadmium and chromium containing coatings are present.

- c. The initial assessment must determine the requirement for further monitoring and the need to fully implement the control and protective requirements including the lead, cadmium, chromium compliance plan per 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

#### 1.5.2.4 Medical Examinations

Submit pre-work blood lead levels and post-work blood lead levels for all workers performing lead, cadmium, chromium activities during the execution of the work. Initial medical surveillance as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 must be made available to all employees exposed to lead, cadmium, chromium at any time (one day) above the action level. Full medical surveillance must be made available to all employees on an annual basis who are or may be exposed to lead, cadmium and chromium in excess of the action level for more than 30 days a year or as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Adequate records must show that employees meet the medical surveillance requirements of 29 CFR 1926.33, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 29 CFR 1926.103. Provide medical surveillance to all personnel exposed to lead, cadmium, chromium as indicated in 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Maintain complete and accurate medical records of employees for the duration of employment plus 30 years.

#### 1.5.2.5 Training

Train each employee performing work that disturbs lead, cadmium, chromium, who performs LBP/MCL/PWL disposal, and air sampling operations prior to the time of initial job assignment and annually thereafter, in accordance with 29 CFR 1926.21, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, 40 CFR 745 and State of North Carolina and local regulations where appropriate.

#### 1.5.2.6 Respiratory Protection Program

- a. Provide each employee required to wear a respirator a respirator fit test at the time of initial fitting and at least annually thereafter as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.
- b. Establish and implement a respiratory protection program as required by 29 CFR 1926.103, 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 29 CFR 1926.55.

#### 1.5.2.7 Hazard Communication Program

Establish and implement a Hazard Communication Program as required by 29 CFR 1926.59.

#### 1.5.2.8 Lead, Cadmium, Chromium Waste Management

The Lead, Cadmium, Chromium Waste Management Plan must comply with applicable requirements of federal, State, and local hazardous waste regulations and address:

- a. Identification and classification of wastes associated with the work.
- b. Estimated quantities of wastes to be generated and disposed of.
- c. Names and qualifications of each contractor that will be transporting, storing, treating, and disposing of the wastes. Include the facility location and operator and a 24-hour point of contact. Furnish two copies of USEPA State and local hazardous waste permits, manifests and USEPA Identification numbers.
- d. Names and qualifications (experience and training) of personnel who will be working on-site with hazardous wastes.
- e. List of waste handling equipment to be used in performing the work, to include cleaning, volume reduction, and transport equipment.
- f. Spill prevention, containment, and cleanup contingency measures including a health and safety plan to be implemented in accordance with 29 CFR 1926.65.
- g. Work plan and schedule for waste containment, removal and disposal. Proper containment of the waste includes using acceptable waste containers (e.g., 55-gallon drums) as well as proper marking/labeling of the containers. Clean up and containerize wastes daily.
- h. Include any process that may alter or treat waste rendering a hazardous waste non hazardous.
- i. Unit cost for hazardous waste disposal according to this plan.

#### 1.5.2.9 Environmental, Safety and Health Compliance

In addition to the detailed requirements of this specification, comply with laws, ordinances, rules, and regulations of federal, State, and local authorities regarding lead, cadmium and chromium. Comply with the applicable requirements of the current issue of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, EM 385-1-1, ND OPNAVINST 5100.23. Submit matters regarding interpretation of standards to the Contracting Officer for resolution before starting work. Where specification requirements and the referenced documents vary, the most stringent requirements apply.

Licensing and certification in the state of North Carolina is required.

#### 1.5.3 Pressure Differential Recordings for Local Exhaust System

Provide a local exhaust system that creates a negative pressure of at least 0.02 inches of water relative to the pressure external to the enclosure and operate it continuously, 24-hours a day, until the temporary enclosure of the lead, cadmium, chromium control area is removed. Submit pressure differential recordings for each work day to the PQP and GC for review and to the Contracting Officer within 24-hours from the end of each work day.

#### 1.5.4 Licenses, Permits and Notifications

Certify and submit in writing to the Regional Office of the EPA and the Contracting Officer at least 10 days prior to the commencement of work that licenses, permits and notifications have been obtained. All associated fees or costs incurred in obtaining the licenses, permits and notifications

are included in the contract price.

#### 1.5.5 Occupant Protection Plan

The certified project designer must develop and implement an Occupant Protection Plan describing the measures and management procedures to be taken during lead, cadmium and chromium hazard abatement activities to protect the building occupants/building facilities and the outside environment from exposure to any lead, cadmium and chromium contamination while lead, cadmium and chromium hazard abatement activities are performed.

#### 1.5.6 Pre-Construction Conference

Along with the CP, meet with the Contracting Officer to discuss in detail the Lead, Cadmium, Chromium Waste Management Plan and the Lead, Cadmium, Chromium Compliance Plan, including procedures and precautions for the work.

### 1.6 EQUIPMENT

#### 1.6.1 Respirators

Furnish appropriate respirators approved by the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services, for use in atmospheres containing lead, cadmium and chromium dust, fume and mist. Respirators must comply with the requirements of 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

#### 1.6.2 Special Protective Clothing

Personnel exposed to lead, cadmium, chromiumcontaminated dust must wear proper disposable protective whole body clothing, head covering, gloves, eye, and foot coverings as required by 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. Furnish proper disposable plastic or rubber gloves to protect hands. Reduce the level of protection only after obtaining approval from the CP.

#### 1.6.3 Rental Equipment Notification

If rental equipment is to be used during PWL or MCL handling and disposal, notify the rental agency in writing concerning the intended use of the equipment.

#### 1.6.4 Vacuum Filters

UL 586 labeled HEPA filters.

#### 1.6.5 Equipment for Government Personnel

Furnish the Contracting Officer with two complete sets of personal protective equipment (PPE) daily, as required herein, for entry into and inspection of the lead, cadmium and chromium removal work within the lead, cadmium and chromium controlled area. Personal protective equipment must include disposable whole body covering, including appropriate foot, head, eye, and hand protection. PPE remains the property of the Contractor. The Government will provide respiratory protection for the Contracting Officer.

### 1.6.6 Abrasive Removal Equipment

The use of powered machine for vibrating, sanding, grinding, or abrasive blasting is prohibited unless equipped with local exhaust ventilation systems equipped with high efficiency particulate air (HEPA) filters.

### 1.6.7 Negative Air Pressure System

#### 1.6.7.1 Minimum Requirements

Do not proceed with work in the area until containment is set up and HEPA filtration systems are in place. The negative air pressure system must meet the requirements of ASSP Z9.2 including approved HEPA filters in accordance with UL 586. Negative air pressure equipment must be equipped with new HEPA filters, and be sufficient to maintain a minimum pressure differential of minus 0.02 inch of water column relative to adjacent, unsealed areas. Negative air pressure system minimum requirements are listed as follows:

- a. The unit must be capable of delivering its rated volume of air with a clean first stage filter, an intermediate filter and a primary HEPA filter in place.
- b. The HEPA filter must be certified as being capable of trapping and retaining mono-disperse particles as small as 0.3 micrometers at a minimum efficiency of 99.97 percent.
- c. The unit must be capable of continuing to deliver no less than 70 percent of rated capacity when the HEPA filter is 70 percent full or measures 2.5 inches of water static pressure differential on a magnehelic gauge.
- d. Equip the unit with a manometer-type negative pressure differential monitor with minor scale division of 0.02 inch of water and accuracy within plus or minus 1.0 percent. The manometer must be calibrated daily as recommended by the manufacturer.
- e. Equip the unit with a means for the operator to easily interpret the readings in terms of the volumetric flow rate of air per minute moving through the machine at any given moment.
- f. Equip the unit with an electronic mechanism that automatically shuts the machine off in the event of a filter breach or absence of a filter.
- g. Equip the unit with an audible horn that sounds an alarm when the machine has shut itself off.
- h. Equip the unit with an automatic safety mechanism that prevents a worker from improperly inserting the main HEPA filter.

#### 1.6.7.2 Auxiliary Generator

Provide an auxiliary generator with capacity to power a minimum of 50 percent of the negative air machines at any time during the work. When power fails, the generator controls must automatically start the generator and switch the negative air pressure system machines to generator power. The generator must not present a carbon monoxide hazard to workers.

### 1.6.8 Vacuum Systems

Vacuum systems must be suitably sized for the project, and filters must be capable of trapping and retaining all mono-disperse particles as small as 0.3 micrometers (mean aerodynamic diameter) at a minimum efficiency of 99.97 percent. Properly dispose of used filters that are being replaced.

### 1.6.9 Heat Blower Guns

Heat blower guns must be flameless, electrical, paint-softener type with controls to limit temperature to 1,100 degrees F. Heat blower must be (grounded) 120 volts ac, and must be equipped with cone, fan, glass protector and spoon reflector nozzles.

## 1.7 PROJECT/SITE CONDITIONS

### 1.7.1 Protection of Existing Work to Remain

Perform work without damage or contamination of adjacent areas. Where existing work is damaged or contaminated, restore work to its original condition or better as determined by the Contracting Officer.

## PART 2 PRODUCTS

### 2.1 MATERIALS AND EQUIPMENT

Keep materials and equipment needed to complete the project available and on the site. Submit a description of the materials and equipment required; including Safety Data Sheets (SDSs) for material brought onsite to perform the work.

#### 2.1.1 Expendable Supplies

Submit a description of the expendable supplies required.

##### 2.1.1.1 Polyethylene Bags

Disposable bags must be polyethylene plastic and be a minimum of 6 mils thick (4 mils thick if double bags are used) or any other thick plastic material shown to demonstrate at least equivalent performance; and capable of being made leak-tight. Leak-tight means that solids, liquids or dust cannot escape or spill out.

##### 2.1.1.2 Polyethylene Leak-tight Wrapping

Wrapping used to wrap lead, cadmium, chromium contaminated debris must be polyethylene plastic that is a minimum of 6 mils thick or any other thick plastic material shown to demonstrate at least equivalent performance.

##### 2.1.1.3 Polyethylene Sheeting

Sheeting must be polyethylene plastic with a minimum thickness of 6 mil, or any other thick plastic material shown to demonstrate at least equivalent performance; and be provided in the largest sheet size reasonably accommodated by the project to minimize the number of seams. Where the project location constitutes an out of the ordinary potential for fire, or where unusual fire hazards cannot be eliminated, provide flame-resistant polyethylene sheets which conform to the requirements of NFPA 701.

#### 2.1.1.4 Tape and Adhesive Spray

Tape and adhesive must be capable of sealing joints between polyethylene sheets and for attachment of polyethylene sheets to adjacent surfaces. After dry application, tape or adhesive must retain adhesion when exposed to wet conditions, including amended water. Tape must be minimum 2 inches wide, industrial strength.

#### 2.1.1.5 Containers

When used, containers must be leak-tight and be labeled in accordance with EPA, DOT and OSHA standards.

#### 2.1.1.6 Chemical Paint Strippers

Chemical paint strippers must not contain methylene chloride and be formulated to prevent stain, discoloration, or raising of the substrate materials.

#### 2.1.1.7 Chemical Paint Stripper Neutralizer

Neutralizers for paint strippers must be compatible with the substrate and suitable for use with the chemical stripper that has been applied to the surface.

#### 2.1.1.8 Detergents and Cleaners

Detergents or cleaning agents must not contain trisodium phosphate and have demonstrated effectiveness in lead, cadmium and chromium control work using cleaning techniques specified by HUD 6780 guidelines.

### PART 3 EXECUTION

#### 3.1 PREPARATION

##### 3.1.1 Protection

###### 3.1.1.1 Notification

- a. Notify the Contracting Officer 20 days prior to the start of any lead, cadmium and chromium work.
- b. Occupant Notification

Submit occupant written acknowledgment of the delivery of lead hazard information pamphlet (EPA 747-K-99-001 "Protect Your Family From Lead in Your Home") prior to commencing the renovation work for each affected unit using language provided in 40 CFR 745 Subpart E.

###### 3.1.1.2 Lead, Cadmium, Chromium Control Area

- a. Physical Boundary - Provide physical boundaries around the lead, cadmium, chromium control area by roping off the area designated in the work plan or providing curtains, portable partitions or other enclosures to ensure that lead, cadmium and chromium will not escape outside of the lead, cadmium and chromium control area. Prohibit the general public from accessing the lead, cadmium, chromium control areas.

- b. Warning Signs - Provide warning signs at approaches to lead, cadmium, chromium control areas. Locate signs at such a distance that personnel may read the sign and take the necessary precautions before entering the area. Signs must comply with the requirements of 29 CFR 1926.62.

#### 3.1.1.3 Furnishings

Furniture and equipment will remain in the lead, cadmium, chromium control area. Protect and cover furnishings or remove furnishings from the work area and store in a location approved by the Contracting Officer.

#### 3.1.1.4 Heating, Ventilating and Air Conditioning (HVAC) Systems

Shut down, lock out, and isolate HVAC systems that supply, exhaust, or pass through the lead, cadmium, chromium control areas. Seal intake and exhaust vents in the lead, cadmium, chromium control area with 6 mil plastic sheet and tape. Seal seams in HVAC components that pass through the lead, cadmium, chromium control area.

#### 3.1.1.5 Local Exhaust System

Provide a local exhaust system in the lead, cadmium, chromium control area in accordance with ASSP Z9.2, 29 CFR 1926.62, 29 CFR 1926.1126 and 29 CFR 1926.1127 that will provide at least 4 air changes per hour inside of the negative pressure enclosure. Local exhaust equipment must be operated 24-hours per day, until the lead, cadmium, chromium control area is removed and must be leak proof to the filter and equipped with HEPA filters. Maintain a minimum pressure differential in the lead, cadmium, chromium control area of minus 0.02 inch of water column relative to adjacent, unsealed areas. Provide continuous 24-hour per day monitoring of the pressure differential with a pressure differential automatic recording instrument. The building ventilation system must not be used as the local exhaust system for the lead, cadmium, chromium control area. Filters on exhaust equipment must conform to ASSP Z9.2 and UL 586. Terminate the local exhaust system out of doors and remote from any public access or ventilation system intakes.

