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1. PROJECT DESCRIPTION: This is a Design-Build (DB) project to "Repair Vertical Transportation Equipment Systems At the Various Locations". The Contractor must furnish labor, materials, equipment, transportation and supervision necessary to perform this project. The Contractor must provide and secure this construction, complete and ready for use. The Contractor must perform work required under this contract, as indicated in this document specification and attached drawings.

1.1 Design: All design work must be included in the contract price. The design must fully accommodate usage requirements of the facilities, minimize interference with existing work, and be suitable for the site. All design work must be in accordance with applicable criteria. Minimum technical requirement must be as specified in Paragraph 2 "ENGINEERING SYSTEMS REQUIREMENTS." The Government must not be responsible for any additional costs incurred by the Contractor which could have been avoided through an appropriate contractor's design.

1.2 Work Descriptions:

1.2.1 Mechanical Work:

1.2.1.1 Base Work: Repair and modified existing elevator systems in following buildings in conformity to work descriptions shown on Conceptual Drawings.

Building No.	Elevator ID	Manufacturer of Existing Elevator
16	EL-M1	OTIS
35	EL-M57	DAIKO
98	EL-M31	OTIS
100	EL-M2	OTIS
132	EL-M39	OTIS
151	EL-M25	OTIS
151	EL-M26	OTIS
200	EL-M4	OTIS
200	EL-M5	OTIS
311	EL-M49	DAIKO
480	EL-M55	DAIKO
480	EL-M56	DAIKO
487	EL-M50	DAIKO
487	EL-M51	DAIKO
1653	EL-M21	OTIS
6056	EL-M52	MORIYA YUSOKI KOUGYO

1.2.1.2 Option 1 Work: Repair and modified existing elevator systems in following buildings in conformity to work descriptions shown on Conceptual Drawings.

Building No.	Elevator ID	Manufacturer of Existing Elevator
5035	EL-H16	DAIKO
5035	EL-H17	DAIKO

1.2.2 Electrical Work:

(1) Perform necessary electrical work associated to repair/modification work of elevator systems by Mechanical Work.

1.3 Project Schedule: Within the overall project schedule, the Contractor must complete the work within the period as stated below and in accordance with the overall MACC.

a. Total Contract Performance Period: Maximum 800 calendar days for performance of base contract.

(1) When the Option 1 is exercised, 60 calendar days will be added to total contract performance period.

NOTE: Commencement of Site Work will be allowed after Final Design Approval (Overall / Phase).

b. Allow 21 calendar days at each Government review stage.

1.3.1 Required Design Submittals: The Project Schedule must include the following Design Submittal Packages.

a. Design Development 60% in-progress

b. Prefinal (100%) Design

c. Final Design

Note:
1. Federal holidays will be considered non-working days for Government personnel in reviewing design submittals.
2. The time period between December 29th and January 3rd will be considered non-working time for Government personnel in reviewing design submittals.
3. The Contractor must submit applicable sections of the Accident Prevention Plan (APP), including organization chart and emergency contact procedures, Activity Hazard Analysis (AHA) and Design Quality Control (DQC) Plan to obtain the approval of Government prior to commencement of the on-site survey and Design Work.
4. Design Progress Meeting may be convened at Government Reviews of preliminary and/or pre-final design submissions to conform to the project requirements in the discretion of the Contracting Officer. Submit three copies of each submittal and one set of electronic files of those submittals on CD or DVD, unless otherwise specified.

1.4 Governmental Requirements for Key Personnel:

The following subparagraph(s) includes particular or supplemental requirements for Key Personnel. Requirements other than the requirements specified in the following subparagraph(s) herein must meet the requirements specified in MACC Master Specification.

1.4.1 Particular Requirements for QC Manager, On-site Construction Superintendent and SSHO:

a. SSHO must have a minimum of 5 years safety work of a progressive nature with at least 5 years of experience on similar projects.

b. The On-site Construction Superintendent cannot be the QC Manager on this project.

c. The On-site Construction Superintendent cannot be the SSHO on this project.

d. The SSHO cannot be the QC Manager on this project.

1.4.2 Requirements of Personnel Qualifications for DQC Manager: The Contractor must comply with the following requirements.

a. The DQC Manager must have one of the following licenses;

(1) Registered Architect (RA);

(2) Professional Engineer (PE);

(3) One of the following Japanese Licenses;

(a) Mechanical, Electrical and Plumbing (MEP) 1st-class Architect ("Setsubi Sekkei Ikkyu Kenchiku-shi ");

(b) 1st-class Architect ("Ikkyu Kenchiku-shi");

(c) Professional Engineer ("Gijutsu-shi");

(d) Building Mechanical and Electrical Engineer ("Kenchiku Setsubi-shi").

b. The DQC Manager must have a minimum of 5 years' experience as a design Architect or Engineer on similar size and type designs or DB contracts.

1.4.3 Requirements of Personnel Qualifications for DQC Specialist(s):

1.4.3.1 Mechanical Work: In case the qualifications possessed by the DQC Manager do not cover the area of responsibilities in this discipline specified in this task order, the Contractor must provide a DQC Specialist for this discipline separately from the DQC Manager.

a. The DQC Specialist must have one of the following licenses suitable for this discipline:

(1) Professional Engineer (PE);

(2) One of the following Japanese Licenses;

(a) MEP 1st-class Architect ("Setsubi Sekkei Ikkyu Kenchiku-shi");

(b) Professional Engineer ("Gijutsu-shi");

(c) Building Mechanical and Electrical Engineer ("Kenchiku Setsubi-shi").

b. The DQC Specialist must have a minimum of 5 years' experience engaged in this discipline and as an Engineer on similar size and type designs.

1.4.3.2 Electrical Work: In case the qualifications possessed by the DQC Manager do not cover the area of responsibilities in this discipline specified in this task order, the Contractor must provide a DQC Specialist for this discipline separately from the DQC Manager.

a. The DQC Specialist must have one of the following licenses suitable for this discipline:

(1) Professional Engineer (PE);

(2) One of the following Japanese Licenses;

(a) MEP 1st-class Architect ("Setsubi Sekkei Ikkyu Kenchiku-shi");

(b) Professional Engineer ("Gijutsu-shi");

(c) Building Mechanical and Electrical Engineer ("Kenchiku Setsubi-shi").

b. The DQC Specialist must have a minimum of 5 years' experience engaged in this discipline and as an Engineer on similar size and type designs.

