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OHA TO #16 - GRIFFIN PARK APTS

COMMISSION #: 21091.00

PROJECT SPECIFICATIONS

SEPTEMBER 2023
Revised February 2024

1 Beach Drive SE, Suite 201M ▪ St. Petersburg, Florida 33701
(727) 894-4453 ▪ (727) 896-8662

PROJECT MANUAL

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September 2023
Revised February 2024

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DIVISION 1 – GENERAL DATA

SECTION 00600
INSURANCE AND BONDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02. BONDS

A. PERFORMANCE AND PAYMENT BONDS shall be furnished to the Owner, by the Contractor, in an amount equal to 100 percent of the Contract sum as security for the faithful performance of the Contract and the payment of all persons performing labor and furnishing materials in connection with the Contract. Said payment bond shall also be executed in statutory bond and filed in the office of the Clerk of the District Court of the county in which the Project is located. Contractor shall provide the Owner with a certified copy of said statutory bond as so filed.

B. BONDS FURNISHED shall be written by a SURETY approved by the US. Treasury Department and licensed to do business in the State in which the Project is located. No work shall be commenced until bonds are in force.

C. FORM OF BOND shall be AlA Document A312, 2010 edition, issued and approved by the American Institute of Architects.

D. POWER OF ATTORNEY for the surety company agent must accompany each bond issued, and must be certified to include the date of the bonds.

E. PROVIDE TRIPLICATE COPIES of the bond forms and power of attorney.

1.03. INSURANCE

A. See AIA A101-2017 Exhibit A for required coverage.

PART 2 - MATERIALS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the day of in the year 2023
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

Orlando Housing Authority
TO 16 Griffin Park Apartments
520 Callahan Drive
Orlando, FL 32805

THE OWNER:
(Name, legal status and address)

Orlando Housing Authority
390 N Bumby Ave
Orlando, FL 32803

THE CONTRACTOR:
(Name, legal status and address)

TBD

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

ARTICLE A.1 GENERAL

The Owner and Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE A.2 OWNER'S INSURANCE

§ A.2.1 General

Prior to commencement of the Work, the Owner shall secure the insurance, and provide evidence of the coverage, required under this Article A.2 and, upon the Contractor's request, provide a copy of the property insurance policy or policies required by Section A.2.3. The copy of the policy or policies provided shall contain all applicable conditions, definitions, exclusions, and endorsements.

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§ A.2.2 Liability Insurance
The Owner shall be responsible for purchasing and maintaining the Owner's usual general liability insurance.

§ A.2.3 Required Property Insurance
§ A.2.3.1 Unless this obligation is placed on the Contractor pursuant to Section A.3.3.2.1, the Owner shall purchase and maintain, from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located, property insurance written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis. The Owner's property insurance coverage shall be no less than the amount of the initial Contract Sum, plus the value of subsequent Modifications and labor performed and materials or equipment supplied by others. The property insurance shall be maintained until Substantial Completion and thereafter as provided in Section A.2.3.1.3, unless otherwise provided in the Contract Documents or otherwise agreed in writing by the parties to this Agreement. This insurance shall include the interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project as insureds. This insurance shall include the interests of mortgagees as loss payees.

§ A.2.3.1.1 Causes of Loss. The insurance required by this Section A.2.3.1 shall provide coverage for direct physical loss or damage, and shall not exclude the risks of fire, explosion, theft, vandalism, malicious mischief, collapse, earthquake, flood, or windstorm. The insurance shall also provide coverage for ensuing loss or resulting damage from error, omission, or deficiency in construction methods, design, specifications, workmanship, or materials. Sub-limits, if any, are as follows:
(Indicate below the cause of loss and any applicable sub-limit.)

Causes of Loss	Sub-Limit

§ A.2.3.1.2 Specific Required Coverages. The insurance required by this Section A.2.3.1 shall provide coverage for loss or damage to falsework and other temporary structures, and to building systems from testing and startup. The insurance shall also cover debris removal, including demolition occasioned by enforcement of any applicable legal requirements, and reasonable compensation for the Architect's and Contractor's services and expenses required as a result of such insured loss, including claim preparation expenses. Sub-limits, if any, are as follows:
(Indicate below type of coverage and any applicable sub-limit for specific required coverages.)

Coverage	Sub-Limit

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures
If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

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§ A.2.4 Optional Extended Property Insurance.
The Owner shall purchase and maintain the insurance selected and described below.
(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

[ ] **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

[ ] **§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

[ ] **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

[ ] **§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

[ ] **§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

[ ] **§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

[ ] **§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.
The Owner shall purchase and maintain the insurance selected below.

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(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[ ] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. *(Indicate applicable limits of coverage or other conditions in the fill point below.)*

[ ] **§ A.2.5.2 Other Insurance**
(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	Limits

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose to the Owner any deductible or self-insured retentions applicable to any insurance required to be provided by the Contractor.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.2.2 Commercial General Liability

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than ($2,000,000) each occurrence, ($4,000,000) general aggregate, and ($) aggregate for products-completed operations hazard, providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal injury and advertising injury;

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.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
.4 bodily injury or property damage arising out of completed operations; and
.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
.3 Claims for bodily injury other than to employees of the insured.
.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.
.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
.8 Claims related to roofing, if the Work involves roofing.
.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
.10 Claims related to earth subsidence or movement, where the Work involves such hazards.
.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than ($1,000,000) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits.

§ A.3.2.6 Employers' Liability with policy limits not less than ($1,000,000) each accident, ($) each employee, and ($) policy limit.

§ A.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ A.3.2.8 If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.10 Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than ($) per claim and ($) in the aggregate.

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§ A.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.
(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[ ] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[ ] **§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for Work within fifty (50) feet of railroad property.

[ ] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[ ] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[ ] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[ ] **§ A.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

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Coverage	Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	100% of contract value
Performance Bond	100% of contract value

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE A.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

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SECTION 00701
GENERAL CONDITIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

B. Refer to Section 00811 for the amendments to these General Conditions.

1.02 CONTRACTS

A. The Standard Form AIA Document No. A201, "General Conditions for the Contract for Construction", 2017, are hereby made a part of this specification to the same extent as they are herein written out in full.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 00711
SUPPLEMENTARY GENERAL CONDITIONS

PART I – GENERAL

1.01 SCOPE

A. This Section sets forth the modifications and additions to the General Conditions of the contract for Construction HUD-5370 (1/2014)

B. In those instances that a Clause of the General Conditions is amended, modified, voided, or superseded by the Agreement, the provisions of such Clause not specifically amended, modified, voided or superseded shall remain in effect. Should a conflict exist between the provisions of the Agreement and those of the specifications, the requirements of the Agreement shall apply.

1.02 MODIFICATIONS AND ADDITIONS

A. Article 1 – Definitions

1. Clause 1 (c) shall have the following added: The term Contracting Office refers to OWNER NAME & ADDRESS.
2. Clause 1 (h) shall have the following added: The term _____or Owner refers to Orlando Housing Authority.

B. Clause II – Contractor's Responsibility for Work Add the following subclauses;

1. The Contractor shall be responsible for cutting, fitting or patching, required to complete the Work or to make its parts fit together properly.
2. The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Housing Authority or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the Housing Authority or a separate contractor except with written consent of the Housing Authority and of such separate contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the Housing Authority or a separate contractor the Contractor's consent to cutting or otherwise altering the Work.

C. Clause 9 Specifications and Drawings for Construction: Paragraph (a) delete the sentence, "In case of discrepancies between drawing and specifications, the specifications shall govern."

D. Clause 13 Health, Safety & Accident Precaution - Add the following subclauses:

1. To the fullest extent permitted by law, the contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorney's fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the work itself) including loss of use resulting therefrom, but only to the extent caused in whole or in part by negligent acts or omissions of the Contractor, a Subcontractor, or anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this subclause. The Contractor for and in consideration of ten ($10) Dollars and other good valuable considerations shall provide aforementioned indemnification.

2. In claims against any person or entity indemnified under this subclause (f) by an employee of the Contractor, or Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this subclause shall not be limited by limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workmen's compensation acts, disability benefits acts or other employee benefit acts.

3. The obligations of the Contractor under this Clause shall not extend to the liability of the Architect, the Architect's consultants, and agents and employees of any of them arising out of (1) the preparation or approval of maps, drawings, opinions, reports, surveys, Change Orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by the Architects, the Architect's consultants, and agents and employees of any of them provided such giving or failure to give is the primary cause of the injury or damage.

E. Clause 27 Payments - Add the following subclause:

1. The Architect may decide not to certify payment and may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if the Architect's opinion the representation to the Owner required by Clause 27 (i) cannot be made. The amount of the Application, the Architect will notify the Contractor and Owner. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also decide not to certify payment because of subsequently discovered evidence or subsequent observations may nullify the whole or part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss because of:

   a. defective Work not remedied;
   b. third party claims filed or reasonable evidence indicating probable filing of such claims;
   c. failure of the Contractor to make payments properly to Subcontractors for labor, materials or equipment;
   d. reasonable evidence that the Work cannot be completed for the unpaid balance of the contract Sum;
   e. damage to the Owner or another contractor;
   f. reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
   g persistent failure to carry out the Work in accordance with the Contractor Documents.

F. Clause 36 Insurance, subclause (b); delete last sentence. The Contractor is required to carry Builders Risk Insurance.

G. Clause 38 Contractor/Subcontracting with Small and minority Firms, Women's Business Enterprise and Labor Surplus Area Firms add the following subclauses;

1. CMBE Participation Goal 15% of Base of bid;

2. Each bidder shall meet, exceed or demonstrate that it could not meet, despite its good faith efforts, the project goal of the Housing Authority.

3. Attached to and hereby incorporated in the Contract Documents is a MBE Utilization Summary, which must be submitted with Contractor's bid. Award of the Contract shall be conditioned upon submission of the MBE participation information and upon satisfaction of the project goal or, if the goal is not met, upon demonstration that good faith efforts were made to meet the goals. Failure to satisfy these requirements shall result in the bid being deemed non-responsive and rejected. If the Utilization Summary does not indicate the goal has been met, then the Contractor must dispatch for overnight delivery to the Housing Authority all documentation of good faith effort not later than two (2) working days after notification has not been met.

4. If the apparent low bidder is determined not to have made a good faith effort, the Housing Authority will review the next lowest apparent responsive bid. This process will be repeated until a responsible bid is found.

H. Clause 41, delete in its entirety.

SECTION 00900
SUPPLEMENTARY INFORMATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SUBSURFACE INVESTIGATION REPORT

A. A copy of the geotechnical report prepared by OHC Environmental Engineering dated September 2019 is provided under this section.

B. This report identified properties of below grade conditions and offers recommendations for the design of foundations, prepared primarily for the use of the Architect/Engineer and is hereby incorporated into the project specifications.

C. The recommendations described shall be construed as a requirement of the Contract, unless specifically referenced otherwise in the Contract documents.

D. This report, by its nature, cannot reveal all conditions that exist on the site. Should subsurface conditions be found to vary substantially from this report, changes in the design and construction of foundations will be made, with resulting credits or expenditures to the Contract Price/Sum accruing to the Owner.

1.03 ASBESTOS SURVEY

A. A copy of the survey prepared by OHC Environmental Engineering dated November 2019 is provided under this section.

1.04 LEAD XRF SURVEY

B. A copy of the Lead XRF survey prepared by OHC Environmental Engineering dated December 2019 is provided under this section.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

Phase I Environmental Assessment Report

Performed at:

Housing Authority of the City of Orlando
Griffin Park Apartments
520 Callahan Drive
Orlando, FL 32805

Report Prepared For:

Mr. Monty Stinson, Purchasing Manager
Housing Authority of the City of Orlando
390 North Bumby Avenue
Orlando, Florida 32803

Report Prepared By:

OHC Environmental Engineering, Inc.
101 South Hoover Blvd, Suite 101
Tampa, Florida 33609

OHC Project #190184-ES

September 20, 2019

August 27, 2019

Mr. Monty Stinson
Purchasing Manager
Housing Authority of the City of Orlando
390 North Bumby Avenue
Orlando, FL 32803

RE: Phase I Environmental Site Assessment Report
Housing Authority of the City of Orlando – Griffin Park Apartments
520 Callahan Drive
Orlando, Orange County, FL

Dear Mr. Stinson,

OHC Environmental Engineering, Inc., (OHC), is pleased to submit this Phase I Environmental Site Assessment Report for the above referenced property. The following information summarizes our findings.

Executive Summary

OHC was retained by Mr. Monty Stinson, Purchasing Manager for the Housing Authority of the City of Orlando to conduct a Phase I Environmental Assessment of one tax parcel totaling approximately 3.79 acres. The parcel is located at 520 Callahan Drive in Orlando, FL. The tax parcel ID # is 292235321201000. OHC performed the Phase I Environmental Site Assessment of the property which is a subsidized housing project, herein known as the property, or site. The assessment is being performed prior to future demolition activities. The property is currently a residential facility which consists of three ten unit, fourteen eight unit and five six-unit apartment buildings an office building. The buildings were constructed around 1940. The property is currently owned by the Housing Authority of the City of Orlando.

The purpose of this Phase I Environmental Assessment (ESA) is to assess current site conditions and render an opinion as to the presence of recognized environmental conditions (REC) at the property. OHC performed this Phase I in general conformance with the scope and limitations of the ASTM Practice E1527-13, 40 CFR part 312 and 24 CFR part 58. The following findings which are potential REC's are listed below, along with supporting opinions and recommendations:

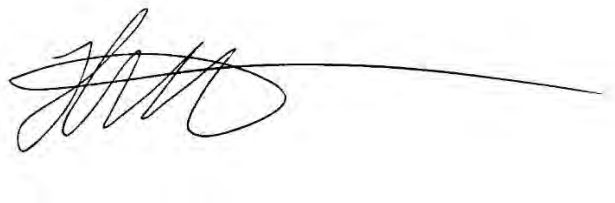
Finding 1) Small quantities of routine building cleaning chemicals, insecticides, paints, automotive maintenance products, flammable/combustible liquids, etc. are stored on-site. These products are used for maintaining the residences and lawn maintenance equipment. All chemical substances are stored in a number of different sized consumer ready packages or portable containers. The majority of these products and flammables are stored in the clubhouse maintenance shop. The majority of these items and their containers are in good condition with no signs of significant leakage or spills to site surfaces. Similar items are assumed to be located within the residential units when they are vacated. The presence of these items represents a REC. These items will need to be properly disposed of prior to demolition.

Finding 2) The use of PCBs in newly manufactured electrical equipment and oils has been banned since 1979. There are concrete pad mounted transformers present which may contain PCB containing dielectric fluid. Fluorescent light ballasts are present which may contain capacitors that may be filled with PCB containing dielectric fluid. Therefore, these items are a REC. The transformers and light ballasts also do not appear to be leaking. If they are PCB containing, they should be properly recycled prior to any future renovation or demolition.

Finding 3) Various engine waste oil stained areas were observed on the asphalt parking lot areas throughout the site. These areas are a result of oil leaking from resident vehicles. These areas represent a REC. If future demolition work will disturb any of these oil stained areas, the asphalt should be properly recycled at an asphalt recycling facility. Because the asphalt in these areas appear to be in good condition, subsurface migration to site soils would not be expected to have a significant impact.

No other potential REC's or findings of significant impact were identified at the site. The undersigned declares that he meets the definition of Environmental Professional as stated in 40 CFR part 312 and that he has conducted the assessment in accordance with same. OHC appreciates the opportunity to be of service to you on this project. If you have any further questions, please contact me at your earliest convenience.

Respectfully Submitted,
OHC ENVIRONMENTAL ENGINEERING, INC.



Thomas Martinelli
Environmental Professional

PHASE I ASSESSMENT

OHC PROJECT #:	**190184-ES**
CLIENT NAME:	**Mr. Monty Stinson**
PROJECT LOCATION:	**Griffin Park Apartments** **520 Callahan Drive** **Orlando, FL 32805**
DATE OF SURVEY:	**August 22, 2019**
CONSULTING FIRM:	**OHC Environmental Engineering, Inc.** **101 South Hoover Blvd, Suite101** **Tampa, Florida 33609**
ENVIRONMENTAL PROFESSIONAL:	**Thomas Martinelli**
OHC PROJECT MANAGER:	**Christina Jones**
CONSULTANT:	 **James F. Rizk, CIH**

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EXECUTIVE SUMMARY

OHC was retained by Mr. Monty Stinson, Purchasing Manager for the Housing Authority of the City of Orlando (OHA) to conduct a Phase I Environmental Assessment of one tax parcel totaling approximately 2.5 acres. The parcel is located at 520 Callahan Drive in Orlando, FL. The tax parcel ID # is 292235321201000. OHC performed the Phase I Environmental Site Assessment of the property which is a subsidized housing project, herein known as the property, or site. The assessment is being performed prior to future demolition activities. The property is currently a residential facility which consists of three ten unit, fourteen eight unit and five six-unit apartment buildings and an office building. The buildings were constructed around 1940. The property is currently owned by the Housing Authority of the City of Orlando.

The purpose of this Phase I Environmental Assessment (ESA) is to assess current site conditions and render an opinion as to the presence of recognized environmental conditions (REC) at the property. OHC performed this Phase I in general conformance with the scope and limitations of the ASTM Practice E1527-13, 40 CFR part 312 and 24 CFR part 58. The following findings which are potential REC's are listed below, along with supporting opinions and recommendations:

Finding 1) Small quantities of routine building maintenance chemicals, insecticides, paints, thinners, etc. are stored on-site. These products are used for maintaining the residences and lawn maintenance equipment. All chemical substances are stored in a number of different sized consumer ready packages or portable containers. The majority of these chemical products are stored in the maintenance shop. The majority of these items and their containers are in good condition with no signs of significant leakage or spills to site surfaces. Similar items are assumed to be located within the residential units when they are vacated. The presence of these items represents a REC. These items will need to be properly disposed of prior to demolition.

Finding 2) The use of PCBs in newly manufactured electrical equipment and oils has been banned since 1979. There are pole mounted transformers present which may contain PCB containing dielectric fluid. Fluorescent light ballasts are present which may contain capacitors that may be filled with PCB containing dielectric fluid. Therefore, these items are a REC. The transformers and light ballasts do not appear to be leaking. If they are

PCB containing, they should be properly recycled prior to any future renovation or demolition.

Finding 3) Various engine waste oil stained areas were observed on the asphalt parking lot areas throughout the site. These areas are a result of oil leaking from resident vehicles. These areas represent a REC. If future demolition work will disturb any of these oil stained areas, the asphalt should be properly recycled at an asphalt recycling facility. Because the asphalt in these areas appear to be in good condition, subsurface migration to site soils would not be expected to have a significant impact.

1.0 INTRODUCTION

OHC Environmental Engineering, Inc. (OHC) was retained by Mr. Monty Stinson, Purchasing Manager of the site, ("user"), to prepare a Phase I Environmental Site Assessment of the subject property ("site") in general conformance with ASTM Standard E1527-13, 40 CFR part 312 and 24 CFR part 58. This report documents OHC's findings from our Phase I Investigation of the site. The site currently consists of one tax parcel which is zoned R-3B/T/PH, Land Use Code: 0300 Multi Family-1. The site is currently an occupied subsidized residential complex. The site is located in a primarily residential setting with wooded and interstate roadway properties nearby.

1.1 Purpose

The purpose of this Phase I Environmental Site Assessment (ESA) is to determine whether there are "recognized environmental conditions" (REC), historical REC's (HREC) or controlled REC's (CREC) on the property, which may have an impact on the purchase, refinance or future sale of the site and liability of the user from a governmental or private party. The purpose of this assessment is to evaluate current environmental conditions. This ESA will therefore document current environmental conditions so either party, user or financier, will be able to establish their impact to the site, if any. Evidence for recognized environmental conditions were sought through environmental and historical records searches, interviews, and a site reconnaissance, etc.

1.2 Project Scope

This ESA is designed to generally conform to the American Society for Testing and Materials (ASTM) Practice E 1527-13, Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process in terms of levels of

inquiry, standard regulatory record search distances and site reconnaissance methodology. The All Appropriate Inquiry document outlined in 40 CFR 312 and the U.S, Housing and Urban Development (HUD) environmental review procedures were also referenced in preparing this report.

The following issues were not evaluated within the scope of this Phase I ESA: 1) regulatory compliance or permitting of facility operations, 2) off-site waste disposal tracking, 3) integrity of on-site sewage disposal systems, 4) geotechnical/structural concerns with underlying soil or fill, 5) wetlands delineation, 6) the potential for naturally-occurring elements or their products that exceed applicable regulatory standards, 7) radon, 8) underground storage tank testing, 9) electromagnetic fields, 10) agricultural practices, 11) the potential for biological hazards.

Phase I ESA's do not generally include field or laboratory analyses of building materials, air, soil or water samples, which may yield additional information unforeseen in a Phase I ESA. OHC completed this study under the regulatory framework known to be in effect as of the date of this report; and the investigation, findings and conclusions as set forth are predicated upon those laws and regulations.

1.3 Project Limitations

According to ASTM Practice E 1527-13, a Phase I ESA is intended to reduce, not necessarily eliminate, uncertainty regarding the potential environmental conditions in connection with the subject property. The standard states that it recognizes “reasonable limits of time and cost” in this process. Consequently, assessments cannot be judged solely on whether they missed some existing contamination, but instead on “the reasonableness of the judgments made at the time and under the circumstances in which they were made.”

This report is based upon the application of scientific principles and professional judgment to certain facts with resultant subjective interpretations. Professional judgments expressed herein are based on the facts currently available within the limit or scope of work, budget and schedule. The work described in this report was carried out in accordance with the Terms and Conditions in the proposal. An environmental lien and activity use limitation search was not performed or requested by the user.

In preparing this report, OHC may have relied on certain information provided by Environmental Data Resources (EDR), federal, state and local officials and other parties

referenced therein, and on information contained in the files of state agencies, local agencies, or both, available to OHC at the time of this site assessment. Although there may have been some degree of overlap in the information provided by these various sources, OHC did not attempt to independently verify the accuracy or completeness of all the information reviewed or received during the course of this site assessment. Observations were made of the site and of the structures, if any, on the site as indicated in this report. Where access to portions of the site or to structures on the site was unavailable or limited, OHC renders no opinion as to the presence of indirect evidence relating to petroleum substance, hazardous substances, or both, in that portion of the site and structure. In addition, OHC renders no opinion as to the presence or indirect evidence relating to hazardous material storage or oil, where direct observation of the interior/exterior walls, ground surface, floors, ceiling or a structure is obstructed by objects or vegetation covering on or over these surfaces.

As part of this assessment, OHC has submitted a request for an informal file review with the Orange County Environmental Protection Division (EPD), Orange County Emergency Management office and the City of Orlando Fire Department. Information from these inquiries are found in Attachment V.

1.4 Special Terms and Conditions

Terms as defined by ASTM E 1527 are used, as appropriate, in this report. ASTM defines recognized environmental conditions as: "the presence or likely presence of any hazardous substances or petroleum products in, on or at a property (1) due to a release to the environment, (2) under conditions indicative of a release to the environment or (3) under conditions that pose a material threat of a future release to the environment. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de-minimus conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. Conditions determined to be de-minimus are not recognized environmental conditions. Within the context of the ASTM standard, the "site" is the Griffin Park Apartment Complex property and the "user" of this report is Mr. Monty Stinson. Mr. Monty Stinson was responsible as owner/seller to have knowledgeable individuals prepare the user questionnaire found in Attachment I. OHC relied on information from the questionnaire to assist in determining if REC's were

present on site. The Housing Authority of the City of Orlando plans on future demolition of the site.

2.0 SITE DESCRIPTION

2.1 Location and Legal Description

The subject property, consisting of the aforementioned tax parcel, is described as approximately 3.79 acres of residentially developed property. The site is located at 520 Callahan Drive., Orlando, Orange County, Florida, herein known as the property, or site. The property is currently owned by the Housing Authority of the City of Orlando. Refer to the tax assessment information/site maps in Attachment II and site photographs in Attachment III for visual reference.

2.2 Environmental Setting

The site is located in a primarily residential setting. According to the EDR FEMA Flood Hazard Area Map, the site is not located within a flood plain. According to the EDR provided wetland inventory map, no wetland areas appear to be present within the property boundary. Wetland areas are present on adjacent properties. According to the EDR provided information from the 1994 United States Geological Survey, the rock stratigraphic unit at the site is of the Miocene Series of the Tertiary system which was formed in the Cenozoic era. Metamorphic rock formation consists of limestone. Native soil types of the area are primarily Wabasso fine sands that are not hydric. The site consists of urban land. The survey does not identify any depressions or sinkholes on the site. The elevation of the site is approximately 101 feet above mean sea level. The natural topography of the site generally slopes slightly to the south.

2.3 General Site and Vicinity Characteristics

Located within the City of Orlando, the surrounding area was initially developed in the early 1930's as primarily agricultural or residential in nature. No industrial or agricultural properties are located in the immediate vicinity. The site is serviced by city water by the Orlando Utilities Commission (OUC). The site is connected to the city sanitary sewer system. Municipal waste disposal in the vicinity is contracted or provided by the city. Electric (OUC), gas & telecommunications are available at the street. The site consists of one irregular shaped parcel consisting of 3.79 acres.

The surrounding area was sparsely developed by at least the early 1930's. By 1952, surrounding properties to the west included residential structures. The immediate surrounding area is currently primarily wooded, interstate roadways and residential.

2.4 On-site structures/Improvements

The 3.79 acre site is approximately 20% landscaped, 60% improved with the residential apartment buildings, 5% for outdoor recreational space (basketball court/wading pool) and 15% sidewalks. Vehicle parking is in the street. Improved areas consist of three ten unit two story apartment buildings, fourteen eight unit two story apartment buildings, five six unit one story apartment buildings and the office building. The buildings have electric HVAC units with natural gas hot water heaters and stoves. Fluorescent light ballasts are located in some buildings. The buildings are described as follows:

Office Building

The office building is constructed on concrete slab at grade which encompasses approximately 2,436 square feet. The exterior walls are concrete block which are painted on the interior. Interior walls and ceilings are a combination of block and drywall. Some ceilings have suspended ceiling tiles. The floors are predominantly vinyl and/or ceramic tile. The roof is constructed of wood joists, planking and asphalt shingles. The building consists of offices, a laundry room, meeting space, restrooms, a kitchen and a vault. The maintenance shop is located in this building. Office functions have been discontinued in this building and have been relocated to residential unit #808.

Ten Unit Apartment Building

The ten unit buildings are constructed on concrete slab at grade which encompass approximately 8,467 square feet. The exterior walls are painted concrete block which are also painted on the interior. Interior walls and ceilings are a combination of block and drywall. Some ceilings have textured surfaces. The floors are predominantly ceramic tile. The roof is constructed of wood joists, planking and asphalt shingles.

Eight Unit Apartment Building

The eight unit buildings are constructed on concrete slab at grade which encompass approximately 7,077 square feet. The exterior walls are painted concrete block which are also painted on the interior. Interior walls and ceilings are a combination of block and

drywall. Some ceilings have textured surfaces. The floors are predominantly ceramic tile. The roof is constructed of wood joists, planking and asphalt shingles.

Six Unit Apartment Building

The six unit buildings are constructed on concrete slab at grade which encompass approximately 6,407 square feet. The exterior walls are painted concrete block which are also painted on the interior. Interior walls and ceilings are a combination of block and drywall. Some ceilings have textured surfaces. The floors are predominantly ceramic tile. The roof is constructed of wood joists, planking and asphalt shingles.

2.5 Current Site Usage and Adjoining Properties

The site is currently a subsidized housing project. The office building was used as a place to conduct project business and have public functions. The first floor is also used as a common gathering place, laundry facility and maintenance department storage and work area. A branch of the Orlando Police Department neighborhood watch is located within one of the residential apartments. The adjoining property to the south is partially wooded and is bordered by Interstate 4. The adjoining property to the north are residences and Carter Street. The adjoining property to the east is Interstate 4. The adjoining property to the west is Avondale Avenue and the Route 408 off ramp. Surrounding land use in all further directions is primarily residential, commercial and for transportation purposes.

3.0 RECORDS REVIEW

3.1 Site History & Ownership

The Declaration of Trust (DOT) documenting site sales history was obtained and reviewed. Information obtained through the DOT involving the Griffin Park site and former land plats are as follows:

- Plat Book Q, page 72.

Tracking these plats and previous sales are outside the scope of this assessment. The OHA has owned this property since at least 1940. Previous to this point the property underwent various subdivisions, easements, etc. which made further deed tracking unmanageable within the time constraints of this project. The DOT is found in Attachment II.

3.2 Federal and State Environmental Database Search (EDR)

A search of federal and state records was conducted according to ASTM standards by contracting a commercial database service, EDR, in order to identify any property within a designated proximity to the site that may pose a risk of contamination of the site. Definitions for selected database sites were identified and are described along with each identified site in the following sections. See Attachment IV for definitions and the Executive Summary of the EDR database report.

Pertinent Federal ASTM Records

The site was listed as a conditionally exempt small quantity generator of hazardous waste as described in the federal database descriptions. The generator notice was received by the EPA in 1994. No violations are noted regarding the waste generation activities. The following are designated by the ASTM Standard as search databases with the number of sites identified in the search area:

NPL	US EPA National Priorities List - 0
CERCLIS/SEMS	US EPA Comprehensive Environmental Response, Compensation and Liability Act Information System - 0
RCRA CORRACTS	Facilities Subject to Corrective Action Under the Resource Conservation and Recovery Act -0
RCRA non-CORRACTS	Facilities Not Subject to Corrective Action Under the Resource Conservation and Recovery Act - 0
RCRA generators	Generators Under the Resources Conservation and Recovery Act -3
RI/ERNS	National Response Incidents – 0

Based on proximity and a cursory drive by, none of the federal mapped or unmapped sites identified in the EDR report would be expected to impact the subject property. However, any contamination issues present on adjacent sites migrating to the site would be the responsibility of the adjacent site owner to rectify through the applicable regulatory guidelines.

Florida Records

No state hazardous waste sites, two solid waste facilities/historic landfill sites, 19 LUST sites and one Brownfields site were identified by EDR within a designated proximity to the site according to ASTM standards. The target property is not listed as any type of state listed site. However, the radius map indicated the site is within a Florida Brownfields zone. Based on proximity, a cursory drive by and the fact that the EDR reports do not identify non-reported leaking tanks, none of these types of state properties or unmapped properties would be expected to impact the site. However, any contamination issues present on adjacent sites migrating to the site would be the responsibility of the adjacent site owner to rectify through the applicable regulatory guidelines.

3.3 Local and State Environmental Record Search

As part of this assessment, OHC has submitted a request for an informal file review with the Orange County EPC, Orange County Emergency Management and City of Orlando fire Department offices. Information obtained from these requests is as follows:

- The Orange County EPD office responded back stating that there were no waste management, air management, water management or other pertinent files associated with the subject property. There was a record of an individual tenant complaining about water quality.
- The Orange County Emergency Management office has responded stating that the site is in the jurisdiction of the City of Orlando Fire Department.
- The City of Orlando Fire Department responded back stating there were no records for the site.

File review requests and information is found in Attachment V.

3.4 Other Environmental Record Sources

OHC conducted a review of geological maps, land use and zoning maps at the Orange County Planning Commission office. The site is zoned residential R-3B/T/PH and the land use code is 0300 Multi Family. The geology is as stated in section 2.2. A City Directory Search was performed which identifies business entities, individuals, etc. which have had phone numbers associated with the site address. The listings for 520 Callahan Drive and other addresses on the site indicate that address had individual names

indicating residential usage. Surrounding addresses indicate that the addresses have been used for residential and commercial purposes. The Directory Search summary is found in Attachment V.

3.5 Sanborn Maps

JMT conducted a Sanborn Fire Insurance Map search through EDR. The search conducted revealed that maps were produced for the years 1919, 1925, 1950, 1956, 1965 and 1973. The 1919 map reveals the area was vacant. The 1925 map indicates the city streets have been constructed in the area and that individual residences exist. Callahan Drive does not exist. The 1950 and 1956 map indicate that the housing project is constructed. Additional six and eight unit apartments exist to the north, east and south of the office building as compared to today. The surrounding area is primarily residential. The 1965 and 1973 maps reveal that a number of apartment buildings have been demolished to accommodate the construction of Interstate 4. The Sanborn map search report is found in Attachment VI.

3.6 Topographic Maps

Historic topographic maps for the years 1956, 1970, 1980, 1994/95 and 2012 were obtained and reviewed for the subject area. All maps reveal the site is not developed and appears to be vacant. Residential neighborhoods exist in all directions. Sparse commercial development is evident to the north and east. The 2012 map produced does not show building structures, only topographic features. The map search data is found in Attachment VII.

3.7 Aerial Photograph Review

Historic aerial photographs for the years 1947, 1952, 1969, 1974, 1978, 1984, 1989, 1994, 1997, 1999, 2007, 2010, 2013 and 2017 were obtained and reviewed of the subject area. The aerials were at the 1" = 500 ft. scale which have varying levels of resolution. The 1947 and 1952 aerials reveal that the site appears to have all the apartment buildings from the original construction. Residential development exists in all areas in 1947 and increases in each map chronologically. The 1969 aerial reveals the site is essentially unchanged but Interstate 4 exists to the east. The 1974 through 2012 aerials reveal that the site is essentially unchanged and is completely surrounded by Interstate 4 and Route 408 roadways and off ramps. The areas east of Interstate 4 indicate heavy commercial and industrial development. The 2017 aerial reveals that the site is developed with some

of the structures demolished due to the Interstate 4 expansion. The apartment complex, office building and exterior recreation areas exist. The photos obtained are found in Attachment VIII.

3.8 National Environmental Protection Act Records

This section is designed to be in general conformance with the U.S. Department of Housing and Urban Development regulation as stated in 24 CFR PART 58 entitled "Environmental Review Procedures for Entities Assuming HUD Environmental Responsibilities". The records reviewed in this section were provided by EDR or researched by OHC personnel. The information provided here can assist HUD officials in completing the form entitled "Environmental Assessment Determination and Compliance Findings for HUD Assisted Projects" required for federal financial assistance.

The EDR report does not identify any floodplains, wild or scenic rivers, wetlands, farmlands, coastal barriers/zones or FCC/FAA sites on the subject property. Therefore, these issues would not be expected to require mitigation. No noise abatement or control measures would be expected to be implemented as no major sources of noise exist on the site. The site is serviced by a public potable water source, therefore, if sole source aquifers do exist in the vicinity, they would not be adversely affected by site demolition. The site does not contain any stationary or mobile emissions sources as per the Clean Air Act definition. The EDR report does identify endangered species and natural areas on or in the vicinity of the site. The site has been developed as a residential complex since 1940, and does not appear to support habitat necessary for state natural areas or endangered species to exist, therefore, these issues would not be expected to impact the demolition process. The presence of contamination/toxic substances or explosive/flammable hazards would not be expected to be present at the site. Three historic sites were identified on or in the vicinity of the subject property. These would be the Carter Street Historic District and the Griffin Park Historic District. It lists the 520 Callahan Drive address as a historic structure. Further inquiry into these areas would be required by the user to determine if these areas would be disturbed during demolition.