#### 3.1.1.6 Negative Air Pressure System Containment

- a. Operate the negative air pressure systems to provide at least 4 air changes per hour inside the containment. Operate the local exhaust unit equipment continuously until the containment is removed. Smoke test the negative air pressure system for leaks at the beginning of each shift. The certified supervisor is responsible to continuously monitor and keep a pressure differential log with an automatic manometric recording instrument. Notify the Contracting Officer immediately if the pressure differential falls below the prescribed minimum. Submit the continuously monitored pressure differential log, as specified. Do not use the building ventilation system as the local exhaust system. Terminate the local exhaust system out of doors unless the Contracting Officer allows an alternate arrangement. All filters must be new at the beginning of the project and be periodically changed as necessary to maintain specified pressure differential and disposed of as lead, cadmium and chromium contaminated waste.
- b. Discontinuing Negative Air Pressure System. Operate the negative air pressure system continuously during abatement activities unless otherwise authorized by the Contracting Officer. At the completion of the project, units must be run until full cleanup has been completed

and final clearance testing requirements have been met. Dismantling of the negative air pressure systems must conform to written decontamination procedures be as presented in the Lead, Cadmium, Chromium Compliance Plan. Seal the HEPA filter machine intakes with polyethylene to prevent environmental contamination.

#### 3.1.1.7 Decontamination Shower Facility

Provide clean and contaminated change rooms and shower facilities in accordance with this specification and 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.

#### 3.1.1.8 Eye Wash Station

Provide suitable facilities within the work area for quick drenching or flushing of the eyes where eyes may be exposed to injurious corrosive materials.

#### 3.1.1.9 Mechanical Ventilation System

- a. Use adequate ventilation to control personnel exposure to lead, cadmium and chromium in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127. To the extent feasible, use local exhaust ventilation or other collection systems, approved by the CP. Evaluate and maintain local exhaust ventilation systems in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127.
- b. Vent local exhaust outside the building and away from building ventilation intakes or ensure system is connected to HEPA filters.
- c. Use locally exhausted, power actuated tools or manual hand tools.

#### 3.1.1.10 Personnel Protection

Personnel must wear and use protective clothing and equipment as specified herein. Eating, smoking, or drinking or application of cosmetics is not permitted in the lead, cadmium, chromium control area. No one will be permitted in the lead, cadmium, chromium control area unless they have been appropriately trained and provided with protective equipment.

### 3.2 ERECTION

#### 3.2.1 Lead, Cadmium, Chromium Control Area Requirements

Establish a lead, cadmium, chromium control area by completely establishing barriers and physical boundaries around the area or structure where PWL or MCL removal operations will be performed.

Full containment - Contain removal operations by the use of critical barriers and HEPA filtered exhaust a negative pressure enclosure system with decontamination facilities and with HEPA filtered exhaust if required by the CP. For containment areas larger than 1,000 square feet install a minimum of two 18 inch square viewing ports. Locate ports to provide a view of the required work from the exterior of the enclosed contaminated area. Glaze ports with laminated safety glass.

### 3.3 APPLICATION

#### 3.3.1 Lead, Cadmium, Chromium Work

Perform lead, cadmium, chromium work in accordance with approved Lead, Cadmium, Chromium Compliance Plan. Use procedures and equipment required to limit occupational exposure and environmental contamination with lead, cadmium, chromium when the work is performed in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127, and as specified herein. Dispose of all PWL or MCL and associated waste in compliance with federal, State, and local requirements.

#### 3.3.2 Paint with Lead, Cadmium, Chromium or Material Containing Lead, Cadmium, Chromium Removal

Manual or power sanding or grinding of lead, cadmium, chromium surfaces or materials is not permitted unless tools are equipped with HEPA attachments or wet methods. The dry sanding or grinding of surfaces that contain lead, cadmium, chromium is prohibited. Provide methodology for removing lead, cadmium, chromium in the Lead, Cadmium, Chromium Compliance Plan. Select lead, cadmium, chromium removal processes to minimize contamination of work areas outside the control area with lead, cadmium, chromium contaminated dust or other lead, cadmium, chromium contaminated debris or waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead, cadmium, chromium. Describe this removal process in the Lead, Cadmium, Chromium Compliance Plan.

Avoid flash rusting and deterioration of the substrate. Provide surface preparations for painting in accordance with Section 09 90 00 PAINTS AND COATINGS.

Provide methodology for lead, cadmium and chromium, LBP/PWL removal and abatement/control and processes to minimize contamination of work areas outside the control area with lead, cadmium, chromium contaminated dust or other lead, cadmium, chromium contaminated debris/waste and to ensure that unprotected personnel are not exposed to hazardous concentrations of lead, cadmium, chromium. Describe this lead, cadmium and chromium, LBP/PWL removal/control process in the Lead, Cadmium, Chromium Compliance Plan.

#### 3.3.2.1 Paint with Lead, Cadmium, Chromium or Material Containing Lead, Cadmium, Chromium - Indoor Removal

Perform manual or mechanical removal in the lead, cadmium, chromium control areas using enclosures, barriers or containments and powered locally exhausted tools equipped with HEPA filters. Collect residue and debris for disposal in accordance with federal, State, and local requirements.

#### 3.3.3 Personnel Exiting Procedures

Whenever personnel exit the lead, cadmium, chromium controlled area, they must perform the following procedures and must not leave the work place wearing any clothing or equipment worn in the control area:

- a. Vacuum all clothing before entering the contaminated change room.
- b. Remove protective clothing in the contaminated change room, and place them in an approved impermeable disposal bag.

c. Shower.

d. Change to clean clothes prior to leaving the clean clothes storage area.

### 3.4 FIELD QUALITY CONTROL

#### 3.4.1 Tests

##### 3.4.1.1 Air and Wipe Sampling

Conduct sampling for lead, cadmium, chromium in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and as specified herein. Air and wipe sampling must be directed or performed by the CP.

- a. The CP must be on the job site directing the air and wipe sampling and inspecting the PWL or MCL removal work to ensure that the requirements of the contract have been satisfied during the entire PWL or MCL operation.
- b. Collect personal air samples on employees who are anticipated to have the greatest risk of exposure as determined by the CP. In addition, collect air samples on at least twenty-five percent of the work crew or a minimum of two employees, whichever is greater, during each work shift.
- c. Submit results of air samples, signed by the CP, within 72-hours after the air samples are taken.
- d. Conduct area air sampling daily, on each shift in which lead, cadmium and chromium and lead-based paint removal operations are performed, in areas immediately adjacent to the lead, cadmium and chromium control area. Conduct sufficient area monitoring to ensure unprotected personnel are not exposed at or above 30 micrograms of lead per cubic meter of air or 2.5 micrograms of cadmium/chromium per cubic meter of air. If 30 micrograms of lead per cubic meter of air or 2.5 micrograms of cadmium/chromium per cubic meter of air is reached or exceeded, stop work, correct the condition(s) causing the increased levels. Notify the Contracting Officer immediately. Determine if condition(s) require any further change in work methods. Resume removal work only after the CP and the Contracting Officer give approval.

##### 3.4.1.2 Testing of Material Containing Lead, Cadmium, Chromium Residue

Test residue in accordance with 40 CFR 261 for hazardous waste.

### 3.5 CLEANING AND DISPOSAL

#### 3.5.1 Cleanup

Maintain surfaces of the lead, cadmium, chromium control area free of accumulations of dust and debris. Restrict the spread of dust and debris; keep waste from being distributed over the work area. Do not dry sweep or use pressurized air to clean up the area. At the end of each shift and when the lead, cadmium, chromium operation has been completed, clean the controlled area of all visible contamination by vacuuming with a HEPA filtered vacuum cleaner, wet mopping the area and wet wiping the area as indicated by the Lead, Cadmium, Chromium Compliance Plan. Reclean areas showing dust or debris. After visible dust and debris is removed, wet wipe

and HEPA vacuum all surfaces in the controlled area. If adjacent areas become contaminated at any time during the work, clean, visually inspect, and then wipe sample all contaminated areas. The CP must then certify in writing that the area has been cleaned of lead, cadmium and chromium contamination before clearance testing.

#### 3.5.1.1 Clearance Certification

The CP must certify in writing that air samples collected outside the lead, cadmium, chromium control area during paint removal operations are less than 30 micrograms of lead per cubic meter of air and less than 2.5 micrograms of cadmium/chromium per cubic meter of air; the respiratory protection used for the employees was adequate; the work procedures were performed in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127; and that there were no visible accumulations of material and dust containing lead, cadmium, chromium left in the work site. Do not remove the lead, cadmium, chromium control area or roped off boundary and warning signs prior to the Contracting Officer's acknowledgement of receipt of the CP certification.

The third party consultant must certify surface wipe sample results collected inside and outside the work area are less than 40 micrograms of lead per square foot on floors, less than 250 micrograms of lead per square foot on interior window sills and less than 400 micrograms of lead per square foot on window troughs.

#### 3.5.2 Disposal

- a. Dispose of material, whether hazardous or non-hazardous in accordance with all laws and provisions and all federal, State or local regulations. Ensure all waste is properly characterized. The result of each waste characterization (TCLP for RCRA materials) will dictate disposal requirements.
- b. Contractor is responsible for segregation of waste. Collect lead, cadmium, chromium contaminated waste, scrap, debris, bags, containers, equipment, and lead, cadmium, chromium contaminated clothing that may produce airborne concentrations of lead, cadmium, chromium particles. Label the containers in accordance with 29 CFR 1926.62, 29 CFR 1926.1126, 29 CFR 1926.1127 and 40 CFR 261, 40 CFR 262 and corresponding state regulations.
- c. Dispose of lead, cadmium, chromium contaminated material classified as hazardous waste at an EPA approved hazardous waste treatment, storage, or disposal facility off Government property.
- d. Accumulate waste materials in U.S. Department of Transportation (49 CFR 178) approved 55 gallon drums or appropriately sized container for smaller volumes. Properly label each drum to identify the type of hazardous material (49 CFR 172). For hazardous waste, the collection container requires marking/labeling in accordance with 40 CFR 262 and corresponding state regulations during the accumulation/collection timeframe. The Contracting Officer or an authorized representative will assign an area for accumulation of waste containers. Coordinate authorized accumulation volumes and time limits with the host installation environmental function.
- e. Handle, store, transport, and dispose lead, cadmium, chromium or lead, cadmium, chromium contaminated waste in accordance with 40 CFR 260,

40 CFR 261, 40 CFR 262, 40 CFR 263, 40 CFR 264, and 40 CFR 265. Comply with land disposal restriction notification requirements as required by 40 CFR 268.

- f. All lead, cadmium, and chromium waste generation, management, and disposal will be coordinated with the host installation environmental function.

#### 3.5.2.1 Disposal Documentation

Coordinate all disposal or off-site shipments of lead, cadmium, and chromium waste with the host installation environmental function. Submit written evidence of TSD approval to demonstrate the hazardous waste treatment, storage, or disposal facility (TSD) is approved for lead, cadmium, chromium disposal by the EPA, State or local regulatory agencies. Submit one copy of the completed hazardous waste manifest, signed and dated by the initial transporter in accordance with 40 CFR 262. Provide a certificate that the waste was accepted by the disposal facility.

#### 3.5.2.2 Payment for Hazardous Waste

Payment for disposal of hazardous and non-hazardous waste will not be made until a signed copy of the manifest from the treatment or disposal facility is received and approved by the Contracting Officer. The manifest must detail and certify the amount of lead, cadmium, chromium containing materials or non-hazardous waste delivered to the treatment or disposal facility.

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SECTION 07 92 00

JOINT SEALANTS  
08/16, CHG 3: 11/18

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

ASTM INTERNATIONAL (ASTM)

- ASTM C920 (2018) Standard Specification for Elastomeric Joint Sealants
- ASTM C1193 (2013) Standard Guide for Use of Joint Sealants
- ASTM C1521 (2013) Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joints

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH (CDPH)

- CDPH SECTION 01350 (2010; Version 1.1) Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources using Environmental Chambers

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

- SCS SCS Global Services (SCS) Indoor Advantage

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD)

- SCAQMD Rule 1168 (2017) Adhesive and Sealant Applications

UNDERWRITERS LABORATORIES (UL)

- UL 2818 (2013) GREENGUARD Certification Program For Chemical Emissions For Building Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Sealants

Primers

Bond Breakers

## SD-06 Test Reports

## Field Adhesion

## SD-07 Certificates

## Indoor Air Quality For Interior Sealants

## 1.3 PRODUCT DATA

Include storage requirements, shelf life, curing time, instructions for mixing and application, and accessories. Provide manufacturer's Safety Data Sheets (SDS) for each solvent, primer and sealant material proposed.

## 1.4 CERTIFICATIONS

## 1.4.1 Indoor Air Quality Certifications

Submit required indoor air quality certifications in one submittal package.

## 1.4.1.1 Adhesives and Sealants

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this Section. Provide current product certification documentation from certification body.. When product does not have certification, provide validation that product meets the indoor air quality product requirements cited herein.

## 1.5 ENVIRONMENTAL CONDITIONS

Apply sealant when the ambient temperature is between 40 and 90 degrees F.

## 1.6 DELIVERY AND STORAGE

Deliver materials to the jobsite in unopened manufacturers' sealed shipping containers, with brand name, date of manufacture, color, and material designation clearly marked thereon. Label elastomeric sealant containers to identify type, class, grade, and use. Handle and store materials in accordance with manufacturer's printed instructions. Prevent exposure to foreign materials or subjection to sustained temperatures exceeding 90 degrees F or lower than 0 degrees F. Keep materials and containers closed and separated from absorptive materials such as wood and insulation.

## 1.7 QUALITY ASSURANCE

## 1.7.1 Compatibility with Substrate

Verify that each sealant is compatible for use with each joint substrate in accordance with sealant manufacturer's printed recommendations for each application.

## 1.7.2 Joint Tolerance

Provide joint tolerances in accordance with manufacturer's printed instructions.

1.7.3 Mock-Up

Provide a mock-up of each type of sealant using materials, colors, and techniques approved for use on the project. Approved mock-ups may be incorporated into the Work.

1.7.4 Adhesion

Provide in accordance with ASTM C1193 or ASTM C1521.