1.4.4 Requirements of Personnel Qualifications for DOR(s): The Contractor must comply with the following requirements.

1.4.4.1 Mechanical Work:

a. The DOR must have one of the following licenses suitable for this discipline:

(1) Professional Engineer (PE);

(2) One of the following Japanese Licenses;

(a) MEP 1st-class Architect ("Setsubi Sekkei Ikkyu Kenchiku-shi");

(b) Professional Engineer ("Gijutsu-shi");

(c) Building Mechanical and Electrical Engineer ("Kenchiku Setsubi-shi").

b. The DOR must have a minimum of 5 years' experience engaged in this discipline and as an Engineer on similar size and type designs.

c. The DOR must stamp or sign per their drawing within the limitations of the above license.

1.4.4.2 Electrical Work:

a. The DOR must have one of the following licenses suitable for this discipline:

(1) Professional Engineer (PE);

(2) One of the following Japanese Licenses;

(a) MEP 1st-class Architect ("Setsubi Sekkei Ikkyu Kenchiku-shi");

(b) Professional Engineer ("Gijutsu-shi");

(c) Building Mechanical and Electrical Engineer ("Kenchiku Setsubi-shi").

b. The DOR must have a minimum of 5 years' experience engaged in this discipline and as an Engineer on similar size and type designs.

c. The DOR must stamp or sign per their drawing within the limitations of the above license.

1.4.4.3 Relationship: The DOR cannot serve as the DQC Manager on this project. The DOR can serve as the DQC Specialist, provided all requirements of both positions can be met.

2. ENGINEERING SYSTEMS REQUIREMENTS:

2.1 Government-Furnished Material and Equipment (GFME): Not applicable. Also, the Government will not allow for the Contractor's workers to operate government cranes.

2.2 Availability of Utilities Services: The Clause "NFAS 5252.236-9304, UTILITIES FOR CONSTRUCTION AND TESTING" applies. However, any utilities of Government sources will not be made available to the Contractor.

2.3 Materials and Equipment to Be Salvaged: Existing materials and equipment listed below must be removed but will remain the property of the Government. Remove and handle the material and equipment without damage and deliver to the Government. All materials to be delivered into one turn-in place must be transported and delivered to turn-in place at one time.

2.3.1 The materials and equipment to be salvaged must be delivered at work site as Hazardous Wastes .

MATERIALS AND EQUIPMENT	QUANTITY&UNIT
a. Type I waste of ACM, if asbestos is found by sample analysis	1 lot

b. Wastes generated by ACM abatement work (including glovebags, cloths, rags)	1 lot
c. Coats/Materials contained lead or cadmium or chromium (VI), if lead or cadmium or chromium (VI) is found by sample analysis	1 lot
d. Wastes generated by lead, cadmium, chromium (VI) abatement/removal work (including glovebags, cloths, rags)	1 lot

Note 1: Items to be delivered at work site must be sorted out, and must be packed into the container(s) prepared by the Government.

Note 2: The Contractor must coordinate setting up the container(s) with the Contracting Officer at least seven working days prior to planned setting up date.

Note 3: The Contractor must fill required data in the document provided by the Government and must submit that document for the Contracting Officer's approval at least seven working days prior to planned delivery date.

Note 4: For ACM waste as specified in paragraph 2.9.3.1, only type I waste of ACM is listed. However, even if ACM waste is categorized as Type II waste, the ACM waste packed in glovebag must be treated as Type I waste.

2.4 Design Requirements: Design new facilities in accordance with the publications and guides listed below. References listed will be available at the Design Section, Project Management and Engineering Branch, FEAD via the Contracting Officer, in Bldg. 200 for review.

2.4.1 References for All/General Work:

a. National Fire Protection Association (NFPA) Publication (including National Electrical Code and National Fire Alarm and Signaling Code)
b. OSHA Regulations
c. U.S. Army Corps of Engineers Safety and Health Requirements Manual EM-385-1-1
d. Unified Facilities Guide Specifications (UFGS)
e. Unified Facilities Criteria (UFC)
f. "Standard Specifications for Government Buildings Construction Work", "Standard Specifications for Government Buildings Repair Work" and "Standard Drawings", supervising by Government Buildings Department, Minister’s Secretariat, Ministry of Land, Infrastructure, Transport and Tourism (MLIT), Government of Japan
g. Japanese Industrial Standards (JIS)
h. DOD Japanese Environmental Governing Standards (JEGS)

2.4.2 Publications and Guides for Mechanical Work:

a. ASME A17.1, "Safety Code for Elevators and Escalators"
b. ASME A17.2, "Guide for Inspection of Elevators, Escalators, and Moving Walks"
c. International Building Code (IBC)

2.5 Design Submittals: Design submittals which must be submitted at each stage of preliminary (60%), Pre-final (100%), and final must include design identifying the work to be done, work layout and the equipment selected, including necessary design drawings, samples, catalog cuts and calculation sheets. The Contractor must submit adequate submittals of all design items. All correspondence and submittals must be submitted in English (These may be submitted in Japanese with translation in English). The submittal items listed below are provided as the reference of special caution for necessary submittals, but necessary submittals must not be limited to the items listed below.

Note: The Contractor must prepare and present design drawings in accordance with NAVFACFE Capital Improvements CAD Standards Manual. The Contractor must confirm there is/are any latest version(s) at the time of

actual use and follow the guidance of the Contracting Officer.

2.5.1 SD-02, Design/Shop Drawings: All fabrication and/or installation details and drawings necessary to explain details of the work to be done and necessary to perform future maintenance/repair work must be submitted.

2.5.2 SD-03, Product Data: All Product Data for the materials/equipment to be used under this contract must be submitted.