The Environmental Assessment Factors were reviewed as per 24 CFR 58.40. Due to the fact that the site is already developed, no future land development is currently planned, future development is not an issue. There are no socioeconomic issues, community

facilities & services or natural features that would be expected to be adversely impacted during the demolition process. Therefore, these issues would be expected to fall under the code (2) classification of no impact anticipated.

Based upon the records researched within this section, the demolition of this site would not be expected to have any significant impact upon the human environment. Therefore, a "Finding of No Significant Impact" (FONSI) would be recommended. The OHA should make a self determination to decide if further Environmental Impact Statements (EIS) are required. The EDR NEPA executive summary report is found in Attachment IX.

4.0 SITE RECONNAISSANCE

On August 21, 2019 OHC Environmental Professional, Mr. Thomas Martinelli, performed site reconnaissance at the subject property. Mr. Ray Collar of the Orlando Housing Authority central maintenance office, accompanied OHC on the site inspection. Remarkable observations as a result of the reconnaissance are discussed in the following sections of the report.

4.1 General Site Observations

The site was observed to have the characteristics outlined in Section 2.3 and 2.4. The site was occupied at the time of the site reconnaissance. Specific items were observed:

4.1.1 Storage Tanks

No evidence of aboveground or underground storage tanks, (i.e. vent/fill pipes), was observed at the site.

4.1.2 Polychlorinated Biphenyls ("PCBs")

The use of PCBs in newly manufactured electrical equipment and oils has been banned since 1979. Therefore, this type of equipment (pole mounted transformers, fluorescent light ballasts) which were installed prior to this date may contain parts which may be filled with PCB-contained dielectric fluid. Pole mounted transformers and light ballasts were observed on site. Any pole mounted transformers would be owned by OUC. As likely owner, OUC would be responsible for any leaks, spills or relocation of their transformers.

4.2 Exterior Observations

The site is separated by chain link fencing on the east side. Exterior areas of the site include the basketball court, wading pool, exterior storage, grassy landscaped areas, concrete sidewalks, etc. Various areas of incidental waste motor oil leakage was observed on the surface of the city owned asphalt road surfaces which tenants use to park their vehicles. The roof stormwater flows off the rooftops and percolate into site soils. Stormwater from roadways is conveyed via surface catch basins to underground conveyances to the city stormwater sewer. HVAC heat pump units and natural gas meters are present at the rear of each building. Various subsurface utility access boxes for telecommunications, electric service, etc. were observed.

Indicators Not Observed

The following indicators of possible recognized environmental conditions under the ASTM standard were not observed at the site during the external site reconnaissance: stressed vegetation, material storage ponds or lagoons.

4.3 Interior Observations

The interior areas of the buildings is as described in section 2.4. Floor drains, not used for grey water, were not observed in the concrete slab of any of the buildings. Various routine building maintenance fluids, chemical cleaners, paints, thinners, insecticides, etc. in consumer ready packages were stored in the maintenance shop of the office building. No significant leaks or spills were observed in this area. Items similar to these may be located in occupied residential units.

4.4 Non-Scope Observations

4.4.1 Lead-Based Paint

Lead-based paint was not physically evaluated as part of this ESA. Painted areas were observed to be in good condition.

4.4.2 Asbestos-Containing Material (ACM)

ACM was not physically evaluated as part of this ESA. Suspect asbestos containing materials were observed which included floor coverings, drywall walls/ceilings, caulking, etc. All materials were observed to be in fair to good condition.

4.4.3 Radon

Radon was not physically evaluated as part of this ESA. Since the site is residential, radon may be considered a concern.

4.4.4 Mold

No significant areas of discolored surfaces indicating the presence of mold was observed.

5.0 INTERVIEW INFORMATION

Mr. Lionel Garris, (Property Manager), stated he has managed the site for the last few years. He stated that the site has always been a subsidized housing project since 1940 and no commercial activities were ever performed at the site during his management tenure. He was not aware of any significant spill events, hazardous materials releases or hazardous waste generation during his tenure at the site. No non-conforming zoning use violations occurred during his employ. He did mention there was a natural gas leak recently when a construction crew broke a gas line while repairing the sidewalk. He was not aware of any underground storage tanks on the site.

Mr. Thomas Dennis, (Orlando Housing Authority Maintenance Director), stated he has managed the OHA maintenance department for the last three years. He stated that the site has always been a subsidized housing project since 1976 and no commercial activities were ever performed at the site during his management tenure. He was not aware of any significant spill events, hazardous materials releases or hazardous waste generation during his tenure at the site. No non-conforming zoning use violations occurred during his employ. He was not aware of any underground storage tanks on the site.

Ms. Beverly Barnett, (Orlando Housing Authority Assistant Maintenance Director), stated she has managed OHA sites since 1996. She stated that the site has always been a subsidized housing project since 1940 and no commercial activities were ever performed at the site during her management tenure. She was not aware of any significant spill events, hazardous materials releases or hazardous waste generation during her tenure at the OHA. No non-conforming zoning use violations occurred during her employ. She did state that the site was undeveloped prior to OHA obtaining the site. She was not aware of any underground storage tanks on the subject property.

Ms. Terri Brinson (Orange County EPD), was contacted and stated that she is the point of contact at the EPC to prepare right to know requests. She prepared the request to the air,

waste, water, wetland management and other pertinent divisions. She stated that one requested file of interest was discovered for the site.

6.0 FINDINGS, CONCLUSIONS & RECOMMENDATIONS

OHC Environmental Engineering, Inc. has performed a Phase I Environmental Site Assessment in general conformance with the scope and limitations of ASTM Practice E1527-13, 40 CFR 312 and 24 CFR 58. The site was the Griffin Park Apartments, Orlando, Orange County, FL. Any exceptions to or deletions from this practice are described in Section 7.0, Exceptions/Data Gaps section of this report. This assessment has revealed evidence of the following potential recognized environmental conditions (REC) in connection with the property:

Finding 1) Small quantities of routine building maintenance chemicals, insecticides, lubricants, paints, thinners, etc. are stored on-site. These products are used for maintaining the residences and lawn maintenance equipment. All chemical substances are stored in a number of different sized consumer ready packages or portable containers. The majority of these chemical products are stored in the maintenance shop. These items and their containers are in good condition with no signs of significant leakage or spills to site surfaces. Similar items are assumed to be located within the residential units when they are vacated. The presence of these items represents a REC. These items will need to be properly disposed of prior to demolition.

Finding 2) The use of PCBs in newly manufactured electrical equipment and oils has been banned since 1979. There are pole mounted transformers present which may contain PCB containing dielectric fluid. Fluorescent light ballasts are present which may contain capacitors that may be filled with PCB containing dielectric fluid. Therefore, these items are a REC. The transformers and light ballasts also do not appear to be leaking. If they are PCB containing, they should be properly recycled prior to any future renovation or demolition.

Finding 3) Various engine waste oil stained areas were observed on the city owned asphalt roads that tenants use to park vehicles throughout the site. These areas are a result of oil leaking from resident vehicles. These areas represent a REC. If future demolition work will disturb any of these oil stained areas, the asphalt should be properly recycled at

an asphalt recycling facility. Because the asphalt in these areas appear to be in good condition, subsurface migration to site soils would not be expected to have a significant impact.

7.0 EXCEPTIONS/DATA GAPS

Section Reference 3.1: Explanation

A complete, thorough 50-year chain of title was not obtained for the site due to the county plat and deed records becoming too complex to trace back. If a thorough chain of title is required, an abstract company should be retained. Also, data gaps are present which determine exact site usage of the site for every year dating back to when the site was undeveloped.

Section Reference 4.3: Explanation

Access was not available to all residential units as only vacant units were accessed for the inspection.

8.0 NON-SCOPE ISSUES

Radon

The EPA has established 4 picocuries per liter ("pCi/L") of radon gas in indoor air as a guidance level for residences. Accumulations above 4 pCi/L are considered to represent a health risk to occupants. Orange County is known to lie within an area that generally does not have elevated radon levels. The EDR Report has identified 98% of the structures tested in county residences are below the guidance level. Actual radon concentration can only be determined by actual on-site measurement. Radon was not evaluated as part of this EA. The possible presence of naturally occurring radon is a non-scope issue, as it is not included in CERCLA's definition of hazardous substances and does not otherwise present potential CERCLA liability.

Asbestos

The issue of asbestos is outside the scope of the Phase I ESA standard practice. Effective October 11, 1994, the Occupational Safety and Health Administration ("OSHA") expanded the scope of its general industry standard for asbestos, 29 CFR 1910.1001. The standard requiring asbestos building surveys now applies to virtually

all buildings constructed before 1980 and brings OSHA' enforcement power to an issue which was previously regulated by the EPA's National Emission Standards for Hazardous air Pollutants ("NESHAPS"). Since buildings exist on site which were constructed before 1980, suspect asbestos materials may be expected to be a business risk. Suspect materials may include but not be limited to drywall ceilings and walls, thermal system insulation, roofing materials, etc. If renovation or demolition of any site building is planned, the areas or building involved should be inspected by an accredited building inspector prior to disturbance.

Lead Based Paint

Lead-based paint was not evaluated as part of this EA. Since site buildings were reportedly constructed around 1940, lead paint may be expected to be an issue. The possible presence of lead-containing paint is a non-scope issue, as lead-containing paint is not included in CERCLA's definition of hazardous substances and does not otherwise present potential CERCLA liability. Due to the age of the building on site, suspect lead-based paint may be located within the buildings. Lead based paint inspections relating to human exposure are required in subsidized residential buildings according to HUD regulations. The condition of painted surfaces is in fair to good condition.

Mold

No significant areas of discolored surfaces indicating the presence of mold was observed.

Lead XRF Survey Report

Performed at:
Griffin Park
520 Callahan Dr.,
Orlando, FL 32805

Report Prepared For:
Orlando Housing Authority
390 North Bumby Ave
Orlando, FL 32803

Report Prepared By:

OHC Environmental Engineering, Inc.
101 South Hoover Blvd, Suite 101
Tampa, Florida 33609

OHC Project #190184-IH

December 26, 2019

PROJECT INFORMATION

OHC PROJECT #: 190184-IH

CLIENT NAME: Orlando Housing Authority

CLIENT CONTACT: Monty Stinson

PROJECT LOCATION: 520 Callahan Dr.,
Orlando, FL 32805

DATE OF SURVEY: December 16, 2019

CONSULTING FIRM: OHC Environmental Engineering, Inc.
101 South Hoover Blvd, Suite101
Tampa, Florida 33609

OHC SURVEYOR: Armin Tabakovic

REPORT REVIEWED BY:

Cristina Jones, CPH, MPH
OHC Operations Manager

LICENSED CONSULTANT:

James F. Rizk, CIH
FLAC #ZA0000060

TABLE OF CONTENTS

1.0 INTRODUCTION

OHC Environmental Engineering, Inc., (OHC), was contracted by the Orlando Housing Authority to perform an assessment for Lead-Containing Paint (LCP). These services were conducted for the upcoming demolition of the Griffin Park Apartments located at 520 Callahan Drive in Orlando, FL. A representative from OHC and EPA-certified Lead Paint Inspector, Armin Tabakovic, visited the site on December 16th of 2019, to perform these services.

2.0 EXECUTIVE SUMMARY

Based on the results of the Polarized Light Microscopy (PLM) laboratory analysis, **lead-containing paint (LCP) is present** within the scope of this survey.

3.0 LEAD SURVEY METHODS

The initial Lead Paint Survey was performed using a Niton 300A XLp X-Ray Fluorescence (XRF) portable spectrum analyzer. An initial and final calibration check was performed on the day of the survey to ensure the quality control of the sample results. This procedure was performed within the tolerance limits of the Performance Characteristic Sheet prior to the beginning of the LBP survey. Each suspect material is analyzed three (3) times to ensure accuracy of the readings. Each of the sampling materials were determined based on its room equivalent, the building component, paint color and the substrate. All materials with an XRF reading of 0.0 mg/cm^2 are considered to be non-lead containing (NLC). Materials with an XRF reading of 0.5-0.99 mg/cm^2 are considered to be lead containing paint (LCP). Materials with an XRF reading of 1.0 mg/cm^2 and above are considered to be Lead-Based Paint (LBP).

4.0 LEAD SURVEY RESULTS

Table 1 below summarizes the materials analyzed by XRF and includes their location, material description, concentration reported by the XRF analyzer and determination. Samples in RED indicate that the paint contains lead. Please refer to the Appendices at the end of this report for photographs of the materials sampled, sample locations and official laboratory analytical results.

Legend:

- LBP = Lead Based Paint
- LCP = Lead Containing Paint
- NLC = Non-Lead Containing

TABLE 1: MATERIALS LEAD XRF RESULTS					
PRECALIBRATION:		*#1 =0.9*	*#2 =1.0*		*#3 =1.0*
Sample ID	**Location**	**Material**	**Color**	**Result**	**Determination**
XRF-1	Office Building Exterior Side A	Stucco	Yellow	0.0 0.0 0.0	NLC
XRF-2	Office Building Exterior Side B	Stucco	Yellow	0.0 0.0 0.0	NLC
XRF-3	Office Building Exterior Side C	Stucco	Yellow	0.0 0.0 0.0	NLC
XRF-4	Office Building Exterior Side D	Stucco	Yellow	0.0 0.0 0.0	NLC
XRF-5	Office Building Exterior Side A Front Door	Metal	Green	0.0 0.0 0.0	NLC
XRF-6	Office Building Exterior Side A Column	Stucco	Brown	0.5 0.6 0.5	LCP
XRF-7	Office Building Exterior Side A Window Seal	Stucco	White	0.17 0.13 0.16	NLC
XRF-8	Office Building Exterior Side A Window Shutter	Plastic	Black	0.0 0.0 0.0	NLC
XRF-9	Office Building Exterior Side A Porch Ceiling	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-10	Office Building Exterior Side D Warehouse garage Door	Metal	White	0.0 0.0 0.0	NLC
XRF-11	Office Building Interior Lobby Side A	Texture	Teal	0.09 0.10 0.11	NLC
XRF-12	Office Building Interior Lobby Side B	Texture	Teal	0.07 0.08 0.14	NLC

XRF-13	Office Building Interior Lobby Side C	Texture	Teal	0.08 0.09 0.04	NLC
XRF-14	Office Building Interior Lobby Side D	Texture	Teal	0.12 0.11 0.07	NLC
XRF-15	Office Building Interior Lobby Side C Restroom Door	Metal	White	0.0 0.0 0.0	NLC
XRF-16	Office Building Interior Lobby Side C Restroom Door Frame	Metal	White	0.0 0.0 0.0	NLC
XRF-17	Office Building Interior Lobby Restroom Side A	Tile	Grey	0.0 0.0 0.0	NLC
XRF-18	Office Building Interior Lobby Restroom Side B	Tile	Grey	0.0 0.0 0.0	NLC
XRF-19	Office Building Interior Lobby Restroom Side C	Tile	Grey	0.0 0.0 0.0	NLC
XRF-20	Office Building Interior Lobby Restroom Side D	Tile	Grey	0.0 0.0 0.0	NLC
XRF-21	Office Building Interior Lobby Restroom Ceiling	Drywall	White	0.0 0.0 0.0	NLC
XRF-22	Office Building Interior Lobby Storage Closet Door	Wood	White	0.4 0.25 0.29	NLC
XRF-23	Office Building Interior Lobby Storage Closet Frame	Wood	White	0.4 0.32 0.4	NLC
XRF-24	Office Building Interior Office Space Side A	Texture	Maroon	0.07 0.06 0.07	NLC
XRF-25	Office Building Interior Office Space Side B	Texture	Maroon	0.04 0.05 0.06	NLC
XRF-26	Office Building Interior Office Space Side C	Drywall	Maroon	0.09 0.08	NLC

				0.04	
XRF-27	Office Building Interior Office Space Side D	Texture	Maroon	0.04	NLC
				0.02	
				0.01	
XRF-28	Office Building Interior Office Space Door	Wood	White	0.3	NLC
				0.26	
				0.5	
XRF-29	Office Building Interior Community Room Side A	Texture	Tan	0.4	LCP
				0.5	
				0.45	
XRF-30	Office Building Interior Community Room Side B	Texture	Tan	0.26	NLC
				0.4	
				0.30	
XRF-31	Office Building Interior Community Room Side C	Texture	Tan	0.41	NLC
				0.4	
				0.36	
XRF-32	Office Building Interior Community Room Side D	Texture	Tan	0.08	NLC
				0.10	
				0.14	
XRF-33	Office Building Interior Kitchen Side A	Texture	Light Blue	0.01	NLC
				0.01	
				0.02	
XRF-34	Office Building Interior Kitchen Side B	Texture	Light Blue	0.02	NLC
				0.03	
				0.01	
XRF-35	Office Building Interior Kitchen Side C	Texture	Light Blue	0.03	NLC
				0.06	
				0.02	
XRF-36	Office Building Interior Kitchen Side D	Texture	Light Blue	0.02	NLC
				0.01	
				0.01	
XRF-37	Office Building Interior Warehouse Side A	Texture	Grey	0.01	NLC
				0.02	
				0.04	
XRF-38	Office Building Interior Warehouse Side B	Texture	Grey	0.01	NLC
				0.02	
				0.02	
XRF-39	Office Building Interior Warehouse Side C	Texture	Grey	0.05	NLC
				0.04	
				0.07	
XRF-40	Exterior Building 804-7	Stucco	Yellow	0.04	NLC

	Side A			0.05	
				0.07	
XRF-41	Exterior Building 804-7 Side B	Stucco	Yellow	0.05	NLC
				0.04	
				0.07	
XRF-42	Exterior Building 804-7 Side C	Stucco	Yellow	0.01	NLC
				0.02	
				0.05	
XRF-43	E Exterior Building 804-7 Side D	Stucco	Yellow	0.04	NLC
				0.07	
				0.08	
XRF-44	Exterior Building 804-7 Column Side A	Stucco	Brown	0.4	LCP
				0.6	
				0.4	
XRF-45	Exterior Building 804-7 Window Seal Side C	Stucco	White	0.04	NLC
				0.07	
				0.06	
XRF-46	Exterior Building 804-7 Window Shutters Side A	Plastic	Black	0.0	NLC
				0.0	
				0.0	
XRF-47	Exterior Building 804-7 Porch Ceiling Side A	Plastic	Tan	0.0	NLC
				0.0	
				0.0	
XRF-48	Exterior Building 804-7 Side A Window Shutters	Plastic	Tan	0.0	NLC
				0.0	
				0.0	
XRF-49	Interior Building 804-7 Side A	Metal	Brown	0.0	NLC
				0.0	
				0.0	
XRF-50	Interior Building 804-7 Side A	Texture	Tan	0.07	NLC
				0.06	
				0.08	
XRF-51	Interior Building 804-7 Side B	Texture	Tan	0.11	NLC
				0.09	
				0.07	
XRF-52	Interior Building 804-7 Side C	Texture	Tan	0.05	NLC
				0.07	
				0.08	
XRF-53	Interior Building 804-7 Side D	Texture	Tan	0.09	NLC
				0.12	
				0.17	

XRF-54	Interior Building 804-7 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-55	Interior Building 804-7 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-56	Interior Building 804-7 Living Room Side D Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-57	Interior Building 804-7 Door Frame	Wood	Tan	0.01	NLC
				0.02	
				0.01	
XRF-58	Interior Building 804-7 Bathroom Side A	Texture	Tan	0.21	NLC
				0.17	
				0.19	
XRF-59	Interior Building 804-7 Bathroom Side B	Texture	Tan	0.11	NLC
				0.14	
				0.16	
XRF-60	Interior Building 804-7 Bathroom Side C	Texture	Tan	0.21	NLC
				0.26	
				0.2	
XRF-61	Interior Building 804-7 Bathroom Side D	Texture	Tan	0.13	NLC
				0.11	
				0.11	
XRF-62	Interior Building 804-7 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-63	Interior Building 804-7 Bedroom Side A	Drywall	Tan	0.01	NLC
				0.02	
				0.01	
XRF-64	Interior Building 804-7 Bedroom Side A	Texture	Tan	0.04	NLC
				0.06	
				0.06	
XRF-65	Interior Building 804-7 Bedroom Side B	Texture	Tan	0.05	NLC
				0.04	
				0.02	
XRF-66	Interior Building 804-7 Bedroom Side C	Texture	Tan	0.02	NLC
				0.02	
				0.02	
XRF-67	Interior Building 804-7	Texture	Tan	0.01	NLC

	Bedroom Side D			0.02	
				0.01	
XRF-68	Interior Building 804-7 Bedroom 2 Side A	Drywall	Tan	0.07	NLC
				0.03	
				0.06	
XRF-69	Interior Building 804-7 Bedroom 2 Side A	Texture	Tan	0.05	NLC
				0.06	
				0.07	
XRF-70	Interior Building 804-7 Bedroom 2 Side B	Texture	Tan	0.09	NLC
				0.08	
				0.09	
XRF-71	Interior Building 804-7 Bedroom 2 Side C	Texture	Tan	0.01	NLC
				0.02	
				0.03	
XRF-72	Interior Building 804-7 Bedroom 2 Side D	Texture	Tan	0.01	NLC
				0.02	
				0.01	
XRF-73	Interior Building 804-7 Bedroom 3 Side A	Drywall	Tan	0.07	NLC
				0.03	
				0.06	
XRF-74	Interior Building 804-7 Bedroom 3 Side A	Texture	Tan	0.05	NLC
				0.06	
				0.07	
XRF-75	Interior Building 804-7 Bedroom 3 Side B	Texture	Tan	0.09	NLC
				0.08	
				0.09	
XRF-76	Interior Building 804-7 Bedroom 3 Side C	Texture	Tan	0.01	NLC
				0.02	
				0.03	
XRF-77	Interior Building 804-7 Bedroom 3 Side D	Texture	Tan	0.01	NLC
				0.02	
				0.01	
XRF-78	Interior Building 804-7 Kitchen Side A	Texture	Tan	0.11	NLC
				0.17	
				0.2	
XRF-79	Interior Building 804-7 Kitchen Side B	Texture	Tan	0.21	NLC
				0.24	
				0.26	
XRF-80	Interior Building 804-7 Kitchen Side C	Texture	Tan	0.21	NLC
				0.17	
				0.19	

XRF-81	Interior Building 804-7 Kitchen Side D	Drywall	Tan	0.12 0.16 0.11	NLC
XRF-82	Exterior Building 808-7 Side A	Stucco	Yellow	0.09 0.08 0.04	NLC
XRF-83	Exterior Building 808-7 Side B	Stucco	Yellow	0.07 0.09 0.11	NLC
XRF-84	Exterior Building 808-7 Side C	Stucco	Yellow	0.11 0.12 0.08	NLC
XRF-85	E Exterior Building 808-7 Side D	Stucco	Yellow	0.04 0.07 0.08	NLC
XRF-86	Exterior Building 808-7 Column Side A	Stucco	Brown	0.5 0.6 0.5	LCP
XRF-87	Exterior Building 808-7 Window Seal Side C	Stucco	White	0.08 0.07 0.09	NLC
XRF-88	Exterior Building 808-7 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-89	Exterior Building 808-7 Porch Ceiling Side A	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-90	Exterior Building 808-7 Side A Door	Metal	Brown	0.0 0.0 0.0	NLC
XRF-91	Interior Building 808-7 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-92	Interior Building 808-7 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-93	Interior Building 808-7 Side B	Texture	Tan	0.0 0.0 0.0	NLC
XRF-94	Interior Building 808-7	Texture	Tan	0.0	NLC

	Side C			0.0	
				0.0	
XRF-95	Interior Building 808-7 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-96	Interior Building 808-7 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-97	Interior Building 808-7 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-98	Interior Building 808-7 Living Room Side D Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-99	Interior Building 808-7 Door Frame	Wood	Tan	0.01	NLC
				0.0	
				0.01	
XRF-100	Interior Building 808-7 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-101	Interior Building 808-7 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-102	Interior Building 808-7 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-103	Interior Building 808-7 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-104	Interior Building 808-7 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-105	Interior Building 808-7 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-106	Interior Building 808-7 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-107	Interior Building 808-7 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	

				0.0	
XRF-108	Interior Building 808-7 Bedroom Side C	Texture	Tan	0.0 0.0 0.0	NLC
XRF-109	Interior Building 808-7 Bedroom Side D	Texture	Tan	0.0 0.0 0.0	NLC
XRF-110	Interior Building 808-7 Kitchen Side A	Texture	Tan	0.11 0.17 0.2	NLC
XRF-111	Interior Building 808-7 Kitchen Side B	Texture	Tan	0.21 0.24 0.26	NLC
XRF-112	Interior Building 808-7 Kitchen Side C	Texture	Tan	0.21 0.17 0.19	NLC
XRF-113	Interior Building 808-7 Kitchen Side D	Drywall	Tan	0.12 0.16 0.11	NLC
XRF-114	Exterior Building 715-2 Side A	Stucco	Yellow	0.08 0.07 0.05	NLC
XRF-115	Exterior Building 715-2 Side B	Stucco	Yellow	0.09 0.08 0.09	NLC
XRF-116	Exterior Building 715-2 Side C	Stucco	Yellow	0.11 0.09 0.07	NLC
XRF-117	E Exterior Building 715-2 Side D	Stucco	Yellow	0.05 0.05 0.08	NLC
XRF-118	Exterior Building 715-2 Column Side A	Stucco	Brown	0.6 0.7 0.8	LCP
XRF-119	Exterior Building 715-2 Window Seal Side C	Stucco	White	0.04 0.05 0.01	NLC
XRF-120	Exterior Building 715-2 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-121	Exterior Building 715-2	Plastic	Tan	0.0	NLC

	Porch Ceiling Side A			0.0 0.0	
XRF-122	Exterior Building 715-2 Side A Window Shutters	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-123	Interior Building 715-2 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-124	Interior Building 715-2 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-125	Interior Building 715-2 Side B	Texture	Tan	0.0 0.0 0.0	NLC
XRF-126	Interior Building 715-2 Side C	Texture	Tan	0.0 0.0 0.0	NLC
XRF-127	Interior Building 715-2 Side D	Texture	Tan	0.0 0.0 0.0	NLC
XRF-128	Interior Building 715-2 Front Door	Metal	White	0.0 0.0 0.0	NLC
XRF-129	Interior Building 715-2 Living Room Ceiling	Drywall	White	0.0 0.0 0.0	NLC
XRF-130	Interior Building 715-2 Living Room Closet Door	Wood	White	0.0 0.0 0.0	NLC
XRF-131	Interior Building 715-2 Door Frame	Wood	Tan	0.0 0.0 0.0	NLC
XRF-132	Interior Building 715-2 Bathroom Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-133	Interior Building 715-2 Bathroom Side B	Texture	Tan	0.0 0.0 0.0	NLC
XRF-134	Interior Building 715-2 Bathroom Side C	Texture	Tan	0.0 0.0	NLC

				0.0	
XRF-135	Interior Building 715-2 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-136	Interior Building 715-2 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-137	Interior Building 715-2 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-138	Interior Building 715-2 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-139	Interior Building 715-2 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-140	Interior Building 715-2 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-141	Interior Building 715-2 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-142	Interior Building 715-2 Bedroom 2 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-143	Interior Building 715-2 Bedroom 2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-144	Interior Building 715-2 Bedroom 2 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-145	Interior Building 715-2 Bedroom 2 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-146	Interior Building 715-2Bedroom 2 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-147	Interior Building 715-2 Bedroom 3 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-148	Interior Building 715-2	Texture	Tan	0.0	NLC

	Bedroom 3 Side A			0.0	
				0.0	
XRF-149	Interior Building 715-2 Bedroom 3 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-150	Interior Building 715-2 Bedroom 3 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-151	Interior Building 715-2 Bedroom 3 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-152	Interior Building 715-2 Kitchen Side A	Texture	Tan	0.4	NLC
				0.37	
				0.4	
XRF-153	Interior Building 715-2 Kitchen Side B	Texture	Tan	0.4	NLC
				0.28	
				0.32	
XRF-154	Interior Building 715-2 Kitchen Side C	Texture	Tan	0.29	NLC
				0.4	
				0.4	
XRF-155	Interior Building 715-2 Kitchen Side D	Drywall	Tan	0.32	NLC
				0.36	
				0.31	
XRF-156	Exterior Building 729-8 Side A	Stucco	Yellow	0.11	NLC
				0.09	
				0.07	
XRF-157	Exterior Building 729-8 Side B	Stucco	Yellow	0.05	NLC
				0.04	
				0.04	
XRF-158	Exterior Building 729-8 Side C	Stucco	Yellow	0.04	NLC
				0.03	
				0.03	
XRF-159	E Exterior Building 729-8 Side D	Stucco	Yellow	0.07	NLC
				0.07	
				0.07	
XRF-160	Exterior Building 729-8 Column Side A	Stucco	Brown	0.4	LCP
				0.4	
				0.5	
XRF-161	Exterior Building 729-8 Window Seal Side C	Stucco	White	0.08	NLC
				0.03	
				0.04	

XRF-162	Exterior Building 729-8 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-163	Exterior Building 729-8 Porch Ceiling Side A	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-164	Exterior Building 729-8 Side A Door	Metal	Brown	0.0 0.0 0.0	NLC
XRF-165	Interior Building 729-8 Side A	Texture	Tan	0.24 0.2 0.21	NLC
XRF-166	Interior Building 729-8 Side A	Texture	Tan	0.17 0.16 0.11	NLC
XRF-167	Interior Building 729-8 Side B	Texture	Tan	0.21 0.2 0.19	NLC
XRF-168	Interior Building 729-8 Side C	Texture	Tan	0.17 0.13 0.11	NLC
XRF-169	Interior Building 729-8 Side D	Texture	Tan	0.09 0.09 0.11	NLC
XRF-170	Interior Building 729-8 Front Door	Metal	White	0.0 0.0 0.0	NLC
XRF-171	Interior Building 729-8 Living Room Ceiling	Drywall	White	0.0 0.0 0.0	NLC
XRF-172	Interior Building 729-8 Living Room Side D Closet Door	Wood	White	0.0 0.0 0.0	NLC
XRF-173	Interior Building 729-8 Door Frame	Wood	White	0.01 0.03 0.03	NLC
XRF-174	Interior Building 729-8 Bathroom Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-175	Interior Building 729-8 Bathroom Side B	Texture	Tan	0.0 0.0	NLC

				0.0	
XRF-176	Interior Building 729-8 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-177	Interior Building 729-8 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-178	Interior Building 729-8 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-179	Interior Building 729-8 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-180	Interior Building 729-8 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-181	Interior Building 729-8 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-182	Interior Building 729-8 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-183	Interior Building 729-8 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-184	Interior Building 729-8 Kitchen Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-185	Interior Building 729-8 Kitchen Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-186	Interior Building 729-8 Kitchen Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-187	Interior Building 729-8 Kitchen Side D	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-188	Exterior Building 728-8 Side A	Stucco	Yellow	0.12	NLC
				0.08	
				0.06	
XRF-189	Exterior Building 728-8	Stucco	Yellow	0.05	NLC

	Side B			0.04	
				0.03	
XRF-190	Exterior Building 728-8 Side C	Stucco	Yellow	0.07	NLC
				0.08	
				0.08	
XRF-191	E Exterior Building 728-8 Side D	Stucco	Yellow	0.09	NLC
				0.11	
				0.16	
XRF-192	Exterior Building 728-8 Column Side A	Stucco	Brown	0.5	LCP
				0.5	
				0.5	
XRF-193	Exterior Building 728-8 Window Seal Side C	Stucco	White	0.02	NLC
				0.03	
				0.04	
XRF-194	Exterior Building 728-8 Window Shutters Side A	Plastic	Black	0.0	NLC
				0.0	
				0.0	
XRF-195	Exterior Building 728-8 Porch Ceiling Side A	Plastic	Tan	0.0	NLC
				0.0	
				0.0	
XRF-196	Exterior Building 728-8 Side A Door	Metal	Brown	0.0	NLC
				0.0	
				0.0	
XRF-197	Interior Building 728-8 Side A	Texture	Tan	0.21	NLC
				0.21	
				0.24	
XRF-198	Interior Building 728-8 Side A	Texture	Tan	0.19	NLC
				0.11	
				0.14	
XRF-199	Interior Building 728-8 Side B	Texture	Tan	0.2	NLC
				0.26	
				0.4	
XRF-200	Interior Building 728-8 Side C	Texture	Tan	0.41	NLC
				0.41	
				0.32	
XRF-201	Interior Building 728-8 Side D	Texture	Tan	0.15	NLC
				0.19	
				0.24	
XRF-202	Interior Building 728-8 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	

XRF-203	Interior Building 728-8 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-204	Interior Building 728-8 Living Room Side D Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-205	Interior Building 728-8 Door Frame	Wood	White	0.01	NLC
				0.03	
				0.03	
XRF-206	Interior Building 728-8 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-207	Interior Building 728-8 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-208	Interior Building 728-8 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-209	Interior Building 728-8 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-210	Interior Building 728-8 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-211	Interior Building 728-8 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-212	Interior Building 728-8 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-213	Interior Building 728-8 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-214	Interior Building 728-8 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-215	Interior Building 728-8 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-216	Interior Building 728-8 Kitchen Side A	Texture	Tan	0.06	NLC
				0.06	

				0.05	
XRF-217	Interior Building 728-8 Kitchen Side B	Texture	Tan	0.02 0.02 0.07	NLC
XRF-218	Interior Building 728-8 Kitchen Side C	Texture	Tan	0.09 0.09 0.08	NLC
XRF-219	Interior Building 728-8 Kitchen Side D	Drywall	Tan	0.07 0.11 0.09	NLC
XRF-220	Exterior Building 745-1 Side A	Stucco	Yellow	0.09 0.06 0.04	NLC
XRF-221	Exterior Building 745-1 Side B	Stucco	Yellow	0.04 0.04 0.04	NLC
XRF-222	Exterior Building 745-1 Side C	Stucco	Yellow	0.07 0.07 0.04	NLC
XRF-223	E Exterior Building 745-1 Side D	Stucco	Yellow	0.08 0.08 0.11	NLC
XRF-224	Exterior Building 745-1 Column Side A	Stucco	Brown	0.6 0.4 0.5	LCP
XRF-225	Exterior Building 745-1 Window Seal Side C	Stucco	White	0.06 0.06 0.07	NLC
XRF-226	Exterior Building 745-1 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-227	Exterior Building 745-1 Porch Ceiling Side A	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-228	Exterior Building 745-1 Side A Door	Metal	Brown	0.0 0.0 0.0	NLC
XRF-229	Interior Building 745-1 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-230	Interior Building 745-1	Texture	Tan	0.0	NLC

	Side A			0.0	
				0.0	
XRF-231	Interior Building 745-1 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-232	Interior Building 745-1 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-233	Interior Building 745-1 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-234	Interior Building 745-1 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-235	Interior Building 745-1 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-236	Interior Building 745-1 Living Room Side D Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-237	Interior Building 745-1 Door Frame	Wood	White	0.04	NLC
				0.02	
				0.01	
XRF-238	Interior Building 745-1 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-239	Interior Building 745-1 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-240	Interior Building 745-1 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-241	Interior Building 745-1 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-242	Interior Building 745-1 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-243	Interior Building 745-1 Kitchen Side A	Texture	Tan	0.06	NLC
				0.06	
				0.05	