PART 2 PRODUCTS

2.1 SEALANTS

Provide sealant products that have been tested, found suitable, and documented as such by the manufacturer for the particular substrates to which they will be applied.

2.1.1 Interior Sealants

Provide ASTM C920, Type S or M, Grade NS, Class 12.5, Use NT. Provide sealant products used on the interior of the building (defined as inside of the weatherproofing system) meeting either emissions requirements of CDPH SECTION 01350 (limit requirements for either office or classroom spaces regardless of space type) or VOC content requirements of SCAQMD Rule 1168. Provide certification or validation of indoor air quality for interior sealants. Location(s) and color(s) of sealant for the following. Note, color "as selected" refers to manufacturer's full range of color options

LOCATION	COLOR
a. Small voids between walls or partitions and adjacent lockers, casework, shelving, door frames, built-in or surface mounted equipment and fixtures, and similar items.	As selected

2.2 PRIMERS

Non-staining, quick drying type and consistency as recommended by the sealant manufacturer for the particular application. Provide primers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

2.3 BOND BREAKERS

Type and consistency as recommended by the sealant manufacturer to prevent adhesion of the sealant to the backing or to the bottom of the joint. Provide bond breakers for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

2.4 CLEANING SOLVENTS

Provide type(s) recommended by the sealant manufacturer and in accordance with environmental requirements herein. Provide solvents for interior applications that meet the indoor air quality requirements of the paragraph SEALANTS above.

### PART 3 EXECUTION

#### 3.1 FIELD QUALITY CONTROL

Perform a field adhesion test in accordance with manufacturer's instructions and ASTM C1193, Method A or ASTM C1521, Method A, Tail Procedure. Remove sealants that fail adhesion testing; clean substrates, reapply sealants, and re-test. Test sealants adjacent to failed sealants. Submit field adhesion test report indicating tests, locations, dates, results, and remedial actions taken.

#### 3.2 SURFACE PREPARATION

Prepare surfaces according to manufacturer's printed installation instructions. Clean surfaces from dirt, frost, moisture, grease, oil, wax, lacquer, paint, or other foreign matter that would destroy or impair adhesion. Remove oil and grease with solvent; thoroughly remove solvents prior to sealant installation. Wipe surfaces dry with clean cloths. When resealing an existing joint, remove existing caulk or sealant prior to applying new sealant. For surface types not listed below, provide in accordance with sealant manufacturer's printed instructions for each specific surface.

##### 3.2.1 Steel Surfaces

Remove loose mill scale by sandblasting or, if sandblasting is impractical or would damage finished work, scraping and wire brushing. Remove protective coatings by sandblasting or using a residue free solvent. Remove resulting debris and solvent residue prior to sealant installation.

##### 3.2.2 Aluminum or Bronze Surfaces

Remove temporary protective coatings from surfaces that will be in contact with sealant. When masking tape is used as a protective coating, remove tape and any residual adhesive prior to sealant application. For removing protective coatings and final cleaning, use non-staining solvents recommended by the manufacturer of the item(s) containing aluminum or bronze surfaces.

##### 3.2.3 Concrete and Masonry Surfaces

Where surfaces have been treated with curing compounds, oil, or other such materials, remove materials by sandblasting or wire brushing. Remove laitance, efflorescence and loose mortar from the joint cavity. Remove resulting debris prior to sealant installation.

##### 3.2.4 Wood Surfaces

Ensure wood surfaces that will be in contact with sealants are free of splinters, sawdust and other loose particles.

#### 3.3 SEALANT PREPARATION

Do not add liquids, solvents, or powders to sealants. Mix multicomponent elastomeric sealants in accordance with manufacturer's printed instructions.

3.4 APPLICATION

3.4.1 Joint Width-To-Depth Ratios

Acceptable Ratios:

JOINT WIDTH	JOINT DEPTH	
	Minimum	Maximum
For metal, glass, or other nonporous surfaces:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch	1/2 of width	Equal to width
For wood, concrete, masonry, stone:		
1/4 inch (minimum)	1/4 inch	1/4 inch
over 1/4 inch to 1/2 inch	1/4 inch	Equal to width
over 1/2 inch to 1 inch	1/2 inch	5/8 inch
Over 1 inch	prohibited	

Unacceptable Ratios: Where joints of acceptable width-to-depth ratios have not been provided, clean out joints to acceptable depths and grind or cut to acceptable widths without damage to the adjoining work. Grinding is prohibited at metal surfaces.

3.4.2 Unacceptable Sealant Use

Do not install sealants in lieu of other required building enclosure weatherproofing components such as flashing, drainage components, and joint closure accessories, or to close gaps between walls, floors, roofs, windows, and doors, that exceed acceptable installation tolerances. Remove sealants that have been used in an unacceptable manner and correct building enclosure deficiencies to comply with contract documents requirements.

3.4.3 Masking Tape

Place masking tape on the finished surface on one or both sides of joint cavities to protect adjacent finished surfaces from primer or sealant smears. Remove masking tape within 10 minutes of joint filling and tooling.

3.4.4 Backstops

Provide backstops dry and free of tears or holes. Tightly pack the back or bottom of joint cavities with backstop material to provide joints in specified depths. Provide backstops where indicated and where backstops are not indicated but joint cavities exceed the acceptable maximum depths specified in JOINT WIDTH-TO-DEPTH RATIOS Table.

3.4.5 Primer

Clean out loose particles from joints immediately prior to application of.

Apply primer to joints in concrete masonry units, wood, and other porous surfaces in accordance with sealant manufacturer's printed instructions. Do not apply primer to exposed finished surfaces.

#### 3.4.6 Bond Breaker

Provide bond breakers to surfaces not intended to bond in accordance with, sealant manufacturer's printed instructions for each type of surface and sealant combination specified.

#### 3.4.7 Sealants

Provide sealants compatible with the material(s) to which they are applied. Do not use a sealant that has exceeded its shelf life or has jelled and cannot be discharged in a continuous flow from the sealant gun. Apply sealants in accordance with the manufacturer's printed instructions with a gun having a nozzle that fits the joint width. Work sealant into joints so as to fill the joints solidly without air pockets. Tool sealant after application to ensure adhesion. Apply sealant uniformly smooth and free of wrinkles. Upon completion of sealant application, roughen partially filled or unfilled joints, apply additional sealant, and tool smooth as specified. Apply sealer over sealants in accordance with the sealant manufacturer's printed instructions.

### 3.5 PROTECTION AND CLEANING

#### 3.5.1 Protection

Protect areas adjacent to joints from sealant smears. Masking tape may be used for this purpose if removed 5 to 10 minutes after the joint is filled and no residual tape marks remain.

#### 3.5.2 Final Cleaning

Upon completion of sealant application, remove remaining smears and stains and leave the work in a clean and neat condition.

- a. Masonry and Other Porous Surfaces: Immediately remove fresh sealant that has been smeared on adjacent masonry, rub clean with a solvent, and remove solvent residue, in accordance with sealant manufacturer's printed instructions. Allow excess sealant to cure for 24 hour then remove by wire brushing or sanding. Remove resulting debris.
- b. Metal and Other Non-Porous Surfaces: Remove excess sealant with a solvent moistened cloth. Remove solvent residue in accordance with solvent manufacturer's printed instructions.

-- End of Section --

## SECTION 09 90 00

## PAINTS AND COATINGS

02/21

## PART 1 GENERAL

## 1.1 RELATED REQUIREMENTS

## 1.1.1 Painting Included

Where a space or surface is indicated to be painted, include the following unless indicated otherwise.

- a. Surfaces behind portable objects and surface mounted articles readily detachable by removal of fasteners, such as screws and bolts.
- b. New factory finished surfaces that require identification or color coding and factory finished surfaces that are damaged during performance of the work.
- c. Existing coated surfaces that are damaged during performance of the work.

## 1.1.1.1 Interior Painting

Includes new surfaces existing coated surfaces of the building and appurtenances as indicated and existing coated surfaces made bare by cleaning operations. Where a space or surface is indicated to be painted, include the following items, unless indicated otherwise.

- a. Exposed columns, girders, beams, joists, and metal deck; and
- b. Other contiguous surfaces.

## 1.1.2 Painting Excluded

Do not paint the following unless indicated otherwise.

- a. Surfaces concealed and made inaccessible by panelboards, fixed ductwork, machinery, and equipment fixed in place.
- b. Surfaces in concealed spaces. Concealed spaces are defined as enclosed spaces above suspended ceilings, furred spaces, attic spaces, crawl spaces, elevator shafts and chases.
- c. Steel to be embedded in concrete.
- d. Copper, stainless steel, aluminum, anodized aluminum, brass, and lead except existing coated surfaces.
- e. Hardware, fittings, and other factory finished items.

## 1.1.3 Mechanical and Electrical Painting

Includes field coating of interior new and existing surfaces.

- a. Where a space or surface is indicated to be painted, include the

following items unless indicated otherwise.

- (1) Exposed piping, conduit, and ductwork;
- (2) Supports, hangers, air grilles, and registers;
- (3) Miscellaneous metalwork and insulation coverings.

b. Do not paint the following, unless indicated otherwise:

- (1) New zinc-coated, aluminum, and copper surfaces under insulation
- (2) New aluminum jacket on piping
- (3) New interior ferrous piping under insulation.

1.2 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

AMERICAN CONFERENCE OF GOVERNMENTAL INDUSTRIAL HYGIENISTS (ACGIH)

ACGIH 0100 (2017; Suppl 2020) Documentation of the Threshold Limit Values and Biological Exposure Indices

ASTM INTERNATIONAL (ASTM)

ASTM D235 (2002; R 2012) Mineral Spirits (Petroleum Spirits) (Hydrocarbon Dry Cleaning Solvent)

ASTM D523 (2014; R 2018) Standard Test Method for Specular Gloss

ASTM D4214 (2007; R 2015) Standard Test Method for Evaluating the Degree of Chalking of Exterior Paint Films

ASTM D4263 (1983; R 2018) Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

ASTM D4444 (2013; R 2018) Standard Test Method for Laboratory Standardization and Calibration of Hand-Held Moisture Meters

ASTM F1869 (2016a) Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

Intelligence Bulletin 65 (2013) Occupational Exposure to Carbon Nanotubes and Nanofibers

## MASTER PAINTERS INSTITUTE (MPI)

MPI 147 (May 2016) Latex, Interior, Institutional Low Odor/VOC, Semi-Gloss (MPI Gloss Level 5)

MPI ASM (2019) Architectural Painting Specification Manual

MPI GPS-1-14 (2014) Green Performance Standard GPS-1-14

MPI GPS-2-14 (2014) Green Performance Standard GPS-2-14

MPI MRM (2015) Maintenance Repainting Manual

## SOCIETY FOR PROTECTIVE COATINGS (SSPC)

SSPC Glossary (2011) SSPC Protective Coatings Glossary

SSPC Guide 6 (2015) Guide for Containing Surface Preparation Debris Generated During Paint Removal Operations

SSPC Guide 7 (2015) Guide to the Disposal of Lead-Contaminated Surface Preparation Debris

SSPC PA 1 (2016) Shop, Field, and Maintenance Coating of Metals

SSPC QP 1 (2019) Standard Procedure for Evaluating the Qualifications of Industrial/Marine Painting Contractors (Field Application to Complex Industrial Steel Structures and Other Metal Components)

## U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

EPA Method 24 (2000) Determination of Volatile Matter Content, Water Content, Density, Volume Solids, and Weight Solids of Surface Coatings

## U.S. GENERAL SERVICES ADMINISTRATION (GSA)

FED-STD-313 (2018) Material Safety Data, Transportation Data and Disposal Data for Hazardous Materials Furnished to Government Activities

## U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

29 CFR 1910.1000 Air Contaminants

29 CFR 1910.1025 Lead

29 CFR 1926.62 Lead

1.3 DEFINITIONS

1.3.1 Qualification Testing

Qualification testing is the performance of all test requirements listed in the product specification. This testing is accomplished by MPI to qualify each product for the MPI Approved Product List, and may also be accomplished by Contractor's third-party testing lab if an alternative to Batch Quality Conformance Testing by MPI is desired.

1.3.2 Batch Quality Conformance Testing

Batch quality conformance testing determines that the product provided is the same as the product qualified to the appropriate product specification. This testing must be accomplished by an MPI testing lab.

1.3.3 Coating

SSPC Glossary; (1) A liquid, liquefiable, or mastic composition that is converted to a solid protective, decorative, or functional adherent film after application as a thin layer; (2) Generic term for paint, lacquer, enamel.

1.3.4 DFT or dft

Dry film thickness, the film thickness of the fully cured, dry paint or coating.

1.3.5 DSD

Degree of Surface Degradation, the MPI system of defining degree of surface degradation. Five levels are generically defined under the Assessment sections in the MPI MRM, MPI Maintenance Repainting Manual.

1.3.6 INT

MPI short term designation for an interior coating system.

1.3.7 Loose Paint

Paint or coating that can be removed with a dull putty knife.

1.3.8 mil / mils

The English measurement for 0.001 in or one one-thousandth of an inch.

1.3.9 MPI Gloss Levels

MPI system of defining gloss. Seven gloss levels (G1 to G7) are generically defined under the Evaluation sections of the MPI Manuals. Traditionally, Flat refers to G1/G2, Eggshell refers to G3, Semigloss refers to G5, and Gloss refers to G6.

Gloss levels are defined by MPI as follows:

Gloss Level	Description	Units at 60 degree angle	Units at 80 degree angle
G1	Matte or Flat	0 to 5	10 max

Gloss Level	Description	Units at 60 degree angle	Units at 80 degree angle
G2	Velvet	0 to 10	10 to 35
G3	Eggshell	10 to 25	10 to 35
G4	Satin	20 to 35	35 min
G5	Semi-Gloss	35 to 70	
G6	Gloss	70 to 85	
G7	High Gloss		

Gloss is tested in accordance with ASTM D523. Historically, the Government has used Flat (G1 / G2), Eggshell (G3), Semi-Gloss (G5), and Gloss (G6).