2.5.3 SD-04, Samples: All Samples for the materials/equipment to be used under this contract must be submitted.

2.5.4 SD-05, Design Data: All Design Data necessary to explain details of design and to perform future maintenance/repair work must be submitted. The items listed below are the part of Design Data required.

a. Basis of Design
b. Planned luminance distribution maps by new lighting fixtures

2.5.5 SD-07, Certificates: Submit copy of all certificates and licenses required to perform the contractual work. The items listed below are the part of Certificates required.

a. Certificates of Compliance: Submit a certificate from the manufacturer stating that the product conforms to requirements of the referenced specification, such as certifications of lead and/or asbestos quantities contained in each material. Also, additional one set of copy is required to submit.
b. Certificates of Fire Facilities Installer (SHOUBOU SETSUBI-SI)
c. Certificates of Fire Protection Engineer
d. Certificate of inspection or calibration of measuring instruments to be used under mechanical work
e. Certificates of Technician for Fabrication/Installation of Electric Cabinet/Panelboard/Equipment/Device (Fabrication Work for Panelboard, Control Panel and Enclosure/Cabinet), "DENKI KIKI KUMITATE GINOUSHI", prescribed in Vocational Faculty Development Promotion Law ("SYOKUGYO NORYOKU KAIHATSU SOKUSHIN HO") of Ministry of Labor
f. Licenses by the prefectural governor or a local government entity for Industrial Waste transportation, treatment and/or disposal.

2.5.6 SD-08, Manufacturer's Instructions: Submit all instructions prepared by manufacturer required to perform the contractual work. The items listed below are the part of Certificates required.

a. Manufacturer's Safety Data Sheets: Submit for coatings, solvents, sealants/caulking, and other potentially hazardous materials, as defined in the Japanese Labor, Safety and Sanitation Law and Japanese Regulation of Organic Solvent Toxication Prevention. If the original SDS is written in English, provide the SDS translated into Japanese in addition.

2.6 Materials: All materials and devices/tools to be used under this contract must be furnished by the Contractor. All materials must be approved in accordance with requirements specified in this document and Contract Drawings. Unless otherwise specified in this document or Contract Drawings, materials to be used under this contract must be the materials conforming to the applicable requirements of Japanese Industrial Standards (JIS). In case material conforming to JIS is not available, submit data and applicable standards/regulations of the material for the Contracting Officer's approval. All materials must be new except where indicated as existing or reused.

2.6.1 General Material Requirements: Unless otherwise specified, materials requirements specified in Government reference contract package must be applied.

2.6.1.1 Do not use materials having a lead content over 0.06 percent by weight of nonvolatile content, and 0.009 percent by weight of nonvolatile content at housing, CDC, youth center and school. Do not use paints with any content of cadmium and chromium (VI). Do not use paints containing ACGIH 0100 confirmed human carcinogens (A1) and suspected human carcinogens (A2). Also, all materials to be used under this contract must be Non-asbestos type (Asbestos contained; not more than 0.1 percent by weight). For each materials furnished, submit a certificate from the manufacturer stating that the product conforms to requirements, such as certifications of quantities contained in materials.

2.6.2 Materials for Mechanical Work: Unless otherwise specified in the specification and drawing, Paragraph 2.6 must be applied.

2.6.3 Materials for Electrical Work: Unless otherwise specified, requirements for electrical materials to be used under this contract must conform to MLIT "Standard Specifications for Government Buildings Construction Work (Electrical Facility Work)", and locally prepared technical document "Construction Guide Lines, Volume E-001: Electric Cabinets/Panelboards (600V nominal or less)" must be referred as supplementary document.

2.6.3.1 Radio Fire Alarm Addressable Panels: UL Listed. Must be able to communicate with existing receiver of radio fire alarm system in Bldg. 222.

2.6.3.2 Receptacles for Sump Pump: GFCI type.

2.6.3.3 Lighting Fixtures: Must be LED type. New lighting fixtures must have standard commercial warranty by the manufacturer for a period of five years from date of provision.

2.6.3.4 Fabrication of new enclosure boxes for shunt trip device and pull boxes must be performed in conformity to "Construction Guide Lines, Volume E-001: Electric Cabinets/Panelboards (600V nominal or less)", by the Contractor's personnel which is including at least one person who has a certificate of Second Grade Technician for Fabrication/Installation of Electric Cabinet/Panelboard/Equipment/Device (Fabrication Work for Panelboard, Control Panel and Enclosure/Cabinet), "NIKYU DENKI KIKI KUMITATE GINOUSHI", or higher grade.

a. Color of finish coat must be L22-85D in accordance with Standard Color Samples of Japan Paint Manufacturer's Association.

2.7 Restrictions on Operations:

2.7.1 Restrictions Upon Interrupting Activity Operations: The Contractor must be working in/on/around existing building that is occupied. The building will remain in operation during the entire construction period. The Contractor must conduct his operations so as to cause the least possible interference with normal operations of the activity.

2.7.1.1 Occupied Buildings: Do not enter buildings without prior approval of the Contracting Officer.

2.7.2 Restrictions Upon Interrupting Utility Services: If the Contractor requires interruption to utilities service, the Contractor must submit his interruption plan to the Contracting Officer for approval, at least 14 working days prior to actual interruption work, unless otherwise specified.

2.7.2.1 Electric power outages will be permitted in the period of the contract, upon the Contracting Officer's Approval.

a. Exact date and time frame of electric power outages must be coordinated and decided with the Contracting Officer. Approved duration of power outages must include cut-out work and electricity restoration work. The Contractor must be responsible to minimize the duration and frequency of electric power outages.

b. Necessary operations of electrical equipment for electric power outages must be performed by the Contractor's personnel.

2.8 General Execution Requirements:

2.8.1 At least 14 working days prior to commencement of site work, the Contractor must coordinate work schedule under this contract with the Contracting Officer, and submit Construction Work Schedule based upon that coordination for the Contracting Officer's approval.

2.8.2 The Contractor must perform site survey and measurements of site conditions, prior to actual contract work. The Contractor must prepare design/shop drawings to submit as submittal specified in Paragraph 2.5.1 and work drawings to perform the Contractor's site work, based on the results of site survey and these contract drawings.

2.8.3 During actual site work, the Contractor must provide off-limit procedures to close work site from the persons who are not related to the contractual work. Also, the Contractor must provide safety procedures, such as fences, signs and flashing lights.

2.8.4 Fire Protection: The Contractor must comply with the latest edition of the USACE EM 385-1-1 and activity fire prevention regulations.

2.8.4.1 In case the Contractor want to perform hot work, such as welding and cutting, or to operate other flame-producing/spark producing devices in the Akasaki POL Depot, area approval and permission for hot work must be obtained by submission of written documents including work schedules, work areas, work procedures and tools/equipment to be used, at least 14 working days prior to such work, because there are oil storage tanks and pipelines in work area.