XRF-244	Interior Building 745-1 Kitchen Side B	Texture	Tan	0.02 0.02 0.07	NLC
XRF-245	Interior Building 745-1 Kitchen Side C	Texture	Tan	0.09 0.09 0.08	NLC
XRF-246	Interior Building 745-1 Kitchen Side D	Drywall	Tan	0.07 0.11 0.09	NLC
XRF-247	Exterior Building 805-5 Side A	Stucco	Yellow	0.04 0.04 0.03	NLC
XRF-248	Exterior Building 805-5 Side B	Stucco	Yellow	0.08 0.08 0.06	NLC
XRF-249	Exterior Building 805-5 Side C	Stucco	Yellow	0.07 0.07 0.03	NLC
XRF-250	E Exterior Building 805-5 Side D	Stucco	Yellow	0.03 0.03 0.06	NLC
XRF-251	Exterior Building 805-5 Column Side A	Stucco	Brown	0.5 0.5 0.4	LCP
XRF-252	Exterior Building 805-5 Window Seal Side C	Stucco	White	0.03 0.03 0.02	NLC
XRF-253	Exterior Building 805-5 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-254	Exterior Building 805-5 Porch Ceiling Side A	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-255	Exterior Building 805-5 Side A Window Shutters	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-256	Interior Building 805-5 Side A	Texture	Tan	0.0 0.0 0.0	NLC
XRF-257	Interior Building 805-5 Side A	Texture	Tan	0.0 0.0	NLC

				0.0	
XRF-258	Interior Building 805-5 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-259	Interior Building 805-5 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-260	Interior Building 805-5 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-261	Interior Building 805-5 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-262	Interior Building 805-5 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-263	Interior Building 805-5 Living Room Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-264	Interior Building 805-5 Door Frame	Wood	Tan	0.0	NLC
				0.0	
				0.0	
XRF-265	Interior Building 805-5 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-266	Interior Building 805-5 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-267	Interior Building 805-5 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-268	Interior Building 805-5 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-269	Interior Building 805-5 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-270	Interior Building 805-5 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	

XRF-271	Interior Building 805-5 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-272	Interior Building 805-5 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-273	Interior Building 805-5 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-274	Interior Building 805-5 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-275	Interior Building 805-5 Bedroom 2 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-276	Interior Building 805-5 Bedroom 2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-277	Interior Building 805-5 Bedroom 2 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-278	Interior Building 805-5 Bedroom 2 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-279	Interior Building 805-5 Bedroom 2 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-280	Interior Building 805-5 Bedroom 3 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-281	Interior Building 805-5 Bedroom 3 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-282	Interior Building 805-5 Bedroom 3 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-283	Interior Building 805-5 Bedroom 3 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-284	Interior Building 805-5 Bedroom 3 Side D	Texture	Tan	0.0	NLC
				0.0	

				0.0	
XRF-285	Interior Building 805-5 Kitchen Side A	Texture	Tan	0.36 0.32 0.3	NLC
XRF-286	Interior Building 805-5 Kitchen Side B	Texture	Tan	0.28 0.21 0.19	NLC
XRF-287	Interior Building 805-5 Kitchen Side C	Texture	Tan	0.28 0.19 0.26	NLC
XRF-288	Interior Building 805-5 Kitchen Side D	Drywall	Tan	0.3 0.31 0.24	NLC
XRF-289	Exterior Building 724-5 Side A	Stucco	Yellow	0.06 0.07 0.04	NLC
XRF-290	Exterior Building 724-5 Side B	Stucco	Yellow	0.06 0.06 0.03	NLC
XRF-291	Exterior Building 724-5 Side C	Stucco	Yellow	0.09 0.05 0.08	NLC
XRF-292	E Exterior Building 724-5 Side D	Stucco	Yellow	0.04 0.03 0.07	NLC
XRF-293	Exterior Building 724-5 Column Side A	Stucco	Brown	0.6 0.5 0.5	LCP
XRF-294	Exterior Building 724-5 Window Seal Side C	Stucco	White	0.04 0.0 0.01	NLC
XRF-295	Exterior Building 724-5 Window Shutters Side A	Plastic	Black	0.0 0.0 0.0	NLC
XRF-296	Exterior Building 724-5 Porch Ceiling Side A	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-297	Exterior Building 724-5 Side A Window Shutters	Plastic	Tan	0.0 0.0 0.0	NLC
XRF-298	Interior Building 724-5	Texture	Tan	0.0	NLC

	Side A			0.0	
				0.0	
XRF-299	Interior Building 724-5 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-300	Interior Building 724-5 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-301	Interior Building 724-5 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-302	Interior Building 724-5 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-303	Interior Building 724-5 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-304	Interior Building 724-5 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-305	Interior Building 724-5 Living Room Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-306	Interior Building 724-5 Door Frame	Wood	Tan	0.0	NLC
				0.01	
				0.0	
XRF-307	Interior Building 724-5 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-308	Interior Building 724-5 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-309	Interior Building 724-5 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-310	Interior Building 724-5 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-311	Interior Building 724-5 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	

XRF-312	Interior Building 724-5 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-313	Interior Building 724-5 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-314	Interior Building 724-5 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-315	Interior Building 724-5 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-316	Interior Building 724-5 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-317	Interior Building 724-5 Bedroom 2 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-318	Interior Building 724-5 Bedroom 2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-319	Interior Building 724-5 Bedroom 2 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-320	Interior Building 724-5 Bedroom 2 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-321	Interior Building 724-5 Bedroom 2 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-322	Interior Building 724-5 Kitchen Side A	Texture	Tan	0.14	NLC
				0.16	
				0.21	
XRF-323	Interior Building 724-5 Kitchen Side B	Texture	Tan	0.2	NLC
				0.17	
				0.14	
XRF-324	Interior Building 724-5 Kitchen Side C	Texture	Tan	0.16	NLC
				0.18	
				0.18	
XRF-325	Interior Building 724-5 Kitchen Side D	Drywall	Tan	0.2	NLC
				0.26	

				0.21	
XRF-326	Exterior Building 724-2 Side A	Stucco	Yellow	0.08	NLC
				0.06	
				0.06	
XRF-327	Exterior Building 724-2 Side B	Stucco	Yellow	0.05	NLC
				0.04	
				0.01	
XRF-328	Exterior Building 724-2 Side C	Stucco	Yellow	0.06	NLC
				0.06	
				0.04	
XRF-329	E Exterior Building 724-2 Side D	Stucco	Yellow	0.03	NLC
				0.06	
				0.07	
XRF-330	Exterior Building 724-2 Column Side A	Stucco	Brown	0.5	LCP
				0.5	
				0.4	
XRF-331	Exterior Building 724-2 Window Seal Side C	Stucco	White	0.04	NLC
				0.0	
				0.01	
XRF-332	Exterior Building 724-2 Window Shutters Side A	Plastic	Black	0.0	NLC
				0.0	
				0.0	
XRF-333	Exterior Building 724-2 Porch Ceiling Side A	Plastic	Tan	0.0	NLC
				0.0	
				0.0	
XRF-334	Exterior Building 724-2 Side A Window Shutters	Plastic	Tan	0.0	NLC
				0.0	
				0.0	
XRF-335	Interior Building 724-2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-336	Interior Building 724-2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-337	Interior Building 724-2 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-338	Interior Building 724-2 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-339	Interior Building 724-2	Texture	Tan	0.0	NLC

	Side D			0.0	
				0.0	
XRF-340	Interior Building 724-2 Front Door	Metal	White	0.0	NLC
				0.0	
				0.0	
XRF-341	Interior Building 724-2 Living Room Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-342	Interior Building 724-2 Living Room Closet Door	Wood	White	0.0	NLC
				0.0	
				0.0	
XRF-343	Interior Building 724-2 Door Frame	Wood	Tan	0.0	NLC
				0.01	
				0.0	
XRF-344	Interior Building 724-2 Bathroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-345	Interior Building 724-2 Bathroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-346	Interior Building 724-2 Bathroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-347	Interior Building 724-2 Bathroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-348	Interior Building 724-2 Bathroom Ceiling	Drywall	White	0.0	NLC
				0.0	
				0.0	
XRF-349	Interior Building 724-2 Bedroom Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-350	Interior Building 724-2 Bedroom Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-351	Interior Building 724-2 Bedroom Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-352	Interior Building 724-2 Bedroom Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	

XRF-353	Interior Building 724-2 Bedroom Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-354	Interior Building 724-2 Bedroom 2 Side A	Drywall	Tan	0.0	NLC
				0.0	
				0.0	
XRF-355	Interior Building 724-2 Bedroom 2 Side A	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-356	Interior Building 724-2 Bedroom 2 Side B	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-357	Interior Building 724-2 Bedroom 2 Side C	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-358	Interior Building 724-2 Bedroom 2 Side D	Texture	Tan	0.0	NLC
				0.0	
				0.0	
XRF-359	Interior Building 724-2 Kitchen Side A	Texture	Tan	0.11	NLC
				0.09	
				0.17	
XRF-360	Interior Building 724-2 Kitchen Side B	Texture	Tan	0.19	NLC
				0.11	
				0.07	
XRF-361	Interior Building 724-2 Kitchen Side C	Texture	Tan	0.12	NLC
				0.12	
				0.09	
XRF-362	Interior Building 724-2 Kitchen Side D	Drywall	Tan	0.13	NLC
				0.22	
				0.16	

5.0 STANDARDS FOR LEAD PAINT

There is presently no standard on the level of lead in paint other than the HUD guidelines of 0.5% by weight or 1.0 mg/cm2, which is used as a threshold for remedial action. OSHA, on the other hand, does not recognize these criteria. The consumer product safety commission has established a level of 0.06% as a threshold for lead-free paint. Any levels of lead in paint are considered lead-containing paint (LCP). OSHA's standards for lead are based on the potential for human exposure by means of inhalation and ingestion. Therefore, any substrate with any level of LCP could cause health concerns when the paint is disturbed. Performing activities could create airborne exposures of lead above the PEL.

Any persons performing any lead activities such as LCP renovation, repair, painting, or maintenance that may disturb the paint must be certified by EPA to perform these activities in accordance with the Renovation, Repair, and Painting (RRP) rule 40 CFR 745 Subpart E.

6.0 OBSERVATIONS

- The exteriors of the buildings were homogeneous. There are several different floor plans, however, the exteriors are all homogeneous whether it was a 2 story building or a one-story unit.
- Interiors of the building were all homogeneous, all materials and surfaces were the same materials.
- The units that were occupied were homogeneous to the units which were unoccupied.
- The Columns of all the buildings had LCP (lead containing paint).

7.0 LIMITATIONS

The materials assessed in this survey were subject to accessibility. This survey was limited to areas not occupied by residents of the Griffin Park Apartments. Only XRF analysis were performed within the scope of this assessment. Building plans and site drawings were not available to the assessors. OHC warrants that the investigations and methodology reflect the prevailing standard of work practices in the environmental consulting field. If it is expected that materials outside the scope of this survey are to be disturbed, they must be presumed hazardous until the materials can be analyzed by an accredited building inspector.

Access was limited to the following areas:

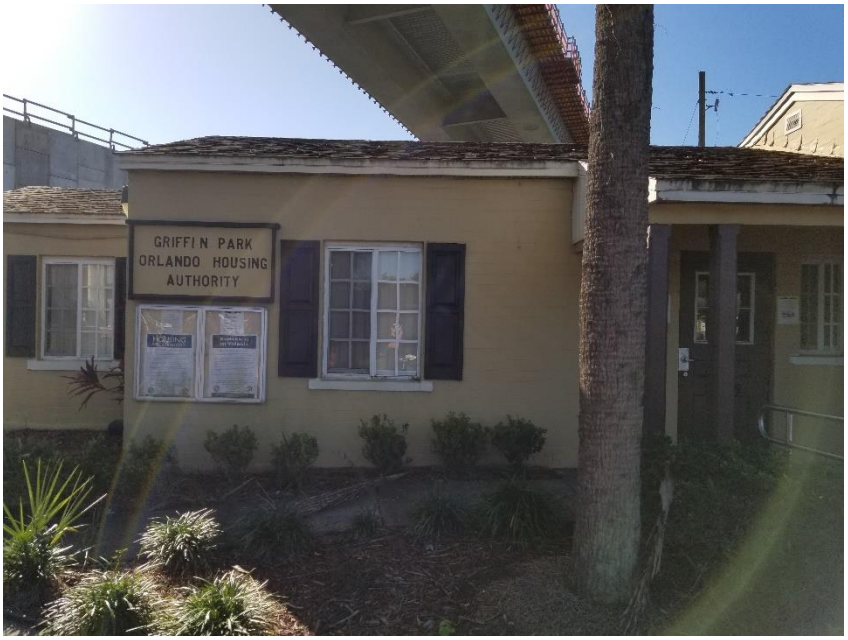
- Access was limited to many of the occupied units as the occupants were unaware of the survey being conducted on those specific days.
- The Office Building was closed until the 2nd of January. Maintenance crew assisted in opening units.

8.0 DOCUMENT CONTENT

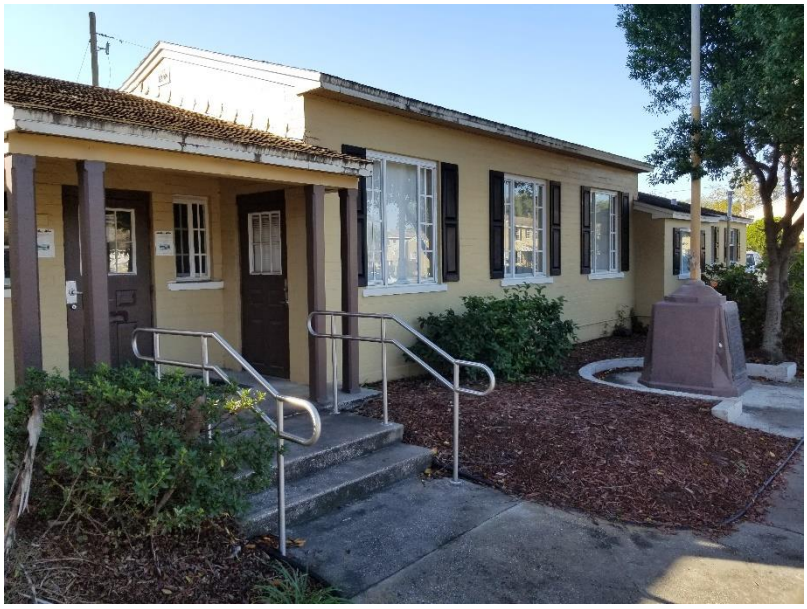
This document has been prepared for exclusive use by the Orlando Housing Authority. The knowledge of the consultant is based upon current information and research. If local knowledge indicates error, omissions, or inaccuracy, please notify the consultant.

APPENDIX A:

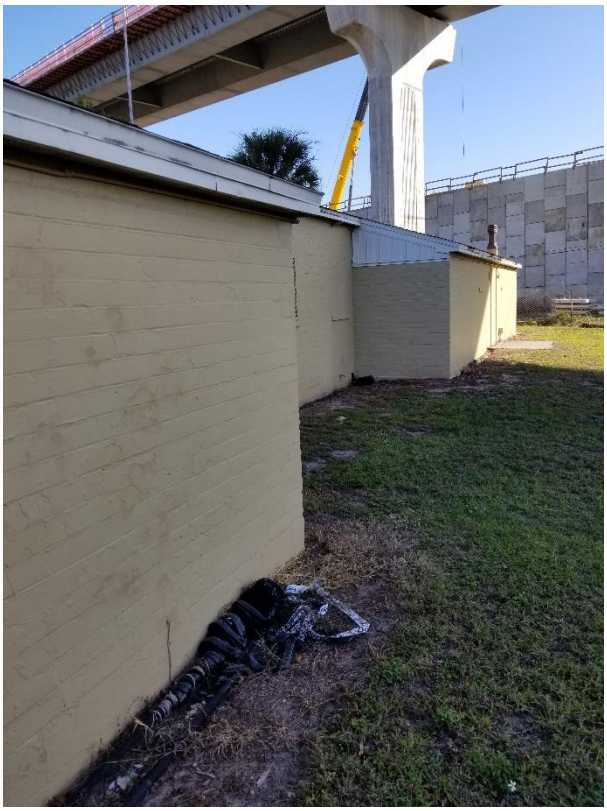
PHOTOGRAPHS OF MATERIALS SAMPLED FOR LEAD



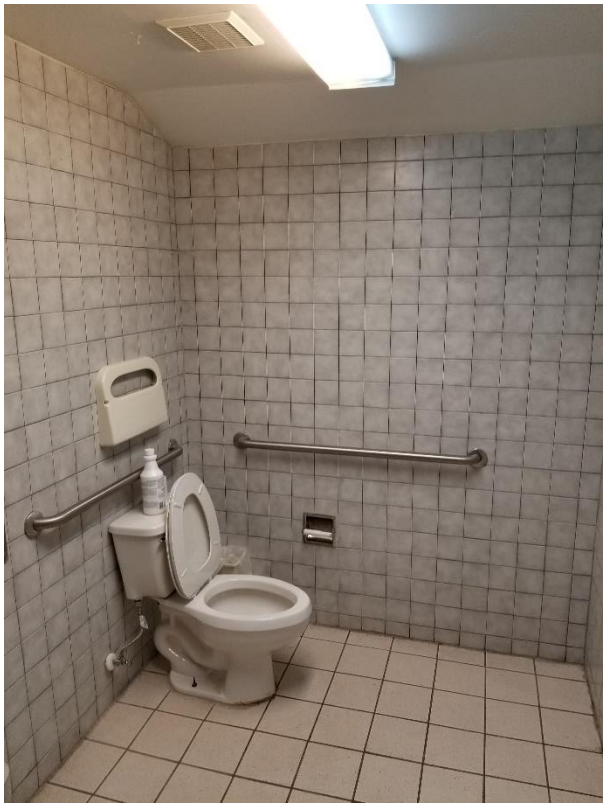
XRF-1 Exterior Office Building Side A
Yellow Paint on Stucco (NLC)



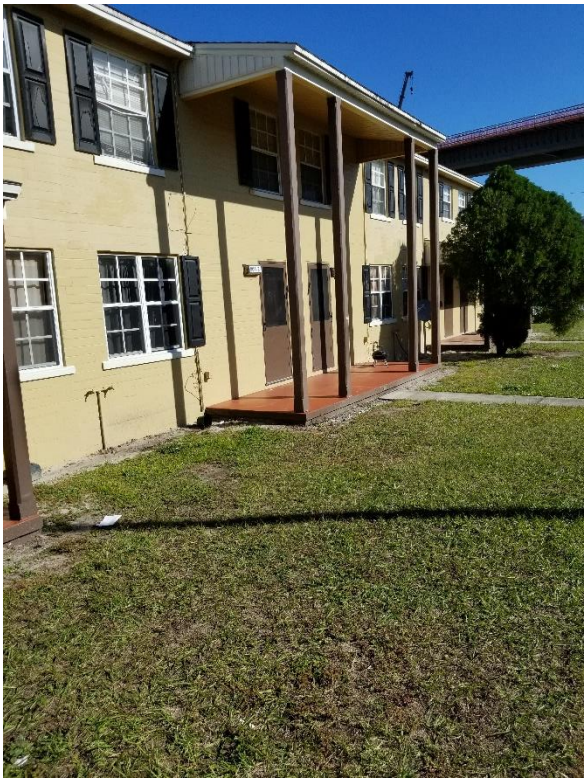
XRF-6 Exterior Office Building Side A
Column
Brown Paint on Stucco (LCP)



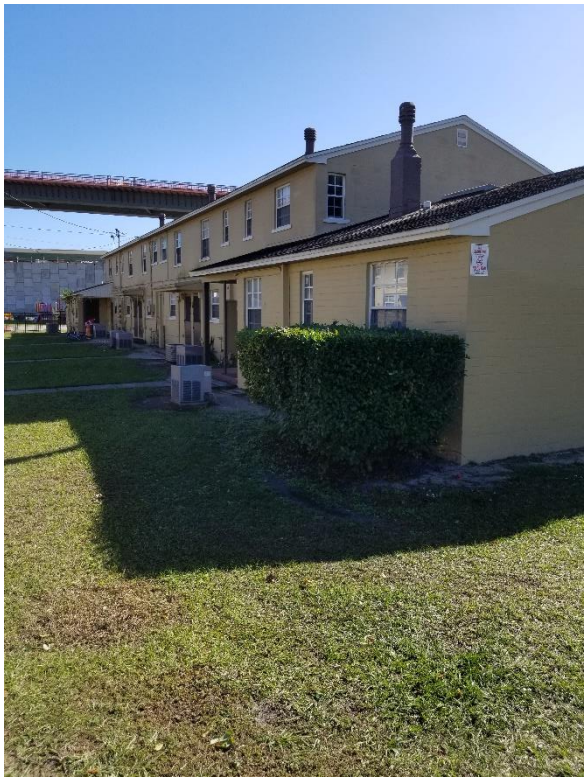
XRF-3 Exterior Office Building Side C
Yellow Paint on Stucco (NLC)



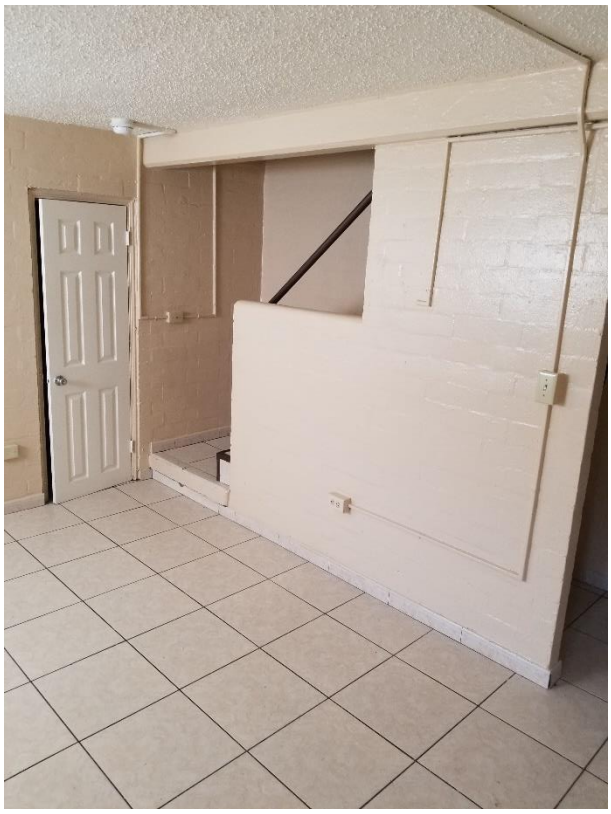
XRF-17 Interior Office Building Lobby Restroom
Grey Ceramic Tile (NLC)



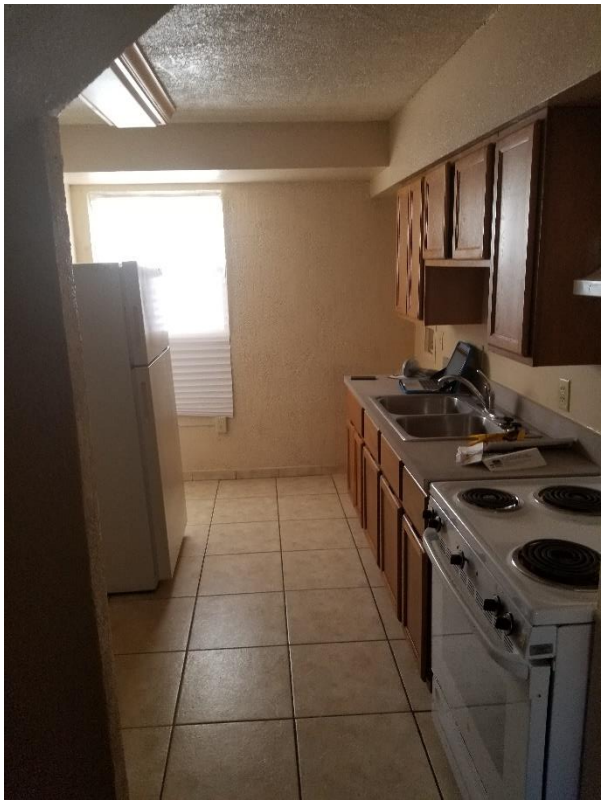
XRF-158 – Exterior Building 729-8
Side C
Yellow Paint on Stucco (NLC)



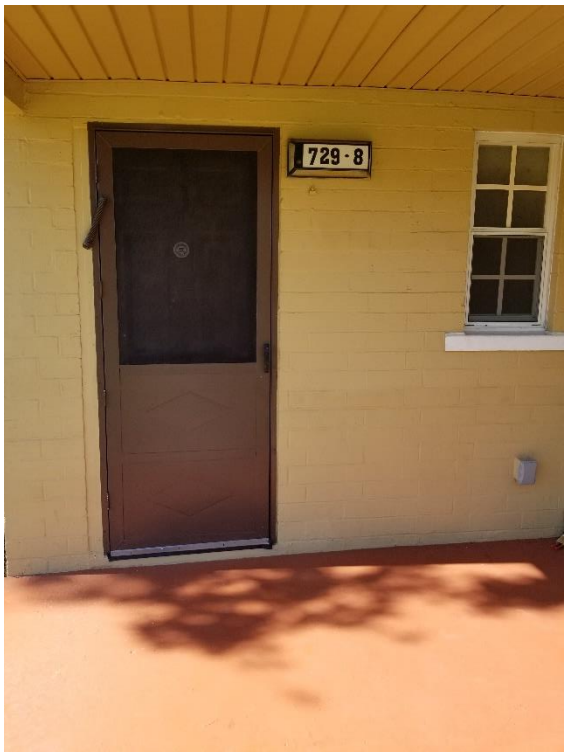
XRF-222 – Exterior Building 745-1
Side C
Yellow Paint on Stucco (NLC)



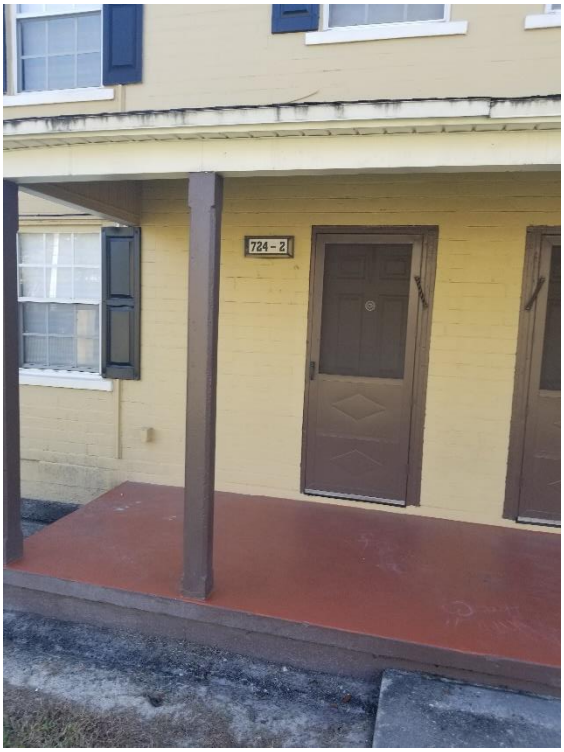
XRF-235 – Interior Building 745-1
White paint on Drywall Ceiling (NLC)



XRF-359 – Interior Building 724-2
Kitchen Side B
Tan paint on texture (NLC)



XRF-164 –Exterior Building 729-8
Brown paint on metal door (NLC)



XRF-330 –Exterior Building 724-2
Brown paint on Stucco (LCP)

APPENDIX E:

CONSULTANT & LABORATORY CREDENTIALS

ABIH

american board of industrial hygiene

organized to improve the practice of industrial hygiene
proclaims that

Jim F. Rizk

having met all requirements of
education, experience and examination, and
ongoing maintenance,
is hereby certified in the

COMPREHENSIVE PRACTICE
of
INDUSTRIAL HYGIENE

and has the right to use the designations

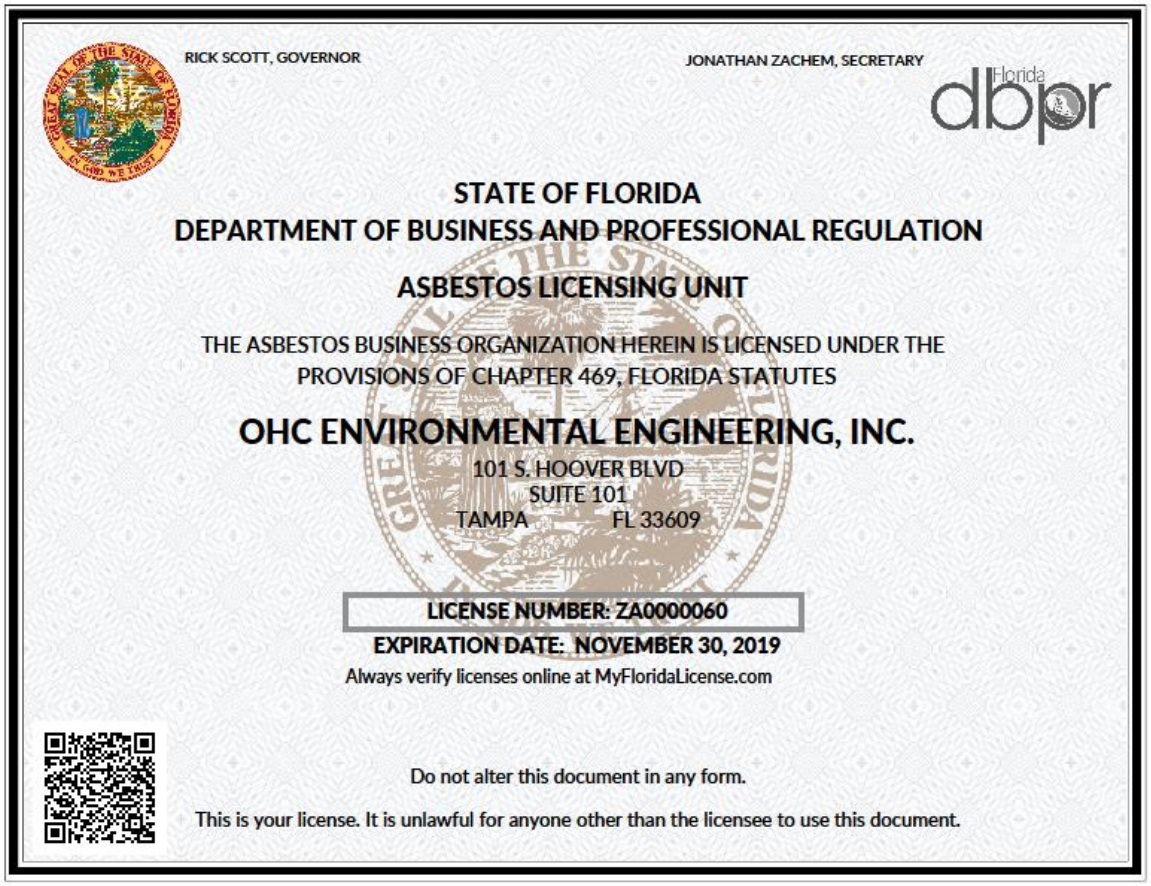
CERTIFIED INDUSTRIAL HYGIENIST

CIH

Certificate Number	3956 CP
Awarded:	June 30, 1988
Expiration Date:	December 1, 2020

Nicole Greeson
Chair, ABIH

Chief Executive Officer, ABIH



RICK SCOTT, GOVERNOR

JONATHAN ZACHEM, SECRETARY

Florida dbpr

STATE OF FLORIDA
DEPARTMENT OF BUSINESS AND PROFESSIONAL REGULATION

ASBESTOS LICENSING UNIT

THE ASBESTOS BUSINESS ORGANIZATION HEREIN IS LICENSED UNDER THE PROVISIONS OF CHAPTER 469, FLORIDA STATUTES

OHC ENVIRONMENTAL ENGINEERING, INC.