1.3.10 MPI System Number

The MPI coating system number in each MPI Division found in either the MPI Architectural Painting Specification Manual or the Maintenance Repainting Manual and defined as an exterior (EXT/REX) or interior system (INT/RIN).

1.3.11 Paint

SSPC Glossary; (1) Any pigmented liquid, liquefiable, or mastic composition designed for application to a substrate in a thin layer that is converted to an opaque solid film after application. Used for protection, decoration, identification, or to serve some other functional purposes; (2) Application of a coating material.

1.3.12 RIN

MPI short term designation for an interior coating system used in repainting projects or over existing coating systems.

1.4 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

Samples of specified materials may be taken and tested for compliance with specification requirements.

SD-03 Product Data

Coating

Product Data Sheets

SD-04 Samples

Color

SD-07 Certificates

Qualification Testing laboratory for coatings

Indoor Air Quality for Paints and Primers

SD-08 Manufacturer's Instructions

Application Instructions

Mixing

Manufacturer's Safety Data Sheets

SD-10 Operation and Maintenance Data

Coatings, Data Package 1

1.5 QUALITY ASSURANCE

1.5.1 Regulatory Requirements

1.5.1.1 Environmental Protection

In addition to requirements specified elsewhere for environmental protection, provide coating materials that conform to the restrictions of the local Air Pollution Control District and regional jurisdiction. Notify Contracting Officer of any paint specified herein which fails to conform.

1.5.1.2 Lead Content

Do not use coatings having a lead content over 0.06 percent by weight of nonvolatile content.

1.5.1.3 Chromate Content

Do not use coatings containing zinc-chromate or strontium-chromate.

1.5.1.4 Asbestos Content

Provide asbestos-free materials.

1.5.1.5 Mercury Content

Provide materials free of mercury or mercury compounds.

1.5.1.6 Silica

Provide abrasive blast media containing no free crystalline silica.

1.5.1.7 Human Carcinogens

Provide materials that do not contain ACGIH 0100 confirmed human carcinogens (A1) or suspected human carcinogens (A2).

1.5.1.8 Carbon Based Fibers / Tubes

Materials must not contain carbon based fibers such as carbon nanotubes or carbon nanofibers. Intelligence Bulletin 65 ranks toxicity of carbon nanotubes on a par with asbestos.

### 1.5.2 SSPC QP 1 Certification

Contractors that perform surface preparation or coating application on steel substrates must be certified by the Society for Protective Coatings (formerly Steel Structures Painting Council) (SSPC) to the requirements of SSPC QP 1 prior to Contract award, and must remain certified while accomplishing any surface preparation or coating application. If a Contractor's certification expires, the firm will not be allowed to perform any work until the certification is reissued. Requests for extension of time for any delay to the completion of the project due to an inactive certification will not be considered. Notify the Contracting Officer of any change in Contractor certification status. Notify the Contracting Officer of all scheduled and unannounced on-site audits from SSPC and furnish a copy of all audit reports.

### 1.5.3 Approved Products List

The current MPI, "Approved Product List" which lists paint by brand, label, product name and product code as of the date of Contract award, will be used to determine compliance with the submittal requirements of this specification. The Contractor may choose to use a subsequent MPI "Approved Product List", however, only one list may be used for the entire Contract and each coating system is to be from a single manufacturer. Provide all coats on a particular substrate from a single manufacturer. No variation from the MPI Approved Products List is acceptable.

### 1.5.4 Paints and Coatings Indoor Air Quality Certifications

Provide paint and coating products certified to meet indoor air quality requirements by MPI GPS-1-14, MPI GPS-2-14 or provide certification by other third-party programs. Provide current product certification documentation from certification body.

Provide certification of Indoor Air Quality for Paints and Primers. Submit required indoor air quality certifications in one submittal package.

### 1.5.5 Field Samples and Tests

The Contracting Officer may choose up to two coatings that have been delivered to the site to be tested at no cost to the Government. Take samples of each chosen product as specified in the paragraph SAMPLING PROCEDURE. Test each chosen product as specified in the paragraph TESTING PROCEDURE. Remove products from the job site which do not conform, and replace with new products that conform to the referenced specification. Test replacement products that failed initial testing as specified in the paragraph TESTING PROCEDURE at no cost to the Government.

#### 1.5.5.1 Sampling Procedure

Select paint at random from the products that have been delivered to the job site for sample testing. The Contractor must provide one quart samples of the selected paint materials. Take samples in the presence of the Contracting Officer, and label, and identify each sample. Provide labels in accordance with the paragraph PACKAGING, LABELING, AND STORAGE.

#### 1.5.5.2 Testing Procedure

Provide Batch Quality Conformance Testing for specified products, as defined by and performed by MPI. As an alternative to Batch Quality

Conformance Testing, the Contractor may provide Qualification Testing for specified products above to the appropriate MPI product specification, using the third-party laboratory approved under the paragraph QUALIFICATION TESTING laboratory for coatings. Include the backup data and summary of the test results within the qualification testing lab report. Provide a summary listing of all the reference specification requirements and the result of each test. Clearly indicate in the summary whether the tested paint meets each test requirement. Note that Qualification Testing may take 4 to 6 weeks to perform, due to the extent of testing required.

Submit name, address, telephone number, FAX number, and e-mail address of the independent third party laboratory selected to perform testing of coating samples for compliance with specification requirements. Submit documentation that laboratory is regularly engaged in testing of paint samples for conformance with specifications, and that employees performing testing are qualified. If MPI is chosen to perform the Batch Quality Conformance testing, the above submittal information is not required, only a letter is required from the Contractor stating that MPI will perform the testing.

#### 1.6 PACKAGING, LABELING, AND STORAGE

Provide paints in sealed containers that legibly show the Contract specification number, designation name, formula or specification number, batch number, color, quantity, date of manufacture, manufacturer's formulation number, manufacturer's directions including any warnings and special precautions, and name and address of manufacturer. Furnish pigmented paints in containers not larger than 5 gallons. Store paints and thinners in accordance with the manufacturer's written directions, and as a minimum, stored off the ground, under cover, with sufficient ventilation to prevent the buildup of flammable vapors, and at temperatures between 40 to 95 degrees F. Do not store paint, polyurethane, varnish, or wood stain products with materials that have a high capacity to absorb VOC emissions. Do not store paint, polyurethane, varnish, or wood stain products in occupied spaces.

#### 1.7 SAFETY AND HEALTH

Comply with applicable Federal, State, and local laws and regulations. Include in the Activity Hazard Analysis the potential impact of painting operations on painting personnel and on others involved in and adjacent to the work zone.

##### 1.7.1 Toxic Materials

To protect personnel from overexposure to toxic materials, conform to the most stringent guidance of:

- a. The applicable manufacturer's Safety Data Sheets (SDS) or local regulation.
- b. 29 CFR 1910.1000.
- c. ACGIH 0100, threshold limit values.
- d. The appropriate OSHA standard in 29 CFR 1910.1025 and 29 CFR 1926.62 for surface preparation on painted surfaces containing lead. Removal and disposal of coatings which contain lead is specified in Section 02 83 00 LEAD REMEDIATION. Additional guidance is given in SSPC Guide 6

and SSPC Guide 7. Refer to drawings for list of hazardous materials located on this project. Coordinate paint preparation activities with this specification section.

Submit manufacturer's Safety Data Sheets for coatings, solvents, and other potentially hazardous materials, as defined in FED-STD-313.

## 1.8 ENVIRONMENTAL REQUIREMENTS

Comply, at minimum, with manufacturer recommendations for space ventilation during and after installation.

### 1.8.1 Coatings

Do not apply coating when air or substrate conditions are:

- a. Less than 5 degrees F above dew point;
- b. Below 50 degrees F or over 95 degrees F, unless specifically pre-approved by the Contracting Officer and the product manufacturer. Do not, under any circumstances, violate the manufacturer's application recommendations.

### 1.8.2 Post-Application

Vacate space for as long as possible after application. Wait a minimum of 48 hours before occupying freshly painted rooms. Maintain one of the following ventilation conditions during the curing period, or for 72 hours after application:

- a. Supply 100 percent outside air 24 hours a day.
- b. Supply airflow at a rate of 6 air changes per hour, when outside temperatures are between 55 degrees F and 85 degrees F and humidity is between 30 percent and 60 percent.
- c. Supply airflow at a rate of 1.5 air changes per hour, when outside air conditions are not within the range stipulated above.

## PART 2 PRODUCTS

### 2.1 MATERIALS

Conform to the coating specifications and standards referenced in PART 3. Submit Product Data Sheets for specified coatings and solvents. Provide preprinted cleaning and maintenance instructions for all coating systems. Submit Manufacturer's Instructions on Mixing: Detailed mixing instructions, minimum and maximum application temperature and humidity, pot life, and curing and drying times between coats.

### 2.2 COLOR SELECTION OF FINISH COATS

Provide colors of finish coats as indicated or specified. Allow Contracting Officer to select colors not indicated or specified. Manufacturers' names and color identification are used for the purpose of color identification only. Named products are acceptable for use only if they conform to specified requirements. Products of other manufacturers are acceptable if the colors are approximately the colors indicated and the product conforms to specified requirements.

Provide color, texture, and pattern of wall coating systems to match existing color. Submit manufacturer's samples of paint colors. Cross reference color samples to color scheme as indicated. Submit color stencil codes. Tint each coat progressively darker to enable confirmation of the number of coats.

### PART 3 EXECUTION

#### 3.1 PROTECTION OF AREAS AND SPACES NOT TO BE PAINTED

Prior to surface preparation and coating applications, remove, mask, or otherwise protect hardware, hardware accessories, machined surfaces, radiator covers, plates, lighting fixtures, public and private property, and other such items not to be coated that are in contact with surfaces to be coated. Following completion of painting, reinstall removed items by workmen skilled in the trades. Restore surfaces contaminated by coating materials, to original condition and repair damaged items.

#### 3.2 SURFACE PREPARATION

Remove dirt, splinters, loose particles, grease, oil, disintegrated coatings, and other foreign matter and substances deleterious to coating performance as specified for each substrate before application of paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Schedule cleaning so that dust and other contaminants will not fall on wet, newly painted surfaces. Spot-prime exposed ferrous metals such as nail heads on or in contact with surfaces to be painted with water-thinned paints, with a suitable corrosion-inhibitive primer capable of preventing flash rusting and compatible with the coating specified for the adjacent areas. Refer to MPI ASM and MPI MRM for additional more specific substrate preparation requirements.

##### 3.2.1 Additional Requirements for Preparation of Surfaces With Existing Coatings

Before application of coatings, perform the following on surfaces covered by soundly-adhered coatings, defined as those which cannot be removed with a putty knife:

- a. Test existing finishes for lead before sanding, scraping, or removing. If lead is present, refer to paragraph Toxic Materials.
- b. Wipe previously painted surfaces to receive solvent-based coatings, except stucco and similarly rough surfaces clean with a clean, dry cloth saturated with mineral spirits, ASTM D235 or as specified in MPI MRM. Wipe the surfaces dry with a clean, dry, lint free cloth. Wipe immediately preceding the application of the first coat of any coating, unless specified otherwise.
- c. Sand existing glossy surfaces to be painted to reduce gloss. Brush, and wipe clean with a damp cloth to remove dust.
- d. The requirements specified are minimum. Comply also with the application instructions of the paint manufacturer and specific surface preparation requirements as outlined in MPI MRM Exterior Surface Preparation and Interior Surface Preparation.
- e. Thoroughly clean previously painted surfaces specified to be repainted

and damaged during construction of all grease, dirt, dust or other foreign matter.

- f. Remove blistering, cracking, flaking and peeling or otherwise deteriorated coatings.
- g. Remove chalk so that when tested in accordance with ASTM D4214, the chalk resistance rating is no less than 8.
- h. Roughen slick surfaces. Repair damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls with suitable material to match adjacent undamaged areas.
- i. Feather and sand smooth edges of chipped paint.
- j. Clean rusty metal surfaces in accordance with SSPC requirements. Use solvent, mechanical, or chemical cleaning methods to provide surfaces suitable for painting.
- k. Provide new, proposed coatings that are compatible with existing coatings.

### 3.2.2 Existing Coated Surfaces with Minor Defects

Sand, spackle, and treat minor defects to render them smooth. Minor defects are defined as scratches, nicks, cracks, gouges, spalls, alligating, chalking, and irregularities due to partial peeling of previous coatings.

### 3.2.3 Substrate Repair

- a. Repair substrate surface damaged during coating removal;
- b. Sand edges of adjacent soundly-adhered existing coatings so they are tapered as smooth as practical to areas involved with coating removal; and
- c. Clean and prime the substrate as specified.

## 3.3 PREPARATION OF CONCRETE AND CEMENTITIOUS SURFACE

### 3.3.1 Concrete and Masonry

- a. Curing: Allow concrete, stucco and masonry surfaces to cure at least 30 days before painting, and concrete slab on grade to cure at least 90 days before painting.
- b. Surface Cleaning: Remove the following deleterious substances.
  - (1) Dirt, Chalking, Grease, and Oil: Wash existing coated surfaces with a suitable detergent and rinse thoroughly.
  - (2) Fungus and Mold: Wash existing coated surfaces with a solution composed of 1/2 cup trisodium phosphate, 1/4 cup household detergent, one quart 5 percent sodium hypochlorite solution and 3 quarts of warm water. Rinse thoroughly with fresh water.
  - (3) Paint and Loose Particles: Remove by wire brushing.

(4) Efflorescence: Remove by scraping or wire brushing followed by washing with a 5 to 10 percent by weight aqueous solution of hydrochloric (muriatic) acid. Do not allow acid to remain on the surface for more than five minutes before rinsing with fresh water. Do not acid clean more than 4 square feet of surface, per workman, at one time.

- c. Cosmetic Repair of Minor Defects: Repair or fill mortar joints and minor defects, including but not limited to spalls, in accordance with manufacturer's recommendations and prior to coating application.
- d. Allowable Moisture Content: Latex coatings may be applied to damp surfaces, but not to surfaces with droplets of water. Do not apply epoxies to damp vertical surfaces as determined by ASTM D4263 or horizontal surfaces that exceed 3 lbs of moisture per 1000 square feet in 24 hours as determined by ASTM F1869. In all cases follow manufacturer's recommendations. Allow surfaces to cure a minimum of 30 days before painting.