2.8.5 Smoking: Smoking other than the area designated by the Contracting Officer is strictly prohibited.

2.8.6 The Contractor must restore any existing items or areas which have been damaged by the Contractor to existing or better condition before such damage.

2.8.7 The work site and surrounded area must be daily cleaned of trash and debris resulting from the work after the completion of daily work. Also, do not leave the materials and tools to be used under this contract at the work site after the completion of daily work.

2.8.8 Radiographic Testing: On all NAVFAC FE construction projects, radiographic testing is prohibited to conduct in the performance of the contract.

2.8.9 Confined Space: On the job sites and Facilities, the Contractor must assign a Confined Space Competent Person (CSCP) who has completed skill training course for operation chief of oxygen deficient/hydrogen sulfide (SANSO-KETSUBO AND RYUKA-SUISO KIKEN SAGYO SHUNIN-SHA GINO KOSHU) prescribed by the Ordinance on Prevention of Anoxia, etc., (SANSO-KETSUBO-TO YOBOUKISOKU) to identify all confined spaces and determine entry rules. Proof of qualification for a competent person for confined space to be submitted as submittals must include both of certifications of assignment and course completion. Also, assigned CSCP must have thorough knowledge of OSHA's Confined Space Standard, 29 CFR 1910.146, EM385-1-1 Section 34 and Japan Industrial Safety and Health Law, experience with Permit Required Confined Space (PRCS) entry procedures and the authority to supervise and direct work performance on job sites and in facilities.

2.8.10 Environmental Protection Plan: The Contractor must provide the Contracting Officer an Environmental Protection Plan to present an overview of known or potential environmental issues that must be considered and addressed during construction, using "CFAS Environmental Protection Plan (EPP)" template. The template can be obtained from PWD Environmental Division via the Contracting Officer. During Construction, the Contractor must identify, implement, and submit for approval any additional requirements to be included in the EPP.

2.9 Demolition and Removal: The work includes demolition or removal of all construction indicated or specified. All materials resulting from demolition work, except as indicated or specified otherwise, must become the property of the Contractor and must be removed from the limits of Government controlled area. Remove rubbish and debris from the work site, unless otherwise directed; do not allow accumulations inside or outside the buildings. Store materials which cannot be removed daily in areas specified by the Contracting Officer.

2.9.1 Demolition: Materials to be removed must be removed carefully so as not to damage material which is to remain. Existing work damaged by the Contractor's operations must be replaced with new work of the same construction. Sufficient safety precautions must be taken to protect all personnel from injury. The demolition work must be conducted so as not to interfere with the normal operations of the activity.

2.9.2 Dust and Debris Control: Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, ice, flooding, or pollution. Vacuum and dust the work area daily. Comply with all dust regulations imposed by local air pollution agencies.

2.9.3 Title to Materials: Except where indicated on the attached drawings, all materials and equipment removed, and not reused or salvaged, must become the property of the Contractor and must be removed from Government property. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Contracting Officer of the Contractor's demolition and removal procedures, and authorization by the Contracting Officer to begin demolition. The Government will not be responsible for the condition or loss of, or damage to, such property after date of award. Materials and equipment must not be viewed by prospective purchasers or sold on the site.

2.9.4 Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on streets or adjacent areas. Cleanup spillage from streets and adjacent areas. Comply with local hauling disposal regulations, Prefectural hauling disposal regulations and hauling disposal regulations of Government of Japan.

2.9.5 Submittal: Submit proposed demolition and removal procedures to the Contracting Officer for approval before the work is started. Procedures must provide for careful removal and disposition of materials, coordination with other work in progress, a disconnection schedule of utilities services, a detailed description of method and equipment to be used for each operation, and sequence of operations.

2.9.6 Disposal: Comply with local hauling and disposal regulations, Prefectural hauling and disposal regulations and hauling and disposal regulations of Government of Japan. The name of the waste generator and the location at which the waste was generated must be clearly indicated on the outside of each container. Prevent contamination of the transport vehicle.

2.9.6.1 Reuse: First consideration must be given to salvage for reuse since little or no re-processing is necessary for this method, and less pollution is created when items are reused in their original form. Sale or donation of waste suitable for reuse must be considered.

2.9.6.2 Recycle: Waste materials not suitable for reuse, but having value as being recyclable, must be made available for recycling whenever economically feasible. Arrange for timely pickups from the site or deliveries to recycling facilities in order to prevent contamination of recyclable materials. Recycle concrete aggregate, asphalt paving, soil materials, wood, lumber and etc, in accordance with latest guide-line of MLIT.

2.9.6.3 Waste Management Plan: The Contractor must provide the Contracting Officer a Solid Waste Management Plan in accordance with “CFAS Solid Waste Management Plan (SWMP)” template requirements. The template can be obtained from PWD Environmental Division via the Contracting Officer. The plan must comply with DoD/Navy policy and local management plans and instruction, and include a section for estimating waste streams the project is expected to generate (and associated quantities, costs and revenues), a disposal plan for each waste stream the project is estimated to produce, a template for disposal reports, and a waste characterization guide to ensure compatibility with DoD/Navy reporting requirements and waste information management at CFAS. Monthly disposal reports must be provided monthly in accordance with CFAS SWMP template requirements.

2.9.6.4 Disposal Records: Solid waste disposal reports must be submitted to the Contracting Officer in a monthly basis in accordance with the CFAS SWMP template requirements The template can be obtained from PWD Environmental Division via the Contracting Officer. In the template, a separate line item must be developed for each waste stream that includes a primary group, subcategory, disposal method, waste-to-energy indicator for all incinerated waste, quantity of waste disposed (in kilograms), disposal costs, and revenues (for the sale of recyclable material). All reports must be submitted to the Contracting Officer with weight tickets/manifests for weights, invoices/manifests for costs, and receipts for revenues obtained from the Government of Japan (GoJ)-permitted facility where waste/recyclable material was delivered for further processing or disposal. In case hazardous wastes are disposed of off-base, manifests for hazardous wastes must be submitted to the Contracting Officer.

2.10 Hazardous Materials: In case hazardous materials, such as asbestos containing materials, and materials/coats containing at least one of lead, cadmium and chromium (VI), are found by sample analysis required in Paragraphs 2.11.1.5 and 2.11.1.6, the Contractor must necessary work for their abatement/removal work specified in the paragraphs below.