101 S. HOOVER BLVD
SUITE 101
TAMPA FL 33609

LICENSE NUMBER: ZA0000060
EXPIRATION DATE: NOVEMBER 30, 2019

Always verify licenses online at MyFloridaLicense.com

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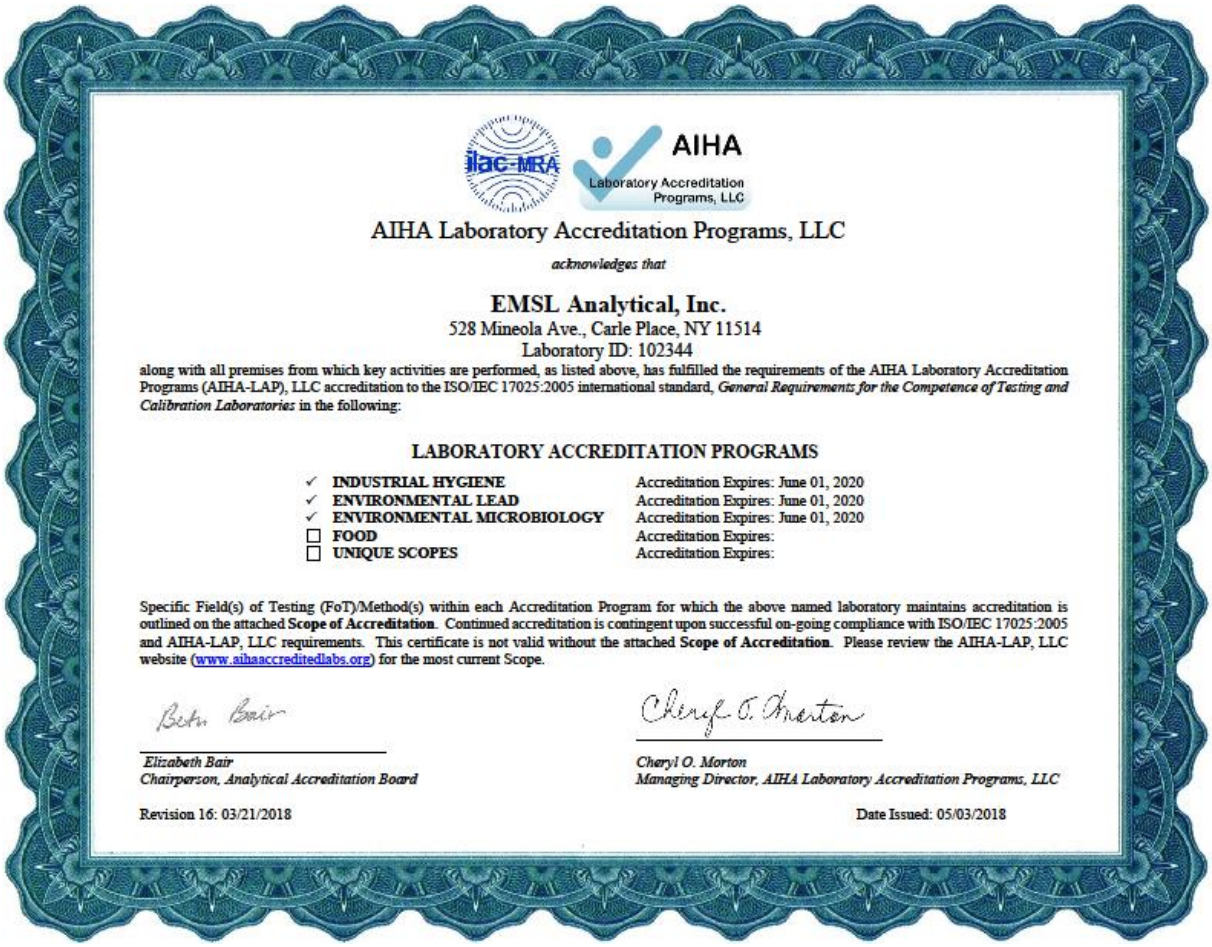


AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.
528 Mineola Ave., Carle Place, NY 11514
Laboratory ID: 102344

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: June 01, 2020
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: June 01, 2020
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: June 01, 2020
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

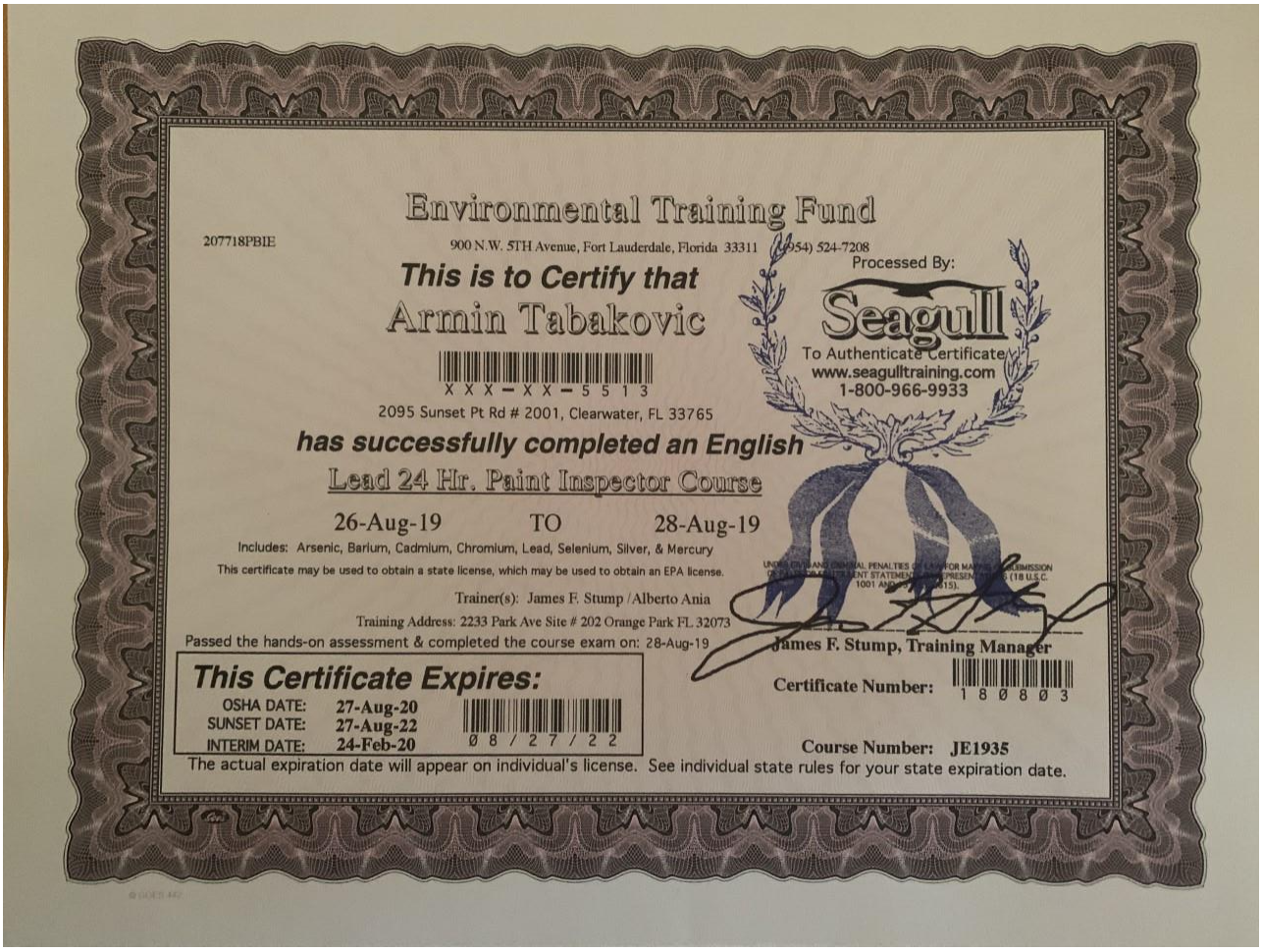
Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Elizabeth Bair
Chairperson, Analytical Accreditation Board

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 16: 03/21/2018

Date Issued: 05/03/2018



Environmental Training Fund

207718PBIE

900 N.W. 5TH Avenue, Fort Lauderdale, Florida 33311 (954) 524-7208

Processed By:

Seagull

To Authenticate Certificate
www.seagulltraining.com
1-800-966-9933

This is to Certify that

Armin Tabakovic

XXX-XX-5513

2095 Sunset Pt Rd # 2001, Clearwater, FL 33765

has successfully completed an English

Lead 24 Hr. Paint Inspector Course

26-Aug-19 TO 28-Aug-19

Includes: Arsenic, Barium, Cadmium, Chromium, Lead, Selenium, Silver, & Mercury

This certificate may be used to obtain a state license, which may be used to obtain an EPA license.

Trainer(s): James F. Stump /Alberto Ania

Training Address: 2233 Park Ave Site # 202 Orange Park FL 32073

Passed the hands-on assessment & completed the course exam on: 28-Aug-19

James F. Stump, Training Manager

This Certificate Expires:

OSHA DATE: 27-Aug-20
SUNSET DATE: 27-Aug-22
INTERIM DATE: 24-Feb-20

08/27/22

Certificate Number: 180803

Course Number: JE1935

The actual expiration date will appear on individual's license. See individual state rules for your state expiration date.

------ END REPORT ------

Asbestos NESHAP Survey

Performed at:
Griffin Park Apartments
520 Callahan Drive
Orlando, FL 32805

Report Prepared For:
Orlando Housing Authority
390 North Bumby Ave
Orlando, FL 32803

Report Prepared By:

OHC Environmental Engineering, Inc.
101 South Hoover Blvd, Suite 101
Tampa, Florida 33609

OHC Project #190184-AL

November 2, 2019

HAZARDOUS MATERIALS SURVEY

OHC PROJECT NO.	**190184-AL**
CLIENT NAME:	**Orlando Housing Authority**
ADDRESS:	**Griffin Park Apartments** **520 Callahan Drive** **Orlando, FL 32805**
DATE OF SURVEY:	**10/21/2019 – 10/22/2019**
CONSULTING FIRM:	**OHC Environmental Engineering, Inc.** **101 South Hoover Blvd, Suite101** **Tampa, Florida 33609**
SURVEYOR:	**Tom Martinelli & Giancarlo Lozada**
OHC PROJECT MANAGER:	**Cristina Jones**
LICENSED CONSULTANT:	 **James F. Rizk, CIH** ***FLAC #ZA0000022***

TABLE OF CONTENTS

1.0 INTRODUCTION

OHC Environmental Engineering, Inc., (OHC), was contracted by Orlando Housing Authority to perform an Asbestos Survey in compliance with the National Emission Standard for Hazardous Air Pollutants (NESHAP) regulation for asbestos (40 CFR 61, Subpart M). These services were conducted for the upcoming demolition of the Griffin Park Apartments located at 520 Callahan Drive in Orlando, FL. Representatives from OHC and certified AHERA Building Inspectors, Mr. Tom Martinelli and Giancarlo Lozada, visited the site on October 21st and 22nd of 2019, to perform these services.

2.0 EXECUTIVE SUMMARY

Based on the results of the Polarized Light Microscopy (PLM) laboratory analysis, **asbestos is present** within the scope of this survey as indicated in Table 1 below.

TABLE 1: ASBESTOS CONTAINING MATERIALS

HSA	Sample ID	Material Description	Material Locations	Total Quantity	Lab Result	Category & Class
1	184-1A	Three Layers of Floor Tile & Mastic	Admin Building Offices	600 SF	Brown Tile: 2-3% Chrysotile Black Mastic (multiple layers): 6-8% Chrysotile Green Tile: 6-10% Chrysotile	NF-I, Class II
15	184-15A	Black Sink Undercoating	Admin Building Break Room	One Sink	2% Chrysotile	NF-II, Class I
16	184-16A to 184-16G	Floor Tile & Mastic Under Ceramic Tile	Throughout All Units	700 SF per unit	Brown Tile: 2% Chrysotile Black: Mastic: 7-10% Chrysotile	NF-I, Class II

3.0 BUILDING DESCRIPTION

The subsidized housing project site consists of three two story ten-unit buildings, fourteen two story eight-unit buildings and five single-story six-unit buildings. The buildings are estimated to have been built in 1941. The areas to be inspected are located throughout the buildings in all accessible spaces. The structures are rectangle in design. In general, the interior space consists of concrete floors covered with floor tile/mastic and ceramic tile, brick walls, concrete or drywall ceilings, and bare wooden roof truss. The attics contain fiberglass blown-in and bat insulation. The exterior consists of painted brick around the building. The HVAC systems throughout are independent in the individual units. The roofing systems consist of standard residential asphalt shingles, tar paper, and tar.

4.0 ASBESTOS SURVEY

Based on the observations and the laboratory analysis of the samples collected from the site, asbestos-containing materials (ACM) **does exist** within the scope of this survey. The Environmental Protection Agency defines asbestos-containing material (ACM) as any material or product that contains more than one percent (1%) asbestos.

4.1 Asbestos Survey Results

Table 2 below summarizes the samples of suspect ACM collected from the site. The table describes the homogenous sampling area (HSA), sample ID, sample location, material description, quantity, condition, friability, and the laboratory analytical result. Samples with an asterisk (*) were collected for Quality Control measures to ensure the reliability of laboratory analytical procedures. Note that samples in RED indicates that the material contains asbestos and will require compliance with NESHAP and OSHA. Lab results with NAD indicates that no asbestos was detected. Please refer to the Appendices at the end of this report for photographs of the materials sampled and official laboratory analytical results.

TABLE 2: MATERIALS SAMPLED FOR ASBESTOS

HSA	Sample ID	Sample Location	Material Description	Quantity, Condition, Friability	Lab Results
1	184-1A*	Admin Bldg. Offices	Three Layers of Floor Tile & Mastic	600 SF Good Non-Friable	Brown Tile: 2-3% Chrysotile
	184-1B	Admin Bldg. Offices			Black Mastic (multiple layers): 6-8% Chrysotile
	184-1C	Admin Bldg. Offices			Green Tile: 6-10% Chrysotile
2	184-2A*	Admin Bldg. Foyer	Suspended Ceiling Tile	1,000 SF Good Non-Friable	NAD
	184-2B	Admin Bldg. Office			
	184-2C	Admin Bldg. Office			
3	184-3A	Admin Bldg. Break Room	Suspended Ceiling Tile	300 SF Good Non-Friable	NAD
	184-3B	Admin Bldg. Break Room			
	184-3C	Admin Bldg. Break Room			
4	184-4A	Admin Bldg. Shop Bathroom	12 x 12 Tan Floor Tile with Mastic	100 SF Good Non-Friable	NAD
	184-4B	Admin Bldg. Store Room			
	184-4C	Admin Bldg. Shop Store Room			
5	184-5A	Admin Bldg. Office	Cove Base Mastic	200 SF Good Non-Friable	NAD
	184-5B	Admin Bldg. Office			
	184-5C	Admin Bldg. Store Room			

6	184-6A	Admin Bldg. Office Wall	Drywall with Joint Compound	1,000 SF Good Non-Friable	<1% Chrysotile
	184-6B	Admin Bldg. Bathroom Ceiling			
	184-6C	Admin Bldg. Store Room Wall			
7	184-7A*	Admin Bldg. Store Room HVAC Closet	HVAC Duct Joint Tape with Mastic	50 SF/Unit Good Non-Friable	NAD
	184-7B	Bldg. 739 Unit 3 HVAC Closet			
	184-7C	Bldg. 724 Unit 2 HVAC Closet			
	184-7D	Bldg. 729 Unit 8 HVAC Closet			
	184-7E	Bldg. 738 Unit 7 HVAC Closet			
	184-7F	Bldg. 800 Unit 1 HVAC Closet			
	184-7G	Bldg. 804 Unit 7 HVAC Closet			
	184-7H	Bldg. 805 Unit 4 HVAC Closet			
	184-7I	Bldg. 801 Unit 4 HVAC Closet			
8	184-8A	Admin Bldg. Roof	Brown Asphalt Shingle with Felt Paper	5,000 SF per Building Good Non-Friable	NAD
	184-8B	Bldg. 745 Roof			
	184-8C	Bldg. 715 Roof			
	184-8D	Bldg. 724 Roof			
	184-8E	Bldg. 729 Roof			
	184-8F	Bldg. 744 Roof			
	184-8G	Bldg. 800 Roof			
	184-8H	Bldg. 805 Roof			
	184-8I	Bldg. 808 Roof			
9	184-9A	Admin Bldg. Roof	Black Roof Tar Mastic on Wall and Chimney Flashing	5,000 SF Per Building Good Non-Friable	NAD
	184-9B	Bldg. 745 Roof			
	184-9C	Bldg. 715 Roof			
	184-9D	Bldg. 724 Roof			
	184-9E	Bldg. 729 Roof			
	184-9F	Bldg. 744 Roof			
	184-9G	Bldg. 800 Roof			
	184-9H	Bldg. 805 Roof			
	184-9I	Bldg. 808 Roof			
10	184-10A	Admin Bldg. Storage Room	Ceiling Drywall with Joint Compound	800 SF Per Unit Good Non-Friable	<1% Chrysotile in Admin Bldg. Remainder NAD
	184-10B	Bldg. 739 Unit 3			
	184-10C	Bldg. 724 Unit 2			

	184-10D	Bldg. 729 Unit 8			
	184-10E	Bldg. 738 Unit 7			
	184-10F	Bldg. 800 Unit 1			
	184-10G	Bldg. 804 Unit 7			
	184-10H	Bldg. 805 Unit 4			
	184-10I	Bldg. 801 Unit 4			
11	184-11A	Bldg. 739 Unit 3 Kitchen	White Sink Undercoating	1 Double Sink per Unit Good Non-Friable	NAD
	184-11B	Bldg. 738 Unit 7 Kitchen			
	184-11C	Bldg. 800 Unit 1 Kitchen			
12	184-12A	Bldg. 724 Unit 2 Kitchen	Black Pad Sink Undercoating	1 Double Sink per Unit Good Non-Friable	NAD
	184-12B	Bldg. 729 Unit 8 Kitchen			
	184-12C	Bldg. 804 Unit 7 Kitchen			
13	184-13A	Admin Bldg. Office Window	Exterior Window/Door Caulk	150 LF/Unit Good Non-Friable	NAD
	184-13B	Bldg. 739 Unit 3 Kitchen Window			
	184-13C	Bldg. 725 Unit 2 Kitchen Window			
	184-13D	Bldg. 729 Unit 8 Front Door			
	184-13E	Bldg. 728 Unit 7 Front Window			
	184-13F	Bldg. 800 Unit 1 Bath Window			
14	184-14A*	Admin Bldg. Office Window	Interior Window/Door Caulk	150 LF/Unit Good Non-Friable	NAD
	184-14B	Bldg. 739 Unit 3 Kitchen Window			
	184-14C	Bldg. 725 Unit 2 Kitchen Window			
	184-14D	Bldg. 729 Unit 8 Front Door			
	184-14E	Bldg. 728 Unit 7 Front Window			
	184-14F	Bldg. 800 Unit 1 Bath Window			
15	184-15A	Admin Bldg. Break Room	White Sink Undercoating	1 Sink Good Friable	2% Chrysotile
16	184-16A*	Bldg. 739 Unit 3 Hot Water Heater Closet	12 x 12 Floor Tile with Mastic Under Ceramic Tile Throughout Building	700SF/unit Good Non-Friable	Brown Tile: 2% Chrysotile Black: Mastic: 7-10% Chrysotile
	184-16B	Bldg. 724 Unit 2 Kitchen Hot Water Heater Area			
	184-16C	Bldg. 729 Unit 8 Hot Water Heater Area			
	184-16D	Bldg. 800 Unit 1 Closet			
	184-16E	Bldg. 804 Unit 7 Closet			
	184-16F	Bldg. 805 Unit 4 Closet			

	184-16G	Bldg. 801 Unit 7 Closet			
17	184-17A	Bldg. 739 Unit 3 Closet	Ceiling Tile	50SF/unit Good Non-Friable	NAD
	184-17B	Bldg. 724 Unit 2 Closet			
	184-17C	Bldg. 738 Unit 7 Closet			
	184-17D	Bldg. 800 Unit 1 Closet			
	184-17E	Bldg. 804 Unit 7 Closet			
	184-17F	Bldg. 801 Unit 7 Closet			
18	184-18A	Bldg. 724 Unit 2 Stairwell	Stair Rubber Corner Strip Mastic	100 SF/Unit Good Non-Friable	NAD
	184-18B	Bldg. 738 Unit 7 Stairwell			
	184-18C	Bldg. 804 Unit 7 Stairwell			
19	184-19A	Bldg. 724 Unit 2 Kitchen	Interior Caulk	50 LF/Unit Good Non-Friable	NAD
	184-19B	Bldg. 738 Unit 7 Bath			
	184-19C	Bldg. 800 Unit 1 Kitchen			
	184-19D	Bldg. 804 Unit 7 Kitchen			
	184-19E	Bldg. 805 Unit 4 Bath			
	184-19F	Bldg. 801 Unit 7 Kitchen			
20	184-20A	Bldg. 724 Unit 2 Kitchen	Cove Base Mastic	20 SF/Unit Good Non-Friable	NAD
	184-20B	Bldg. 738 Unit 7 Kitchen			
21	184-21A	Bldg. 805 Unit 4 Attic	Fiberglass Bat Insulation Paper Mastic	700 SF/Unit Good Non-Friable	NAD
	184-21B	Bldg. 801 Unit 7 Attic			
22	184-22A	Bldg. 800 Unit 7 Living Room	Popcorn Textured Ceiling	400 SF/Unit Good Non-Friable	NAD
	184-22B	Bldg. 804 Unit 7 Living Room			
	184-22C	Bldg. 801 Unit 4 Living Room			
	184-22D	Bldg. 744 Unit 4 Living Room			
	184-22E	Bldg. 804 Unit 5 Living Room			
	184-22F	Bldg. 809 Unit 7 Living Room			
	184-22G	Bldg. 804 Unit 3 Living Room			
23	184-23A	Bldg. 808 Unit 7 Living Room Wall	Masonry Wall/Ceiling Texture	2000 SF/Unit Good Non-Friable	NAD
	184-23B	Bldg. 808 Unit 7 Living Room Ceiling			
	184-23C	Bldg. 808 Unit 8 Living Room Wall			
	184-23D	Bldg. 808 Unit 8 Living Room Ceiling			
	184-23E	Bldg. 808 Unit 6 Bedroom Wall			

	184-23F	Bldg. 808 Unit 6 Bedroom Ceiling			
	184-23G	Bldg. 808 Unit 5 Living Room Wall			
	184-23H	Bldg. 808 Unit 5 Living Room Ceiling			
	184-23I	Bldg. 808 Office Wall			

4.2 Asbestos Sampling Methods

Asbestos sampling was conducted in accordance with NESHAP (40 CFR 61, Subpart M) protocol for the commencement of demolition/renovation activities. The surveyor conducted a visual inspection of every safe and reasonably accessible room and space of the building. Materials sampled were grouped into Homogenous Sampling Areas (HSA) based on the texture, color, use, age, condition, and every other visual appearance to identify suspect ACM. Materials containing asbestos are grouped into the following categories:

- **Regulated ACM (RACM)**: Refers to friable manufactured ACM or a Category I non-friable ACM that has become friable; or a Category I Non-Friable ACM that will be or has been subjected to sanding, grinding, cutting or abrading; or a Category II Non-Friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- **Category I Non-Friable ACM**: Refers to asbestos containing packing, gaskets, resilient floor coverings (including mastics), Galbestos, and asphalt roofing products containing more than 1% asbestos.
- **Category II Non-Friable ACM**: Refers to any material that is not a Category I Non-Friable ACM that contains greater than 1% asbestos.

Bulk samples of all friable and non-friable suspect ACM were collected, as well as a representative number of samples from each homogeneous area following the EPA's simplified random sampling method (EPA560/585-030a). Good Industrial Hygiene practices were followed when collecting bulk samples in order to minimize fiber release. Every precaution was taken to prevent asbestos exposure to the surveyor, the building occupants, and the public. All sample locations were logged with an appropriate description and the locations were marked on any available drawings. A unique sequential numbering system was used to identify each area. Each bulk sample was placed in a labeled bag, which was immediately marked with its sample number. Strict Chain-of-Custody protocols were followed and signed by the receiving laboratory personnel who handled the samples. The samples were analyzed via PLM EPA-600 by EMSL Analytical in Orlando, FL. Quality control samples were analyzed by EMSL Analytical in Tampa, Florida for Quality Control procedures during the analysis of asbestos content. The purpose is to monitor the performance of the

laboratories where samples are being analyzed in order to provide competence and reliability assurance.

4.3 Regulatory Requirements

***Demolition*:** According to NESHAP, 40CFR61 Subpart M, demolition is defined as the wrecking or taking out of any load-supporting structural member of a facility together with any related handling operations or the intentional burning of any facility. The final NESHAP Rule provides classification for regulated asbestos containing material as follows:

- Friable asbestos material;
- Category I non-friable ACM that has become friable;
- Category I non-friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading; or
- Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by forces expected to act upon the material in the course of demolition or renovation operations.

If the total asbestos content is determined to be trace to 10%, the owner must either assume that the material contains greater than 1% asbestos and treat the material as regulated asbestos-containing material (RACM) or have the material verified/quantified by point counting. If after point counting, the material is quantified as 1% or less, it is not regulated by the NESHAP. The Occupational Safety and Health Administration (OSHA) considers material that contains any amount of asbestos as asbestos-containing and requires compliance with OSHA regulations. The demolition of a structure with materials present that contain any amount of asbestos is considered by OSHA as an asbestos abatement, and all applicable OSHA rules must be complied with during the demolition.

***Notification*:** Notification is required to the local regulatory agency:

1. Ten (10) working days prior to a demolition.
2. Ten (10) working days prior to a renovation operation, if the amount of asbestos material removed or impacted is greater than 160 SF on all building components (i.e. floor tile, mastic, GWBS, etc.) or 260 LF on pipes.
3. One (1) day prior to demolition, if the building has been condemned and is structurally unsound as determined by the appropriate agency.

Notification must be sent by certified mail with return receipt or hand delivered to the Florida Department of Environmental Protection. The demolition contractor must wait ten (10) working days (Monday – Friday) from the postmarked date of mailing or the date of hand delivery to commencement of demolition. Any change to the start date of the demolition requires notification to the agency by phone, followed by a written revision to the Notification Form.

4.4 Statutory Requirements

The regulatory agency responsible for the oversight of the rules pertaining to asbestos-containing building materials (ACBM) is the Environmental Protection Agency (EPA). The regulations state that prior to demolition or renovation a facility survey must be conducted in accordance to section 40 CFR 61-M National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revisions, Final Rule. Enforcement of these rules was passed on to the states. In the State of Florida they are enforced by the Department of Environmental Protection (DEP). Some counties have developed an enforcement division to carry out the responsibilities of the DEP and have developed environmental and asbestos ordinances with which compliance is required.

5.0 OBSERVATIONS

- Administration building appears to be slightly different than the residential buildings due to it being converted into office space.
- Majority of the administration building consists of the same homogeneous materials as the apartment buildings.
- Piping throughout the apartments were bare and consisted of PCV and copper. Pipes were located inside walls and beneath the slab. No insulation was observed on the pipes.
- The 12 x 12 floor tile and mastic (HSA # 1 & 16) is assumed to be located under all ceramic tile in all rooms of all buildings.
- The masonry wall/ceiling texture is located in Building 808 only.
- The popcorn ceiling texture is located on ceilings in limited numbers of buildings.

6.0 LIMITATIONS

The materials sampled in this survey were subject to accessibility. This survey was limited to areas not occupied by residents of the Griffin Park Apartments. Building plans and site drawings were not available to the assessors. OHC warrants that the investigations and methodology reflect the prevailing standard of work practices in the environmental consulting field. If it is expected that materials outside the scope of this survey are to be disturbed, they must be presumed hazardous until the materials can be analyzed by an accredited building inspector. Access was limited to the following areas:

- Apartments occupied by residents.
- Invasive sampling was limited in areas/apartments that are to be re-occupied by residents of the Griffin Park Apartments.

7.0 DOCUMENT CONTENT

This document has been prepared for exclusive use by Orlando Housing Authority. The knowledge of the consultant is based upon current information and research. If local knowledge indicates error, omissions, or inaccuracy, please notify the consultant.

APPENDIX A:

ASBESTOS SAMPLING LOCATIONS

SECTION 01010
SUMMARY OF WORK

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 DESCRIPTION OF WORK

A. The project located at 520 Callahan Drive, Orlando FL 32805, consists of the following as noted below:

1. Demolish 21 existing buildings and all surrounding infrastructure and utilities serving these buildings. All buildings are to be demolished at the same time. Please note that one existing residential building and one existing non-residential building will remain.
2. Disconnecting, capping, or sealing, all sewer lines and site utilities such as electrical, water and telecommunications.
3. **Note if cultural material or human remains be encountered during ground disturbance, construction, or demolition please notify the owner and David J. Proctor, Historical and Cultural Preservation Department, Muscogee (Creek) Nation, P.O. Box 580, Okmulgee, OK 74447. Email djproctor@mcn-nsn.gov/ or phone 918 732-7642.**

1.03 COORDINATION OF WORK

A. Work of the contractor and subcontractors: provide in the following manner for interrelated portions of the project, unless specifically indicated otherwise on the drawings or elsewhere in these specifications.

1.04 COMMENCEMENT OF WORK

A. Preparation: Properly prepare work to receive subsequent work or finish. Notify Architect if any work is unsatisfactory to receive subsequent work or finish and receive instruction before proceeding.

1.05 LAYOUT OF WORK

A. Execution: The Contractor shall employ, or have in his employ, a competent Engineer who shall establish a permanent bench mark and general reference points, to which easy access may be had by all the Contractors and Subcontractors, for use in determining all levels, lines and grades and for verification from time to time during the progress of the work. It is the duty of each Contractor or Subcontractors to lay out his own work, take his own measurements, grades and levels, and be responsible for their proper correlation to the entire project, except that the Contractor shall lay out the partitions on the forms or rough floors as a guide to the Trades.

B. Coordination: Report inconsistencies between the Drawings and the actual size to the Architect and receive instructions before commencing work.

1.06 USE OF SITE

A. Contractor may utilize the portion of the site designated by the Owner at the time of the pre-construction meeting.

1.07 WORK SEQUENCE

A. The various phases of the work shall be executed in the following sequence, unless the Architect receives express permission of the Owner to permit specific variations requested by the Contractor.

1.08 OWNER FURNISHED ITEMS

A. The following is a list of the items which shall be furnished by the Owner and installed by the Contractor:

B. The following is a list of the items, which shall be furnished and installed by the Owner. Rough-ins and all final connections are by the General Contractor.

PART 2 – PRODUCTS -Not used

PART 3 – EXECUTION -Not used

END OF SECTION

SECTION 01039
COORDINATION AND MEETINGS

PART I - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 DESCRIPTION OF WORK

A. Coordination

B. Field Engineering

C. Pre-Construction Conference

D. Progress Meetings

1.03 COORDINATION

A. Coordinate scheduling, submittals, and Work of the various Sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify that utility requirement characteristics of operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.

C. Coordinate space requirements and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with line of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance and for repairs. A meeting amongst all trades, specifically fire, plumbing and mechanical contractors for the purpose of determining sequencing of tasks so as to not conflict with other installations is suggested and the sole responsibility of the General Contractor. See Mechanical specifications for further direction.

D. In finished areas, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.

E. Coordinate completion and clean-up of Work of separate sections in preparation for Substantial Completion.

1.04 FIELD ENGINEERING

A. Contractor to employ a Land Surveyor registered in the State of Florida.

B. Contractor to locate and protect survey control and reference points.

C. Control datum for survey that is established by Owner provided survey.

D. Contractor to provide field engineering services. Establish elevations, lines and levels, utilizing recognized engineering survey practices.

E. Submit a copy of registered site drawing and certificate signed by the Land Surveyor that the elevations and locations of the work are in conformance with the Contract Documents.

1.05 CUTTING AND PATCHING (WHERE REQUIRED)

A. Employ skilled and experienced installer to perform cutting and patching.

B. Submit written report in advance of cutting or altering elements which affects:

1. Structural integrity of element.
2. Integrity of weather-exposed or moisture-resistant elements.
3. Efficiency, maintenance or safety of element.
4. Visual qualities of sight exposed elements.

C. Execute cutting, fitting and patching, including excavation and fill, to complete Work and to:

1. Fit the several parts together, to integrate with other Work.
2. Uncover Work to install or correct ill-timed Work.
3. Remove and replace defective and non-conforming Work.
4. Remove samples of installed Work for testing.
5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.

D. Execute work by methods which will avoid damage to other Work, and provide surfaces to receive patching and finishing.

E. Cut rigid materials using masonry saw or core drill.

F. Restore Work with new products in accordance with requirements of Contract Documents.

G. Fit Work tight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.

H. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

I. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

J. Identify any hazardous substance or condition exposed during the Work to the Architect/Engineer for decision of remedy.

1.06 PRECONSTRUCTION CONFERENCE

A. Architect/Engineer will schedule a conference after Contract Negotiation is complete.

B. Attendance Required: Owner, Architect/Engineer and General Contractor.

C. Agenda:

1. Submission of executed bonds and insurance certificates.
2. Distribution of Contract Documents.
3. Submission of list of Subcontractors, schedule of shop drawings, list of Products, schedule of values and progress schedule.

4. Designation of personnel representing the parties in Contract, Threshold Inspector and the Architect/Engineer.
5. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
6. RFI procedure/process
7. Scheduling
8. Project Clean-up.
9. Project Coordination.

1.07 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at bi-weekly intervals or as determined during the pre-construction meeting.

B. Make arrangements for meetings, prepare agenda with copies of participants, preside at meetings, record minutes, and distribute copies to Architect/ Engineer, Owner, participants, and those affected by decisions made.

C. Attendance Required: General contractor's job superintendent and project manager, Owner or owner's representative, Architect/Engineer, as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review minutes of previous meetings.
2. Review of Work progress.
3. Field observations.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01040
COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Cleaning and protection.

1.03 RELATED SECTIONS

A. Division 1 Section "Field Engineering" specifies procedures for field engineering services, including establishment of benchmarks and control points.

B. Division 1 Section "Project Meetings" for progress meetings, coordination meetings, and preinstallation conferences.

C. Division 1 Section "Submittals" for preparing and submitting the Contractor's Construction Schedule.

D. Division 1 Section "Materials and Equipment" for coordinating general installation.

E. Division 1 Section "Contract Closeout" for coordinating contract closeout.

1.04 COORDINATION

A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
   1. Preparation of schedules.
   2. Installation and removal of temporary facilities.
   3. Delivery and processing of submittals.
   4. Progress meetings.
   5. Project closeout activities.

D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.
   1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

1.05 SUBMITTALS

A. Coordination Drawings: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.
   1. Show the relationship of components shown on separate Shop Drawings.
   2. Indicate required installation sequences.
   3. Comply with requirements contained in Section "Submittals."

B. Staff Names: Within 15 days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.
   1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.02 CLEANING AND PROTECTION

A. Clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Radiation.
12. Puncture.
13. Abrasion.
14. Heavy traffic.
15. Soiling, staining, and corrosion.
16. Bacteria.
17. Rodent and insect infestation.
18. Combustion.
19. Electrical current.
20. High-speed operation.
21. Improper lubrication.
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

END OF SECTION

SECTION 01105
RODENT CONTROL

PART 1 - GENERAL

1.01 SUMMARY

A. This section specifies rodent control and general pest control requirements within project areas, and bordering areas as designated by the Owner and Architect. This work is to be performed prior to demolition, excavation, and site preparation and throughout the Contract, so that rodents and other pests do not disperse from or infest the project area.

B. The Contractor shall develop and implement an Integrated Pest Management (IPM) approach. As part of that approach, the Contractor shall maintain a cooperative dialogue with appropriate agencies and management/representatives of neighboring properties.

C. The Contractor shall perform the rodent control tasks described in this Scope of Work and also respond to other pest control needs when directed by the Owner.

1.02 SUBMITTALS

A. Submit to the Engineer copies of pesticide applicator certifications and licenses within ten (10) days of the start of Rodent Control activities and ten (10) days prior to their issuance or renewal for the duration of this Contract.

B. After performing the survey described in Paragraph 3.2 below and before initiating baiting, submit to the Architect a written description of proposed pest control procedures, indicating materials, quantities, methods and time schedule. For all pesticides to be used, submit a copy of the pesticide manufacturer's EPA-approved pesticide label with application directions.

C. Submit to the Architect documentation of pest control activities and results as followed:

1. Weekly – Submit data sheets with locations of sites treated, amounts and types of pesticide used, number and types of traps set, survey and inspection results, sanitation conditions, complaint calls investigated, and any problem that occurred.
2. Monthly – Submit a written summary that includes determinable results of the IPM program and recommendations.
3. Quarterly – Submit a map that shows bait stations, manholes, and catch basins where rodent baits are being maintained.

1.03 QUALIFICATIONS

A. The Contractor shall perform this work at all times in accordance with the following minimum standards and as acceptable to the Owner and Architect.

1. The Contractor and key personnel shall have experience with commercial and residential accounts and construction projects; have experience and technical training in vertebrate pest management and integrated pest management; have experience with various rodent control techniques, equipment and strategies;

have training and experience with insect control; and have knowledge of an experience with techniques to reduce non-target hazards.

2. The supervisor shall be licensed and certified in General Pest Control and Vertebrate Pest Control. The supervisor shall have specific training and experience in vertebrate post management, commercial rodent control, general pest control, and integrated pest management.
3. Applicators shall be licensed by the Florida Pesticide Bureau and certified in General Pest Control. Applicators shall have specific training and experience in commercial rodent control and integrated pest management.

1.04 COORDINATION

A. Perform this Work in cooperation with the other Work performed under the Contract.

B. Initiate the work on or before field mobilization begins for the Contract and with adequate timing to achieve control before environmental disruptions. Provide a maintenance program until Contract is completed and all equipment and materials are removed.

C. Perform the Work according to the preliminary schedule described in this section and as accepted or revised by the Owner and Architect. Estimated durations and start dates may be changed by the Owner or Architect to suit changes in construction schedules and field conditions. The Work could potentially require performance any day of the week and any hour of the day or night, regardless of weather.