### 3.3.2 Gypsum Board, Plaster, and Stucco

#### 3.3.2.1 Surface Cleaning

Verify that plaster and stucco surfaces are free from loose matter and that gypsum board is dry. Remove loose dirt and dust by brushing with a soft brush, rubbing with a dry cloth, or vacuum-cleaning prior to application of the first coat material. A damp cloth or sponge may be used if paint is water-based.

#### 3.3.2.2 Repair of Minor Defects

Prior to painting, repair joints, cracks, holes, surface irregularities, and other minor defects with patching plaster or spackling compound and sand smooth.

#### 3.3.2.3 Allowable Moisture Content

Latex coatings may be applied to damp surfaces, but not surfaces with droplets of water. Do not apply epoxies to damp surfaces as determined by ASTM D4263. Verify that new plaster to be coated has a maximum moisture content of 8 percent, when measured in accordance with ASTM D4444, Method A, unless otherwise authorized. In addition to moisture content requirements, allow new plaster to age a minimum of 30 days before preparation for painting.

### 3.4 APPLICATION

#### 3.4.1 Coating Application

- a. Comply with applicable federal, state and local laws enacted to ensure compliance with Federal Clean Air Standards. Apply coating materials in accordance with SSPC PA 1. SSPC PA 1 methods are applicable to all substrates, except as modified herein.
- b. At the time of application, paint must show no signs of deterioration. Maintain uniform suspension of pigments during application.
- c. Unless otherwise specified or recommended by the paint manufacturer, paint may be applied by brush, roller, or spray. Use trigger operated

spray nozzles for water hoses. Use rollers for applying paints and enamels of a type designed for the coating to be applied and the surface to be coated. Wear protective clothing and respirators when applying oil-based paints or using spray equipment with any paints.

- d. Only apply paints, except water-thinned types, to surfaces that are completely free of moisture as determined by sight or touch.
- e. Thoroughly work coating materials into joints, crevices, and open spaces. Pay special attention to ensure that all edges, corners, crevices, welds, and rivets receive a film thickness equal to that of adjacent painted surfaces.
- f. Apply each coat of paint so that dry film is of uniform thickness and free from runs, drops, ridges, waves, pinholes or other voids, laps, brush marks, and variations in color, texture, and finish. Completely hide all blemishes.
- g. Touch up damaged coatings before applying subsequent coats.
- h. Drying Time: Allow time between coats, as recommended by the coating manufacturer, to permit thorough drying, but not to present topcoat adhesion problems. Provide each coat in specified condition to receive next coat.
- i. Primers, and Intermediate Coats: Do not allow primers or intermediate coats to dry more than 30 days, or longer than recommended by manufacturer, before applying subsequent coats. Follow manufacturer's recommendations for surface preparation if primers or intermediate coats are allowed to dry longer than recommended by manufacturers of subsequent coatings. Cover each preceding coat or surface completely by ensuring visually perceptible difference in shades of successive coats.
- j. Finished Surfaces: Provide finished surfaces free from runs, drops, ridges, waves, laps, brush marks, and variations in colors.

#### 3.4.2 Mixing and Thinning of Paints

Reduce paints to proper consistency by adding fresh paint, except when thinning is mandatory to suit surface, temperature, weather conditions, application methods, or for the type of paint being used. Obtain written permission from the Contracting Officer to use thinners. Verify that the written permission includes quantities and types of thinners to use.

When thinning is allowed, thin paints immediately prior to application with not more than one pint of suitable thinner per gallon. The use of thinner does not relieve the Contractor from obtaining complete hiding, full film thickness, or required gloss. Thinning cannot cause the paint to exceed limits on volatile organic compounds. Do not mix paints of different manufacturers.

#### 3.4.3 Two-Component Systems

Mix two-component systems in accordance with manufacturer's instructions. Follow recommendation by the manufacturer for any thinning of the first coat to ensure proper penetration and sealing for each type of substrate.

3.4.4 Coating Systems

- a. Systems by Substrates: Apply coatings that conform to the respective specifications listed in the following Tables:

Table for Interior Applications	
MPI Division	Substrate Application
MPI Division 3	Interior Concrete Paint Table
MPI Division 4	Interior Concrete Masonry Units Paint Table
MPI Division 5	Interior Metal, Ferrous and Non-Ferrous Paint Table
MPI Division 6	Interior Wood Paint Table
MPI Division 9	Interior Plaster, Gypsum Board, Textured Surfaces Paint Table

- b. Minimum Dry Film Thickness (DFT): Apply paints, primers, varnishes, enamels, undercoats, and other coatings to a minimum dry film thickness of 1.5 mil each coat unless specified otherwise in the Tables. Coating thickness, where specified, refers to the minimum dry film thickness.
- c. Coatings for Surfaces Not Specified Otherwise: Coat unspecified surfaces the same as surfaces having similar conditions of exposure.
- d. Existing Surfaces Damaged During Performance of the Work, Including New Patches In Existing Surfaces: Coat surfaces with the following:
  - (1) One coat of primer.
  - (2) One coat of undercoat or intermediate coat.
  - (3) One topcoat to match adjacent surfaces.
- e. Existing Coated Surfaces To Be Painted: Apply coatings conforming to the respective specifications listed in the Tables herein, except that pretreatments, sealers and fillers need not be provided on surfaces where existing coatings are soundly adhered and in good condition. Do not omit undercoats or primers.

3.5 COATING SYSTEMS FOR CONCRETE AND CEMENTITIOUS SUBSTRATES

Apply coatings of Tables in MPI Division 3, 4 and 9 for Exterior and Interior.

3.6 INSPECTION AND ACCEPTANCE

In addition to meeting previously specified requirements, demonstrate mobility of moving components, including swinging and sliding doors, cabinets, and windows with operable sash, for inspection by the Contracting Officer. Perform this demonstration after appropriate curing and drying times of coatings have elapsed and prior to invoicing for final payment.

3.7 WASTE MANAGEMENT

As specified in the Waste Management Plan and as follows. Do not use kerosene or any such organic solvents to clean up water based paints. Properly dispose of paints or solvents in designated containers. Close and seal partially used containers of paint to maintain quality as necessary for reuse. Store in protected, well-ventilated, fire-safe area at moderate temperature. Place materials defined as hazardous or toxic waste in designated containers.

3.8 PAINT TABLES

All DFT's are minimum values. Use only materials with a MPI GPS-1-14 green check mark having a minimum MPI "Environmentally Friendly" E1 rating based on VOC (EPA Method 24) content levels. Acceptable products are listed in the MPI Green Approved Products List, available at <http://www.specifygreen.com/APL/ProductIdxByMPIInum.asp>.

3.8.1 Interior Paint Tables

3.8.1.1 MPI Division 4: Interior Concrete Masonry Units Paint Table

B. Existing, Previously Painted Concrete Masonry

Institutional Low Odor / Low VOC Latex					
Existing, previously painted	Filler	Primer	Intermediate	Topcoat	System DFT
MPI RIN 4.2L-G5 (Semigloss)	N/A	MPI 147	MPI 147	MPI 147	4 mils

-- End of Section --

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## SECTION 10 21 13

## TOILET COMPARTMENTS

08/20

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## ALUMINUM ASSOCIATION (AA)

AA DAF45 (2003; Reaffirmed 2009) Designation System for Aluminum Finishes

## ASTM INTERNATIONAL (ASTM)

ASTM A123/A123M (2017) Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products

ASTM A167 (2011) Standard Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip

ASTM A336/A336M (2021) Standard Specification for Alloy Steel Forgings for Pressure and High-Temperature Parts

ASTM A385/A385M (2020) Standard Practice for Providing High-Quality Zinc Coatings (Hot-Dip)

ASTM B36/B36M (2018) Standard Specification for Brass Plate, Sheet, Strip, and Rolled Bar

ASTM B86 (2018; E 2021) Standard Specification for Zinc and Zinc-Aluminum (ZA) Alloy Foundry and Die Castings

ASTM B221 (2021) Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes

ASTM D7611/D7611M (2013; E 2014) Standard Practice for Coding Plastic Manufactured Articles for Resin Identification

## INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 (2017) Standard And Commentary Accessible and Usable Buildings and Facilities

SCIENTIFIC CERTIFICATION SYSTEMS (SCS)

SCS SCS Global Services (SCS) Indoor Advantage

U.S. GENERAL SERVICES ADMINISTRATION (GSA)

CID A-A-60003 (Basic; Notice 1) Partitions, Toilet,  
Complete

U.S. NATIONAL ARCHIVES AND RECORDS ADMINISTRATION (NARA)

36 CFR 1191 Americans with Disabilities Act (ADA)  
Accessibility Guidelines for Buildings and  
Facilities; Architectural Barriers Act  
(ABA) Accessibility Guidelines

UNDERWRITERS LABORATORIES (UL)

UL 2818 (2013) GREENGUARD Certification Program  
For Chemical Emissions For Building  
Materials, Finishes And Furnishings

1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following  
in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Fabrication Drawings

Installation Drawings

SD-03 Product Data

Cleaning and Maintenance Instructions

Colors And Finishes

Anchoring Devices and Fasteners

Hardware and Fittings

Brackets

Door Hardware

Toilet Enclosures

Pilaster Shoes

Finishes

SD-04 Samples

Colors and Finishes

Hardware and Fittings

## Anchoring Devices and Fasteners

SD-07 Certificates

Warranty

SD-10 Operation and Maintenance Data

Plastic Identification

## 1.3 CERTIFICATIONS

## 1.3.1 Indoor Air Quality

## 1.3.1.1 Laminated Plastic and Solid Phenolic Products

Provide products certified to meet indoor air quality requirements by UL 2818 (Greenguard) Gold, SCS Global Services Indoor Advantage Gold or provide certification or validation by other third-party program that products meet the requirements of this Section. Provide current product certification documentation from certification body.

## 1.4 REGULATORY REQUIREMENTS

Comply with to ICC A117.1 code for access for the handicapped operation of toilet compartment door and hardware.

## 1.5 DELIVERY, STORAGE, AND HANDLING

Deliver materials in the manufacturer's original unopened packages with the brand, item identification, and project reference clearly marked. Store components in a dry location that is adequately ventilated; free from dust, water, other contaminants, and damage during delivery, storage, and construction.

## 1.6 WARRANTY

Provide manufacturer's warranty to repair or replace defective materials and workmanship for a period of one year from date of final acceptance of the work.

## PART 2 PRODUCTS

## 2.1 SYSTEM REQUIREMENTS

Provide a complete and usable toilet partition system, including toilet enclosures, room entrance screens, urinal screens, system of panels, hardware, and support components. Furnish the partition system from a single manufacturer, with a standard product as shown in the most recent catalog data. Submit Fabrication Drawings for toilet partitions and urinal screens consisting of fabrication and assembly details to be performed in the factory. Submit manufacturer's Cleaning and Maintenance Instructions in accordance with the streamline SOW.

## 2.1.1 Plastic Identification

Verify that plastic products to be incorporated into the project are labeled in accordance with ASTM D7611/D7611M. Where products are not labeled, provide product data indicating polymeric information in the

Operation and Maintenance Manual.

Type 1	Polyethylene Terephthalate (PET, PETE)
Type 2	High Density Polyethylene (HDPE)
Type 3	Vinyl (Polyvinyl Chloride or PVC)
Type 4	Low Density Polyethylene (LDPE)
Type 5	Polypropylene (PP)
Type 6	Polystyrene (PS)
Type 7	Other. Use of this code indicates that the package in question is made with a resin other than the six listed above, or is made of more than one resin listed above, and used in a multi-layer combination.

2.2 MATERIALS

2.2.1 Solid Polyethylene Panels (Finish 5)

Provide high density polyethylene (HDPE) suitable for exposed application. Waterproof, non-absorbent and graffiti resistant textured surface with a Flame Spread Index of 75 or less, and a Smoke Developed Index of 450 or less.

2.2.2 Anchoring Devices and Fasteners

Provide steel anchoring devices and fasteners hot-dipped galvanized after fabrication, in conformance with ASTM A385/A385M and ASTM A123/A123M. Conceal all galvanized anchoring devices.

2.2.3 Brackets

Provide two-ear panel wall brackets, T-style, 1 inch stock. Provide stirrup style panel-to-pilaster brackets.

2.2.4 Hardware and Fittings

2.2.4.1 General Requirements

Provide hardware for the toilet partition system that complies with CID A-A-60003 for the specified type and style of partitions. Provide hardware finish highly resistant to alkalis, urine, and other common toilet room acids. Comply with 36 CFR 1191 of latching devices and hinges for handicap compartments; provide stainless steel devices and hinges with door latches that operate without either tight grasping or twisting of the wrist of the operator. Submit three samples of each item, including anchoring devices and fasteners. Approved hardware samples may be installed in the work if properly identified.

Material	Conformance Standard
Cold-rolled sheet steel	ASTM A336/A336M, commercial quality

Zinc-base alloy	ASTM B86, Alloy AC41-A
Brass	ASTM B36/B36M, Alloy C26800
Aluminum	ASTM B221
Corrosion-resistant steel	ASTM A167, Type 304

2.2.4.2 Finishes

- a. Provide stainless steel with a No. 4 finish.

2.2.5 Door Hardware

2.2.5.1 Hinges

Provide adjustable hinges to hold in-swinging doors open at any angle up to 90 degrees and outswinging doors up to 10 degrees. Provide self-lubricating hinges with the indicated swing. Provide hinges that are surface-mounted type and have the following type of return movement:

- a. Gravity return movement

2.2.5.2 Latch and Pull

Provide latch and pull that is a combination rubber-faced door strike and keeper equipped with emergency access. Provide surface mounted latch.

2.2.5.3 Coat Hooks

Provide coat hooks that are combination units with hooks and rubber tipped pins.

2.3 PARTITION PANELS AND DOORS

Fabricate partition panels, and pilasters of materials and construction listed:

Provide plastic (HDPE) partition panels, doors and pilasters not less than 1 inch thick.