2.10.1 Asbestos

Perform removal, management, and disposition/disposal work of Asbestos Containing Material (ACM) as specified in the paragraph 2.10.1.1. The Contractor must develop abatement plans for ACM, and must conduct removal work of ACM in accordance with the requirement of abatement plans developed. The Contractor must submit abatement plan with necessary submittals to approval authorities of the Government via the Contracting Officer for their review and approval, prior to the commencement of actual removal work.

2.10.1.1 Existence of Asbestos

Existence of Asbestos is shown in the following table.

Materials	Asbestos	
	Contained	Type of ACM Waste
Existing under coating applied on exterior wall	TBD *1	TBD *1
Existing ceiling materials	TBD *1	TBD *1
Existing wall materials	TBD *1	TBD *1

*1 To Be Determined (TBD): These data must be determined by the results of sample analysis to be performed by the Contractor.

2.10.2 Lead, Cadmium and Chromium (VI)

Perform removal, management, and disposition/disposal work of Lead Base Paint (LBP) and Paint Containing Cadmium, Chromium (VI) as specified in the paragraph 2.10.2.1.
The Contractor must develop lead, cadmium, chromium (VI) compliance plan for LBP and Paint Containing Cadmium, Chromium (VI), and must conduct removal work of LBP and Paint Containing Cadmium, Chromium (VI) in accordance with the requirement of lead, cadmium, chromium (VI) compliance plan developed. The Contractor must submit lead, cadmium, chromium (VI) compliance plan with necessary submittals to approval authorities of the Government via the Contracting Officer for their review and approval, prior to the commencement of actual removal work.

The same abatement/removal work as LBP is not required to Paint Containing Lead (PCL). However, the Contractor must perform the contract work so as not to generate dust of PCL. In case generation of dust cannot be avoided, a respirator with HEPA filter is required during working in dust. After complete of the work, clean the work site and clear all visible dust and debris. The used HEPA filter will not be considered as hazardous waste. The Contractor must dispose of the used HEPA filter on the Contractor's own responsibility in accordance with Japanese laws, provisions and local regulations.

In case the PCL exists within area of removal work for LBP and Paint Containing Cadmium, Chromium (VI), preferentially apply the safety requirement for removal work of LBP and Paint Containing Cadmium, Chromium (VI).

2.10.2.1 Existence of Lead, Cadmium and Chromium (VI)

Existence of Lead, Cadmium and Chromium (VI) is shown in the following table.

Materials	Lead		Cadmium	Chromium (VI)
	Classified as LBP	Classified as PCL*1	Contained	Contained
Existing paint coats	TBD *2	TBD *2	TBD *2	TBD *2

*1 Paint Containing Lead (PCL) is a paint containing lead less than the value defined as LBP.
*2 To Be Determined (TBD): These data must be determined by the results of sample analysis to be performed by the Contractor.

2.10.3 Disposal of Hazardous Waste (HW): Must be performed in accordance with the latest edition of the "Japan Environmental Government Standards" and CFAS Hazardous Waste Management Plan.

2.10.3.1 Wastes of Asbestos Containing Materials (ACM): In accordance with JEGS, ACM wastes are divided into two types; type I waste and type II waste. Disposal of ACM wastes must comply with the following requirements for each type.

a. Type I ACM Waste: Type I waste is categorized as a Specified Hazardous Industrial Waste (SHIW), which is a subcategory of Specially Controlled Industrial Waste (SCIW). Type I waste includes, but is not limited to: sprayed asbestos; asbestos lagging material; diatomaceous earth (kieselguhr) lagging material; Pearlite lagging material; lagging material that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure, or when placed in contact with moving air or vibration; items contaminated with asbestos as a result of asbestos removal operations (e.g., PPE, plastic sheeting); items contaminated with asbestos (e.g., respirators, asbestos dust collection filters, equipment); and imported asbestos.

    (1) Do not dispose of type I ACM wastes into any area outside the Government control area. The Contractor must inform of ACM to be salvaged to the Contracting Officer in writing and coordinate setting up the container(s) with the Contracting Officer. The Contractor must submit Hazardous Waste turn-in form provided by the Contracting Officer.

b. Type II ACM Waste: Type II waste is treated as an Asbestos-Containing Industrial Waste (ACIW), which is categorized as Industrial Waste (IW) under the JEGS, and refers to all other waste containing more than 0.1% asbestos by weight. Type II waste includes, but is not limited to: fire safes; slate board; cement board; siding board; floor tile; gaskets; packing; cement pipe; and brake shoes.

    (1) The Contractor must dispose of type II ACM wastes as Asbestos-Containing Industrial Waste (ACIW) into the facility or landfill authorized by Japanese Prefectural and/or Japanese Government in accordance with "Japan Environmental Government Standards."

2.10.3.2 HW Other Than Above Wastes: Unless otherwise specified, do not dispose of HW into any area outside the Government control area. The Contractor must inform of HW to be salvaged to the Contracting Officer in writing and coordinate setting up the container(s) with the Contracting Officer. The Contractor must submit Hazardous Waste turn-in form provided by the Contracting Officer.

2.11 Technical Execution Requirements: References must be made to conceptual drawings and Government reference design drawings, and applicable Government criteria and standards, national codes and regulations for this project must be referred to the documents specified in Paragraph 2.4.

2.11.1 Mechanical Work: General requirements for mechanical work in conformity with MLIT "Standard Specifications for Government Buildings Construction Work (Mechanical Facility Work)" and "Standard Specifications for Government Buildings Repair Work (Mechanical Facility Work)" must be applied.

2.11.1.1 Design work for freight elevators must be conducted by referring and conforming to UFGS 14 21 13 "Electric Traction Freight Elevators". and design work for passenger elevators must be conducted by referring and conforming to UFGS 14 21 23 "Electric Traction Passenger Elevators".

2.11.1.2 Drainage Pumps:

a. Draining water must be flow into rainwater drainage line.

b. Exact routes of drainage piping must be decided by site survey.

c. After completion of operation tests of drainage pumps, water in drainage piping must be removed.