D. Perform this work in such a manner that toxicant or other control tools do not pose a hazard to persons, domestic animals, or non-target wildlife.

1.05 PERMITS

A. Obtain and maintain in coordination with the Contractor appropriate permit(s) from city or state agencies for pest control activities associated with this Work.

B. Obtain and maintain in coordination with the Contractor all right of entry permits required for the performance of this Work. This includes all utilities and private properties to which entrance is required.

PART 2 – PRODUCTS

2.01 PRODUCTS

A. Furnish and use only pesticide formulations registered by the U.S. Environmental Protection Agency (EPA) and the Florida Department of Food and Agriculture, where appropriate according to label directions and as acceptable to the Architect.

B. Furnish and use devices and supplies (e.g., traps and bait stations) to facilitate the management and effectiveness of the pest control program, where appropriate and as acceptable to the Architect.

PART 3 - EXECUTION

3.01 MEETINGS

A. Before proceeding with the Work, all pest control personnel shall attend a Work Shop held by the Contractor and Architect to discuss planned pest control methods and coordination.

B. The supervisor shall meet with the Contractor weekly to discuss pest control activities.

3.02 SURVEY

A. Prior to baiting, survey the proposed construction area and accessible or observable bordering areas and record signs of rodent activity and sanitation conditions. Closely inspect all embankments, edge areas, and properties within and abutting the construction area. Maintain survey records in the manner described in Paragraph 3.7 below.

B. Thoroughly inspect construction area and accessible or observable bordering areas and any nearby areas designated by the Architect, for rodent activity and sanitation deficiencies weekly throughout the duration of this Contract and in accordance with the work schedule. Maintain inspection records in the manner described in Paragraph 3.7 below.

C. Plan the control program and allocate resources based on survey and inspection data and as acceptable to the Owner.

3.03 APPLICATION FOR RODENT CONTROL

A. Apply rodenticide in strict accordance with EPA-approved label directions. Maintain records of all bait placements in the manner described in Paragraph 3.7 below.

B. Where appropriate, especially for surface placements of rodent baits, use properly secured and tamper-resistant bait stations consistent with EPA regulation. Individually number and properly identify all bait stations.

C. Surface Applications

1. Initial Surface Baiting

   Rid the construction area of all detectable rodents before construction begins, or as acceptable to the Owner. Bait all observable rodent burrows. Install and secure bait stations at regular an appropriate intervals and locations, and document rodent activity (burrows, droppings, bait consumed, dead rodents). Replenish bait and shift bait stations as necessary to ensure complete control of rodent populations. Bait edge and accessible bordering areas as necessary to ensure that rodents will not be dispersed by construction activities and that rodents will not infest work areas.

2. Maintain Surface Baiting

   Establish a maintenance baiting program prior to mobilization by the Contractor, including construction areas and accessible bordering areas, as acceptable to the Owner. Check bait placements weekly. Use survey and baiting data to determine the most effective distribution of baiting locations and bait quantities. Shift and distribute bait and bait stations as appropriate to ensure continued control.

D. Subsurface Applications

1. General

For situations involving underground construction/demolition, utility relocation, or utility construction, and for other situations when determined necessary by the Owner or Architect, initiate subsurface baiting and rid underground environments of all detectable rodents before construction begins. Assign an identifying number to each manhole and catch basin where bait is placed so that locations of bait placements can be identified and rodent activity (dropping, bait consumed, dead rats) can be documented. Conduct bait applications during off-peak traffic hours unless otherwise directed by the Architect. Access manholes according to the requirements of appropriate agencies and utility companies. Coordinate the Work with appropriate municipal agencies and utility companies.

2. Initial Subsurface Baiting

Apply appropriate baits to control rodent populations in manholes and catch basins. This will involve suspending and securing bait using noncorrosive wire (e.g., 24 gauge plastic coated). Place bait in all accessible manholes and catch basins within the construction work area. In addition, bait an appropriate set of manholes and catch basins in the blocks bordering the work area and as acceptable to the Owner. Identify all baited manholes and catch basins with a standardized paint mark on the street and a numbered tag to be attached to the suspending wire. Approximately seven days after completion of the first baiting, check all manhole and catch basin baits and record estimates on the amount of bait consumed. Replenish or increase the amount of bait applied according to the amount consumed or as acceptable to the Owner and Architect. Repeat this process again approximately fourteen days later and until there is little or no bait consumed. Check manholes and catch basins weekly when they repeatedly have 100 percent of the bait consumed.

3. Maintenance of Subsurface Baiting

Prior to mobilization by the Contractor, establish a maintenance baiting program appropriate for the rodent infestation patterns identified during initial subsurface baiting. This program shall ensure continued control and shall be performed in a manner acceptable to the Owner and Architect. Maintain bait in manholes and catch basins that have rodent activity and those that had activity during initial baitings. Check each bait according to rodent activity levels. This could range from weekly to approximately every three months, depending upon the recent history of bait consumption. Use utility maps and baiting data to determine the most effective distribution of baiting locations and bait quantities. Shift and distribute baiting locations as necessary to ensure adequate interception points for controlling immigrating rodents.

E. Cleanup

1. Remove visible rodent carcasses and dispose of them daily consistent with the pesticide label directions and applicable codes, laws and regulations.
2. Upon completion of any pest control operations at the site, remove remaining bait and dispose of it according to the pesticide label and applicable codes, laws and regulations. Also remove all wires used for subsurface baiting and any bait stations or traps.

3.04 SANITATION

A. Prior to construction and throughout the duration of this Contract, identify and document harborage and food sources available to rodents on the construction site and in observable bordering areas. This includes any littering or improper or insufficient use of trash receptacles in construction areas. It also includes any bordering areas with sanitation conditions or structural deficiencies that violate City or State sanitation codes.

B. Maintain records of sanitation conditions in the manner described in Paragraph 3.7 below.

3.05 COMPLAINT CALLS

A. During construction, respond to pest-related complaints from the "adjacent" neighborhood (i.e. within 200 feet of the project limits) within 12 hours when directed by the Owner or Architect. Inspect the particular premises and adjacent areas for sanitation and structural deficiencies and also signs of historic and recent pest activity. Provide sanitation and structural maintenance information to the property owner. Use pesticides or traps as necessary and appropriate to resolve the complaint when there is a relationship between the pest infestation and construction activities, or when directed by the Owner or Architect.

B. Maintain records of all complaints investigated, including location, contact person, inspection results, and actions taken. Document the relatedness of the pest infestation to construction activities.

3.06 GENERAL PEST CONTROL

A. When directed by the Owner or Architect, the Contractor shall determine appropriate methods for any pest control task not specifically identified above and shall submit them in writing to the Owner and Architect for approval in advance. Such pest control tasks would relate to unanticipated pest control needs within construction areas or adjacent areas. This could include control of insects or vertebrates other than rats and mice.

B. Maintain records of general pest control activities and results in the manner described in Paragraph 3.7 below.

3.07 RECORD KEEPING

A. Use standardized data sheets acceptable to the Owner and Architect to maintain accurate records of date, placement, type and amount of pesticides or other control tools (e.g., traps) applied. Similarly, maintain records of surveys, inspections, changes in pest activity, sanitation conditions, and complaint calls. Submit data in a format acceptable to the Owner and Architect and as required under Paragraph 1.3 (C) above.

END OF SECTION

SECTION 01200
GENERAL PROVISIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Examination of Site.

B. Drawings and Specifications.

C. Data and Measure.

D. Cooperation of Trades.

1.03 EXAMINATION OF SITE:

A. Contractor is required to visit the site, compare the drawings and specifications with any work in place, and inform himself as to all conditions, including other work, if any, being performed. Failure to visit the site will in no way relieve the Contractor from necessity of furnishing any materials or performing any work that may be required to complete work in accordance with drawings and specifications without any additional costs to the Owner.

1.04 DRAWINGS AND SPECIFICATIONS

A. These specifications are intended to supplement the drawings and it will not be the province of the specifications to mention any part of the work which the drawings are competent to fully explain in every particular and such omission is not to relieve the Contractor from carrying out portions indicated on the drawings only. Should items be required by these specifications or applicable code requirements and not indicated on the drawings, they are to be supplied even if of such nature that they could have been indicated thereon.

B. In cases of disagreement between drawings and specifications, or within either drawings or specifications, the better quality or greater quantity of work shall be estimated and the matter referred to the Architect for a decision. Larger scale plans take precedence over smaller. Specifications take precedence over drawings.

1.05 DATA AND MEASURE

A. The data given herein and on the drawings is as exact as could be secured. Their absolute accuracy is not guaranteed, and the Contractor shall obtain exact locations, measurements, levels, etc., at the site and shall satisfactorily adapt to his work to the actual conditions of the building. Do not scale prints. Verify all dimensions with the Architect prior to commencing work. Only Architectural drawings may be utilized in calculation. Other drawings (Mechanical, etc.) are diagrammatic or schematic.

1.06 EQUIPMENT AND CONSTRUCTION METHODS

A. The Contractor shall be responsible for the equipment and methods used in the erection of his work covered by the contract, but the Architect reserves the right to approve such equipment and methods.

B. If, at any time, the Contractor's working force, in the opinion of the Architect, shall be inadequate for securing the necessary progress, as herein stipulated, the Contractor shall, if so directed, increase the work force or equipment to such extent as to give reasonable assurance of compliance with the schedule of progress, but the failure to make such demand shall not relieve the Contractor of his obligation to secure the quality, the safe conduct of the work, and the rate of progress required by the contract. The Contractor alone shall be responsible for the safety, efficiency, and adequacy of his plant, appliance and methods.

C. Quality workmanship will be expected. The good appearance of finished work shall be of equal importance with its mechanical efficiency. No makeshifts will be permitted anywhere in the work, and all portions of the work shall be so laid out and installed that the work as a whole is of uniform quality and appearance.

1.07 COOPERATION OF TRADES

A. It is the intention of the Contract Documents that the various trades engaged in the work shall cooperate in the execution of the work. The contractors will be expected and required at all times to require cooperation from all sub-contractors engaged in the work. The contractors shall plan the work in such a manner that all parts of the construction will fit in with other parts or sections in a proper manner and at the proper time.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01300
SUBMITTALS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Submittal Procedures and Schedule.

B. Construction progress schedules.

C. Proposed products list.

D. Shop drawings.

E. Product Data.

F. Samples.

G. Manufacturers' instructions.

H. Manufacturers' certificates.

I. Construction photographs.

1.03 RELATED SECTIONS

A. Section 01400 - Quality Control: Manufacturers' field services and reports.

B. Section 01700 – Contract Closeout: Contract warranty and manufacturers' certificates Closeout certificates.

1.04 SUBMITTAL PROCEDURES

A. Transmit each submittal with Architect/Engineer accepted form.
   1. Submit a schedule of submittals in accordance with Section 1.07.

B. Sequentially number the transmittal forms. Resubmittals to have original number with Alphabetic sequence.

C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and Detail number(s), and specification Section number, as appropriate.

D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimension, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents. All submittals without this stamp of approval or which have not been checked, or only superficially checked, will not be considered and will be returned to the Contractor for resubmission.

E. Schedule submittals to expedite the Project, and deliver to Architect/Engineer at business address. Coordinate submission of related items.

F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed work.

G. Provide space for Contractor and Architect/Engineer review stamps.

H. Revise and resubmit submittals as required, identify all changes made since previous submittal.

I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

J. Coordination: Coordinate preparation and processing of submittals with performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.
    a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until all related submittals are received.
3. Processing: To avoid the need to delay installation as a result of the time required to process submittals, allow sufficient time for submittal review, including time for resubmittals.
    a. Allow 2 weeks for initial review. Allow additional time if the Architect must delay processing to permit coordination with subsequent submittals.
    b. If an intermediate submittal is necessary, process the same as the initial submittal.
    c. Allow 2 weeks for reprocessing each resubmittal.
    d. No extension of Contract Time will be authorized because of failure to transmit submittals to the Architect sufficiently in advance of the Work to permit processing.

K. Submittal Preparation: Place a permanent label or title block on each submittal for identification. Indicate the name of the entity that prepared each submittal on the label or title block.

1. Provide a space approximately 4 by *5* inches (100 by 125 mm) on the label or beside the title block on Shop Drawings to record the Contractor's review and approval markings and the action taken.
2. Include the following information on the label for processing and recording action taken.
    a. Project name.
    b. Date.
    c. Name and address of the Architect.
    d. Name and address of the Contractor.
    e. Name and address of the subcontractor.
    f. Name and address of the supplier.

g. Name of the manufacturer.
h. Number and title of appropriate Specification Section.
i. Drawing number and detail references, as appropriate.

L. Submittal Transmittal: Package each submittal appropriately for transmittal and handling. Transmit each submittal from the Contractor to the Architect using a transmittal form. The Architect will not accept submittals received from sources other than the Contractor.

1. On the transmittal, record relevant information and requests for data. On the form, or separate sheet, record deviations from Contract Document requirements, including variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

1.05 CONSTRUCTION PROGRESS SCHEDULES

A. Submit initial progress schedule in duplicate within 15 days after date of Owner-Contractor Agreement for Architect/Engineer review. Include the anticipated amount of each monthly payment that will become due to the Contractor in accordance with the Progress Schedule/

B. Revise and resubmit as requested by the Architect.

C. Submit revised schedules with each Application for Payment, identifying changes since previous version. No application for payment will be approved until the initial or revised schedule has been received and approved by the architect.

D. Submit a horizontal bar chart with separate line for each major section of Work, identifying first work day of each week.

E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.

F. Indicate estimated percentage of completion for each item of Work at each submission.

G. Indicate Submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner.

1.06 PROPOSED PRODUCTS LIST

A. Within 30 days after date of Owner-Contractor Agreement, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.07 SUBMITTAL SCHEDULES

A. After development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 10 days of the date required for submittal of the Contractor's Construction Schedule.

1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Contractor's Construction Schedule.

2. Prepare the schedule in chronological order. Provide the following information:
   a. Scheduled date for the first submittal.
   b. Related Section number.
   c. Submittal category (Shop Drawings, Product Data, or Samples).
   d. Name of the subcontractor.
   e. Description of the part of the Work covered.
   f. Scheduled date for resubmittal.
   g. Scheduled date for the Architect's final release or approval.

B. Distribution: Following response to the initial submittal, print and distribute copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Post copies in the Project meeting room and field office.

1. When revisions are made, distribute to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in construction activities.

C. Schedule Updating: Revise the schedule after each meeting or activity where revisions have been recognized or made. Issue the updated schedule concurrently with the report of each meeting.

1.08 SHOP DRAWINGS

A. Contractor shall prepare and submit to the Architect 30 days after award of the Contract a schedule of Shop Drawings and Submittals as required in the Contract Documents. Schedule shall fix dates for submission, and the lead time for each submittal as related to the requirements for return receipt. No work shall be fabricated by the Contractor, save at his own risk, until approval of the shop drawings has been obtained.

B. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 – Contract Closeout.

C. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:

1. Dimensions.
2. Identification of products and materials included by sheet and detail number.
3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.
6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by II inches (215 by 280 mm) but no larger than 36 by 48 inches (890 by 1220 mm).
7. Final Submittal: Submit 4 blue- or black-line prints and 2 additional prints where required for maintenance manuals, plus the number of prints needed by the Architect for distribution. The Architect will retain 1 print and return the remainder.
   a. Alternately, submissions may be sent electronically except for samples for various materials and color selection.
8. At contractor's option, electronic files may be submitted in lieu of hard copy prints. Electronic submittal shall be submitted with the same information as listed above and in Section 1.04 above.

9. Do not use Shop Drawings without an appropriate final stamp indicating action taken.

1.09 PRODUCT DATA

A. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect/Engineer.

B. Mark each copy to identify applicable products, models, options and other data. Supplement manufacturers' standard data to provide information unique to this Project.

C. After review, distribute in accordance with Article on Procedures above and for Record Documents described in Section 01700 – Contract Closeout.

1.10 SAMPLES

A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

B. Submit samples of finishes from the full range of manufacturers' standard colors in custom colors, textures, and patterns for Architect/Engineer.

C. Include identification on each sample, with full Project information.

D. Submit the number or samples specified in individual specification sections; one of which will be retained by Architect/Engineer.

E. Reviewed samples, which may be used in the Work, are indicated in individual specification Sections.

1.11 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, (start-up,) adjusting, and finishing, in quantities specified for Product Data.

B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.12 MANUFACTURER'S CERTIFICATES

A. When specified in individual specification sections, submit manufacturers' certificate to Architect/Engineer for review, in quantities specified for Product Data.

B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference date, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.13 ARCHITECT'S ACTION

A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, action stamp. The Architect will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When the Architect marks a submittal "No Exception Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
2. Final-But-Restricted Release: When the Architect marks a submittal "Furnish as Corrected," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
3. Returned for Resubmittal: When the Architect marks a submittal "Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
   a. Do not use, or allow others to use, submittals marked "Revise and Resubmit" at the Project Site or elsewhere where Work is in progress.
4. Returned for Resubmittal: When the Architect marks a submittal “Rejected,” do not proceed with any work covered by this submittal, including purchasing, fabrication, delivery or any other activity. This submittal does not comply with the Contract Documents or Specifications.
5. Restricted Release: When the Architect marks a submittal “Submit Specified items,” work covered by the submittal may proceed provided it complies with the Contract Documents and the Specifications are submitted for Architect review.
6. Other Action: Where a submittal is for information or record purposes or special processing or other activity, the Architect will return the submittal marked "Action Not Required."

C. Unscheduled Submittals: The Architect will return unscheduled submittals to the sender without action.

1.14 CONSTRUCTION PHOTOGRAPHS

A. Each month submit photographs to Architect/Engineer with Application for Payment.

B. Photograph: Prints; color; 8 x 10 inch; mounted on 8-1/2 x 11 inch soft card stock, with left edge binding margin for three hole punch.

C. Take two (2) aerial site photographs from differing directions indicating the relative progress of the Work, ten (10) days maximum prior to submitting Application for Payment.

D. Identify photographs with date, time orientation and project identification.

PART 2 – PRODUCTS - Not Used

PART 3 – EXECUTION - Not Used

END OF SECTION

SECTION 01301
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:

1. General coordination procedures.
2. Coordination drawings.
3. Requests for Information (RFIs).
4. Project Web site.
5. Project meetings.
6. Project photographs.

B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

1.03 DEFINITIONS

A. RFI: Request from Owner, Construction Manager, Architect, or Contractor seeking information required by or clarifications of the Contract Documents.

1.04 INFORMATIONAL SUBMITTALS

A. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.

B. Key Personnel Names: Within seven days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home, office, and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

1. Post copies of list in project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.05 GENERAL COORDINATION PROCEDURES

A. Coordination: Coordinate construction operations included in different Sections of the

Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

B. Coordination: Each contractor shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its operations with operations, included in different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
3. Make adequate provisions to accommodate items scheduled for later installation.

C. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's construction schedule.
2. Preparation of the schedule of values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Pre-installation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.

E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.

1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

1.06 COORDINATION DRAWINGS

A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely shown on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.

1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
   a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
   b. Coordinate the addition of trade-specific information to the coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
   c. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
   d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
   e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
   f. Indicate required installation sequences.
   g. Indicate dimensions shown on the Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Architect indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.

B. Coordination Drawing Organization: Organize coordination drawings as follows:

1. Floor Plans and Reflected Ceiling Plans: Show architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
2. Plenum Space: Indicate sub-framing for support of ceiling and wall systems, mechanical and electrical equipment, and related Work. Locate components within ceiling plenum to accommodate layout of light fixtures indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
6. Mechanical and Plumbing Work: Show the following:
   a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
   b. Dimensions of major components, such as dampers, valves, diffusers,

access doors, cleanouts and electrical distribution equipment.
c. Fire-rated enclosures around ductwork.
d. Plan piping sizes and floor penetration arrays within wall assemblies.

7. Electrical Work: Show the following:
a. Runs of vertical and horizontal conduit 1-1/4 inches (32 mm) in diameter and larger.
b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
c. Panel board, switch board, switchgear, transformer, busway, generator, and motor control center locations.
d. Location of pull boxes and junction boxes, dimensioned from column center lines.

8. Fire-Protection System: Show the following:
a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.

9. Review: Architect will review coordination drawings to confirm that the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Architect determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Architect will so inform Contractor, who shall make changes as directed and resubmit.

10. Coordination Drawing Prints: Prepare coordination drawing prints according to requirements in Division 01 Section "Submittal Procedures."

11. Information Technology Rooms: The selected GC is to coordinate with the owner's IT personnel in creating coordination documents and installation of all IT related equipment and infrastructure.

C. Coordination Digital Data Files: Prepare coordination digital data files according to the following requirements:

1. File Preparation Format: Same digital data software program, version, and operating system as original Drawings.

2. File Preparation Format: DWG, Version, operating in AutoCAD Architecture 2016 operating system.

3. File Submittal Format: Submit or post coordination drawing files using format same as file preparation format.

4. Architect will furnish Contractor one set of digital data files of Drawings for use in preparing coordination digital data files upon receipt of completed Cad Request Release form.
a. Architect makes no representations as to the accuracy or completeness of digital data files as they relate to Drawings.
b. Digital Data Software Program: Drawings are available in AutoCAD Architecture 2016.
c. Contractor shall execute a data licensing agreement in the form of Agreement form acceptable to Owner and Architect.

1.07 REQUESTS FOR INFORMATION (RFIs)

A. General: Immediately on discovery of the need for additional information or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.

1. Architect will return RFIs submitted to Architect by other entities controlled by Contractor with no response.

2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
3. Construction Progress Meetings: If during the course of a scheduled construction progress meeting, a question is raised and resolved at the meeting, the resolution of the issue will be recorded in the meeting minutes and shall be considered formal direction to proceed under that course of action. The Architect will not issue a separate document echoing that direction, nor shall the Contractor issue a confirming RFI. If the Contractor believes that the direction results in a change in the contract sum or schedule, he shall submit a proposal for consideration by the Owner as stipulated elsewhere in this Section.
4. Reference Division 1 section “Progress Management and Coordination”.

B. Content of the RFI: Include a detailed, legible description of item needing information or interpretation and the following:
1. Project name.
2. Project number.
3. Date.
4. Name of Contractor.
5. Name of Architect and Construction Manager.
6. RFI number, numbered sequentially.
7. RFI subject.
8. Specification Section number and title and related paragraphs, as appropriate.
9. Drawing number, date of drawings, revision number, and detail references, as appropriate. The drawing shall be the latest dated drawing issued.
10. Field dimensions and conditions, as appropriate.
11. Contractor's suggested resolution. If Contractor's suggested resolution impacts the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
12. Contractor's signature.
13. Attachments: Include sketches, descriptions, measurements, photos, Product Data, Shop Drawings, coordination drawings, and other information necessary to fully describe items needing interpretation.
    a. Include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments on attached sketches.

C. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Architect.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.

D. Architect's and Construction Manager's Action: Architect and Construction Manager will review each RFI, determine action required, and respond. Allow seven working days for Architect's response for each RFI. RFIs received by Architect after 1:00 p.m. EST will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
    a. Requests for approval of submittals.
    b. Requests for approval of substitutions.
    c. Requests for approval of Contractor's means and methods.
    d. Requests for coordination information already indicated in the Contract Documents.
    e. Requests for adjustments in the Contract Time or the Contract Sum.

f. Requests for interpretation of Architect's actions on submittals.
g. Incomplete RFIs or inaccurately prepared RFIs.

2. Architect's action may include a request for additional information, in which case Architect's time for response will date from time of receipt of additional information.

3. Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Division 01 Section "Contract Modification Procedures."

a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect and Construction Manager in writing within 7 days of receipt of the RFI response.

E. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log monthly. The project website shall generate and update of the RFI log and immediately notify via e-mail the Architect and Owner when an RFI has been posted and the Contractor and/or subcontractors when the RFI has been responded to. The Contractor will be required to distribute the RFI response to affected parties. Review the Owner's or Architect's response and post on the project's website for the Architect's notification within seven days if Contractor disagrees with Architect's response.

Include the following:

1. Project name.
2. Name and address of Contractor.
3. Name and address of Architect and Construction Manager.
4. RFI number including RFIs that were returned without action or withdrawn.
5. RFI description.
6. Date the RFI was submitted.
7. Date Architect's response was received.

F. On receipt of Architect's and Construction Manager's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect and Construction Manager within seven days if Contractor disagrees with response.

G. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

H. Identification of related Field Order, Work Change Directive, Proposal Request, as appropriate.

I. Forms to be used for all RFI are attached to the end of this section.

1.08 PROJECT WEB SITE

A. The Contractor shall provide in its bid the cost to provide an interactive project website for the purpose of providing electronic access to project documents generated during the course of construction for all parties involved in the project. The purpose of establishing this website is to cut down on the amount of paper used on the project, to substantially reduce the costs associated with sending documents between parties via postal or delivery services, and to provide time efficiencies in the project for all parties involved. It is up to the Contractor to select the provider of this service. The provider of the interactive website shall be capable of providing training free of charge to the Owner, Architect, the Architect's sub-consultants, Contractor, all subcontractors, sub-subcontractors, and suppliers on a scheduled

basis once the Owner has issued the Notice to Proceed.

1. All fees for this service are to be paid by the Contractor.

B. The types of documents to be hosted on the website include, but may not be limited to, the following:

Architects Supplemental Instructions (ASIs)
Contractor's Schedule of Values
Contractor's List of Key Personnel and Contact Information Contractor's Construction Schedule
Meeting Minutes
Requests for Information (RFIs) and Responses Product Submittals (except for product samples) Proposal Requests (PRs)
Change Order Proposals (COPs) Change Orders
Construction Change Directives (CCDs) Certificate(s) of Substantial Completion
Progress Photographs
Any close-out documents not listed above

C. All documents to be posted to the project website will be required to be in PDF file format. Photos to be in JPEG file format.

D. The provider of the interactive website, as part of their services, shall provide a free downloadable document editing software program to be used for providing review comments directly on the posted documents as applicable.

1.09 PROJECT MEETINGS

A. General: Construction Manager will schedule and conduct meetings and conferences at Project site unless otherwise indicated.

1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Architect of scheduled meeting dates and times.

2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees two days prior to meeting date.

3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner, Construction Manager, and Architect, within three days of the meeting.

4. Changes to prior minutes shall be noted at the beginning of each meeting and recorded as the first item of business.

B. Preconstruction Conference: Construction Manager will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Architect, but no later than 15 days after execution of the Agreement.

1. Conduct the conference to review responsibilities and personnel assignments.

2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. Participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Discuss items of significance that could affect progress, including the

following:

a. Tentative construction schedule.
b. Phasing.
c. Critical work sequencing and long-lead items.
d. Designation of key personnel and their duties.
e. Lines of communications.
f. Procedures for processing field decisions and Change Orders.
g. Procedures for RFIs.
h. Procedures for testing and inspecting.
i. Procedures for processing Applications for Payment.
j. Distribution of the Contract Documents.
k. Submittal procedures.
l. LEED requirements.
m. Preparation of record documents.
n. Use of the premises and existing building.
o. Work restrictions.
p. Working hours.
q. Owner's occupancy requirements.
r. Responsibility for temporary facilities and controls.
s. Procedures for moisture and mold control.
t. Procedures for disruptions and shutdowns.
u. Construction waste management and recycling.
v. Parking availability.
w. Office, work, and storage areas.
x. Equipment deliveries and priorities.
y. First aid.
z. Security.
aa. Progress cleaning.

4. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.

C. Pre-installation Conferences: Conduct a pre-installation conference at Project site before each construction activity that requires coordination with other construction.

1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect, Construction Manager, and Owner's Commissioning Authority of scheduled meeting dates.

2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related RFIs.
d. Related Change Orders.
e. Purchases.
f. Deliveries.
g. Submittals.
h. Review of mockups.
i. Possible conflicts.
j. Compatibility requirements.
k. Time schedules.
l. Weather limitations.
m. Manufacturer's written instructions.
n. Warranty requirements.
o. Compatibility of materials.

p. Acceptability of substrates.
q. Temporary facilities and controls.
r. Space and access limitations.
s. Regulations of authorities having jurisdiction.
t. Testing and inspecting requirements.
u. Installation procedures.
v. Coordination with other work.
w. Required performance results.
x. Protection of adjacent work.
y. Protection of construction and personnel.

3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
4. Reporting: Distribute minutes of the meeting to each party present and to other parties requiring information.
5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.

D. Project Closeout Conference: Construction Manager will schedule and conduct a project closeout conference, at a time convenient to Owner and Architect, but no later than 90 days prior to the scheduled date of Substantial Completion.
1. Conduct the conference to review requirements and responsibilities related to Project closeout.
2. Attendees: Authorized representatives of Owner, Owner's Commissioning Authority, Construction Manager, Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the meeting. Participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
3. Agenda: Discuss items of significance that could affect or delay Project closeout, including the following:
a. Preparation of record documents.
b. Procedures required prior to inspection for Substantial Completion and for final inspection for acceptance.
c. Submittal of written warranties.
d. Requirements for completing LEED documentation.
e. Requirements for preparing operations and maintenance data.
f. Requirements for delivery of material samples, attic stock, and spare parts.
g. Requirements for demonstration and training.
h. Preparation of Contractor's punch list.
i. Procedures for processing Applications for Payment at Substantial Completion and for final payment.
j. Submittal procedures.
k. Coordination of separate contracts.
l. Owner's partial occupancy requirements.
m. Installation of Owner's furniture, fixtures, and equipment.
n. Responsibility for removing temporary facilities and controls.

4. Minutes: Entity conducting meeting will record and distribute meeting minutes.

E. Progress Meetings: Construction Manager will conduct progress meetings at biweekly intervals.
1. Coordinate dates of meetings with preparation of payment requests.
2. Attendees: In addition to representatives of Owner, Owner's Commissioning

Authority, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.

3. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
   a. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
      1) Review schedule for next period.
   b. Review present and future needs of each entity present, including the following:
      1) Interface requirements.
      2) Sequence of operations.
      3) Resolution of BIM component conflicts.
      4) Status of submittals.
      5) Deliveries.
      6) Off-site fabrication.
      7) Access.
      8) Site utilization.
      9) Temporary facilities and controls.
      10) Progress cleaning.
      11) Quality and work standards.
      12) Status of correction of deficient items.
      13) Field observations.
      14) Status of RFIs.
      15) Status of proposal requests.
      16) Pending changes.
      17) Status of Change Orders.
      18) Pending claims and disputes.
      19) Documentation of information for payment requests.

4. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes within three days to each party present and to parties requiring information.
   a. Schedule Updating: Revise Contractor's construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

F. Coordination Meetings: Construction Manager will conduct Project coordination meetings at biweekly intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.

1. Attendees: In addition to representatives of Owner, Owner's Commissioning Authority, Construction Manager, and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Review and correct or approve minutes of the previous coordination meeting.

Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

a. Combined Contractor's Construction Schedule: Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to combined Contractor's construction schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

b. Schedule Updating: Revise combined Contractor's construction schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.

c. Review present and future needs of each contractor present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Resolution of BIM component conflicts.
4) Status of submittals.
5) Deliveries.
6) Off-site fabrication.
7) Access.
8) Site utilization.
9) Temporary facilities and controls.
10) Work hours.
11) Hazards and risks.
12) Progress cleaning.
13) Quality and work standards.
14) Change Orders.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

G. Project Photography

1. General Contractor to provide 5 monthly aerial photos to Owner in hard copy and electronic media.
2. General Contractor to provide weekly photo update to Owner with at least 8 captioned progress photos on PowerPoint format.

H. Forms: Used as part of the requirements of this section are attached at the end of this section and are as follows:

1. AIA Document AIA G716 2004
2. RFI Evaluation Form

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

AIA® Document G716™ – 2004

Request for Information (RFI)

TO: FROM:

PROJECT: ISSUE RFI No.:

REQUESTED REPLY DATE:

PROJECT NUMBERS: COPIES TO:

RFI DESCRIPTION: *(Fully describe the question or type of information requested.)*

REFERENCES/ATTACHMENTS: *(List specific documents researched when seeking the information requested.)*

SPECIFICATIONS DRAWINGS OTHER

SENDER'S RECOMMENDATION: *(If RFI concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)*

RECEIVER'S REPLY: *(Provide answer to RFI, including cost and/or schedule considerations.)*

By:_____ Date:_____ Copies to:_____

NOTE: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

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SEPTEMBER 2023

020711ACD44

Sample

REQUEST FOR INFORMATION EVALUATION

Bessolo Design Group, 7901 4th St. N., Suite 200, St. Petersburg, Florida 33702

Project Name: _____ BDG Project No. _____ RFI No. _____

Date Received: _____ Date of Review: _____ Reviewed by: _____

In accordance with BDG's policy and procedures for evaluating potential Requests for Information (RFI's), a review of the document is conducted to determine if the document is a justifiable and complete request.

❑ **The attached document is considered a justifiable Request for information (RFI) within the definition of the Contract Documents and has been classified as one of the following categories:**

- ❑ Interpretation of Contract Documents
- ❑ Clarification of Contract Documents
- ❑ Drawing/Plan Clarifications
- ❑ Constructability Issue
- ❑ Site Condition Issue
- ❑ Additional Drawings/Specifications

❑ **The attached RFI is determined to be a justifiable and complete Request for information (RFI), response is noted on the attached document:**

_____

This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work, it must be approved and executed by the Owner in accordance with the Contract Documents.

❑ **The attached RFI is REJECTED due to insufficient required information. The following information is missing and must be included in the RFI:**

- ❑ Specification/Drawing/and detail reference no.
- ❑ Clearly state why a response is needed
- ❑ Clear and concise issue requiring clarification
- ❑ GC's own interpretation of the issue
- ❑ GC's proposed response/solution
- ❑ Priority of the Request
- ❑ Confirm no Change Order Required
- ❑ Confirm no time extension required

❑ **The attached document is NOT a Request for information (RFI) within the definition of the Contract Documents and therefore has not been reviewed and is being returned to you without a response. The attached document has NOT been entered into the project's RFI Log.**

The attached document is considered one or more of the following:

- ❑ Project Communication
- ❑ Response to Non-Conformance Notice
- ❑ Request for Substitution/Or Equal Submittal
- ❑ Submittal and/or Shop Drawing
- ❑ Schedule Submittal/Change/Update
- ❑ Value Engineering Change Proposal
- ❑ Construction Deficiency
- ❑ Addresses Means and Methods
- ❑ Change in Design/Project Scope
- ❑ Other: _____

For evaluation and response in a timely manner, please resubmit the attached document in the proper format as stipulated in the Contract Documents.

SECTION 01302
CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
   1. Startup construction schedule.
   2. Contractor's construction schedule.
   3. Construction schedule updating reports.
   4. Daily construction reports.
   5. Material location reports.
   6. Site condition reports.
   7. Special reports.

B. Related Requirements:
   1. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
   2. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.03 DEFINITIONS

A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
   1. Critical Activity: An activity on the critical path that must start and finish on the planned early start and finish times.
   2. Predecessor Activity: An activity that precedes another activity in the network.
   3. Successor Activity: An activity that follows another activity in the network.