2.3.1 Toilet Enclosures

Provide toilet enclosures that comply with CID A-A-60003, Type I, Style C, overhead braced. Furnish width, length, and height of toilet enclosures as shown. Finish surface of panels are solid polyethylene (Finish 5); water resistant; graffiti resistant; non-absorbent radius beveled edges. Reinforce panels indicated to receive toilet paper holders or grab bars for mounting of the items required, and provide cut outs for through partition toilet accessories. Provide grab bars to withstand a bending stress, shear stress, shear force, and a tensile force induced by 250 lbf. Grab bars cannot rotate within their fittings.

## 2.4 OVERHEAD-BRACED PARTITIONS

Provide pilasters in sizes indicated that are manufacturer's standard corrosion-resistant supports, leveling mechanism, and anchors at pilasters to suit floor conditions. Provide shoes at pilasters to conceal supports and leveling mechanism. Provide anchoring device at the bottom of the pilaster consisting of a channel-shaped floor stirrup fabricated from not less than 0.0635 inch thick material and a leveling bolt. Secure the stirrup to the pilaster with not less than a 3/16 inch bolt and nut after the pilaster is leveled. Secure the stirrup to the floor with not less than two lead expansion shields and sheetmetal screws. Fabricate overhead brace from a continuous extruded aluminum tube not less than 1 inch wide by 1-1/2 inch high, 0.125 inch wall thickness. Finish is AA-C22A31 in accordance with AA DAF45. Set and secure brace into the top of each pilaster. Provide shoes at pilasters to conceal supports and leveling mechanism.

## 2.5 PILASTER SHOES

Provide shoes at pilasters to conceal floor-mounted anchorage. Provide one piece molded HDPE pilaster shoes. Height is a minimum 3 inches.

## 2.6 HARDWARE

Provide hardware for the toilet partition system that complies with CID A-A-60003 for the specified type and style of partitions. Provide hardware pre-drilled by manufacturer. Use a hardware finish that is highly resistant to alkalis, urine, and other common toilet room acids. Provide latching devices and hinges for handicap compartments complying with 36 CFR 1191 and stainless steel door latches that operate without either tight grasping or twisting of the wrist of the operator. Use stainless steel, tamper proof type screws and bolts. Wall mounting brackets are continuous, full height, stainless steel, in accordance with toilet compartment manufacturer's instructions. Provide floor-mounted anchorage consisting of corrosion-resistant anchoring assemblies with threaded rods, lock washers, and leveling adjustment nuts at pilasters for structural connection to floor.

## 2.7 COLORS AND FINISHES

### 2.7.1 Colors

Provide color as indicated; colors listed are not intended to limit the selection of equal colors from other manufacturers.

Color of pilaster shoes matches the core of solid plastic compartments. Submit three samples showing color and a finished edge on two adjacent sides and core construction, each not less than 12 inch square.

### 2.7.2 Finishes

#### 2.7.2.1 Finishes No. 4, No 4A and No. 5

Provide manufacturer's standard solid polyethylene (Finish 5) formed under high pressure rendering a single component section not less than 1 inch thick. Colors extend throughout the panel thickness.

## PART 3 EXECUTION

## 3.1 PREPARATION

Take field measurements prior to the preparation of drawing and fabrication to ensure proper fits. Verify that field measurements, surfaces, substrates and conditions are as required, and ready to receive work. Verify correct spacing of plumbing fixtures. Verify correct location of built in framing, anchorage, and bracing. Report in writing to Contracting Officer prevailing conditions that adversely affect satisfactory execution of the work of this section. Do not proceed with work until unsatisfactory conditions have been corrected.

## 3.2 METAL PARTITION FABRICATION

- a. Fabricate metal partition panels, doors, screens, and pilasters required for the project from galvanized-steel face sheets with formed edges. Laminate face sheets via pressure to the sound-deadening core with edges sealed with a continuous locking strip and corners mitered and welded. Ground all welds smooth. Provide concealed reinforcement for installation of hardware, fittings, and accessories. Surface of face sheets must be , free from wave, warp, or buckle.
- b. Before application of an enamel coating system, solvent-clean galvanized-steel surfaces to remove processing compounds, oils, and other contaminants harmful to coating-system adhesion. After cleaning, coat the surfaces with a metal-pretreatment phosphate coating. After pretreatment, finish exposed galvanized-steel surfaces with a baked-enamel coating system as specified.
- c. Provide an enamel coating system consisting of a factory-applied baked acrylic enamel coating system. Provide a coating system that is a durable, washable, stain-resistant, and mar-resistant finish.

## 3.3 INSTALLATION

Do not install items that show visual evidence of biological growth. Install partitions rigid, straight, plumb, and level, with the panels centered between the fixtures. Provide a panel clearance of not more than 1/2 inch and secure the panels to walls and pilasters with continuous full height wall brackets. Locate wall brackets so that holes for wall bolts occur in masonry or tile joints. Secure panels to pilasters with brackets matching the wall brackets. Provide for adjustment due to minor floor variations. Locate head rail joints at pilaster center lines. Install adjacent components for consistency of line and plane. Equip each door with hinges, one door latch, and one coat hook and bumper. Align hardware to uniform clearance at vertical edges of doors.

- a. Secure panels to hollow plastered walls with toggle bolts using not less than 1/4-20 screws of the length required for the wall thickness. Provide toggle bolts with a load-carrying strength of not less than 600 pounds per anchor.
- b. Secure panels to ceramic tile on hollow plastered walls or hollow concrete-masonry walls with toggle bolts using not less than 1/4-20 screws of the length required for the wall thickness. Provide toggle bolts with a load-carrying strength of not less than 600 pounds per anchor.

- c. Secure panels to solid masonry or concrete with lead or brass expansion shields designed for use with not less than 1/4-20 screws, with a shield length of not less than 1-1/2 inches. Provide expansion shields with a load-carrying strength of not less than 600 pounds per anchor.
- d. Submit Installation Drawings for toilet partitions, room entrance screens, and urinal screens showing plans, elevations, details of construction, hardware, reinforcing and blocking, fittings, mountings and escutcheons. Indicate on drawings the type of partition, location, mounting height, cutouts, and reinforcement required for toilet-room accessories.

#### 3.4 OVERHEAD-BRACED PARTITIONS

Secure pilasters to the floor with the anchorage device specified. Make all leveling devices readily accessible for leveling, plumbing, and tightening the installation. Secure overhead brace to the pilaster face with not less than two fasteners per face. Expansion shields have a minimum 2 inch penetration into the concrete slab. Make tops of doors parallel with the overhead brace when doors are in a closed position.

#### 3.5 FINAL ADJUSTMENT

After completion of the installation, make final adjustments to the pilaster-leveling devices, door hardware, and other working parts of the partition assembly. Doors have a uniform vertical edge clearance of approximately 3/16 inch and rest open at approximately 30 degrees when unlatched.

#### 3.6 CLEANING

Touch up baked enamel and powder coat finish with the same color of paint that was used for the finish. Clean all surfaces and adjacent surfaces soiled as a result of the work, in an approved manner compliant with the manufacturer's recommended cleaning and protection from damage procedures until accepted. Remove all equipment, tools, surplus materials, and work debris from the site.

-- End of Section --

SECTION 10 28 13

TOILET ACCESSORIES

08/20

PART 1 GENERAL

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

U.S. DEPARTMENT OF DEFENSE (DOD)

MIL-STD-1691 (1994; Rev F) Construction and Material Schedule for Military Medical and Dental Facilities

1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-02 Shop Drawings

Product Schedule

Submit product Schedule indicating types, quantities, sizes, and installation locations by room for each toilet accessory item required. Identify locations using room designations indicated on the drawings.

SD-03 Product Data

Item A5109 Grab Bar, 1-1/4 inch Dia., SS, 2 Wall, W/C Accessible

Item A5200 Dispenser, Toilet Tissue, SS, 2-Roll, Surface Mntd

Submit catalog numbers, literature, data sheets, construction details, profiles, anchoring and mounting requirements, including cutouts in other work and substrate preparation, and other pertinent data for each toilet accessory item to evaluate function, materials, dimensions and appearance.

Mirror, Wall Mounted

SD-10 Operation and Maintenance Data

Item A5109 Grab Bar, 1-1/4 inch Dia., SS, 2 Wall, W/C Accessible

Item A5200 Dispenser, Toilet Tissue, SS, 2-Roll, Surface Mntd

1.3 DELIVERY, STORAGE, AND HANDLING

Wrap toilet accessories for shipment and storage, then deliver to the jobsite in manufacturer's original packaging, and store in a clean, dry

area protected from construction damage and vandalism.

1.4 WARRANTY

Provide manufacturer's warranty to repair or replace defective materials and workmanship for a period of one year from date of final acceptance of the work..

PART 2 PRODUCTS

2.1 ACCESSORY ITEMS

Provide toilet accessories where indicated in accordance with Contractor-provided product schedule. Conform to the requirements for accessory items specified herein which are based on MIL-STD-1691 Joint Schedule Numbers (JSN). Provide each accessory item complete with the necessary mounting plates of sturdy construction with corrosion resistant surface.

Provide stainless steel products listed herein manufactured from materials containing a minimum of 50 percent recycled content.

2.1.1 Anchors and Fasteners

Provide corrosion-resistant anchors and fasteners capable of developing a restraining force commensurate with the strength of the accessory to be mounted and suited for use with the supporting construction. Provide tamperproof design exposed fasteners with finish to match the accessory. Provide fasteners proposed for use for each type of wall construction and mounting.

2.1.2 Finishes

Except where noted otherwise, provide the following finishes on metal:

Metal	Finish
Stainless steel	No. 4 satin finish
Carbon steel, copper alloy, and brass	Chromium plated, bright

2.1.3 Item A5109 Grab Bar, 1-1/4 Inch Diameter, SS, 2 Wall, W/C Accessible

Grab bar of 1-1/4 inch diameter satin finish stainless steel with peened gripping surface for use in toilet stall/room. Snap-on flange covers for concealed mounting are stainless steel and equipped with two screw holes for attachment to wall. Grab bars designed to meet and exceed ADA requirements for structural strength. Grab bars designed to withstand loads of 900 pounds when properly installed. Clearance from wall to grab bar is 1-1/2 inches to meet ADA and ANSI codes.

2.1.4 Mirror, Wall Mounted

Mirror frames are 0.75 inch by 0.625 inch angles fabricated of 0.050 inch, 18 gauge Type 304 stainless steel with mitered, heilarc welded corners that are ground and polished smooth. Concealed members are corrosion protected steel. Fabricate mirror backs with 0.036 inch, 20 gauge back panels

incorporating 0.050 inch, 18 gauge mounting brackets interlocked with frame tops and bottoms. Place filler material at mirror edges, and between mirrors and back panels. Mirrors are first quality, electrolytic copper backing on 0.25 inch plate or float glass, complying with ASTM C 1036 and ASTM C1503. Dimensions are as indicated.

#### 2.1.5 Item A5200 Dispenser, Toilet Tissue, SS, 2-Roll, Surface Mounted

Concealed surface mounted, double roll, toilet tissue dispenser of stainless steel. Unit holds and dispenses two standard 5-1/4 inch diameter rolls of toilet tissue. Spindles are free-spinning for non-controlled delivery, chrome-plated plastic equipped with heavy-duty internal springs.

Approximate size: 7 inches diameter by 4 inches deep.

### PART 3 EXECUTION

#### 3.1 INSTALLATION

Do not install items that show visual evidence of biological growth. Provide the same finish for the surfaces of fastening devices exposed after installation as the attached accessory. Provide oval exposed screw heads. Install accessories at the location and height indicated. Protect exposed surfaces of accessories with strippable plastic or by other means until the installation is accepted. After acceptance of accessories, remove and dispose of strippable plastic protection. Coordinate accessory manufacturer's mounting details with other trades as their work progresses. Use sealants for brackets, plates, anchoring devices and similar items in showers (a silicone sealant specified in Section 07 92 00 JOINT SEALANTS) as they are set to provide a watertight installation. After installation, thoroughly clean exposed surfaces and restore damaged work to its original condition or replace with new work.

##### 3.1.1 Surface Mounted Accessories

Mount on concealed backplates, unless specified otherwise. Conceal fasteners on accessories without backplates. Install accessories with corrosion-resistant fasteners as required by the construction. Install backplates in the same manner, or provide with lugs or anchors set in mortar, as required by the construction. Fasten accessories mounted on gypsum board and plaster walls without solid backing into the metal or wood studs, or to backplates secured to metal studs.

#### 3.2 CLEANING

Clean material in accordance with manufacturer's recommendations. Do not use alkaline or abrasive agents. Take precautions to avoid scratching or marring exposed surfaces.