2.11.1.3 Fire Extinguishing System: All design and installation work including field tests for fire extinguishing system must be reviewed and approved by a person who is Fire Protection Engineer certified in U.S.A.

a. All design work for sprinkler systems must be performed under the supervision and direction by a person who has a certificates of Fire Facilities Installer, Category "KOU", First Class, ("SHOUBOU SETSUBI-SI, KOU-SHU, DAI-1 RUI") certified by Prefectural Governor.

b. All installation work including field tests for sprinkler system must be performed by a person who has a certificates of Fire Facilities Installer, Category "KOU", First Class, ("SHOUBOU SETSUBI-SI, KOU-SHU, DAI-1 RUI") certified by Prefectural Governor.

2.11.1.4 Work related to Asbestos: In case following materials are necessary to remove by contractual work, the Contractor must conduct sample analysis for ACM in conformity with applicable requirements in JEGS. At first, the Contractor must submit sampling plan for the Contracting Officer's approval, and actual sampling work must be performed in accordance with approved sampling plan. If existing materials are classified to ACM by the analysis, the Contractor must conduct abatement/removal work of ACM within work area as required in Paragraph 2.10.1 prior to commencement of contractual work required.

a. Under coating on exterior wall when holes are made to exterior wall

b. Ceiling materials and/or wall materials when ceiling materials and/or wall materials in elevator lobby are repaired/modified.

2.11.1.5 Work Related to Lead, Cadmium and Chromium (VI): In case existing paint coats are necessary to remove or damaged by contractual work, the Contractor must conduct sample analysis for lead, cadmium and chromium (VI). At first, the Contractor must submit sampling plan for the Contracting Officer's approval, and actual sampling work must be performed in accordance with approved sampling plan. If existing materials are detected to contain at least one of lead not less than threshold value, cadmium or chromium by the analysis, the Contractor must conduct abatement/removal work of paint coats containing lead, cadmium or chromium within work area as required in Paragraph 2.10.2 prior to commencement of contractual work required.

a. In case painted pipes and/or other materials fixed by fastening material, such as screws, and bolts/nuts, are removed by wetting fastened portions and surrounding area with amended water and disassembling of fastened portions, such as loosing of installation bolts/nuts, analysis for lead, cadmium and chromium (VI) is not required. After disassembling, all disassembled portion must be wiped by wet rags.

2.11.1.6 Work at Buildings That Have Two Elevators : When the Contractor perform contractual work at buildings that have two elevators to be repaired, which are Bldg. 151 (EL-M25 and EL-M26), Bldg. 200 (EL-M4 and EL-M5), Bldg. 480 (EL-M55 and EL-M56), Bldg. 487 (EL-M50 and EL-M51) and Bldg. 5035 (EL-H16 and EL-H17), following actions/work is required;

a. Do not perform actual site work to two elevators at same time. The Contractor must perform actual site work to only one elevator, and actual site work to another elevator must be performed after completion of actual site work to one elevator.

b. At Bldg. 151, Bldg. 200 and Bldg. 5035, provide materials showing elevator number to upper frame of hoistway door on each floor. Elevator numbers must be assigned "No. 1" to the elevator that has smaller Elevator ID, and must must be assigned "No. 2" to another elevator.

2.11.1.7 Bldg. 311 is designated as the Historical Structure. Therefore, the Contractor must not perform any work to damage to building structure, such as drilling to exterior walls.

2.11.2 Electrical Work: General requirements for electrical work in conformity with MLIT "Standard Specifications for Government Buildings Construction Work (Electrical Facility Work)" and NFPA 70 must be applied.

2.11.2.1 Fire Alarm Work: All design and installation work including field tests for fire alarm system must be reviewed and approved by a person who is Fire Protection Engineer certified and registered in U.S.A.

a. All design work for fire alarm systems must be performed by the Contractor's personnel which is including at least one person who has the experience of design to similar system.

b. All installation work including field tests for fire alarm system must be performed by the Contractor's personnel which is including at least one person who has a certificates of Fire Facilities Installer, Category "KOU", Fourth Class, ("SHOUBOU SETSUBI-SI, KOU-SHU, DAI-4 RUI").

c. If existing radio fire alarm panel is removed and new radio fire alarm addressable panel is provided, new radio fire alarm addressable panel must designed and fabricated by referring to Reference Drawing "22C#1712729_Reference_Typical_Image_Bldg-1653.pdf".

d. If existing radio fire alarm panel is removed and new radio fire alarm addressable panel is provided, equipment/devices to be added must be connected to new radio fire alarm addressable panel and representative signal of signals from these equipment/devices must be indicated on existing fire alarm panel.

e. If existing radio fire alarm panel is utilized, design work must be performed by referring to Reference Drawing "22C#1712719_Reference_Bldg-16_Elv_Elec.pdf".

f. If existing radio fire alarm panel is utilized, communication status with existing receiver in Bldg. 222 must be confirmed prior to commencement of removal or repair/modification work of the elevator. In case there is unstable communication state, the Contractor must perform adjustment work of radio field strength.

g. Smoke detector for elevator's phase 1 emergency recall operation must be provided within 6.4 meters from elevator door at elevator lobby on each floor.

h. In case fire alarm system is interrupted during four hours or more, the Contractor must perform fire watches to the buildings which fire alarm system is interrupted.

i. Partial parts/devices in existing fire alarm control panel will be salvaged by the Government, before the Contractor's site work. At least 14 working days prior to commencement of removal work to existing fire alarm control panel, the Contractor must request Government's salvage work by written documents to the Contracting Officer.

2.11.2.2 Elevator Work:

a. Shunt trip device must cut power supply to elevator and must keep cut-off state until reset to activation of fire alarm, when sprinkler systems for elevator machine room and elevator shaft is activated.

b. Shun trip device must be installed in elevator machine room.

c. Do not activate shunt trip device by smoke detector in elevator machine room.

d. Status of shunt trip device and tamper switch for valves of sprinkler system must be supervised by fire alarm system.

e. New two-way communication system must be satisfied the requirements of Section 2.27.1.1 in ASME.

2.11.2.3 Work at Bldg. 311: During actual site work for elevator, provide open/close switch for shutter door at outside of the building temporarily so that access from outside of the building to inside rooms of warehouse is available. After completion of actual site work for elevator, temporarily provided switch must be removed.

2.11.2.4 Work at Bldg. 6056:

a. Two-way communication system must designed by referring to Reference Drawing "22C#1712729_Reference_Two-way Communication sys for Bldg-6056.pdf".

b. Cover plate must be provided after existing interphone in Room 105 is removed.

c. Related to removal of existing interphone in Bldg. 6400528, exposed conduits installed on interior wall must be removed. Wall surfaces damaged by removal work must be repaired adequately.

d. Flush mounted emergency phone must be provided in elevator car, and install a symbol specified in ASME.