B. Cost Loading: The allocation of the schedule of values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum unless otherwise approved by Architect.

C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.

D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

E. Event: The starting or ending point of an activity.

F. Float: The measure of leeway in starting and completing an activity.

1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.

G. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.

1.04 INFORMATIONAL SUBMITTALS

A. Format for Submittals: Submit required submittals in the following format:

1. Working electronic copy of schedule file, where indicated.
2. PDF electronic file.

B. Startup construction schedule.

1. Approval of cost-loaded, startup construction schedule will not constitute approval of schedule of values for cost-loaded activities.

C. Startup Network Diagram: Of size required to display entire network for entire construction period. Show logic ties for activities.

D. Contractor's Construction Schedule: Initial schedule, of size required to display entire schedule for entire construction period.

1. Submit a working electronic copy of schedule, using software indicated, and labeled to comply with requirements for submittals. Include type of schedule (initial or updated) and date on label.

E. CPM Reports: Concurrent with CPM schedule, submit each of the following reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.

1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
3. Total Float Report: List of all activities sorted in ascending order of total float.

F. Construction Schedule Updating Reports: Submit with Applications for Payment.

G. Daily Construction Reports: Submit with Applications for Payment.

H. Material Location Reports: Submit with Applications for Payment.

I. Site Condition Reports: Submit at time of discovery of differing conditions.

J. Special Reports: Submit at time of unusual event.

1.05 QUALITY ASSURANCE

A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Architect's request.

B. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the preliminary construction schedule and Contractor's construction schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including phasing, work stages, area separations, interim milestones and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review submittal requirements and procedures.
7. Review time required for review of submittals and resubmittals.
8. Review requirements for tests and inspections by independent testing and inspecting agencies.
9. Review time required for Project closeout and Owner startup procedures.
10. Review and finalize list of construction activities to be included in schedule.
11. Review procedures for updating schedule.

1.06 COORDINATION

A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.

B. Coordinate Contractor's construction schedule with the schedule of values, list of subcontracts, submittal schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from entities involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.01 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Time Frame: Extend schedule from date established for commencement of the Work to date of final completion.

1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.

B. Activities: Treat each story or separate area as a separate numbered activity for each main element of the Work. Comply with the following:

1. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
2. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's construction schedule with submittal schedule.
3. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.
4. Punch List and Final Completion: Include not more than 30 days for completion of punch list items and final completion.

C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.
2. Work under More Than One Contract: Include a separate activity for each contract.
3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
4. Products Ordered in Advance: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
5. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
6. Work Restrictions: Show the effect of the following items on the schedule:
   a. Coordination with existing construction.
   b. Limitations of continued occupancies.
   c. Uninterruptible services.
   d. Partial occupancy before Substantial Completion.
   e. Use of premises restrictions.
   f. Provisions for future construction.
   g. Seasonal variations.
   h. Environmental control.
7. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
   a. Subcontract awards.
   b. Submittals.
   c. Purchases.
   d. Mockups.
   e. Fabrication.
   f. Sample testing.
   g. Deliveries.
   h. Installation.
   i. Tests and inspections.
   j. Adjusting.
   k. Curing.

l. Building flush-out.
m. Startup and placement into final use and operation.

8. Construction Areas: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
   a. Structural completion.
   b. Temporary enclosure and space conditioning.
   c. Permanent space enclosure.
   d. Completion of mechanical installation.
   e. Completion of electrical installation.
   f. Substantial Completion.

D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and final completion.

E. Cost Correlation: Superimpose a cost correlation timeline, indicating planned and actual costs. On the line, show planned and actual dollar volume of the Work performed as of planned and actual dates used for preparation of payment requests.

1. See Division 01 Section "Payment Procedures" for cost reporting and payment procedures.

F. Upcoming Work Summary: Prepare summary report indicating activities scheduled to occur or commence prior to submittal of next schedule update. Summarize the following issues:

1. Unresolved issues.
2. Unanswered Requests for Information.
3. Rejected or unreturned submittals.
4. Notations on returned submittals.
5. Pending modifications affecting the Work and Contract Time.

G. Recovery Schedule: When periodic update indicates the Work is 14 or more calendar days behind the current approved schedule, submit a separate recovery schedule indicating means by which Contractor intends to regain compliance with the schedule. Indicate changes to working hours, working days, crew sizes, and equipment required to achieve compliance, and date by which recovery will be accomplished.

H. Computer Scheduling Software: Prepare schedules using current version of a program that has been developed specifically to manage construction schedules.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.

B. Startup Network Diagram: Submit diagram within 7 days of date established for the Notice to Proceed. Outline significant construction activities for the first 90 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's construction schedule using a time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 20 days after date established for the notice to Proceed.
    a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Architect's approval of the schedule.
2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
4. Use "one workday" as the unit of time for individual activities. Indicate nonworking days and holidays incorporated into the schedule in order to coordinate with the Contract Time.

D. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the startup network diagram, prepare a skeleton network to identify probable critical paths.

1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
    a. Preparation and processing of submittals.
    b. Mobilization and demobilization.
    c. Purchase of materials.
    d. Delivery.
    e. Fabrication.
    f. Utility interruptions.
    g. Installation.
    h. Work by Owner that may affect or be affected by Contractor's activities.
    i. Testing.
    j. Punch list and final completion.
    k. Activities occurring following final completion.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.
    a. Subnetworks on separate sheets are permissible for activities clearly off the critical path.
5. Cost- and Resource-Loading of CPM Schedule: Assign cost to construction activities on the CPM schedule. Do not assign costs to submittal activities. Obtain Architect's approval prior to assigning costs to fabrication and delivery activities. Assign costs under main subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project record documents, and demonstration and training (if applicable), in the

amount of 5 percent of the Contract Sum.

a. Each activity cost shall reflect an appropriate value subject to approval by Architect.
b. Total cost assigned to activities shall equal the total Contract Sum.

E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using a network fragment to demonstrate the effect of the proposed change on the overall project schedule.

F. Initial Issue of Schedule: Prepare initial network diagram from a sorted activity list indicating straight "early start-total float." Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Main events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
9. Average size of workforce.
10. Dollar value of activity (coordinated with the schedule of values).

G. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:

1. Identification of activities that have changed.
2. Changes in early and late start dates.
3. Changes in early and late finish dates.
4. Changes in activity durations in workdays.
5. Changes in the critical path.
6. Changes in total float or slack time.
7. Changes in the Contract Time.

H. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.

1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
    a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
    b. Submit value summary printouts one week before each regularly scheduled progress meeting.

2.3 REPORTS

A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:

1. List of subcontractors at Project site.
2. List of separate contractors at Project site.
3. Approximate count of personnel at Project site.
4. Equipment at Project site.
5. Material deliveries.
6. High and low temperatures and general weather conditions, including presence of rain or snow.
7. Accidents.
8. Meetings and significant decisions.
9. Unusual events (see special reports).
10. Stoppages, delays, shortages, and losses.
11. Meter readings and similar recordings.
12. Emergency procedures.
13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial completions and occupancies.
19. Substantial Completions authorized.

B. Material Location Reports: At monthly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site. Indicate the following categories for stored materials:

1. Material stored prior to previous report and remaining in storage.
2. Material stored prior to previous report and since removed from storage and installed.
3. Material stored following previous report and remaining in storage.

C. Site Condition Reports: Immediately on discovery of a difference between site conditions and the Contract Documents, prepare and submit a detailed report. Submit with a Request for Information. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.4 SPECIAL REPORTS

A. General: Submit special reports directly to Architect within 1 day(s) of an occurrence. Distribute copies of report to parties affected by the occurrence.

B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

A. Contractor's Construction Schedule Updating: At monthly intervals, update schedule to reflect actual construction progress and activities. Issue schedule one week before each regularly scheduled progress meeting.

1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate final completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION

SECTION 01303
PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.01 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.

B. Related Requirements:

1. Division 01 Section "Closeout Procedures" for submitting photographic documentation as Project Record Documents at Project closeout.
2. Division 01 Section “Submittal Procedures” for submitting photographic documentation as project record documents at project closeout.
3. Division 01 section “Demonstration and Training” for submitting video recording of demonstration of equipment and training of Owners personnel.

1.02 INFORMATIONAL SUBMITTALS

A. Key Plan: Submit key plan of Project site with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.

B. Digital Photographs: Submit unaltered, original, full-size image files within 5 days of taking photographs.

1. Identification: Provide the following information with each image description in file metadata tag:
   a. Name of Project.
   b. Date photograph was taken.
   c. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

C. Construction Photographs: Submit file of each photographic view within 5 days of taking photographs.

1. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
   a. Name of Project.
   b. Date photograph was taken if not date stamped by camera.
   c. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
   d. Unique sequential identifier keyed to accompanying key plan.

D. Weekly submission of photographs can be in a report form and be a PDF file. Include the Owner and Architect in the distribution.

1.03 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

1.04 ADDITIONAL PHOTOGRAPHS

A. If the Contractor for their own use, shoots additional photos or videos (i.e. aerial or satellite) those also are to be made available to the Owner and Architect.

PART 2 - PRODUCTS

2.01 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG or PDF format produced by a digital camera.

PART 3 - EXECUTION

3.01 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

C. Preconstruction Photographs: Before commencement of excavation, or starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points.

1. Take a minimum of 20 photographs to show existing conditions adjacent to property before starting the Work.

D. Periodic Construction Photographs: Take a minimum of 20 photographs, not including time lapse, weekly. Select vantage points to show status of construction and progress since last photographs were taken.

E. Time Lapse Sequence Construction Photographs: Take a minimum of 10 photographs as indicated, to show status of construction and progress since last photographs were taken.

1. Frequency: Take photographs weekly.

F. Final Completion Construction Photographs: Take a minimum of 100 color photographs after date of Substantial Completion for submission as Project Record Documents.

G. Additional Photographs: Architect or Owner may request photographs in addition to periodic photographs specified.

1. In emergency situations, take additional photographs within 24 hours of request.
2. Circumstances that could require additional photographs include, but are not limited to, the following:
   a. Special events planned at Project site.
   b. Immediate follow-up when on-site events result in construction damage or losses.
   c. Photographs to be taken at fabrication locations away from Project site.
   d. Substantial Completion of a major phase or component of the Work.
   e. Extra record photographs at time of final acceptance.

END OF SECTION

SECTION 01304
PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; and comparable products.

B. Related Requirements:

1. Division 01 Section "Allowances" for products selected under an allowance.
2. Division 01 Section "Alternates" for products selected under an alternate.
3. Division 01 Section "Substitution Procedures" for requests for substitutions.
4. Division 01 Section "References" for applicable industry standards for products specified.

1.03 DEFINITIONS

A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.

1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature that is current as of date of the Contract Documents.
2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.

1.04 ACTION SUBMITTALS

A. Comparable Product Requests: Submit request for consideration of each comparable product. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

1. Include data to indicate compliance with the requirements specified in "Comparable Products" Article.
2. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within one week of receipt of a comparable product request. Architect will notify Contractor of approval or rejection of proposed comparable product request within a reasonable number of days of receipt of request, or of receipt of additional information or documentation, whichever is later.
    a. Form of Approval: As specified in Division 01 Section "Submittal Procedures."
    b. Use product specified if Architect does not issue a decision on use of a comparable product request within time allocated.

B. Basis-of-Design Product Specification Submittal: Comply with requirements in Division 01 Section "Submittal Procedures." Show compliance with requirements.

1.05 QUALITY ASSURANCE

A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, select product compatible with products previously selected, even if previously selected products were also options.
1. Each contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors.
2. If a dispute arises between contractors over concurrently selectable but incompatible products, Architect will determine which products shall be used.

1.06 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft and vandalism. Comply with manufacturer's written instructions.

B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to determine compliance with the Contract Documents and to determine that products are undamaged and properly protected.

C. Storage:
1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.

3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Protect foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
5. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
6. Protect stored products from damage and liquids from freezing.
7. Provide a secure location and enclosure at Project site for storage of materials and equipment by Owner's construction forces. Coordinate location with Owner.

1.07 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. Manufacturer's Warranty: Written warranty furnished by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. Special Warranty: Written warranty required by the Contract Documents to provide specific rights for Owner.

B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution.

1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.
2. Specified Form: When specified forms are included with the Specifications, prepare a written document using indicated form properly executed.
3. See Divisions 02 through 33 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Submittal Time: Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION PROCEDURES

A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.

1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

4. Where products are accompanied by the term "as selected," Architect will make selection.
5. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
6. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.

B. Product Selection Procedures:

1. Product: Where Specifications name a single manufacturer and product, provide the named product that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered. Subject to review and approval of Architect.
2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered. Subject to review and approval of Architect.
3. Products:
   a. Restricted List: Where Specifications include a list of names of both manufacturers and products, provide one of the products listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
   b. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
4. Manufacturers:
   a. Restricted List: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements. Comparable products or substitutions for Contractor's convenience will be considered.
   b. Non-restricted List: Where Specifications include a list of available manufacturers, provide a product by one of the manufacturers listed, or a product by an unnamed manufacturer, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed manufacturer's product.
5. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers.

   Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

C. Visual Matching Specification: Where Specifications require "match Architect's sample," provide a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.

1. If no product available within specified category matches and complies with

other specified requirements, comply with requirements in Division 01 Section "Substitution Procedures" for proposal of product.

D. Visual Selection Specification: Where Specifications include the phrase "as selected by Architect from manufacturer's full range" or similar phrase, select a product that complies with requirements. Architect will select color, gloss, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

2.02 COMPARABLE PRODUCTS

A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:

1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.
2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.
6. Indicate any cost advantage to the Owner and / or no cost change for the using of the comparable product. Contractor is to absorb any associated cost (including but not limited to) Architects/ Engineers redesign, permit fees, work under separate contracts and current work under contract.
7. Evidence that proposed product does not affect the current schedule.

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01400
QUALITY CONTROL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Quality assurance and control of installation.

B. References.

C. Field samples.

D. Mock-ups.

E. Inspection and testing laboratory services.

F. Manufacturers' field services and reports.

1.03 RELATED SECTIONS

A. Section 01300 – Submittals: Submission of Manufacturers' Instructions and Certificates.

B. Section 01401 – Structural Threshold Inspection, if applicable.

1.04 QUALITY ASSURANCE/CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

B. Comply fully with manufacturers' instructions, including each step in sequence.

C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.

D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Perform work by persons qualified to produce workmanship of specified quality

F. Secure Products in place with positive anchorage devices, designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.05 REFERENCES

A. Conform to reference standard by date of issue current on date of Owner—Contractor Agreement.

B. Obtain copies of standards when required by Contract Documents.

C. Should specified reference standards conflict with Contract Documents, request clarification for Architect/Engineer before proceeding.

D. The contractual relationship of the parties to the Contract shall not be altered from the Contract documents by mention or inference otherwise in any reference document.

1.06 FIELD SAMPLES

A. Install field samples at the site as required by individual specifications Sections for review.

B. Acceptable samples represent a quality level for the Work.

C. Where field sample is specified in individual Sections to be removed, clear area after field sample has been accepted by Architect/Engineer.

1.07 MOCK-UPS

A. Tests will be performed under provisions identified in this section.

B. Assemble and erect specified items, with specified attachment and anchorage devices, flashings, seals and finishes, where specified in other sections of this project manual.

C. Where mock-up is specified in individual Sections to be removed, clear area after mock-up has been accepted by Architect/Engineer/ Owner.

D. In addition to mock-ups specified in other sections of this project manual, the general contractor shall mock up one apartment unit of each unit type shown on the drawings. These unit mock-ups shall be completed in a two (2) step process as follows:

1. Step 1;
   a. All partitions, soffits and ceilings completely framed.
   b. All electrical devises roughed-in for Owner/ Architect review and approval prior to proceeding to step 2.
2. Step 2;
   a. All wall and ceiling finishes installed.
   b. Windows and doors complete with all hardware and screens.
   c. Framed openings, soffits and access doors.
   d. Millwork trim, casing, moldings, wall base.
   e. Tile work with all joints completely grouted and sealed.
   f. All floor transitions/ thresholds between materials
   g. Kitchen and bathroom cabinets, countertops, and appliances.
   h. Bathroom accessories including grab bars, towel bars, soap dishes, shower curtain rod, mirrors, medicine cabinets, handicap shower seats.
   i. All finishes including carpet, vinyl flooring, tile and painting.
   j. All electrical receptacles and switches, electrical panels, fire alarm devices, smoke and heat detectors,CO detectors, speakers, disconnect switches, light fixtures, low voltage outlets.
   k. Mechanical and plumbing systems including ductwork, grilles, access doors, heating/air conditioning unit, condensate lines, plumbing fixtures and trim.

Each unit shall be reviewed by the owner, architect, engineer and interior decorator for compliance with the contract documents. The mock up unit shall serve as the standard by which all other apartment units are to be built. Mock ups may serve as a sales unit

for marketing purposes if desired and directed by the owner. The above list may not include all items that are required for each project, refer to the construction drawings for all work required in each resident unit.

1.08 INSPECTION AND TESTING LABORATORY SERVICES

A. Owner will appoint, employ, and pay for service of an independent firm to perform inspection and testing.

B. The independent firm will perform inspections, tests and other services specified in individual specification Sections and as required by the Architect/Engineer.

C. Reports will be submitted by the independent firm to the Architect/Engineer, in triplicate, indicating observations and results of tests and indicating compliance or non-compliance with Contract Documents.

D. Cooperate with independent firm; furnish samples of materials, design mix, equipment, tools , storage and assistance as requested.

1. Notify Architect/Engineer and independent firm 24 hours prior to expected time for operations requiring services.
2. Make arrangements with independent firm and pay for additional samples and tests required for Contractor's use.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect/Engineer. Payment for re-testing will be charged to the Contractor by deducting inspection or testing charges from the Contract Sum/Price.

1.09 MANUFACTURERS' FIELD SERVICES AND REPORTS

A. When specified in individual specification Sections, or required by material or Product suppliers or manufacturers, that qualified staff personnel observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable, or to initiate instructions when necessary, this service shall be provided at no cost to the Owner.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section "Cutting and Patching."

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is Contractor's responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION

SECTION 01421
REFERENCE STANDARDS AND DEFINITIONS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 DEFINITIONS

A. General: Basic contract definitions are included in the Conditions of the Contract.

B. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings; or to other paragraphs or schedules in the Specifications and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference. Location is not limited.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.

D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means to supply and deliver to the Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at the Project site including the actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced," when used with the term "installer," means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with the special requirements indicated; and having complied with requirements of authorities having jurisdiction.
2. Trades: Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does

not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized experts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.
   a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

J. "Project site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of the Project. The extent of the Project site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project site or elsewhere, to report on and, if required, to interpret results of those inspections or tests.

1.03 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on the 16-division format and CSI/CSC's "MasterFormat" numbering system.

B. Specification Content: These Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

1. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Section Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.
   a. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.04 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with standards in effect as of the date of the Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement.

Refer uncertainties and requirements that are different, but apparently equal, to the Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source and make them available on request.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-producing organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following abbreviations and acronyms, as referenced in the Contract Documents, mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association 900 19th St., NW, Suite 300 Washington, DC 20006 www.aluminum.org	(202) 862-5100
AABC	Associated Air Balance Council 1518 K St., NW, Suite 503 Washington, DC 20005 www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association 1827 Walden Office Sq., Suite 104 Schaumburg, IL 60173-4268 www.aamanet.org	(847) 303-5664
AAN	American Association of Nurserymen (See ANLA)	
AASHTO	American Association of State Highway& Transportation Officials 444 North Capitol St., NW, Suite 249 Washington, DC 20001 www.aashto.org	(202) 624-5800

AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 Research Triangle Park, NC 27709-2215 www.aatcc.org	(919) 549-8141
ABMA	American Bearing Manufacturers Association 1200 19th St., NW, Suite 300 Washington, DC 20036-2401 www.abma-dc.org	(202) 429-5155
ABMA	American Boiler Manufacturers Association 950 North Glebe Rd., Suite 160 Arlington, VA 22203-1824 www.abma.com	(703) 522-7350
ACI	American Concrete Institute P.O. Box 9094 Farmington Hills, MI 48333-9094 www.aci-int.org	(248) 848-3700
ACIL	American Council of Independent Laboratories 1875 I St., NW, Suite 500 Washington, DC 20006 www.acil.org	(202) 887-5872
ACPA	American Concrete Pipe Association 222 West Las Colinas Blvd., Suite 641 Irving, TX 75039-5423 www.concrete-pipe.org	(972) 506-7216
ADC	Air Diffusion Council 11 South LaSalle St., Suite 1400 Chicago, IL 60603 www.airdiffusercouncil.org	(312) 201-0101
AEIC	Association of Edison Illuminating Companies 600 N. 18th St./P.O. Box 2641 Birmingham, AL 35291-0992 www.aeic.org	(205) 250-2530
AFBMA	Anti-Friction Bearing Manufacturers Association (See ABMA)	
AFPA	American Forest and Paper Association 1111 19th St., NW, Suite 800 Washington, DC 20036 www.afandpa.org	(800) 878-8878
AGA	American Gas Association 1515 Wilson Blvd. Arlington, VA 22209 www.aga.com	(703) 841-8400
AHA	American Hardboard Association 1210 W. Northwest Hwy Palatine, IL 60067-1897 www.ahec.org	(847) 934-8800
AHAM	Association of Home Appliance Manufacturers 20 N. Wacker Dr., Suite 1500 Chicago, IL 60606 www.aham.org	(312) 984-5800

AI	Asphalt Institute Research Park Dr./P.O. Box 14052 Lexington, KY 40512-4052 www.asphaltinstitute.org	(606) 288-4960
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006-5292 www.aia.org	(202) 626-7300
AIA	American Insurance Association 1130 Connecticut Ave., NW, Suite 1000 Washington, DC 20036 www.aiadc.org	(202) 828-7100
AIHA	American Industrial Hygiene Association 2700 Prosperity Ave., Suite 250 Fairfax, VA 22031 www.aiha.org	(703) 849-888
AISC	American Institute of Steel Construction One East Wacker Dr., Suite 3100 Chicago, IL 60601-2001	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute 1101 17th St., NW Washington, DC 20036-4700 www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction 7012 S. Revere Pkwy, Suite 140 Englewood, CO 80112 www.aitc-glulam.org	(303) 792-9559
ALA	American Laminators Association (See LMA)	
ALCA	Associated Landscape Contractors of America 12200 Sunrise Valley Dr., Suite 150 Reston, VA 20191 www.alca.org	(703) 620-6363
ALI	Associated Laboratories, Inc. P.O. Box 152837/1323 Wall St. Dallas, TX 75315 www.associatedlab.com	(214) 565-0593
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20875 www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. 30 W. University Dr. Arlington Heights, IL 60004-1893 www.amca.org	(847) 394-0150
ANLA	American Nursery and Landscape Association 1250 Eye St., NW, Suite 500 Washington, DC 20005 www.anla.org	(202) 789-2900

ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036-8002 www.ansi.org	(212) 642-4900
AOAC	AOAC International 481 N. Frederick Ave., Suite 500 Gaithersburg, MD 20877 www.aiac.org	(301) 924-7077
AOSA	Association of Official Seed Analysts 201 N. 8th St., Suite 400 P.O. Box 81152 Lincoln, NE 68501-1152 www.aosaseed.org	(402) 476-3852
APA	APA-The Engineered Wood Association P.O. Box 11700 Tacoma, WA 98411-0700 www.apawood.org	(206) 565-6600
APA	Architectural Precast Association P.O. Box 08669 Fort Myers, FL 33908-0669 www.archprecast.org	(941) 454-6989
API	American Petroleum Institute 1220 L St., NW, Suite 900 Washington, DC 20005-8029 www.api.org	(202) 682-8000
ARI	Air-Conditioning and Refrigeration Institute 4301 Fairfax Dr., Suite 425 Arlington, VA 22203 www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association Center Park, 4041 Powder Mill Rd., Suite 404 Calverton, MD 20705 www.asphaltroofing.org	(301) 231-9050
ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797 www.acousticsociety.org	(516) 576-2360
ASC	Adhesive and Sealant Council 1627 K St., NW, Suite 1000 Washington, DC 20006-1707 www.ascouncil.org	(202) 452-1500
ASCA	Architectural Spray Coaters Association 230 W. Wells St., Suite 311 Milwaukee, WI 53203 www.asca.org	(414) 273-3430
ASCE	American Society of Civil Engineers-World Headquarters 1801 Alexander Bell Dr. Reston, VA 20191-4400 www.asce.org	(800) 548-2723 (703) 295-6000

ASHES	American Society for Healthcare Environmental Services - Division of the American Hospital Assoc. One North Franklin, Suite 2700 Chicago, IL 60606 www.ahe.org	(800) 424-2626 (312) 422-3860
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329-2305 www.ashrae.org	(800) 527-4723 (404) 636-8400
ASLA	American Society of Landscape Architects 4401 Connecticut Ave., NW, 5th Floor Washington, DC 20008-2369 www.asla.org	(202) 686-2752
ASME	American Society of Mechanical Engineers 345 East 47th St. New York, NY 10017-2392 www.asme.org	(800) 434-2763 (212) 705-7722
ASPA	American Sod Producers Association (See TPI)	
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd., Suite 210 Westlake Village, CA 91362-3649 www.aspe.org	(805) 495-7120
ASQC	American Society for Quality Control 611 East Wisconsin, Ave. Milwaukee, WI 53201-3005 www.asqc.org	(800) 248-1946 (414) 272-8575
ASSE	American Society of Sanitary Engineering 28901 Clemens Rd. Westlake, OH 44145 www.asse-plumbing.org	(216) 835-3040
ASTM	American Society for Testing and Materials 100 Barr Harbor Dr. West Conshohocken, PA 19428-2959 www.astm.org	(610) 832-9500
ATIS	Alliance for Telecommunications Industry Solutions 1200 G St., NW, Suite 500 Washington, DC 20005	(202) 628-6380
AWCI	Association of the Wall and Ceiling Industries--International 307 E. Annandale Rd., Suite 200 Falls Church, VA 22042-2433 www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (See WCMA)	
AWI	Architectural Woodwork Institute 1952 Isaac Newton Sq. Reston, VA 20190 www.awinet.org	(703) 733-0600

AWPA	American Wood Preservers' Association 3246 Fall Creek Hwy, Suite 1900 Granbury, TX 76049-7979 www.awpa.com	(817) 326-6300
AWS	American Welding Society 550 NW LeJeune Rd. Miami, FL 33126 www.amweld.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association 6666 W. Quincy Ave. Denver, CO 80235 www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017-6603 www.buildershardware.com	(212) 661-4261
BIA	Brick Institute of America 11490 Commerce Park Dr. Reston, VA 22091-1525 www.bia.org	(703) 620-0010
BIFMA	The Business & Institutional Furniture Manufacturer's Association 2680 Horizon Dr., SE, Suite A1 Grand Rapids, MI 49546-7500 www.bifma.com	(616) 285-3963
CAGI	Compressed Air and Gas Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/cagi	(216) 241-7333
CAUS	Color Association of the United States 409 W. 44th St. New York, NY 10036-4402 www.colorassociation.com	(212) 582-6884
CBM	Certified Ballast Manufacturers Association 1422 Euclid Ave., Suite 402 Cleveland, OH 44115-2094	(216) 241-0711
CCC	Carpet Cushion Council P.O. Box 546 Riverside, CT 06878-0546 www.carpetcushion.org	(203) 637-1312
CDA	Copper Development Association Inc. 260 Madison Ave., 16th Floor New York, NY 10016-2401 www.copper.org	(800) 232-3282 (212) 251-7200
CFFA	Chemical Fabrics & Film Association, Inc. c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/cffa	(216) 241-7333
CGA	Compressed Gas Association 1725 Jefferson Davis Hwy, Suite 1004 Arlington, VA 22202-4102 www.cganet.com	(703) 412-0900

CISCA	Ceilings and Interior Systems Construction Association 1500 Lincoln Hwy, Suite 202 St. Charles, IL 60174 www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Rd., Suite 419 Chattanooga, TN 37421 www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute 9891 Broken Land Pkwy, Suite 300 Columbia, MD 21046 www.chainlinkinfo.org	(301) 596-2584
CPPA	Corrugated Polyethylene Pipe Association 432 N. Superior St. Toledo, OH 43604 www.plasticpipe.org	(800) 510-2772 (419) 241-2221
CRI	Carpet and Rug Institute 310 S. Holiday, Ave. Dalton, GA 30722-2048 www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Rd. Schaumburg, IL 60173-4758 www.crsi.org	(847) 517-1200
CSSB	Cedar Shake and Shingle Bureau 515 116th Ave., NE, Suite 275 Bellevue, WA 98004-5294 www.cedarbureau.org	(206) 453-1323
CTI	Ceramic Tile Institute of America 12061 West Jefferson Blvd. Culver City, CA 90230-6219 www.ctioa.org	(310) 574-7800
CTI	Cooling Tower Institute P.O. Box 73383 Houston, TX 77273 www.cti.org	(281) 583-4087
DASMA	Door & Access Systems Manufacturers Association, Intl c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/dasma	(216) 241-7333
DHI	Door and Hardware Institute 14170 Newbrook Dr. Chantilly, VA 20151-2223 www.dhi.org	(703) 222-2010
DIPRA	Ductile Iron Pipe Research Association 245 Riverchase Pkwy East, Suite O Birmingham, AL 35244	(205) 988-9870
ECSA	Exchange Carriers Standards Association (See ATIS)	

EIA	Electronic Industries Association 2500 Wilson Blvd. Arlington, VA 22201 www.eciaonline.org	(703) 907-7500
EIMA	EIFS Industry Members Association 402 N. Fourth St., Suite 102 Yakima, WA 98901-2470 www.eifsfacts.com	(800) 294-3462 (509) 457-3500
EJMA	Expansion Joint Manufacturers Association 25 N. Broadway Tarrytown, NY 10591-3201 www.ejma.org	(914) 332-0040
FCI	Fluid Controls Institute c/o Thomas Associates, Inc 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/fci	(216) 241-7333
FCICA	Floor Covering Installation Contractors Association P.O. Box 948 Dalton, GA 30722-0948 www.fcica.com	(706) 226-5488
FGMA	Flat Glass Marketing Association (See GANA)	
FM	Factory Mutual System P.O. Box 9102 Norwood, MA 02062-9102 www.factorymutual.com	(781) 762-4300
FTI	Facing Tile Institute c/o Stark Ceramics P.O. Box 8880 Canton, OH 44711 www.ctioa.org	(330) 488-1211
GA	Gypsum Association 810 First St., NE, Suite 510 Washington, DC 20002 www.usg.com	(202) 289-5440
GANA	Glass Association of North America 3310 SW Harrison St. Topeka, KS 66611-2279 www.glasswebsite.com/gana	(913) 266-7013
GRI	Geosynthetic Research Institute 33rd and Lancaster Walk, Rush Building, West Wing Philadelphia, PA 19104 www.gri-server.coe.drexel.edu	(215) 895-2343
HEI	Heat Exchange Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/hei	(216) 241-7333
HI	Hydraulic Institute 9 Sylvan Way Parsippany, NJ 07054-3802 www.pumps.org	(201) 267-9700

HI	Hydronics Institute P.O. Box 218/35 Russo Pl. Berkeley Heights, NJ 07922 www.gamanet.org	(908) 464-8200
HMA	Hardwood Manufacturers Association 400 Penn Center Blvd., Suite 530 Pittsburgh, PA 15235-5605 www.hardwood.org	(412) 829-0770
HPVA	Hardwood Plywood and Veneer Association 1825 Michael Farraday Dr./P.O. Box 2789 Reston, VA 22195-0789 www.hpva.org	(703) 435-2900
IAS	International Approval Services 8504 East Pleasant Valley Rd. Cleveland, OH 44131 www.iasapprovals.org	(216) 524-4990
ICEA	Insulated Cable Engineers Association, Inc. P.O. Box 440 South Yarmouth, MA 02664	(508) 394-4424
IEC	International Electrotechnical Commission (Available from ANSI) 11 West 42nd St., 13th Floor New York, NY 10036-8002	(212) 642-4900
IEEE	Institute of Electrical and Electronics Engineers 345 E. 47th St. New York, NY 10017-2394 www.ieee.org	(800) 678-4333 (212) 705-7900
IESNA	Illuminating Engineering Society of North America 120 Wall St., 17th Floor New York, NY 10005-4001 www.iesna.org	(212) 248-5000
IGCC	Insulating Glass Certification Council (Now part of ITS)	
IIDA	International Interior Design Association	(312) 467-1950
ILI	Indiana Limestone Institute of America Stone City Bank Building, Suite 400 Bedford, IN 47421 www.iliai.org	(812) 275-4426
IMSA	International Municipal Signal Association P.O. Box 539/165 E. Union St. Newark, NY 14513 www.imsasafety.org	(800) 723-4672 315) 331-2182
INCE	Institute of Noise Control Engineering P.O. Box 3206, Arlington Branch Poughkeepsie, NY 12603 www.inceusa.org	(914) 462-4006
IRI	Industrial Risk Insurers P.O. Box 5010/85 Woodland St. Hartford, CT 06102-5010 www.insuranceproviders.org	(860) 520-7300

ISA	ISA - International Society for Measurement and Control P.O. Box 12277/67 Alexander Dr. Research Triangle Park, NC 27709 www.isa.org	(919) 549-8411
ISS	Iron and Steel Society 410 Commonwealth Dr. Warrendale, PA 15086-7512 www.issource.org	(412) 776-1535
ISWA	Insect Screening Weavers Association P.O. Box 1018 Ossining, NY 10562	(914) 962-9052
ITS	Intertek Testing Services P.O. Box 2040 Cortland, NY 13045-7902 www.itsglobal.com	(800) 345-3851 (607) 753-6711
KCMA	Kitchen Cabinet Manufacturers Association 1899 Preston White Dr. Reston, VA 22091-4326 www.kema.org	(703) 264-1690
LGSI	Light Gage Structural Institute c/o Loseke Technologies, Inc. P.O. Box 560746 The Colony, TX 75056 www.cfsei.org	(972) 625-4560
LIA	Lead Industries Association, Inc. 295 Madison Ave. New York, NY 10017 www.leadinfo.com	(800) 422-5323 (212) 578-4750
LMA	Laminating Materials Association 116 Lawrence St. Hillsdale, NJ 07642-2730 www.lma.org	(201) 664-2700
LPI	Lightning Protection Institute 3335 N. Arlington Heights Rd., Suite E Arlington Heights, IL 60004-7700 www.lightning.org	(800) 488-6864 (847) 577-7200
MBMA	Metal Building Manufacturer's Association c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/mbma	(216) 241-7333
MCAA	Mechanical Contractors Association of America 1385 Piccard Dr. Rockville, MD 20850-4329 www.mcaa.org	(301) 869-5800
MFMA	Maple Flooring Manufacturers Association 60 Revere Dr., Suite 500 Northbrook, IL 60062 www.maplefloor.com	(847) 480-9138
MFMA	Metal Framing Manufacturers Association 401 N. Michigan Ave. Chicago, IL 60611	(312) 644-6610

	www.metalframingmfg.org	
MHI	Material Handling Institute 8720 Red Oak Blvd., Suite 201 Charlotte, NC 28217-3992 www.mhi.org	(800) 345-1815 (704) 522-8644
MIA	Marble Institute of America 30 Eden Alley, Suite 301 Columbus, OH 43215 www.marble-institute.com	(614) 228-6194
MIA	Masonry Institute of America 2550 Beverly Blvd. Los Angeles, CA 90057 www.masonryinstitute.org	(213) 388-0472
ML/SFA	Metal Lath/Steel Framing Association 8 South Michigan Ave., Suite 1000 Chicago, IL 60603	(312) 456-5590
MRCA	Midwest Roofing Contractors Association 4840 W. 15th St., Suite 1000 Lawrence, KS 66049 www.mrca.org	(800) 879-4448 (913) 843-4888
MSS	Manufacturers Standardization Society of the Valve &Fittings Industry 127 Park St., NE Vienna, VA 22180-4602	(703) 281-6613
NAA	National Arborist Association P.O. Box 1094 Amherst, NH 03031-1094 www.natlarb.com	(800) 733-2622 (603) 673-3311
NAAMM	National Association of Architectural Metal Manufacturers 8 South Michigan Ave., Suite 1000 Chicago, IL 60603 www.gss.net/naamm	(312) 456-5590
NAGDM	National Association of Garage Door Manufacturers (See DASMA)	
NAIMA	North American Insulation Manufacturers Association 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314 www.naima.org	(703) 684-0084
NAMI	National Accreditation & Management Institute, Inc. P.O. Box 366/207 S. Washington St. Berkeley Springs, WV 25411	(304) 258-5100
NAPA	National Asphalt Pavement Association NAPA Building 5100 Forbes Blvd. Lanham, MD 20706-4413 www.asphaltpavement .org	(301) 731-4748
NAPM	National Association of Photographic Manufacturers 550 Mamaroneck Ave. Harrison, NY 10528	(914) 698-7603
NBHA	National Builders Hardware Association (See DHI)	