-- End of Section --

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## SECTION 22 00 00

PLUMBING, GENERAL PURPOSE  
11/15, CHG 4: 05/21

## PART 1 GENERAL

## 1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.

## AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME A112.6.1M	(1997; R 2017) Floor Affixed Supports for Off-the-Floor Plumbing Fixtures for Public Use
ASME A112.19.2/CSA B45.1	(2018; ERTA 2018) Standard for Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals
ASME B1.20.1	(2013; R 2018) Pipe Threads, General Purpose (Inch)
ASME B16.5	(2020) Pipe Flanges and Flanged Fittings NPS 1/2 Through NPS 24 Metric/Inch Standard
ASME B16.50	(2021) Wrought Copper and Copper Alloy Braze-Joint Pressure Fittings
ASME B31.5	(2020) Refrigeration Piping and Heat Transfer Components

## AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)

ASSE 1037	(2015; R 2020) Performance Requirements for Pressurized Flushing Devices for Plumbing Fixtures
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## AMERICAN WELDING SOCIETY (AWS)

AWS B2.2/B2.2M	(2016) Specification for Brazing Procedure and Performance Qualification
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## ASTM INTERNATIONAL (ASTM)

ASTM A105/A105M	(2021) Standard Specification for Carbon Steel Forgings for Piping Applications
ASTM A193/A193M	(2020) Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service and Other Special Purpose Applications
ASTM A515/A515M	(2017) Standard Specification for Pressure Vessel Plates, Carbon Steel, for

	Intermediate- and Higher-Temperature Service
ASTM A516/A516M	(2017) Standard Specification for Pressure Vessel Plates, Carbon Steel, for Moderate- and Lower-Temperature Service
ASTM B32	(2020) Standard Specification for Solder Metal
ASTM B42	(2020) Standard Specification for Seamless Copper Pipe, Standard Sizes
ASTM B88	(2020) Standard Specification for Seamless Copper Water Tube
ASTM B88M	(2020) Standard Specification for Seamless Copper Water Tube (Metric)
ASTM B813	(2016) Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube
ASTM C920	(2018) Standard Specification for Elastomeric Joint Sealants
ASTM D2564	(2020) Standard Specification for Solvent Cements for Poly(Vinyl Chloride) (PVC) Plastic Piping Systems
ASTM D2665	(2014) Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Drain, Waste, and Vent Pipe and Fittings
ASTM D2855	(2015) Standard Practice for Making Solvent-Cemented Joints with Poly(Vinyl Chloride) (PVC) Pipe and Fittings
ASTM F409	(2017) Standard Specification for Thermoplastic Accessible and Replaceable Plastic Tube and Tubular Fittings
ASTM F891	(2016) Standard Specification for Coextruded Poly (Vinyl Chloride) (PVC) Plastic Pipe with a Cellular Core
ASTM F1760	(2016; R 2020) Standard Specification for Coextruded Poly(Vinyl Chloride) (PVC) Non-Pressure Plastic Pipe Having Reprocessed-Recycled Content
ASTM F2389	(2021) Standard Specification for Pressure-rated Polypropylene (PP) Piping Systems
COPPER DEVELOPMENT ASSOCIATION (CDA)	
CDA A4015	(2016; 14/17) Copper Tube Handbook

INTERNATIONAL CODE COUNCIL (ICC)

ICC A117.1 (2017) Standard And Commentary Accessible and Usable Buildings and Facilities

ICC IPC (2018) International Plumbing Code

MANUFACTURERS STANDARDIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY (MSS)

MSS SP-25 (2018) Standard Marking System for Valves, Fittings, Flanges and Unions

MSS SP-58 (2018) Pipe Hangers and Supports - Materials, Design and Manufacture, Selection, Application, and Installation

MSS SP-80 (2019) Bronze Gate, Globe, Angle and Check Valves

NSF INTERNATIONAL (NSF)

NSF 372 (2016) Drinking Water System Components - Lead Content

NSF/ANSI 14 (2021) Plastics Piping System Components and Related Materials

NSF/ANSI 61 (2020) Drinking Water System Components - Health Effects

U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA)

PL 93-523 (1974; A 1999) Safe Drinking Water Act

UNDERWRITERS LABORATORIES (UL)

UL 1951 (2011; Reprint Jun 2020) UL Standard for Safety Electric Plumbing Accessories

1.2 SUBMITTALS

Government approval is required for all submittals. Submit the following in accordance with Section 01 33 00 SUBMITTAL PROCEDURES:

SD-03 Product Data

Fixtures

List of installed fixtures with manufacturer, model, and flow rate.

Wall Hung Lavatories

SD-07 Certificates

Materials and Equipment

Bolts

Written certification by the bolt manufacturer that the bolts furnished comply with the specified requirements.

#### SD-10 Operation and Maintenance Data

Submit in accordance with Section 01 78 23 OPERATION AND MAINTENANCE DATA.

### 1.3 STANDARD PRODUCTS

Specified materials and equipment shall be standard products of a manufacturer regularly engaged in the manufacture of such products. Specified equipment shall essentially duplicate equipment that has performed satisfactorily at least two years prior to bid opening. Standard products shall have been in satisfactory commercial or industrial use for 2 years prior to bid opening. The 2-year use shall include applications of equipment and materials under similar circumstances and of similar size. The product shall have been for sale on the commercial market through advertisements, manufacturers' catalogs, or brochures during the 2 year period.

#### 1.3.1 Alternative Qualifications

Products having less than a two-year field service record will be acceptable if a certified record of satisfactory field operation for not less than 6000 hours, exclusive of the manufacturer's factory or laboratory tests, can be shown.

#### 1.3.2 Service Support

The equipment items shall be supported by service organizations. Submit a certified list of qualified permanent service organizations for support of the equipment which includes their addresses and qualifications. These service organizations shall be reasonably convenient to the equipment installation and able to render satisfactory service to the equipment on a regular and emergency basis during the warranty period of the contract.

#### 1.3.3 Manufacturer's Nameplate

Each item of equipment shall have a nameplate bearing the manufacturer's name, address, model number, and serial number securely affixed in a conspicuous place; the nameplate of the distributing agent will not be acceptable.

#### 1.3.4 Modification of References

In each of the publications referred to herein, consider the advisory provisions to be mandatory, as though the word, "shall" had been substituted for "should" wherever it appears. Interpret references in these publications to the "authority having jurisdiction", or words of similar meaning, to mean the Contracting Officer.

##### 1.3.4.1 Definitions

For the International Code Council (ICC) Codes referenced in the contract documents, advisory provisions shall be considered mandatory, the word "should" shall be interpreted as "shall." Reference to the "code official" shall be interpreted to mean the "Contracting Officer." For Navy owned

property, references to the "owner" shall be interpreted to mean the "Contracting Officer." For leased facilities, references to the "owner" shall be interpreted to mean the "lessor." References to the "permit holder" shall be interpreted to mean the "Contractor."

#### 1.3.4.2 Administrative Interpretations

For ICC Codes referenced in the contract documents, the provisions of Chapter 1, "Administrator," do not apply. These administrative requirements are covered by the applicable Federal Acquisition Regulations (FAR) included in this contract and by the authority granted to the Officer in Charge of Construction to administer the construction of this project. References in the ICC Codes to sections of Chapter 1, shall be applied appropriately by the Contracting Officer as authorized by his administrative cognizance and the FAR.

#### 1.4 DELIVERY, STORAGE, AND HANDLING

Handle, store, and protect equipment and materials to prevent damage before and during installation in accordance with the manufacturer's recommendations, and as approved by the Contracting Officer. Replace damaged or defective items.

#### 1.5 REGULATORY REQUIREMENTS

Unless otherwise required herein, plumbing work shall be in accordance with ICC IPC.

#### 1.6 PROJECT/SITE CONDITIONS

The Contractor shall become familiar with details of the work, verify dimensions in the field, and advise the Contracting Officer of any discrepancy before performing any work.

#### 1.7 INSTRUCTION TO GOVERNMENT PERSONNEL

When specified in other sections, furnish the services of competent instructors to give full instruction to the designated Government personnel in the adjustment, operation, and maintenance, including pertinent safety requirements, of the specified equipment or system. Instructors shall be thoroughly familiar with all parts of the installation and shall be trained in operating theory as well as practical operation and maintenance work.

Instruction shall be given during the first regular work week after the equipment or system has been accepted and turned over to the Government for regular operation. The number of man-days (8 hours per day) of instruction furnished shall be as specified in the individual section. When more than 4 man-days of instruction are specified, use approximately half of the time for classroom instruction. Use other time for instruction with the equipment or system.

When significant changes or modifications in the equipment or system are made under the terms of the contract, provide additional instruction to acquaint the operating personnel with the changes or modifications.

#### 1.8 ACCESSIBILITY OF EQUIPMENT

Install all work so that parts requiring periodic inspection, operation, maintenance, and repair are readily accessible. Install concealed valves,

expansion joints, controls, dampers, and equipment requiring access, in locations freely accessible through access doors.

## PART 2 PRODUCTS

### 2.1 MATERIALS

Materials for various services shall be in accordance with TABLES I and II. Pipe schedules shall be selected based on service requirements. Pipe fittings shall be compatible with the applicable pipe materials. Plastic pipe, fittings, and solvent cement shall meet NSF/ANSI 14 and shall be NSF listed for the service intended. Plastic pipe, fittings, and solvent cement used for potable hot and cold water service shall bear the NSF seal "NSF-PW." Polypropylene pipe and fittings shall conform to dimensional requirements of Schedule 40, Iron Pipe size and shall comply with NSF/ANSI 14, NSF/ANSI 61 and ASTM F2389. Polypropylene piping that will be exposed to UV light shall be provided with a Factory applied UV resistant coating. Pipe threads (except dry seal) shall conform to ASME B1.20.1. Grooved pipe couplings and fittings shall be from the same manufacturer. Material or equipment containing a weighted average of greater than 0.25 percent lead shall not be used in any potable water system intended for human consumption, and shall be certified in accordance with NSF/ANSI 61, Annex G or NSF 372. In line devices such as water meters, building valves, check valves, meter stops, valves, fittings and back flow preventers shall comply with PL 93-523 and NSF/ANSI 61, Section 8. End point devices such as drinking water fountains, lavatory faucets, kitchen and bar faucets, residential ice makers, supply stops and end point control valves used to dispense water for drinking must meet the requirements of NSF/ANSI 61, Section 9. Hubless cast-iron soil pipe shall not be installed underground, under concrete floor slabs, or in crawl spaces below kitchen floors. Plastic pipe shall not be installed in air plenums. Plastic pipe shall not be installed in a pressure piping system in buildings greater than three stories including any basement levels.

#### 2.1.1 Pipe Joint Materials

Grooved pipe and hubless cast-iron soil pipe shall not be used underground. Solder containing lead shall not be used with copper pipe. Cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Institute. Joints and gasket materials shall conform to the following:

- a. Solder Material: Solder metal shall conform to ASTM B32.
- b. Solder Flux: Flux shall be liquid form, non-corrosive, and conform to ASTM B813, Standard Test 1.
- c. PTFE Tape: PTFE Tape, for use with Threaded Metal or Plastic Pipe.
- d. Plastic Solvent Cement for PVC Plastic Pipe: ASTM D2564 and ASTM D2855.
- e. Flanged fittings including, but not limited to, flanges, bolts, nuts and bolt patterns shall be in accordance with ASME B16.5 class 150 and shall have the manufacturer's trademark affixed in accordance with MSS SP-25. Flange material shall conform to ASTM A105/A105M. Blind flange material shall conform to ASTM A516/A516M cold service and ASTM A515/A515M for hot service. Bolts shall be high strength or intermediate strength with material conforming to ASTM A193/A193M.

f. Copper tubing shall conform to ASTM B88, Type L.

2.2 PIPE HANGERS, INSERTS, AND SUPPORTS

Pipe hangers, inserts, and supports shall conform to MSS SP-58.

2.3 VALVES

Valves shall be provided on supplies to equipment and fixtures. Valves 2-1/2 inches and smaller shall be bronze with threaded bodies for pipe and solder-type connections for tubing. Valves 3 inches and larger shall have flanged iron bodies and bronze trim. Pressure ratings shall be based upon the application. Grooved end valves may be provided if the manufacturer certifies that the valves meet the performance requirements of applicable MSS standard. Valves shall conform to the following standards:

Description	Standard
Bronze Gate, Globe, Angle, and Check Valves	MSS SP-80

2.4 FIXTURES

Water closet replacements in major renovations may have a flush valve of up to 1.6 GPF to accommodate existing plumbing capacity. Fixtures for use by the physically handicapped shall be in accordance with ICC A117.1. Vitreous China, nonabsorbent, hard-burned, and vitrified throughout the body shall be provided. Porcelain enameled ware shall have specially selected, clear white, acid-resisting enamel coating evenly applied on surfaces. No fixture will be accepted that shows cracks, crazes, blisters, thin spots, or other flaws. Fixtures shall be equipped with appurtenances such as traps, faucets, stop valves, and drain fittings. Each fixture and piece of equipment requiring connections to the drainage system, except grease interceptors, shall be equipped with a trap. Brass expansion or toggle bolts capped with acorn nuts shall be provided for supports, and polished chromium-plated pipe, valves, and fittings shall be provided where exposed to view. Fixtures with the supply discharge below the rim shall be equipped with backflow preventers. Internal parts of flush valves and flushometer valves, shower mixing valves, shower head face plates, pop-up stoppers of lavatory waste drains, and pop-up stoppers and overflow tees and shoes of bathtub waste drains shall be copper alloy with all visible surfaces chrome plated. Plastic in contact with hot water shall be suitable for 180 degrees F water temperature.

2.4.1 Automatic Controls

Provide automatic, sensor operated faucets and flush valves to comply with ASSE 1037 and UL 1951 for lavatory faucets, urinals, and water closets. Flushing and faucet systems shall consist of solenoid-activated valves with light beam sensors. Flush valve for water closet shall include an override pushbutton. Flushing devices shall be provided as described in paragraph FIXTURES AND FIXTURE TRIMMINGS.

2.4.2 Wall Hung Lavatories

ASME A112.19.2/CSA B45.1, white vitreous china, straight back type, minimum dimensions of 19 inches, wide by 17 inches front to rear, with supply

openings for use with top mounted centerset faucets, and openings for concealed arm carrier installation. Provide aerator with faucet. Provide lavatory faucets and accessories meeting the flow rate and product requirements of the paragraph LAVATORIES. Provide ASME A112.6.1M concealed chair carriers with vertical steel pipe supports and concealed arms for the lavatory. Mount lavatory with the front rim 34 inches above floor and with 29 inches minimum clearance from bottom of the front rim to floor. Provide top-mounted solenoid-activated lavatory faucets including electrical-operated light-beam-sensor to energize the solenoid.

## 2.5 TRAPS

Unless otherwise specified, traps shall be plastic per ASTM F409 or copper-alloy adjustable tube type with slip joint inlet and swivel. Traps shall be without a cleanout. Provide traps with removable access panels for easy clean-out at sinks and lavatories. Tubes shall be copper alloy with walls not less than 0.032 inch thick within commercial tolerances, except on the outside of bends where the thickness may be reduced slightly in manufacture by usual commercial methods. Inlets shall have rubber washer and copper alloy nuts for slip joints above the discharge level. Swivel joints shall be below the discharge level and shall be of metal-to-metal or metal-to-plastic type as required for the application. Nuts shall have flats for wrench grip. Outlets shall have internal pipe thread, except that when required for the application, the outlets shall have sockets for solder-joint connections. The depth of the water seal shall be not less than 2 inches. The interior diameter shall be not more than 1/8 inch over or under the nominal size, and interior surfaces shall be reasonably smooth throughout. A copper alloy "P" trap assembly consisting of an adjustable "P" trap and threaded trap wall nipple with cast brass wall flange shall be provided for lavatories. The assembly shall be a standard manufactured unit and may have a rubber-gasketed swivel joint.