(1) Emergency phone must have a function to register telephone number of Dispatch Room in Bldg. 222 and must be able to call and talk the telephone at Dispatch Room in Bldg. 222 by one push of the button provided to telephone surface.

(2) Clear cover for howling prevention on a call must be provided to telephone surface.

(3) Wall embedded type Alarm indicator that indicates disconnection of emergency telephone line must be provided beside operation panel at elevator lobby on 1st Floor. Interval of disconnection check must be 10 minutes.

(4) One emergency phone and one alarm indicator must be delivered to the Government as spare for future maintenance.

2.11.2.5 Modification Work of Panelboards, Control Panels, Switch Boxes and Pull Boxes: Must be performed by the Contractor's personnel which is including at least one person who has a certificate of Second Grade Technician for Fabrication/Installation of Electric Cabinet/Panelboard/Equipment/Device (Fabrication Work for Panelboard, Control Panel and Enclosure/Cabinet), "NIKYU DENKI KIKI KUMITATE GINOUSHI", or higher grade.

2.11.2.6 Exposed conduit pipes and accessories must be applied paint coats.

2.11.2.7 Existing lighting fixtures which are temporarily removed must be stored in the Contractor's storage until reinstallation after temporary removal, on the Contractor's responsibility. Temporarily removed lighting fixtures must be thoroughly cleaned by using detergents, before reinstallation.

2.12 Inspection, Testing and Report: All work of inspection, testing and report must be conducted by the Contractor and will be inspected by the Contracting Officer as specified herein and as directed. All defects disclosed by tests must be rectified and the test repeated.

2.12.1 Calibration to Instruments: Measuring instruments to be used to inspections and tests under mechanical work must be new ones with delivery inspection within one year or the ones calibrated within one year. The Contractor must submit the certification of inspection or calibration of all measuring instruments.

2.12.2 Field Tests for Mechanical Work: Unless otherwise specified or required, the Contractor must perform tests, such as insulation resistance test, in compliance with the requirements of MLIT "Standard Specifications for Government Buildings Construction Work (Mechanical Facility Work)".

2.12.3 Field Tests for Electrical Work: Unless otherwise specified or required, the Contractor must perform tests, such as insulation resistance test, in compliance with the requirements of MLIT "Standard Specifications for Government Buildings Construction Work (Electrical Facility Work)".

2.12.4 Operation Tests:

2.12.4.1 Existing elevator systems repaired/modified must be inspected and tested their operational conditions in conformity with in-house testing items of the elevator manufacturer, to confirm that the elevator is operable with normal working condition, after repair/modification work is completed. Also, items repaired/modified in compliance with the requirements of ASME A17.1 must be inspected and tested in conformity with ASME A17.2 to confirm that ASME A17.1 is satisfied and that the elevator is operable with normal working condition.

a. Within warranty period after delivery to the Government, the Contractor must be inspected repaired/modified elevator systems once at annual inspection/test (in May) to be conducted by the Government's elevator inspector and once at semiannual inspection/test (in November) to be conducted by the Government's elevator inspector, for the approval by the Government's elevator inspector to each inspection/test.

2.11.4.2 Lighting Test: After the installation has been completed, conduct a lighting test with lighting system to confirm that the equipment operates.

2.11.4.3 All temporarily removed electrical equipment must be conducted confirmation tests that the equipment work at normal condition, after reinstallation.

2.11.5 Reports: The Contractor is responsible for recording all test data and results and preparation of test reports. Original and two sets of copy of each test report must be submitted to and approved by the Contracting Officer.

2.12 Instruction To Government Personnel: After all systems installed under this contract are ready to be placed in service and before turned over to the Government for regular operation, the Contractor must fully perform On-the-Job Training (OJT) to Government personnel in operation and maintenance of the equipment at the work site. Furnish three sets of the documents necessary to perform OJT, including contractor furnished items and their procedure (such as synopsis, flow chart, and etc., for brief review) to be performed for OJT, to the Contracting Officer, prior to OJT at the work site. The documents must be at a minimum; documents to understand system/operation and also training, i.e. instruction manuals, but must be included project scope, index, OJT schedule, system overview and equipment layouts, wiring diagrams, control circuit diagrams, standard (normal) and emergency operation procedure, trouble shooting, special caution to system (if necessary), maintenance requirements including associated spare parts and their prices, test data, etc. The Contractor must inform the Contracting Officer at least 21 calendar days in advance of the proposed date of scheduled OJT.

2.13 As-Built Records: After completion of actual construction work at work site, the Contractor must submit As-Built Records to confirm the completion of the Contractor's actual construction work. As-built Records must be As-Built Drawings and As-Built Documents for Work Completion, as required below. Submission and Government's acceptance of As-Built Records must be completed within contract period, because they are the condition for final payment.

2.13.1 As-Built Drawings: Prepare and submit As-Built Drawings in accordance with the Clause "NFAS 5252.236-9310, RECORD DRAWINGS (ALTERNATE II)".

2.13.2 As-Built Documents for Work Completion: Unless otherwise specified, three sets of the documents required below subparagraphs and one set of electronic files of these documents on CD or DVD must be furnished and submitted by the Contractor as a part of as-built records. Printed out document must be bound in letter or A4 size loose-leaf binder with hard cover.

2.13.2.1 Record Documents of Materials: Furnish the record of materials used in the format indicated below. Where several manufacturer's brands, types, or classes of the item listed have been used, designate the specific areas where each item was used. Key designations to the areas and spaces depicted on the contract drawings.

MATERIALS	SPECIFICATION DESIGNATION	MANUFACTURER	MATERIALS USED (MANUFACTURER'S DESIGNATION)	WHERE USED

2.13.2.2 Record Documents of Work Completion: Furnish the documents listed below for the Government to keep the records which are shown all status performed by the Contractor under this contract. All documents must be modified to reflect the final status after the completion of construction.