NCAC	National Council of Acoustical Consultants P.O. Box 359/66 Morris Ave., Suite 1A Springfield, NJ 07081 www.ncac.com	(201) 564-5859
NCCA	National Coil Coaters Association 401 N. Michigan Ave. Chicago, IL 60611 www.coilcoating.org	(312) 321-6894
NCMA	National Concrete Masonry Association 2302 Horse Pen Rd. Herndon, VA 20171-3499 www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute P.O. Box 759/253-80 Center St. Lake Geneva, WI 53147 www.ncpi.org	(414) 248-9094
NCRPM	National Council on Radiation Protection & Measurements 7910 Woodmont Ave., Suite 800 Bethesda, MD 20814-3095 www.ncrp.com	(800) 229-2652 (301) 657-2652
NCSPA	National Corrugated Steel Pipe Association 1255 23rd St., NW, Suite 850 Washington, DC 20037 www.ncspa.org	(202) 452-1700
NEBB	Natural Environmental Balancing Bureau 8575 Grovemont Circle Gaithersburg, MD 20877-4121 www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814-5372 www.necanet.org	(301) 657-3110
NEI	National Elevator Industry 185 Bridge Plaza North, Suite 310 Fort Lee, NJ 07024 www.neii.org	(201) 944-3211
NELMA	Northeastern Lumber Manufacturers Association 272 Tuttle Rd./P.O. Box 87A Cumberland Center, ME 04021 www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association 1300 N 17th St., Suite 1847 Rosslyn, VA 22209 www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association P.O. Box 687/106 Stone St. Morrison, CO 80465-1526 www.electricnet.com/neta	(303) 697-8441
NFPA	National Fire Protection Association One Batterymarch Park/ P.O. Box 9101 Quincy, MA 02269-9101 www.nfpa.org	(800) 344-3555 (617) 770-3000

NFPA	National Forest Products Association (See AFPA)	
NFRC	National Fenestration Rating Council Incorporated 1300 Spring St., Suite 120 Silver Spring, MD 20910 www.nfrc.org	(301) 589-NFRC
NHLA	National Hardwood Lumber Association P.O. Box 34518 Memphis, TN 38184-0518 www.natlhardwood.org	(901) 377-1818
NIA	National Insulation Association 99 Canal Center Plaza, Suite 222 Alexandria, VA 22314 www.insulation.org	(703) 683-6422
NIAC	National Insulation and Abatement Contractors Association (See NIA)	
NKCA	National Kitchen Cabinet Association (See KCMA)	
NLGA	National Lumber Grades Authority #406-First Capital Pl., 960 Quayside Dr. New Westminster, BC V3M 6G2	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association P.O. Box 3009 Memphis, TN 38173-0009 www.nwfa.org	(901) 526-5016
NPA	National Particleboard Association 18928 Premiere Ct. Gaithersburg, MD 20879-1569 www.pbmdf.com	(301) 670-0604
NPCA	National Paint and Coatings Association 1500 Rhode Island Ave., NW Washington, DC 20005-5597 www.paint.org	(202) 462-6272
NRCA	National Roofing Contractors Association O'Hare International Center 10255 W. Higgins Rd., Suite 600 Rosemont, IL 60018-5607 www.roofonline.org	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association 900 Spring St. Silver Spring, MD 20910 www.nrmca.org	(301) 587-1400
NSA	National Stone Association 1415 Elliot Pl., NW Washington, DC 20007 www.aggregates.org	(202) 342-1100
NSF	NSF International(Formerly: National Sanitation Foundation) P.O. Box 130140 Ann Arbor, MI 48113-0140 www.nsf.org	(313) 769-8010
NSSEA	National School Supply and Equipment Association 8300 Colesville Rd., Suite 250	(800) 395-5550 (301) 495-0240

	Silver Spring, MD 20910 www.nssea.org	
NTMA	National Terrazzo and Mosaic Association 3166 Des Plaines Ave., Suite 121 Des Plaines, IL 60018 www.ntma.com	(800) 323-9736 (847) 635-7744
NUSIG	National Uniform Seismic Installation Guidelines 12 Lahoma Ct. Alamo, CA 94526 www.nbug.org	(510) 946-0135
NWMA	National Woodwork Manufacturers Association (See NWWDA)	
NWWDA	National Wood Window and Door Association 1400 E. Touhy Ave., G-54 Des Plaines, IL 60018 www.nwwda.org	(800) 223-2301 (847) 299-5200
PATMI	Power Actuated Tool Manufacturers' Institute, Inc. 1603 Boonslick Rd. St. Charles, MO 63301-2244	(314) 947-6610
PCA	Portland Cement Association 5420 Old Orchard Rd. Skokie, IL 60077-1083 www.portcement.org	(847) 966-6200
PCI	Precast/Prestressed Concrete Institute 175 W. Jackson Blvd. Chicago, IL 60604 www.pci.org	(312) 786-0300
PDCA	Painting and Decorating Contractors of America 3913 Old Lee Hwy, Suite 33-B Fairfax, VA 22030 www.pdca.com	(800) 332-7322 (703) 359-0826
PDI	Plumbing and Drainage Institute 45 Bristol Dr., Suite 101 South Easton, MA 02375	(800) 589-8956 (508) 230-3516
PEI	Porcelain Enamel Institute 4004 Hillsboro Pike, Suite 224-B Nashville, TN 37215 www.porcelainenamel.com	(615) 385-5357
PGI	PVC Geomembrane Institute P.O. Box 4226 Traverse City, MI 49685 users.aol.com/forPVC1	(616) 933-6373
PPFA	Plastic Pipe and Fittings Association 800 Roosevelt Rd., Building C, Suite 20 Glen Ellyn, IL 60137-5833	(630) 858-6540
PPI	Plastic Pipe Institute 1801 K St., NW, Suite 600L Washington, DC 20006 www.plasticpipe.org	(202) 974-5306
RCMA	Roof Coatings Manufacturers Association Center Park 4041 Powder Mill Rd., Suite 404	(301) 230-2501

	Calverton, MD 20705	
RCSC	Research Council on Structural Connections Sargent & Lundy 55 E. Monroe St. Chicago, IL 60603	(312) 269-2424
RFCI	Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20850-1714 www.rfci.com	(301) 340-8580
RMA	Rubber Manufacturers Association 1400 K St., NW, Suite 900 Washington, DC 20005 www.rma.org	(800) 220-7620 (202) 682-4800
SAE	SAE International 400 Commonwealth Dr. Warrendale, PA 15096-0001 For publications: Call (412) 776-4970 www.sae.org	(412) 776-4841
SDI	Steel Deck Institute P.O. Box 25 Fox River Grove, IL 60021 www.sdi.org	(847) 462-1930
SDI	Steel Door Institute 30200 Detroit Rd. Cleveland, OH 44145-1967 www.steeldoor.org	(216) 889-0010
SEFA	Scientific Equipment and Furniture Association 1028 Duchess Dr. McLean, VA 22102-2010 www.sefalabfurn.com	(703) 790-8661
SEGD	Society for Environmental Graphic Design 401 F St., NW, Suite 333 Washington, DC 20001-2728	(202) 638-5555
SHLMA	Southern Hardwood Lumber Manufacturers Association (See HMA)	
SIGMA	Sealed Insulating Glass Manufacturers Association 401 N. Michigan Ave. Chicago, IL 60611-4267 www.igmaonline.org	(312) 644-6610
SJI	Steel Joist Institute 3127 10th Ave., North Ext. Myrtle Beach, SC 29577-6760 www.steeljoist.org	(803) 626-1995
SMA	Screen Manufacturers Association 2850 S. Ocean Blvd., Suite 114 Palm Beach, FL 33480-5535	(561) 533-0991
SMACNA	Sheet Metal & Air Conditioning Contractors' National Assoc. 4201 Lafayette Center Dr./P.O. Box 221230 Chantilly, VA 20151-1209 www.smacna.org	(703) 803-2980

SPI	Society of the Plastics Industry, Inc, .Spray Polyurethane Division 1801 K St., NW, Suite 600K Washington, DC 20006 www.socplas.org	(800) 951-2001 (202) 974-5200
SPIB	Southern Pine Inspection Bureau 4709 Scenic Hwy Pensacola, FL 32504-9094 www.spib.org	(904) 434-2611
SPRI	SPRI (Formerly: Single Ply Roofing Institute) 175 Highland Ave. Needham Heights, MA 02194-3034 www.spri.org	(617) 444-0242
SSINA	Specialty Steel Industry of North America c/o Collier, Shannon Rill & Scott 3050 K St., NW, Suite 400 Washington, DC 20007 www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	Steel Structures Painting Council 40 24th St., 6th Floor Pittsburgh, PA 15222-4643 www.sspc.org	(412) 281-2331
SSPMA	Sump and Sewage Pump Manufacturers Association P.O. Box 647 Northbrook, IL 60065-0647	(847) 559-9233
STI	Steel Tank Institute 570 Oakwood Rd. Lake Zurich, IL 60047-1559 www.steel.org	(847) 438-8265
SWI	Steel Window Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851 www.taol.com/swi	(216) 241-7333
SWPA	Submersible Wastewater Pump Association 1806 Johns Dr. Glenview, IL 60025-1657	(847) 729-7972
SWRI	Sealant, Waterproofing and Restoration Institute 2841 Main Kansas City, MO 64108 www.swrionline.org	(816) 472-7974
TCA	Tile Council of America 100 Clemson Research Blvd. Anderson, SC 29625 www.tcnatile.com	(864) 646-8453
TIMA	Thermal Insulation Manufacturers Association (See NAIMA)	
TMS	The Masonry Society 105 South Sunset St., Suite Q Longmont, CO 80501-6172 www.masonrysociety.org	(303) 939-9700

TPI	Truss Plate Institute 583 D'Onofrio Dr., Suite 200 Madison, WI 53719 www.tpinsf.org	(608) 833-5900
TPI	Turfgrass Producers International 1855-A Hicks Rd. Rolling Meadows, IL 60008	(800) 405-8873 (847) 705-9898
UL	Underwriters Laboratories Inc. 333 Pfingsten Rd. Northbrook, IL 60062 www.ul.com	(800) 704-4050 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association 2655 Villa Creek Dr., Suite 155 Dallas, TX 75234 www.members.aol.com/unibell1	(972) 243-3902
USITT	USITT: The American Association of Design and Production Professionals in the Performing Arts 6443 Ridings Rd. Syracuse, NY 13206-1111	(800) 938-7488 (315) 463-6463
USP	U.S. Pharmacopeia 12601 Twinbrook Pkwy Rockville, MD 20852-1790	(800) 227-8772 (301) 881-0666
WA	Wallcoverings Association 401 N. Michigan Ave. Chicago, IL 60611-4267 www.wallcoverings.org	(312) 644-6610
WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281-3145 wwwwclib.org	(503) 639-0651
WCMA	Window Covering Manufacturers Association 355 Lexington Ave., 17th Floor New York, NY 10017-6603 www.wcmanet.org	(212) 661-4261
WEF	Water Environment Federation 601 Wythe St. Alexandria, VA 22314-1994	(703) 684-2400
WMMPA	Wood Moulding & Millwork Producers Association 507 First St. Woodland, CA 95695 www.wmmpa.com	(800) 550-7889 (916) 661-9591
WRI	Wire Reinforcement Institute 203 Loudoun St., SW Leesburg, VA 20175-2718 www.wirereinforcementinstitute.org	(703) 779-2339
WSC	Water Systems Council Building C, Suite 20, 800 Roosevelt Rd. Glen Ellyn, IL 60137 www.watersystemscouncil.org	(630) 545-1762

WWPA	Western Wood Products Association Yeon Building/522 SW 5th Ave. Portland, OR 97204-2122 www.wwpa.org	(503) 224-3930

G. Federal Government Agencies: Names and titles of Federal Government standards- or specification-producing agencies are often abbreviated. The following abbreviations and acronyms referenced in the Contract Documents indicate names of standards- or specification-producing agencies of the Federal Government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CE	Corps of Engineers (U.S. Department of the Army) 20 Massachusetts Ave., NW Washington, DC 20314	(202) 761-0660
	CRD standards are available from: U.S. Army Corps of Engineers Waterways Experiment Station Technical Report Distribution Section Services Branch, TIC 3909 Halls Ferry Rd. Vicksburg, MS 39180-6199	(601) 634-2696
CFR	Code of Federal Regulations (Available from the Government Printing Office) Washington, DC 20401 www.access.gpo.gov	(202) 512-0000
CPSC	Consumer Product Safety Commission East West Towers/4330 East-West Hwy Bethesda, MD 20814 www.cpsc.gov	(800) 638-2772
CS	Commercial Standard (U.S. Department of Commerce)Government Printing Office Washington, DC 20402	(202) 512-1800
DOC	Department of Commerce 14th St. and Constitution Ave., NW Washington, DC 20230 www.commerce.gov	(202) 482-2000
DOT	Department of Transportation 400 Seventh St., SW Washington, DC 20590 www.dot.gov	(202) 366-4000
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460 www.epa.gov	(202) 260-2090
FAA	Federal Aviation Administration (U.S. Department of Transportation) 800 Independence Ave., SW Washington, DC 20591 www.faa.gov	(202) 366-4000
FCC	Federal Communications Commission 1919 M St., NW Washington, DC 20554 www.fcc.gov	(202) 418-0126

FDA	Food and Drug Administration 5600 Fishers Lane Rockville, MD 20857 www.fda.gov	(301) 443-1544
FHA	Federal Housing Administration (U.S. Department of Housing and Urban Development) 451 Seventh St., SW Washington, DC 20410 www.hud.gov	(202) 401-0388
FS	Federal Specification Unit (Available from GSA) 470 East L'Enfant Plaza, SW, Suite 8100 Washington, DC 20407 www.gsa.gov	(202) 619-8925
GSA	General Services Administration F St. and 18th St., NW Washington, DC 20405 www.gsa.gov	(202) 708-5082
MIL	Military Standardization Documents (U.S. Department of Defense) Defense Printing Service 700 Robbins Ave., Building 4D Philadelphia, PA 19111	(215) 697-2179
NIST	National Institute of Standards and Technology Building 101, #A1134, Rte. I-270 and Quince Orchard Rd. Gaithersburg, MD 20899 www.nist.gov	(301) 975-2000
OSHA	Occupational Safety and Health Administration 200 Constitution Ave., NW Washington, DC 20210 www.osha.gov	(202) 219-8148
PS	Product Standard of NBS (U.S. Department of Commerce) Government Printing Office Washington, DC 20402	(202) 512-1800
RUS	Rural Utilities Service (U.S. Department of Agriculture) 14th St. and Independence Ave., SW Washington, DC 20250	(202) 720-9560
TRB	Transportation Research Board, National Research Council 2101 Constitution Ave., NW Washington, DC 20418 www.tra.org	(202) 334-2934
USDA	U.S. Department of Agriculture 14th St. and Independence Ave., SW Washington, DC 20250 www.usda.gov	(202) 720-8732
USPS	U.S. Postal Service 475 L'Enfant Plaza, SW Washington, DC 20260-0010 www.uspa.gov	(202) 268-2000

1.05 GOVERNING REGULATIONS AND AUTHORITIES

A. Copies of Regulations: Obtain copies of the following regulations and retain at the Project site to be available for reference by parties who have a reasonable need.

B. Comply with all rules, regulations, directives, etc. pertaining to the latest edition of the Florida Building Code which includes but is not necessarily limited to the following:
1. All supplements to the Building Code issued and effective.
2. Guidelines for Design and Construction of Health Care Facilities.
3. Florida Building Commission Building Codes and Standards
4. Florida Fire Prevention Code
5. International Code Council

1.06 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.02 SUMMARY

A. This Section includes requirements for construction facilities and temporary controls, including temporary utilities, support facilities, and security and protection.

B. Temporary utilities include, but are not limited to, the following:
1. Water service and distribution.
2. Temporary electric power and light.
3. Ventilation.
4. Telephone service.
5. Sanitary facilities, including drinking water.
6. Storm and sanitary sewer.

C. Support facilities include, but are not limited to, the following:
1. Field offices and storage sheds.
2. Temporary roads and paving.
3. Dewatering facilities and drains.
4. Temporary enclosures.
5. Hoists and temporary elevator use.
6. Temporary project identification signs and bulletin boards.
7. Waste disposal services.
8. Rodent and pest control.
9. Construction aids and miscellaneous services and facilities.

D. Security and protection facilities include, but are not limited to, the following:
1. Temporary fire protection.
2. Barricades, warning signs, and lights.
3. Sidewalk bridge or enclosure fence for the site.
4. Environmental protection.

1.03 SUBMITTALS

A. Temporary Utilities: Submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.

B. Implementation and Termination Schedule: Within 15 days of the date established for commencement of the Work, submit a schedule indicating implementation and termination of each temporary utility.

1.04 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
   1. Building code requirements.
   2. Health and safety regulations.
   3. Utility company regulations.
   4. Police, fire department, and rescue squad rules.
   5. Environmental protection regulations.

B. Standards: Comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
   1. Electrical Service: Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70 "National Electric Code."

C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.05 PROJECT CONDITIONS

A. Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, change over from use of temporary service to use of permanent service.

B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire- prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Provide new materials. If acceptable to the Architect, the Contractor may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
   1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
   2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
   3. For fences and vision barriers, provide minimum 3/8-inch- (9.5-mm-) thick exterior plywood.
   4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch- (16-mm-) thick exterior plywood.

C. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.

D. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.

E. Paint: Comply with requirements of Division 9 Section "Painting."
   1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior- grade acrylic-latex emulsion over exterior primer.
   2. For sign panels and applying graphics, provide exterior- grade alkyd gloss enamel over exterior primer.
   3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.

F. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.

G. Water: Provide potable water approved by local health authorities.

H. Open-Mesh Fencing: Provide 0.120-inch- (3-mm-) thick, galvanized 2-inch (50-mm) chainlink fabric fencing 6 feet (2 m) high with galvanized barbed-wire top strand and galvanized steel pipe posts, 1-1/2 inches (38 mm) I.D. for line posts and 2-1/2 inches (64 mm) I.D. for corner posts.

2.02 EQUIPMENT

A. General: Provide new equipment. If acceptable to the Architect, the Contractor may use undamaged, previously used equipment in serviceable condition. Provide equipment suitable for use intended.

B. Water Hoses: Provide 3/4-inch (19-mm), heavy-duty, abrasion- resistant, flexible rubber hoses 100 feet (30 m) long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.

C. Electrical Outlets: Provide properly configured, NEMA- polarized outlets to prevent insertion of 110- to 120-Volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.

D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures where exposed to breakage. Provide exterior fixtures where exposed to moisture.

F. Temporary Offices: Provide prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.

G. Temporary Toilet Units: Provide self-contained, single- occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.

H. Fire Extinguishers: Provide hand-carried, portable, UL- rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures.

1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

2.03 PROJECT IDENTIFICATION

A. Provide 8′-0″ by 4′-0″ project sign of MPO plywood and 4″ x 4″ pressure treated wood frame construction, painted, with Exhibit lettering by a professional sign painter and installed by GC.

B. List name of project, name of Owner, Architect/Engineer and Contractor. Sign to include rendering and company logo/information as directed by Owner and Architect.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.

B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.02 TEMPORARY UTILITY INSTALLATION

A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.

1. Arrange with company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked- in services.
3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
4. Use Charges: Cost or use charges for temporary facilities are not chargeable to the Owner or Architect. Neither the Owner nor Architect will accept cost or use charges as a basis of claims for Change Orders.

B. Water Service: Install water service and distribution piping of sizes and pressures adequate for construction until permanent water service is in use.

1. Sterilization: Sterilize temporary water piping prior to use.

C. Temporary Electric Power Service: Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload- protected disconnects, automatic ground-fault interrupters, and main distribution switch gear.

1. Install electric power service underground, except where overhead service must be used.
2. Power Distribution System: Install wiring overhead and rise vertically where least exposed to damage. Where permitted, wiring circuits not exceeding 125 Volts, ac 20 Ampere rating, and lighting circuits may be nonmetallic sheathed cable where overhead and exposed for surveillance.

D. Temporary Lighting: When overhead floor or roof deck has been installed, provide temporary lighting with local switching.
1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.

E. Temporary Telephones: Provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Install telephone on a separate line for each temporary office and first-aid station.
1. Separate Telephone Lines: Provide additional telephone lines for the following:
   a. Where an office has more than 2 occupants, install a telephone for each additional occupant or pair of occupants.
   b. Provide a dedicated telephone line for a fax machine in the field office.
   c. Provide a separate line for the Owner's use.
2. At each telephone, post a list of important telephone numbers.

F. Sanitary facilities include temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Provide covered waste containers for used material.

G. Toilets: Use of the Owner's existing toilet facilities will be permitted, so long as facilities are cleaned and maintained in a condition acceptable to the Owner. At Substantial Completion, restore these facilities to the condition prevalent at the time of initial use.

H. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
1. Provide separate facilities for male and female personnel.

I. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for a healthy and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.
1. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.

J. Drinking-Water Facilities: Provide containerized, tap- dispenser, bottled-water drinking-water units, including paper supply.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).

K. Sewers and Drainage: If sewers are available, provide temporary connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.

1. Filter out excessive amounts of soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
2. Connect temporary sewers to the municipal system, as directed by sewer department officials.
3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. Following heavy use, restore normal conditions promptly.

L. Provide earthen embankments and similar barriers in and around excavations and subgrade construction, sufficient to prevent flooding by runoff of storm water from heavy rains.

3.03 SUPPORT FACILITIES INSTALLATION

A. Locate field offices, storage sheds, and other temporary construction and support facilities for easy access.

1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.

B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet (9 m) of building lines. Comply with requirements of NFPA 241.

C. Field Offices: Provide insulated, weathertight temporary offices of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small progress meetings. Furnish and equip offices as follows:

1. Furnish with a desk and chairs, a 4-drawer file cabinet, plan table, plan rack, and a 6-shelf bookcase.
2. Equip with a water cooler and private toilet complete with water closet, lavatory, and medicine cabinet unit with a mirror.

D. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on- site.

E. Temporary Paving: Construct and maintain temporary roads and paving to support the indicated loading adequately and to withstand exposure to traffic during the construction period. Locate temporary paving for roads, storage areas, and parking where the same permanent facilities will be located. Review proposed modifications to permanent paving with the Architect.

1. Paving: Comply with Division 2 Section "Hot-Mixed Asphalt Paving" for construction and maintenance of temporary paving.
2. Coordinate temporary paving development with subgrade grading, compaction, installation and stabilization of subbase, and installation of base and finish courses of permanent paving.

3. Install temporary paving to minimize the need to rework the installations and to result in permanent roads and paved areas without damage or deterioration when occupied by the Owner.
4. Delay installation of the final course of permanent asphalt concrete paving until immediately before Substantial Completion. Coordinate with weather conditions to avoid unsatisfactory results.
5. Extend temporary paving in and around the construction area as necessary to accommodate delivery and storage of materials, equipment usage, administration, and supervision.

F. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations, and construction free of water.

G. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood or similar materials.
3. Close openings through floor or roof decks and horizontal surfaces with load-bearing, wood-framed construction.
4. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use UL-labeled, fire-retardant- treated material for framing and main sheathing.

H. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

I. Temporary Elevator Use: Refer to Division 14 Sections for elevators.

J. Project Identification and Temporary Signs: Prepare project identification and other signs of size indicated. Install signs where indicated to inform the public and persons seeking entrance to the Project. Support on posts or framing of preservative-treated wood or steel. Do not permit installation of unauthorized signs.
1. Project Identification Signs: Engage an experienced sign painter to apply graphics. Comply with details indicated.
2. Temporary Signs: Prepare signs to provide directional information to construction personnel and visitors.

K. Temporary Exterior Lighting: Install exterior yard and sign lights so signs are visible when Work is being performed.

L. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg F (27

deg C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully.

M. Rodent and Pest Control: Before deep foundation work has been completed, retain a local exterminator or pest control company to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests. Employ this service to perform extermination and control procedures at regular intervals so the Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

N. Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate. Cover finished, permanent stairs with a protective covering of plywood or similar material so finishes will be undamaged at the time of acceptance.

3.04 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.

B. Temporary Fire Protection: Until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers" and NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations."

1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
2. Store combustible materials in containers in fire-safe locations.
3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
4. Provide supervision of welding operations, combustion- type temporary heating units, and similar sources of fire ignition.

C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

D. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.

E. Enclosure Fence: Before excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated, or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates.

1. Provide open-mesh, chainlink fencing with posts set in a compacted mixture of gravel and earth.
2. Provide plywood fence, 8 feet (2.5 m) high, framed with four 2-by-4-inch (50-by-100-mm) rails, and preservative- treated wood posts spaced not more than 8 feet (2.5 m) apart.

F. Covered Walkway: Erect a structurally adequate, protective covered walkway for passage of persons along the adjacent public street. Coordinate with entrance gates, other facilities, and obstructions. Comply with regulations of authorities having jurisdiction.

1. Construct covered walkways using scaffold or shoring framing. Provide wood plank overhead decking, protective plywood enclosure walls, handrails, barricades, warning signs, lights, safe and well-drained walkways, and similar provisions for protection and safe passage. Extend the back wall beyond the structure to complete the enclosure fence. Paint and maintain in a manner acceptable to the Owner and the Architect.

G. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.

H. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid use of tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

3.05 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the Contractor's property. The Owner reserves the right to take possession of project identification signs.

2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant

materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.

3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
   a. Replace air filters and clean inside of ductwork and housings.
   b. Replace significantly worn parts and parts subject to unusual operating conditions.
   c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION

SECTION 01503
EXECUTION

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. Installation of the Work.
4. Cutting and patching.
5. Coordination of Owner-installed products.
6. Progress cleaning.
7. Starting and adjusting.
8. Protection of installed construction.
9. Correction of the Work.

B. Related Requirements:

1. Division 01 Section "Summary" for limits on use of Project site.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.
4. Division 07 Section "Penetration Firestopping" for patching penetrations in fire-rated construction.

1.03 DEFINITIONS

A. Cutting: Removal of in-place construction necessary to permit installation or performance of other work.

B. Patching: Fitting and repair work required to restore construction to original conditions after installation of other work.

1.04 INFORMATIONAL SUBMITTALS

A. Certificates: Submit certificate signed by land surveyor certifying that location and elevation of improvements comply with requirements.

B. Cutting and Patching Plan: Submit plan describing procedures at least 10 days prior to the time cutting and patching will be performed. Include the following information:

1. Extent: Describe reason for and extent of each occurrence of cutting and patching.

2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building appearance and other significant visual elements.
3. Products: List products to be used for patching and firms or entities that will perform patching work.
4. Dates: Indicate when cutting and patching will be performed.
5. Utilities and Mechanical and Electrical Systems: List services and systems that cutting and patching procedures will disturb or affect. List services and systems that will be relocated and those that will be temporarily out of service. Indicate length of time permanent services and systems will be disrupted.
   a. Include description of provisions for temporary services and systems during interruption of permanent services and systems.

C. Landfill Receipts: Submit copy of receipts issued by a landfill facility, licensed to accept hazardous materials, for hazardous waste disposal.

D. Certified Surveys: Submit 4 copies signed by land surveyor.

E. Final Property Survey: Submit 10 copies showing the Work performed and record survey data.

1.05 QUALITY ASSURANCE

A. Land Surveyor Qualifications: A professional land surveyor who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing land-surveying services of the kind indicated.

B. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection
2. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety. Operational elements include the following:
   a. Primary operational systems and equipment.
   b. Fire separation assemblies.
   c. Air or smoke barriers.
   d. Fire-suppression systems.
   e. Mechanical systems piping and ducts.
   f. Control systems.
   g. Communication systems.
   h. Fire-detection and -alarm systems.
   i. Conveying systems.
   j. Electrical wiring systems.
   k. Operating systems of special construction.

3. Other Construction Elements: Do not cut and patch other construction elements or components in a manner that could change their load-carrying capacity that results in reducing their capacity to perform as intended, or that result in

increased maintenance or decreased operational life or safety. Other construction elements include but are not limited to the following:

a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Exterior curtain-wall construction.
d. Sprayed fire-resistive material.
e. Equipment supports.
f. Piping, ductwork, vessels, and equipment.
g. Noise- and vibration-control elements and systems.

4. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

C. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

D. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General: Comply with requirements specified in other Sections.

1. For projects requiring compliance with sustainable design and construction practices and procedures, use products for patching that comply with requirements in Division 01 sustainable design requirements Section.

B. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work.

1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services, and other utilities.

2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.

D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.02 PREPARATION

A. Existing Utility Information: Furnish information to local utility that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.

B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.

D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Division 01 Section "Project Management and Coordination."

3.03 CONSTRUCTION LAYOUT

A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.

B. General: Engage a land surveyor to lay out the Work using accepted surveying practices.

1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
2. Establish limits on use of Project site.
3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
4. Inform installers of lines and levels to which they must comply.
5. Check the location, level and plumb, of every major element as the Work progresses.
6. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.

C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.

D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.

E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.04 FIELD ENGINEERING

A. Identification: Contractor will identify existing benchmarks, control points, and property corners.

B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.

Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

C. Benchmarks: Establish and maintain a minimum of 2 permanent benchmarks on Project site, referenced to data established by survey control points. Comply with authorities having jurisdiction for type and size of benchmark.

Record benchmark locations, with horizontal and vertical data on Project Record Documents.

Where the actual location or elevation of layout points cannot be marked, provide temporary reference points to locate the Work.
Remove temporary reference points when no longer needed. Restore marked construction to its original condition.

D. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.

E. Final Property Survey: Engage a land surveyor to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification, signed by land surveyor, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.

Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.05 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 90 inches in unoccupied spaces.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.

1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.

2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.06 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Division 01 Section "Summary."

F. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

G. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
6. Proceed with patching after construction operations requiring cutting are complete.

H. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
   a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
   b. Restore damaged pipe covering to its original condition.
3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.07 OWNER-INSTALLED PRODUCTS

A. Site Access: Provide access to Project site for Owner's construction personnel.

B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.

Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

Preinstallation Conferences: Include Owner's construction personnel at preinstallation

conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.08 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    a. Use containers intended for holding waste materials of type to be stored.
4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Division 01 Section "Temporary Facilities and Controls" and as dictated by local authorities having jurisdiction whichever is most stringent.

H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.

J. Limiting Exposures: Supervise construction operations to assure that no part of the construction completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.09 STARTING AND ADJUSTING

A. Coordinate startup and adjusting of equipment and operating components with requirements in Division 01 Section "General Commissioning Requirements."

B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.

C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.

D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.

E. Manufacturer's Field Service: Comply with qualification requirements in Division 01 Section "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

B. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 01600
MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Products.

B. Transportation and handling.

C. Storage and protection.

D. Product options.

E. Substitutions.

F. Alternatives.

1.03 RELATED SECTIONS

A. Section 01400 – Quality Control: Product quality monitoring.

1.04 PRODUCTS

A. Products: Means new material, machinery components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for re-use.

B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.

C. Provide interchangeable components of the same manufacturer, for similar components.

1.05 TRANSPORTATION AND HANDLING

A. Transport and handle products in accordance with manufacturer's instructions.

B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement or damage.

1.06 STORAGE AND PROTECTION

A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.

B. For exterior storage of fabricated products, place on sloped supports, above ground.

C. Provide off-site storage and protection when site does not permit on-site storage or protection.

D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.

E. Store loose granular materials on solid flat surfaces in a well-drained area. Avoid mixing with foreign matter.

F. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

G. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.06 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.

B. Products Specified by Naming one or more Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.

C. Products specified by naming one or more manufacturers with a provision for Substitutions: Submit a request for substitution for any manufacturer not named.

PART 2 - PRODUCTS

2.01 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.

1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:

1. Proprietary Specification Requirements: Where Specifications name only a single product or manufacturer, provide the product indicated. No substitutions will be permitted.
2. Semiproprietary Specification Requirements: Where Specifications name 2 or more products or manufacturers, provide 1 of the products indicated. No substitutions will be permitted.
   a. Where Specifications specify products or manufacturers by name, accompanied by the term "or equal" or "or approved equal," comply

with the Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.

3. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
   a. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
6. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
7. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product
   a. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category.
8. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.
9. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

PART 3 - EXECUTION

3.01 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
   1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

SECTION 01650
STARTING OF SYSTEMS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Starting systems.

B. Demonstration and instructions.

C. Testing, adjusting, and balancing.

1.03 RELATED SECTIONS

A. Section 01400 – Quality Control: Manufacturers field reports.

B. Section 01700 – Contract Closeout: System operation and maintenance data and extra materials.

1.04 STARTING SYSTEMS

A. Coordinate schedule for start-up of various equipment and systems.

B. Notify Architect/Engineer seven days prior to start-up of each item.

C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.

D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

E. Verify wiring and support components for equipment are completed and tested.

F. Execute start-up under supervision of responsible Contractor's personnel in accordance with manufacturers' instruction.

G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up and to supervise placing equipment or system in operation.

H. Submit a written report in accordance with Section 01400 that equipment or system has been properly installed and is functioning correctly.

1.05 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner's personnel two weeks prior to date of Substantial Completion.

B. Demonstrate Project equipment and instruct by a qualified manufacturers' representative who is knowledgeable about the Project.

C. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.

D. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.

E. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled times, at equipment location.