## 2.6 MISCELLANEOUS PIPING ITEMS

### 2.6.1 Escutcheon Plates

Provide one piece or split hinge metal plates for piping entering floors, walls, and ceilings in exposed spaces. Provide chromium-plated on copper alloy plates or polished stainless steel finish in finished spaces. Provide paint finish on plates in unfinished spaces.

### 2.6.2 Pipe Sleeves

Provide where piping passes entirely through walls, ceilings, roofs, and floors. Sleeves are not required where drain, waste, and vent (DWV) piping passes through concrete floor slabs located on grade, except where penetrating a membrane waterproof floor.

#### 2.6.2.1 Sleeves in Masonry and Concrete

Provide steel pipe sleeves or schedule 40 PVC plastic pipe sleeves. Sleeves are not required where drain, waste, and vent (DWV) piping passes through concrete floor slabs located on grade. Core drilling of masonry and concrete may be provided in lieu of pipe sleeves when cavities in the core-drilled hole are completely grouted smooth.

#### 2.6.2.2 Sleeves Not in Masonry and Concrete

Provide 26 gage galvanized steel sheet or PVC plastic pipe sleeves.

### 2.6.3 Pipe Hangers (Supports)

Provide MSS SP-58 Type 1 with adjustable type steel support rods, except as specified or indicated otherwise. Attach to steel joists with Type 19 or 23 clamps and retaining straps. Attach to Steel W or S beams with Type 21, 28, 29, or 30 clamps. Attach to steel angles and vertical web steel channels with Type 20 clamp with beam clamp channel adapter. Attach to horizontal web steel channel and wood with drilled hole on centerline and double nut and washer. Attach to concrete with Type 18 insert or drilled expansion anchor. Provide Type 40 insulation protection shield for insulated piping.

### 2.6.4 Nameplates

Provide 0.125 inch thick melamine laminated plastic nameplates, black matte finish with white center core, for equipment, gages, thermometers, and valves; valves in supplies to faucets will not require nameplates. Accurately align lettering and engrave minimum of 0.25 inch high normal block lettering into the white core. Minimum size of nameplates shall be 1.0 by 2.5 inches. Key nameplates to a chart and schedule for each system. Frame charts and schedules under glass and place where directed near each system. Furnish two copies of each chart and schedule.

### 2.6.5 Labels

Provide labels for sensor operators at flush valves and faucets. Include the following information on each label:

- a. Identification of the sensor and its operation with written description.
- b. Battery replacement schedule.

## PART 3 EXECUTION

### 3.1 GENERAL INSTALLATION REQUIREMENTS

#### 3.1.1 Water Pipe, Fittings, and Connections

##### 3.1.1.1 Cutting and Repairing

The work shall be carefully laid out in advance, and unnecessary cutting of construction shall be avoided. Damage to building, piping, wiring, or equipment as a result of cutting shall be repaired by mechanics skilled in the trade involved.

##### 3.1.1.2 Protection of Fixtures, Materials, and Equipment

Pipe openings shall be closed with caps or plugs during installation. Fixtures and equipment shall be tightly covered and protected against dirt, water, chemicals, and mechanical injury. Upon completion of the work, the fixtures, materials, and equipment shall be thoroughly cleaned, adjusted, and operated. Safety guards shall be provided for exposed rotating equipment.

##### 3.1.2 Joints

Installation of pipe and fittings shall be made in accordance with the manufacturer's recommendations. Mitering of joints for elbows and notching

of straight runs of pipe for tees will not be permitted. Joints shall be made up with fittings of compatible material and made for the specific purpose intended.

#### 3.1.2.1 Threaded

Threaded joints shall have American Standard taper pipe threads conforming to ASME B1.20.1. Only male pipe threads shall be coated with graphite or with an approved graphite compound, or with an inert filler and oil, or shall have a polytetrafluoroethylene tape applied.

#### 3.1.2.2 Copper Tube and Pipe

- a. Brazed. Brazed joints shall be made in conformance with AWS B2.2/B2.2M, ASME B16.50, and CDA A4015 with flux and are acceptable for all pipe sizes. Copper to copper joints shall include the use of copper-phosphorus or copper-phosphorus-silver brazing metal without flux. Brazing of dissimilar metals (copper to bronze or brass) shall include the use of flux with either a copper-phosphorus, copper-phosphorus-silver or a silver brazing filler metal.
- b. Soldered. Soldered joints shall be made with flux and are only acceptable for piping 2 inches and smaller. Soldered joints shall conform to ASME B31.5 and CDA A4015. Soldered joints shall not be used in compressed air piping between the air compressor and the receiver.
- c. Copper Tube Extracted Joint. Mechanically extracted joints shall be made in accordance with ICC IPC.

#### 3.1.2.3 Plastic Pipe

Acrylonitrile-Butadiene-Styrene (ABS) pipe shall have joints made with solvent cement. PVC and CPVC pipe shall have joints made with solvent cement elastomeric, threading, (threading of Schedule 80 Pipe is allowed only where required for disconnection and inspection; threading of Schedule 40 Pipe is not allowed), or mated flanged.

#### 3.1.2.4 Other Joint Methods

#### 3.1.3 Dissimilar Pipe Materials

Connections between ferrous and non-ferrous copper water pipe shall be made with dielectric unions or flange waterways. Dielectric waterways shall have temperature and pressure rating equal to or greater than that specified for the connecting piping. Waterways shall have metal connections on both ends suited to match connecting piping. Dielectric waterways shall be internally lined with an insulator specifically designed to prevent current flow between dissimilar metals. Dielectric flanges shall meet the performance requirements described herein for dielectric waterways. Connecting joints between plastic and metallic pipe shall be made with transition fitting for the specific purpose.

#### 3.1.4 Pipe Sleeves and Flashing

Pipe sleeves shall be furnished and set in their proper and permanent location.

#### 3.1.4.1 Sleeve Requirements

Unless indicated otherwise, provide pipe sleeves meeting the following requirements:

- a. Secure sleeves in position and location during construction. Provide sleeves of sufficient length to pass through entire thickness of walls, ceilings, roofs, and floors.
- b. A modular mechanical type sealing assembly may be installed in lieu of a waterproofing clamping flange and caulking and sealing of annular space between pipe and sleeve. The seals shall consist of interlocking synthetic rubber links shaped to continuously fill the annular space between the pipe and sleeve using galvanized steel bolts, nuts, and pressure plates. The links shall be loosely assembled with bolts to form a continuous rubber belt around the pipe with a pressure plate under each bolt head and each nut. After the seal assembly is properly positioned in the sleeve, tightening of the bolt shall cause the rubber sealing elements to expand and provide a watertight seal between the pipe and the sleeve. Each seal assembly shall be sized as recommended by the manufacturer to fit the pipe and sleeve involved.
- c. Sleeves shall not be installed in structural members, except where indicated or approved. Rectangular and square openings shall be as detailed. Each sleeve shall extend through its respective floor, or roof, and shall be cut flush with each surface, except for special circumstances. Pipe sleeves passing through floors in wet areas such as mechanical equipment rooms, lavatories, kitchens, and other plumbing fixture areas shall extend a minimum of 4 inches above the finished floor.
- d. Unless otherwise indicated, sleeves shall be of a size to provide a minimum of 1/4 inch clearance between bare pipe or insulation and inside of sleeve or between insulation and inside of sleeve. Sleeves in bearing walls and concrete slab on grade floors shall be steel pipe or cast-iron pipe. Sleeves in nonbearing walls or ceilings may be steel pipe, cast-iron pipe, galvanized sheet metal with lock-type longitudinal seam, or plastic.
- e. Except as otherwise specified, the annular space between pipe and sleeve, or between jacket over insulation and sleeve, shall be sealed as indicated with sealants conforming to ASTM C920 and with a primer, backstop material and surface preparation as specified in Section 07 92 00 JOINT SEALANTS. The annular space between pipe and sleeve, between bare insulation and sleeve or between jacket over insulation and sleeve shall not be sealed for interior walls which are not designated as fire rated.

#### 3.1.4.2 Pipe Penetrations

Provide sealants for all pipe penetrations. All pipe penetrations shall be sealed to prevent infiltration of air, insects, and vermin.

#### 3.2 FIXTURES AND FIXTURE TRIMMINGS

Polished chromium-plated pipe, valves, and fittings shall be provided where exposed to view. Angle stops, straight stops, stops integral with the faucets, or concealed type of lock-shield, and loose-key pattern stops for

supplies with threaded, sweat or solvent weld inlets shall be furnished and installed with fixtures. Where connections between copper tubing and faucets are made by rubber compression fittings, a beading tool shall be used to mechanically deform the tubing above the compression fitting. Exposed traps and supply pipes for fixtures and equipment shall be connected to the rough piping systems at the wall, unless otherwise specified under the item. Floor and wall escutcheons shall be as specified. Drain lines and hot water lines of fixtures for handicapped personnel shall be insulated and do not require polished chrome finish. Plumbing fixtures and accessories shall be installed within the space shown.

### 3.2.1 Fixture Connections

Where space limitations prohibit standard fittings in conjunction with the cast-iron floor flange, special short-radius fittings shall be provided. Connections between earthenware fixtures and flanges on soil pipe shall be made gastight and watertight with a closet-setting compound or neoprene gasket and seal. Use of natural rubber gaskets or putty will not be permitted. Fixtures with outlet flanges shall be set the proper distance from floor or wall to make a first-class joint with the closet-setting compound or gasket and fixture used.

### 3.2.2 Flushometer Valves

Flushometer valves shall be secured to prevent movement by anchoring the long finished top spud connecting tube to wall adjacent to valve with approved metal bracket. Flushometer valves for water closets shall be installed 39 inches above the floor, except at water closets intended for use by the physically handicapped where flushometer valves shall be mounted at approximately 30 inches above the floor and arranged to avoid interference with grab bars. In addition, for water closets intended for handicap use, the flush valve handle shall be installed on the wide side of the enclosure.

### 3.2.3 Height of Fixture Rims Above Floor

Lavatories shall be mounted with rim 34 inches above finished floor. Wall-hung drinking fountains and water coolers shall be installed with rim 42 inches above floor. Wall-hung service sinks shall be mounted with rim 28 inches above the floor. Installation of fixtures for use by the physically handicapped shall be in accordance with ICC A117.1.

### 3.2.4 Fixture Supports

Fixture supports for off-the-floor lavatories, urinals, water closets, and other fixtures of similar size, design, and use, shall be of the chair-carrier type. The carrier shall provide the necessary means of mounting the fixture, with a foot or feet to anchor the assembly to the floor slab. Adjustability shall be provided to locate the fixture at the desired height and in proper relation to the wall. Support plates, in lieu of chair carrier, shall be fastened to the wall structure only where it is not possible to anchor a floor-mounted chair carrier to the floor slab.

#### 3.2.4.1 Support for Solid Masonry Construction

Chair carrier shall be anchored to the floor slab. Where a floor-anchored chair carrier cannot be used, a suitable wall plate shall be imbedded in the masonry wall.

3.2.4.2 Support for Concrete-Masonry Wall Construction

Chair carrier shall be anchored to floor slab. Where a floor-anchored chair carrier cannot be used, a suitable wall plate shall be fastened to the concrete wall using through bolts and a back-up plate.

3.3 ESCUTCHEONS

Escutcheons shall be provided at finished surfaces where bare or insulated piping, exposed to view, passes through floors, walls, or ceilings, except in boiler, utility, or equipment rooms. Escutcheons shall be fastened securely to pipe or pipe covering and shall be satin-finish, corrosion-resisting steel, polished chromium-plated zinc alloy, or polished chromium-plated copper alloy. Escutcheons shall be either one-piece or split-pattern, held in place by internal spring tension or setscrew.

3.4 TABLES

TABLE I								
PIPE AND FITTING MATERIALS FOR DRAINAGE, WASTE, VENT AND CONDENSATE DRAIN PIPING SYSTEMS								
Item #	Pipe and Fitting Materials	SERVICE A	SERVICE B	SERVICE C	SERVICE D	SERVICE E	SERVICE F	SERVICE G
20	Polyvinyl Chloride plastic drain, waste and vent pipe and fittings, ASTM D2665, ASTM F891, (Sch 40) ASTM F1760	X	X	X	X	X	X	X
<p>SERVICE:</p> <p>A - Underground Building Soil, Waste and Storm Drain                      B - Aboveground Soil, Waste, Drain In Buildings                      C - Underground Vent                      D - Aboveground Vent                      E - Interior Rainwater Conductors Aboveground                      F - Corrosive Waste And Vent Above And Belowground                      G - Condensate Drain Aboveground</p> <p>* - Hard Temper</p>								

TABLE II					
PIPE AND FITTING MATERIALS FOR PRESSURE PIPING SYSTEMS					
Item #	Pipe and Fitting Materials	SERVICE A	SERVICE B	SERVICE C	SERVICE D
7	Seamless copper pipe, ASTM B42	X	X		X

TABLE II					
PIPE AND FITTING MATERIALS FOR PRESSURE PIPING SYSTEMS					
Item #	Pipe and Fitting Materials	SERVICE	SERVICE	SERVICE C	SERVICE D
		A	B		
8	Seamless copper water tube, ASTM B88, ASTM B88M	X**	X**	X**	X***
<p>SERVICE:</p> <p>A - Cold Water Service Aboveground</p> <p>B - Hot and Cold Water Distribution 180 degrees F Maximum Aboveground</p> <p>C - Compressed Air Lubricated</p> <p>D - Cold Water Service Belowground</p> <p>Indicated types are minimum wall thicknesses.</p> <p>** - Type L - Hard</p> <p>*** - Type K - Hard temper with brazed joints only or type K-soft temper without joints in or under floors</p> <p>**** - In or under slab floors only brazed joints</p>					

-- End of Section --