(1) All submittals other than Samples, such as Shop Drawings, Product Data, Design Data, Certificates, Manufacturer's Instructions, Manufacturer's Field Reports, Operation and Maintenance Data
(2) Field test reports
(3) Warranty cards for all equipment (notwithstanding above requirement, submit one set only)
(4) Photograph records for mechanical work;
    a. Status before and after repair/modification work to elevator systems
(5) Manifests for disposed industrial solid wastes
(6) Cost data

2.14 Maintenance Data Record: The Contractor must submit "Requirement Branch Data" with filling in data for the management of maintenance data to the Contracting Officer. Formal blank data sheet for submittals is attached as "Contractor_ICAP-Uniformat_Template.xls".

(1) The Contractor must obtain the approval of Contracting Officer to meet the requirements of record by the Chief of the Facilities Requirements Branch, PWD Sasebo, NAVFAC FE.
(2) The Contractor must provide the required data within 30 days after the completion of construction work.
(3) The following data must be entered into the spreadsheet: design life (years), location of equipment, systems' equipment belongs to (master system, system, or sub-system), equipment description, installation date, warranty date, purchase price, replacement cost, equipment quantity, unit of measurement, and whether the item is critical to the building's operation.
(4) The conceptual instruction for inputting data is attached as "ICAP Training Manual_V9.pdf".

2.15 Project Information:

2.15.1 Government Conceptual Drawings: The drawings listed below are attached to show Government concept of the work under this contract

ELECTRONIC FILE NAME

22C#1712719D.pdf

2.15.2 Government Reference Drawings: The drawings listed below are attached for information only. Field verification and adequacy of design are responsibility of the Contractor.

ELECTRONIC FILE NAME

DRAFT

22C#1712719_#16 Add.(Arch.Work).pdf
22C#1712719_#16 Add.(Civil Work).pdf
22C#1712719_#16 Add.(Mech.Elevator Work).pdf
22C#1712719_#16 Add.(Mech.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 16.pdf
22C#1712719_#35 (Arch.Work).pdf
22C#1712719_#35 (Civil Work).pdf
22C#1712719_#35 (Mech.Shop Dwg).pdf
22C#1712719_#35 (Mech.Work-1).pdf
22C#1712719_#35 (Mech.Work-2).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 35.pdf
22C#1712719_#98 #99 #86 (Arch.Work).pdf
22C#1712719_#98 (Civil Work).pdf
22C#1712719_#98 (Mech.Elevator Work).pdf
22C#1712719_#98 (Mech.Shop Dwg).pdf
22C#1712719_#98 (Mech.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 98.pdf
22C#1712719_#100 (Arch.Work).pdf
22C#1712719_#100 (Civil Work).pdf
22C#1712719_#100 (Mech.Elevator Work).pdf
22C#1712719_#100 (Mech.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 100.pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 132.pdf
22C#1712719_#151 #152 #153 (Arch.Work).pdf
22C#1712719_#151 (Civil Work).pdf
22C#1712719_#151 (Mech.Elevatot Work).pdf
22C#1712719_#151 (Mech.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 151.pdf
22C#1712719_#200 (Arch.Work).pdf
22C#1712719_#200 (Civil Work).pdf
22C#1712719_#200 (Mech.Elevator Work).pdf
22C#1712719_#200 (Mech.Work).pdf
22C#1712719_#1632 (Arch.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 311.pdf
22C#1712719_Tele Exchange Upgrade BLDG 311 (Mech.Work).pdf
22C#1712719_#480 #485 & #486 (Arch.Work).pdf
22C#1712719_#480 (Civil Work).pdf
22C#1712719_#480 (Mech.Work).pdf
22C#1712719_#1379958_REPAIR VERTICAL TRANSPORTATION EQUIPMENT_AsBuilt_Drawings_BLDG 480.pdf
22C#1712719_#487 (Arch.Work).pdf
22C#1712719_#487 (Mech.Work).pdf
22C#1712719_#487 (Mech.Shop Dwg).pdf
22C#1712719_#1653 (Arch.Work).pdf
22C#1712719_#1653 (Civil Work).pdf
22C#1712719_#1653 (Mech.Work).pdf
22C#1712719_#5024 #5035 (Civil, Sewage & Storm Drainage Line Work).pdf
22C#1712719_#5035 (Arch.Work).pdf
22C#1712719_#5035 (Mech.Work).pdf
22C#1712719_UME TOWER B.5024 BARA TOWER B.5035 HARIO HSG (ELEVATOR).pdf

22C#1712719_Whole House Revitalization BARA TOWER BLDG.5035.pdf
22C#1712719_#6056_WAREHOUSR AKASAKI_ARCH.pdf
22C#1712719_#6056_WAREHOUSR AKASAKI_MECH.pdf
22C#1712719_ACM AND LBP ANALYSIS FOR PREVIOUS VTE PROJECT
22C#1712719_Reference_Bldg-16_Elec.pdf
22C#1712719_Reference_Bldg-16_Elv_Elec.pdf
22C#1712719_Reference_Bldg-35_Elec.pdf
22C#1712719_Reference_Bldg-35_Elv_Elec.pdf
22C#1712719_Reference_Bldg-98_Elec.pdf
22C#1712719_Reference_Bldg-98_Elv_Elec.pdf
22C#1712719_Reference_Bldg-100_Elec.pdf
22C#1712719_Reference_Bldg-100_Elv_Elec.pdf
22C#1712719_Reference_Bldg-132_Elec.pdf
22C#1712719_Reference_Bldg-151_Elec.pdf
22C#1712719_Reference_Bldg-151_Elv_Elec.pdf
22C#1712719_Reference_Bldg-200_Elec.pdf
22C#1712719_Reference_Bldg-222_Exst_Radio_Fire_Alarm_Racieving_Panel.pdf
22C#1712719_Reference_Bldg-311_Elec.pdf
22C#1712719_Reference_Bldg-311_Elv_Elec.pdf
22C#1712719_Reference_Bldg-480_Elec.pdf
22C#1712719_Reference_Bldg-480_Elv_Elec.pdf
22C#1712719_Reference_Bldg-487_Elec.pdf
22C#1712719_Reference_Bldg-1653_Elec.pdf
22C#1712719_Reference_Typical_Image_Bldg-1653.pdf
22C#1712719_Reference_Bldg-5035_Elec.pdf
22C#1712719_Reference_Bldg-6056_Comm.pdf
22C#1712719_Reference_Bldg-6056_Elec.pdf
22C#1712719_Reference_Two-way Communication sys for Bldg-6056.pdf
22C#1712719_Reference_Bldg-6400528_Interphone.pdf

--END OF STATEMENTS--