F. Prepare and insert additional data in operations and maintenance manuals when the need for additional data becomes apparent during instruction.

1.06 TESTING, ADJUSTING, AND BALANCING

A. Contractor will appoint, employ, and pay for services of an independent firm to perform testing, adjusting and balancing.

B. The independent firm will perform services specified in Section 15990.

C. Reports will be submitted by the independent firm to the Architect/Engineer indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

D. The mechanical and electrical sub-contractors shall conduct 3-month, 6-month and 9-month inspections, following the Substantial Completion of Construction, for preventative maintenance purposes. These first year warranty inspection reports shall be submitted in written form to the Owner/Architect within ten (10) days of inspection.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01700
CONTRACT CLOSEOUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Closeout procedures.

B. Final cleaning.

C. Adjusting.

D. Project record documents.

E. Operation and maintenance data.

1.03 RELATED SECTIONS

A. Section 01650 - Starting of Systems: System start-up, testing, adjusting, and balancing.

B. Section 01730 - Operation and Maintenance Data.

C. Section 01740 - Warranties and Bonds.

1.04 CLOSOUT PROCEDURES

A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's inspection.

B. Provide submittals to Architect/Engineer that shall include the following:

1. Record Drawings
2. Operation and Maintenance Data
3. Guarantees, Warranties and Bonds
4. Keys and Keying Schedule
5. Spare Parts and Maintenance Materials
6. Certificate of Insurance for Products and Completed Operations
7. Certificate of Occupancy, if required

C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.05 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Clean equipment and fixtures to a sanitary condition.

D. Replace filters of operating equipment.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site; sweep paved areas, rake clean landscaped surfaces.

G. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.06 ADJUSTING

A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.07 PROJECT RECORD DOCUMENTS

A. Maintain on-site, one set of the following record documents; record actual revisions to the Work:

1. Contract Drawings
2. Specifications
3. Addenda
4. Change Orders and other Modifications to the Contract
5. Reviewed shop drawings, product data, and samples

B. Store Record Documents separate from documents used for construction.

C. Record information concurrent with construction progress.

D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:

1. Manufacturers' name and product model and number
2. Product substitutions or alternates utilized

E. Record Documents and Shop Drawings: legibly mark each item to record actual construction including:

1. Measured depths of foundations in relation to finish ground floor datum.
2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
4. Field changes of dimension and detail.
5. Details not on original Contract Drawings.

F. The Contractor shall submit to the Architect/Engineer, four (4) weeks before final inspection, an electronic copy of operating and maintenance data in a single PDF file for review. All data shall be assembled and completely indexed into one volume and shall identify the size, model, and features indicated for each item.

1.08 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

B. Deliver to Project site and place in location as directed; obtain receipt prior to final payment.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.
7. Identification systems.
8. Control sequences.
9. Hazards.
10. Cleaning.
11. Warranties and bonds.
12. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.
2. Shutdown.
3. Emergency operations.
4. Noise and vibration adjustments.
5. Safety procedures.
6. Economy and efficiency adjustments.
7. Effective energy utilization.

3.02 FINAL CLEANING

A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section "Construction Facilities and Temporary Controls."

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.
   a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

END OF SECTION

SECTION 01730
OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Format and content of manuals.

B. Schedule of submittals.

1.03 RELATED SECTIONS

A. Section 01300 – Submittals: Shop drawings, product data and samples.

B. Section 01400 – Quality Control: Manufacturer's instructions.

C. Section 01400 – Quality Control: Test and balance reports.

D. Section 01600 – Material and Equipment: Systems demonstration.

E. Section 01700 – Contract Closeout: Project Record Documents.

F. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.04 QUALITY ASSURANCE

A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.05 FORMAT

A. Prepare data in the form of an instructional manual.

B. Binders: Commercial quality, 8-1/2 x 11 inch three-ring binders with hardback, cleanable, plastic covers. When multiple binders are used, correlate data into related consistent groupings.

C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project and identify subject matter of contents.

D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.

E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.

F. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.

G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.06 CONTENTS, EACH VOLUME

A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, sub-consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of volume.

B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.

C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.

D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. (Do not use Project Record Documents as maintenance drawings.)

E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01400.

F. Warranties and Bonds: As specified in Section 01740.

1.07 MANUAL FOR MATERIALS AND FINISHES

A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured Products.

B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods and recommended schedule for cleaning and maintenance.

C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance and repair.

D. Additional Requirements: As specified in individual Product specification sections.

E. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.08 MANUAL FOR EQUIPMENT AND SYSTEMS

A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.

B. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications.

C. Include color coded wiring diagram as installed.

D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulations, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.

F. Provide servicing and lubrication schedule, and list of lubricants required.

G. Include manufacturer's printed operation and maintenance instructions.

H. Include sequence of operation by controls manufacturer.

I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.

J. Provide control diagrams by controls manufacturer as installed.

K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagram.

M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.

N. Include test and balancing reports as specified in Section 01400.

O. Additional Requirements: As specified in individual Product specification sections.

P. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.09 INSTRUCTION OF OWNER PERSONNEL

A. Before final inspection, instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.

B. For equipment requiring seasonal operation, perform instructions for other seasons within six months.

C. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.

D. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.

1.10 SUBMITTALS

A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one copy with comments.

B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.

C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with Architect/Engineer comments. Revise content of documents as required prior to final submittal.

D. Submit two copies of revised volumes of data in final form within ten days after final inspection.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01731
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes administrative and procedural requirements for project record documents, including the following:

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Division 01 Section "Multiple Contract Summary" for coordinating project record documents covering the Work of multiple contracts.
2. Division 01 Section "Execution" for final property survey.
3. Division 01 Section "Closeout Procedures" for general closeout procedures.
4. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
5. Divisions 02 through 33 Sections for specific requirements for project record documents of the Work in those Sections.

1.03 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit 1 set(s) of marked-up record drawings and specifications.
2. Number of Electronic Copies: Submit copies of record Drawings as follows:
   a. Final Submittal:
      1) Submit 1 paper-copy set(s) of marked-up record drawings.
      2) Submit PDF electronic files of scanned record drawings.

B. Record Product Data: Submit 1 paper copy and annotated PDF electronic files and directories of each submittal.

1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

C. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit 1 paper copy and annotated PDF electronic files and directories of each submittal.

D. Reports: Submit written report [**weekly**] indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.01 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an acceptable drawing technique.
   c. Record data as soon as possible after obtaining it.
   d. Record and check the markup before enclosing concealed installations.
   e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Depths of foundations below first floor.
   d. Locations and depths of underground utilities.
   e. Revisions to routing of piping and conduits.
   f. Revisions to electrical circuitry.
   g. Actual equipment locations.
   h. Duct size and routing.
   i. Locations of concealed internal utilities.
   j. Changes made by Change Order or Construction Change Directive.
   k. Changes made following Architect's written orders.
   l. Details not on the original Contract Drawings.
   m. Field records for variable and concealed conditions.
   n. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.02 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
   1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
   2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
   3. Note related Change Orders and record Drawings where applicable.

B. Format: Submit record Product Data as scanned PDF electronic file(s) of marked-up paper copy of Product Data.
   1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

2.03 MISCELLANEOUS RECORD SUBMITTALS

A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

B. Format: Submit miscellaneous record submittals as scanned PDF electronic file(s) of marked-up miscellaneous record submittals.
   1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

PART 3 - EXECUTION

3.01 RECORDING AND MAINTENANCE

A. Recording: Maintain one copy of each submittal during the construction period for project record document purposes. Post changes and revisions to project record documents as they occur; do not wait until end of Project.

B. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's reference during normal working hours.

END OF SECTION

SECTION 01740
WARRANTIES AND BONDS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and General Provisions of the Contract, including General and Supplementary Conditions and Division 1 Specifications, apply to this section.

1.02 SECTION INCLUDES

A. Preparation and submittal

B. Time and schedule of submittals

1.03 RELATED SECTIONS

A. Document 00701 – General Conditions: Performance Bond and Labor and Material Payment Bonds, Warranty, and Correction of Work.

B. Section 01700 – Contract Closeout

C. Section 01730 – Operation and Maintenance Data.

D. Individual Specifications Sections: Warranties required for specific products or Work.

1.04 FORM OF SUBMITTALS

A. Bind in commercial quality, 8-1/2 x 11 inch three ring side binders with hardback, cleanable plastic covers.

B. Label cover of each binder with typed or printed title, "WARRANTIES AND BONDS", with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.

C. Table of contents: Neatly typed, in the sequence of the Table of Contents of the Project manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or Work item.

D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address and telephone number of responsible principal.

1.05 PREPARATION OF SUBMITTALS

A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within ten (10) days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.

B. Verify that documents are in proper form, contain full information, and are notarized.

C. Co-execute submittals when required.

D. Retain warranties and bonds until time specified for submittal.

1.06 TIME OF SUBMITTALS

A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten (10) days after acceptance.

B. Make other submittals within ten (10) days after Date of Substantial Completion, prior to final Application for Payment.

C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten (10) days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used

END OF SECTION

SECTION 01805
CLEANING UP

PART I – GENERAL

1.01 RELATED DOCUMENTS

A. The general provisions of the Contract, including the General, Supplementary General Conditions and special conditions shall apply to the Work specified in this section.

1.02 REQUIREMENTS OF REGULATORY AGENCIES

A. Volatile waste shall be stored in covered metal containers, and removed from the premises daily.

B. Clean-up and disposal operations shall be conducted to comply with local ordinances and Anti-Pollution Laws.

1. Burning or burying of rubbish and waste on the site is not permitted.
2. Disposal of volatile fluid waste in storm or sanitary sewer systems, or into streams or waterways is not permitted.

C. Hazardous materials shall be stored and disposed of only as permitted by law and shall be properly and legally removed from the premises prior to the completion of the Contract.

1.03 MATERIALS

A. Cleaning materials shall be used on materials only when recommended specifically by the materials manufacturer.

1.04 CLEANING DURING CONSTRUCTION

A. The Contractor shall oversee cleaning by the various trades and ensure that the building and grounds are maintained free from accumulations of waste materials. The premises shall be kept free from the accumulation of waste materials or rubbish at all times, daily cleaning required.

B. The Contractor shall provide suitable containers on the Site for collection of waste disposed of in a legal manner.

C. The Contractor shall not, in any case, use the Owner's trash facilities.

1.05 FINAL CLEANING

A. At completion of the Project, and just prior to Final Acceptance, the Contractor and Owner shall conduct an inspection of the entire Project. Prior to conducting this inspection the Contractor shall clean, or re-clean , entire areas exposed to view to normal level for "first class" maintenance/cleaning of building projects of a similar nature, as needed to produce a "clean" condition as judged by the Architect and Owner. The Contractor shall at minimum:

1. Remove grease, dust, dirt, stains, temporary labels, and fingerprints, non-permanent protection and other foreign materials from interior and exterior surface.
2. Repair, patch, and touch-up marred surfaces to match adjacent finishes.
3. Broom clean paved surfaces, clean and rake site, and clean other exposed site finishes.

B. The Contractor shall maintain cleaning while the Project is occupied by the Owner.

C. The Contractor shall remove all his/her waste materials and rubbish from and about the project as well as all tools, construction equipment, and machinery and surplus materials.

END OF SECTION

SECTION 02010

DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:
1. Demolish 21 existing buildings and all surrounding infrastructure and utilities serving these buildings. All buildings are to be demolished at the same time.
2. Disconnecting, capping, or sealing, all sewer lines and site utilities such as electrical, water and telecommunications.

B. Related Sections:

1. Section 011000 "Summary" for use of the premises and phasing requirements.
2. Section 013200 "Construction Progress Documentation" for preconstruction photographs taken before building demolition.
3. Section 024119 "Selective Structure Demolition" for partial demolition of buildings, structures, and site improvements.
4. Section 311000 "Site Clearing" for site clearing and removal of above- and below-grade site improvements not part of building demolition.
5. Section 330500 "Common Work Results for Utilities" for shutting off, disconnecting, removing, and sealing or capping utilities.

1.3 DEFINITIONS

A. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and salvaged.

B. Remove and Salvage: Carefully detach from existing construction, in a manner to prevent damage, and deliver to Owner. Include fasteners or brackets needed for reattachment elsewhere.

1.4 MATERIALS OWNERSHIP

A. Unless otherwise indicated, demolition waste becomes property of Contractor.

B. Historic items, relics, antiques, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, and other items of interest or value to Owner that may be uncovered during demolition remain the property of Owner.

1. Carefully salvage in a manner to prevent damage and promptly return to Owner.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified refrigerant recovery technician.

B. Proposed Protection Measures: Submit informational report, including Drawings, that indicates the measures proposed for protecting individuals and property Chain link Fance with screen is being installed at each individual block.

1. Adjacent Buildings: No adjacent buildings to be protected. Avondale street to be used as the main means of egress.

2. Schedule in first paragraph below may be used to track Contractor's progress; it may also be used to determine that building demolition will not interfere with Owner's operations.

C. Schedule of Building Demolition Activities: Indicate the following:

1. Detailed sequence of demolition work, with starting and ending dates for each activity.
2. Temporary interruption of utility services.
3. Shutoff and capping of utility services.

D. Inventory: Submit a list of items to be removed and salvaged and deliver to Owner prior to start of demolition.

E. Pre-demolition **Photographs** Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by demolition operations. Comply with Section 013233 "Photographic Documentation." Submit before the Work begins.

F. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

A. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

D. Pre-demolition Conference: Conduct conference at Historic Griffin Park @ 520 Callahan Drive, Orlando FL 32805

1. Inspect and discuss condition of construction to be demolished.
2. Review structural load limitations of existing structures.
3. Review and finalize the building demolition schedule and verify availability of demolition personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review and finalize protection requirements.
5. Review procedures for [**noise control**] [**and**] [**dust control**].
6. Review procedures for protection of adjacent buildings.
7. Review items to be salvaged and returned to Owner.

1.7 PROJECT CONDITIONS

A. Buildings to be demolished will be vacated and their use discontinued before start of the Work.

B. Buildings immediately adjacent to demolition area will be occupied. Conduct building demolition so operations of occupied buildings will not be disrupted.

1. Provide not less than seventy-two hours' notice of activities that will affect operations of adjacent occupied buildings.
2. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.

a. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.

C. Owner assumes no responsibility for buildings and structures to be demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
2. Before building demolition, Owner will remove the following items:

a. _____

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work.
2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

E. Hazardous Materials: Hazardous materials are present in buildings and structures to be demolished. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.

1. Hazardous material remediation is specified elsewhere in the Contract Documents.
2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
3. Owner will provide material safety data sheets for materials that are known to be present in buildings and structures to be demolished because of building operations or processes performed there.

F. On-site storage or sale of removed items or materials is not permitted.

1.8 COORDINATION

A. Arrange demolition schedule so as not to interfere with [**Owner's on-site operations**] [**or**] [**operations of adjacent occupied buildings**].

PART 2 - PRODUCTS[**(Not Used)**]

2.1 SOIL MATERIALS

A. Satisfactory Soils: Comply with requirements in Section 312000 "Earth Moving."

PART 3 - EXECUTION

3.1 DEMOLITION CONTRACTOR

A. Demolition Contractor:

1. Name:_____

3.2 EXAMINATION

A. Verify that utilities have been disconnected and capped before starting demolition operations.

B. Review Project Record Documents of existing construction provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.

C. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage operations. Comply with Section 013233 "Photographic Documentation."

D. Professional engineer to perform an engineering survey of condition of building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of structure or adjacent structures during building demolition operations.

1. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.

E. Verify that hazardous materials have been remediated before proceeding with building demolition operations.

3.3 PREPARATION

A. Refrigerant: Remove refrigerant from mechanical equipment according to 40 CFR 82 and regulations of authorities having jurisdiction before starting demolition.

B. Existing Utilities: Locate, identify, disconnect, and seal or cap off indicated utilities serving buildings and structures to be demolished.

1. Owner will arrange to shut off indicated utilities when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. If removal, relocation, or abandonment of utility services will affect adjacent occupied buildings, then provide temporary utilities that bypass buildings and structures to be demolished and that maintain continuity of service to other buildings and structures.
4. Cut off pipe or conduit a minimum of 24 inches (610 mm) below grade. Cap, valve, or plug and seal the remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.

C. Existing Utilities: See plumbing and electrical Sections for shutting off, disconnecting, removing, and sealing or capping utilities. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

D. Temporary Shoring: Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent unexpected movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during the progress of demolition.

E. Salvaged Items: Comply with the following:

1. Clean salvaged items of dirt and demolition debris.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.4 PROTECTION

A. Existing Facilities: Protect adjacent walkways, loading docks, building entries, and other building facilities during demolition operations. Maintain exits from existing buildings.

B. Existing Utilities: Maintain utility services to remain and protect from damage during demolition operations.

1. Do not interrupt existing utilities serving adjacent occupied or operating facilities unless authorized in writing by Owner and authorities having jurisdiction.
2. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and authorities having jurisdiction.

a. Provide at least seventy-two hours' notice to occupants of affected buildings if shutdown of service is required during changeover.

C. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction and as indicated. Comply with requirements in Section 015000 "Temporary Facilities and Controls."

1. Protect adjacent buildings and facilities from damage due to demolition activities.
2. Protect existing site improvements, appurtenances, and landscaping to remain.

3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
5. Provide protection to ensure safe passage of people around building demolition area and to and from occupied portions of adjacent buildings and structures.
6. Protect walls, windows, roofs, and other adjacent exterior construction that are to remain and that are exposed to building demolition operations.
7. Erect and maintain dustproof partitions and temporary enclosures to limit dust, noise, and dirt migration to occupied portions of adjacent buildings.

D. Remove temporary barriers and protections where hazards no longer exist. Where open excavations or other hazardous conditions remain, leave temporary barriers and protections in place.

3.5 DEMOLITION, GENERAL

A. General: Demolish indicated buildings[**and site improvements**] completely. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Do not use cutting torches until work area is cleared of flammable materials. Maintain portable fire-suppression devices during flame-cutting operations.
2. Maintain fire watch during and for at least <**Insert number**> hours after flame cutting operations.
3. Maintain adequate ventilation when using cutting torches.
4. Locate building demolition equipment and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.

B. Engineering Surveys: During demolition, perform surveys to detect hazards that may result from building demolition activities.

C. Site Access and Temporary Controls: Conduct building demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, walkways, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.
2. Use water mist and other suitable methods to limit spread of dust and dirt. Comply with governing environmental-protection regulations. Do not use water when it may damage adjacent construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

D. Explosives: Use of explosives is not permitted.

3.6 DEMOLITION BY MECHANICAL MEANS

A. Proceed with demolition of structural framing members systematically, from higher to lower level. Complete building demolition operations above each floor or tier before disturbing supporting members on the next lower level.

B. Remove debris from elevated portions of the building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

1. Remove structural framing members and lower to ground by method suitable to minimize ground impact and dust generation.

C. Salvage: Items to be removed and salvaged are indicated on Drawings.

D. Below-Grade Construction: Abandon foundation walls and other below-grade construction. Cut below-grade construction flush with grade.

E. Below-Grade Construction: Demolish foundation walls and other below-grade construction that are within footprint of new construction and extending [**5 feet (1.5 m)**] footprint indicated for new construction. Abandon below-grade construction outside this area.

1. Remove below-grade construction, including basements, foundation walls, and footings, completely.

F. Below-Grade Construction: Demolish foundation walls and other below-grade construction.

1. Remove below-grade construction, including basements, foundation walls, and footings, completely.

G. Existing Utilities: Abandon existing utilities and below-grade utility structures. Cut utilities flush with grade.

H. Existing Utilities: Demolish existing utilities and below-grade utility structures that are within [**5 feet (1.5 m)**] outside footprint indicated for new construction. Abandon utilities outside this area.

1. Fill abandoned utility structures with satisfactory soil materials according to backfill requirements in Section 312000 "Earth Moving."
2. Piping: Disconnect piping at unions, flanges, valves, or fittings.
3. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

I. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.

1. Piping: Disconnect piping at unions, flanges, valves, or fittings.
2. Wiring Ducts: Disassemble into unit lengths and remove plug-in and disconnecting devices.

3.7 DEMOLITION BY EXPLOSIVES

A. Explosives: Perform explosive demolition according to governing regulations.

1. Obtain written permission from authorities having jurisdiction before bringing explosives to, or using explosives on, Project site.
2. Do not damage adjacent structures, property, or site improvements when using explosives.

B. Comply with recommendation in specialty explosives consultant's report.

3.8 SITE RESTORATION

A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.

B. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations with satisfactory soil according to backfill requirements in Section 312000 "Earth Moving."

C. Site Grading: Uniformly rough grade area of demolished construction to a smooth surface, free from irregular surface changes. Provide a smooth transition between adjacent existing grades and new grades.

3.9 REPAIRS

A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.10 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove demolition waste materials from Project site and legally dispose of them in an EPA-approved landfill acceptable to authorities having jurisdiction. See Section 017419 "Construction Waste Management and Disposal" for recycling and disposal of demolition waste.

1. Do not allow demolished materials to accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Do not burn demolished materials.

3.11 CLEANING

A. Clean adjacent structures and improvement of dust, dirt, and debris caused by building demolition operations. Return adjacent areas to condition existing before building demolition operations began.

1. Clean roadways of debris caused by debris transport.

END OF SECTION

SECTION 02050

DEMOLITION

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes: All work necessary for the removal and disposal of buildings, structures, foundations, piping, equipment and roadways, or any part thereof including masonry, steel, reinforced concrete, plain concrete, electrical facilities, and any other material or equipment shown or specified to be removed.

B. Basic Procedures and Schedule: Carry out demolition so that adjacent structures, which are to remain, are not endangered. Schedule the work so as not to interfere with the day to day operation of the existing facilities. Do not block doorways or passageways in existing facilities.

C. Additional Requirements: Provide dust control and make provisions for safety.

1.2 SUBMITTALS

A. Provide all submittals, including the following, as specified in Division 1.

B. Site Inspection: Visit the site and inspect all existing structures. Observe and record any defects which may exist in buildings or structures adjacent to but not directly affected by the demolition work. Provide the OWNER with a copy of this inspection record and obtain the (ENGINEER's) (OWNER's) approval prior to commencing the demolition.

1.3 QUALITY ASSURANCE

A. Limits: Exercise care to break concrete well for removal in reasonably small masses. Where only parts of a structure are to be removed, cut the concrete along limiting lines with a suitable saw so that damage to the remaining structure is held to a minimum.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.1 EXAMINATION OF EXISTING DRAWINGS

A. Drawings of existing structures and equipment will be available for inspection at the office of the (ENGINEER) (OWNER).

3.2 PROTECTION

A. General Safety: Provide warning signs, protective barriers, and warning lights as necessary adjacent to the work as approved or required. Maintain these items during the demolition period.

B. Existing Services: Undertake no demolition work until all mechanical and electrical services affected by the work have been properly disconnected. Cap, reroute or reconnect interconnecting piping or electrical services that are to remain in service either permanently or temporarily in a manner that will not interfere with the operation of the remaining facilities.

C. Hazards: Perform testing and air purging where the presence of hazardous chemicals, gases, flammable materials or other dangerous substances is apparent or suspected, and eliminate the hazard before demolition is started.

3.3 DEMOLITION REQUIREMENTS

A. Explosives: The use of explosives will not be permitted.

B. Protection: Carefully protect all mechanical and electrical equipment against dust and debris.

C. Removal: Remove all debris from the structures during demolition and do not allow debris to accumulate in piles.

D. Access: Provide safe access to and egress from all working areas at all times with adequate protection from falling material.

E. Protection: Provide adequate scaffolding, shoring, bracing railings, toe boards and protective covering during demolition to protect personnel and equipment against injury or damage. Cover floor openings not used for material drops with material substantial enough to support any loads placed on it. Properly secure the covers to prevent accidental movement.

F. Lighting: Provide adequate lighting at all times during demolition.

G. Closed Areas: Close areas below demolition work to anyone while removal is in progress.

H. Material Drops: Do not drop any material to any point lying outside the exterior walls of the structure unless the area is effectively protected.

3.4 DISPOSAL OF MATERIALS

A. Final Removal: Remove all debris, rubbish, scrap pieces, equipment, and materials resulting from the demolition unless otherwise indicated. Take title to all demolished materials and remove such items from the site.

B. OWNER's Property: In addition to any items which may be shown, the following items remain the property of the OWNER. Remove carefully, without damage, all items listed or shown, and stockpile as directed.

END OF SECTION

(NO TEXT FOR THIS PAGE)

SECTION 02070
SELECTIVE DEMOLITION

PART 1 – GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.02 DESCRIPTION OF WORK

A. This Section includes the following:

1. Demolition and removal of selected portions of a building.
2. Demolition and removal of selected site elements.
3. Patching and repairs.

1.03 RELATED SECTIONS

A. Division 1 Section "Summary of Work" for use of the building and phasing requirements.

B. Division 1 Section "Cutting and Patching" for cutting and patching procedures for selective demolition operations.

C. Division 1 Section "Construction Facilities and Temporary Controls" for temporary utilities, temporary construction and support facilities, temporary security and protection facilities, and environmental protection measures for selective demolition operations.

D. Division 1 Section "Contract Closeout" for record document requirements.

E. Division 2 Section "Building Demolition" for demolition of buildings, structures, and site improvements.

F. Division 2 Section "Site Clearing" for site clearing and removing above- and below-grade improvements.

G. Division 2 Section "Earthwork" for soil materials, excavating, backfilling, and site grading.

H. Division 6 Section "Rough Carpentry" for material and construction requirements for temporary enclosures.

I. Division 9 Section "Gypsum Board Assemblies" for material and construction requirements for temporary enclosures.

J. Division 15 Sections for cutting, patching, or relocating mechanical items.

K. Division 16 Sections for cutting, patching, or relocating electrical items.

1.04 DEFINITIONS

A. Remove: Remove and legally dispose of items except those indicated to be reinstalled, salvaged, or to remain the Owner's property.

B. Remove and Salvage: Items indicated to be removed and salvaged remain the Owner's property. Remove, clean, and pack or crate items to protect against damage. Identify contents of containers and deliver to Owner's designated storage area.

C. Remove and Reinstall: Remove items indicated; clean, service, and otherwise prepare them for reuse; store and protect against damage. Reinstall items in the same locations or in locations indicated.

D. Existing to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by the Architect, items may be removed to a suitable, protected storage location during selective demolition and then cleaned and reinstalled in their original locations.

1.05 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain the Owner's property, demolished materials shall become the Contractor's property and shall be removed from the site with further disposition at the Contractor's option.

B. Historical items indicated remain the Owner's property. Carefully remove and salvage each item in a manner to prevent damage and deliver promptly to the Owner.

C. Historical items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to the Owner, which may be encountered during selective demolition, remain the Owner's property. Carefully remove and salvage each item or object in a manner to prevent damage and deliver promptly to the Owner.

1. Cooperate with Owner's archaeologist or historical adviser.

1.06 SUBMITTALS

A. General: Submit each item in this Article according to the Conditions of the Contract and Division 1 Specification Sections, for information only, unless otherwise indicated.

B. Proposed dust-control measures.

C. Proposed noise-control measures.

D. Schedule of selective demolition activities indicating the following:

1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity.
2. Interruption of utility services.
3. Coordination for shutoff, capping, and continuation of utility services.
4. Use of elevator and stairs.
5. Detailed sequence of selective demolition and removal work to ensure uninterrupted progress of Owner's on-site operations.
6. Coordination of Owner's continuing occupancy of portions of existing building and of Owner's partial occupancy of completed Work.
7. Locations of temporary partitions and means of egress.

E. Inventory of items to be removed and salvaged.

F. Inventory of items to be removed by Owner.

G. Photographs or videotape, sufficiently detailed, of existing conditions of adjoining construction and site improvements that might be misconstrued as damage caused by selective demolition operations.

H. Record drawings at Project closeout according to Division 1 Section "Contract Closeout."

1. Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

I. Landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

1.07 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage an experienced firm that has successfully completed selective demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.

C. Predemolition Conference: Conduct conference at Project site to comply with preinstallation conference requirements of Division 1 Section "Project Meetings."

1.08 PROJECT CONDITIONS

A. Owner will occupy portions of the building immediately adjacent to selective demolition area. Conduct selective demolition so that Owner's operations will not be disrupted. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.

B. Owner assumes no responsibility for actual condition of buildings to be selectively demolished.

1. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Asbestos: It is not expected that asbestos will be encountered in the Work. If any materials suspected of containing asbestos are encountered, do not disturb the materials. Immediately notify the Architect and the Owner.

1. Asbestos will be removed by Owner before start of Work.

D. Asbestos: Asbestos is present in the building to be selectively demolished. A report on the presence of asbestos is on file for review and use. Examine the report to become aware of locations where asbestos is present.

1. Asbestos abatement is specified elsewhere in the Contract Documents.
2. Do not disturb asbestos or any material suspected of containing asbestos except under the procedures specified elsewhere in the Contract Documents.

E. Storage or sale of removed items or materials on-site will not be permitted.

1.09 SCHEDULING

A. Arrange selective demolition schedule so as not to interfere with Owner's on-site operations.

1.10 WARRANTY

A. Existing Special Warranty: Remove, replace, patch, and repair materials and surfaces cut or damaged during selective demolition, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.01 REPAIR MATERIALS

A. Use repair materials identical to existing materials.

1. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
2. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

D. When unanticipated mechanical, electrical, or structural elements that conflict with the intended function or design are encountered, investigate and measure the nature and extent of the conflict. Promptly submit a written report to the Architect.

E. Survey the condition of the building to determine whether removing any element might result in structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during selective demolition.

F. Perform surveys as the Work progresses to detect hazards resulting from selective demolition activities.

3.02 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

1. Do not interrupt existing utilities serving occupied or operating facilities, except when authorized in writing by Owner and authorities having jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to Owner and to governing authorities.
   a. Provide not less than 72 hours' notice to Owner if shutdown of service is required during changeover.

B. Utility Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services serving building to be selectively demolished.

1. Owner will arrange to shut off indicated utilities when requested by Contractor.
2. Arrange to shut off indicated utilities with utility companies.
3. Where utility services are required to be removed, relocated, or abandoned, provide bypass connections to maintain continuity of service to other parts of the building before proceeding with selective demolition.
4. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit after bypassing.

C. Utility Requirements: Refer to Division 15 and 16 Sections for shutting off, disconnecting, removing, and sealing or capping utility services. Do not start selective demolition work until utility disconnecting and sealing have been completed and verified in writing.

3.03 PREPARATION

A. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with selective demolition operations.

B. Employ a certified, licensed exterminator to treat building and to control rodents and vermin before and during selective demolition operations.

C. Conduct demolition operations and remove debris to ensure minimum interference with roads, streets, walks, and other adjacent occupied and used facilities.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

D. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around selective demolition area.

1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
2. Protect existing site improvements, appurtenances, and landscaping to remain.
3. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line of groups of trees to remain.
4. Provide temporary weather protection, during interval between demolition and removal of existing construction, on exterior surfaces and new construction to ensure that no water leakage or damage occurs to structure or interior areas.
5. Protect walls, ceilings, floors, and other existing finish work that are to remain and are exposed during selective demolition operations.
6. Cover and protect furniture, furnishings, and equipment that have not been removed.

E. Erect and maintain dustproof partitions and temporary enclosures to limit dust and dirt migration and to separate areas from fumes and noise.

1. Construct dustproof partitions of not less than nominal 3 5/8-inch studs, 5/8-inch gypsum wallboard with joints taped on occupied side, and 1/2-inch fire-retardant plywood on the demolition side.
2. Insulate partition to provide noise protection to occupied areas.
3. Seal joints and perimeter. Equip partitions with dustproof doors and security locks.
4. Protect air-handling equipment.
5. Weatherstrip openings.

F. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of building to be selectively demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.04 POLLUTION CONTROLS

A. Use water mist, temporary enclosures, and other suitable methods to limit the spread of dust and dirt. Comply with governing environmental protection regulations.

1. Do not use water when it may damage existing construction or create hazardous or objectionable conditions, such as ice, flooding, and pollution.

B. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

1. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level.

C. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before start of selective demolition.

3.05 SELECTIVE DEMOLITION

A. Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete Work within limitations of governing regulations and as follows:

1. Proceed with selective demolition systematically, from higher to lower level. Complete selective demolition work above each floor or tier before disturbing supporting members on lower levels.
2. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. To minimize disturbance of adjacent surfaces, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Temporarily cover openings to remain.
3. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.
4. Do not use cutting torches until work area is cleared of flammable materials. At concealed spaces, such as duct and pipe interiors, verify condition and contents of hidden space before starting flame-cutting operations. Maintain portable fire-suppression devices during flame-cutting operations.
5. Maintain adequate ventilation when using cutting torches.

6. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.
7. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
8. Locate selective demolition equipment throughout the structure and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
9. Dispose of demolished items and materials promptly. On-site storage or sale of removed items is prohibited.
10. Return elements of construction and surfaces to remain to condition existing before start of selective demolition operations.

B. Demolish concrete and masonry in small sections. Cut concrete and masonry at junctures with construction to remain, using power-driven masonry saw or hand tools; do not use power-driven impact tools.

C. Break up and remove concrete slabs on grade, unless otherwise shown to remain.

D. Remove resilient floor coverings and adhesive according to recommendations of the Resilient Floor Covering Institute's (RFCI) "Recommended Work Practices for the Removal of Resilient Floor Coverings" and Addendum.
1. Remove residual adhesive and prepare substrate for new floor coverings by one of the methods recommended by RFCI.

E. Remove no more existing roofing than can be covered in one day by new roofing. See applicable Division 7 Section for new roofing requirements.

F. Remove air-conditioning equipment without releasing refrigerants.

3.06 PATCHING AND REPAIRS

A. Promptly patch and repair holes and damaged surfaces caused to adjacent construction by selective demolition operations.

B. Patching is specified in Division 1 Section "Cutting and Patching."

C. Where repairs to existing surfaces are required, patch to produce surfaces suitable for new materials.
1. Completely fill holes and depressions in existing masonry walls to remain with an approved masonry patching material, applied according to manufacturer's printed recommendations.

D. Restore exposed finishes of patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.

E. Patch and repair floor and wall surfaces in the new space where demolished walls or partitions extend one finished area into another. Provide a flush and even surface of uniform color and appearance.
1. Closely match texture and finish of existing adjacent surface.
2. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

3. Where patching smooth painted surfaces, extend final paint coat over entire unbroken surface containing the patch after the surface has received primer and second coat.
4. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
5. Inspect and test patched areas to demonstrate integrity of the installation, where feasible.

F. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.07 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

B. Burning: Do not burn demolished materials.

C. Burning: Burning of demolished materials will be permitted only at designated areas on Owner's property, providing required permits are obtained. Provide full-time monitoring for burning materials until fires are extinguished.

D. Disposal: Transport demolished materials and dispose of at designated spoil areas on Owner's property.

E. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.08 CLEANING

A. Sweep the building broom clean on completion of selective demolition operation.

B. Change filters on air-handling equipment on completion of selective demolition operations.

3.09 SELECTIVE DEMOLITION SCHEDULE

A. Remove the following:

B. Remove and salvage the following:

C. Remove and reinstall the following:

END OF SECTION