

SECTION 021105
CARE AND PROTECTION OF PROPERTY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Protection of Property
- B. Work within Highway Right-of-Way
- C. Notice to Property Owner

1.02 PROTECTION OF PROPERTY

- A. Do not enter or occupy with workers, tools, materials or equipment any land other than the right-of-way and easements without the written consent from the property owner.
 - 1. File a copy of the written consent with the ENGINEER.
 - 2. Assume full responsibility for the use of said private properties and defend the OWNER against all claims for damages from use of same.
- B. Provide and maintain all necessary watchman, barricades, lights and warning signs and take all necessary precautions for the protection and safety of the public, the OWNER, the ENGINEER and property.
- C. Continuously maintain adequate protection to all Work from damage, and take all reasonable precautions to protect the Public's and the OWNER's property from injury or loss arising in connection with this Contract.
- D. Make good any damage, injury or loss to the work and to the property of the OWNER and the Public resulting from lack of reasonable protective precautions, except as may be due to errors in the Contract Documents, or caused by the agents or employees of the OWNER.
- E. In an emergency affecting the safety of life, the work, or adjoining property, the CONTRACTOR is, without special instructions or authorization from the ENGINEER, hereby permitted to act at his sole discretion to prevent such threatened loss or injury. He shall also act, without appeal, if so authorized or instructed by the ENGINEER.
- F. Any compensation claimed on account of emergency work, to protect the public, the work, or adjoining property, will be determined by agreement or by arbitration.
- G. Exercise extreme care to prevent damage to trees, flowers, shrubs, etc. Bear all costs of replacing or repairing trees, shrubs, flowers, etc.
- H. Replace or re-erect all fences and guard rails taken down or disturbed to the satisfaction of the ENGINEER, at no additional cost to OWNER.
- I. Conduct work in a manner to properly protect all other utility facilities, such as gas mains, telephone and power conduits and poles, sewers, drainage, cable, fiber optics and other similar facilities. Work near these facilities in accordance with the utility's requirements, rules and regulations. If any utility is damaged, immediately notify the utility involved so that proper inspection and repair can be made.
- J. The OWNER or ENGINEER will attempt to notify the CONTRACTOR of any hazardous condition during non-working hours by telephone. If the OWNER or ENGINEER is unable to reach the CONTRACTOR or the CONTRACTOR fails to correct the hazardous condition utilizing all necessary safety devices within one (1) hour after notification, the OWNER will make all necessary repairs at the expense of the CONTRACTOR. If the hazardous condition is of such a nature, in the opinion of

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the ENGINEER, that it should be remedied immediately and the CONTRACTOR is unable or refuses to do so, the OWNER will make all necessary repairs at the expense of the CONTRACTOR.

1.03 NOTICE TO PROPERTY OWNERS

- A. Notify property owners at least one (1) week advance of pending construction. Keep driveways open and in good conditions at all times.

1.04 WORK WITHIN HIGHWAY RIGHTS-OF-WAY

- A. Perform and complete all work in State, County and Town rights-of-ways to the full satisfaction of the various Departments of Public Works concerned. Obtain all permits required.
- B. Conduct operations associated with the Work so as not to interfere with the movement of traffic on highways and with the operations of the particular Department of Public Works.
- C. If at any time during the work, traffic or facilities of the State of New York, County, Village or Town are endangered, immediately do such work as the representative of the particular Department of Public Works concerned may direct to restore safety. Bear all expenses of restoring safety based on the directions of the particular Department of Public Works representative, at no additional cost to the OWNER.
- D. Permit inspection by the State of New York, County, Village or Town at all times as the work progresses.
- E. Give written notice to the State of New York, County, Village or the Town five (5) days before work begins within their right-of-way.

1.05 WORK WITHIN WETLANDS AND WETLAND BUFFER ZONES

- A. The OWNER will obtain all necessary permits for working within wetlands and wetland buffer zones.
- B. The CONTRACTOR shall adhere to all of the requirements of the permits.
- C. No refueling, oiling, or greasing of construction equipment is allowed in the Wetland or New York State Wetland Buffer Zone.
- E. In the event of spillage of petroleum products within the Wetlands or Wetlands Buffer Zone, take prompt remedial action to stop, contain and remove any spilled materials.
- F. Remove excess spoils, in their entirety, off-site in an amount proportionate to the volume of the pipe and any bedding material installed. Maintain the original bottom contour surface elevations.

END OF SECTION

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PROTECTION OF THE ENVIRONMENT

PART 1 GENERAL

1.01 SUMMARY

- A. CONTRACTOR, in executing Work, shall maintain Work areas on- and off-site free from environmental pollution that would be in violation of federal, state or local regulations.
- B. CONTRACTOR is required to sign and submit ENGINEER's SWPPP to the OWNER and ENGINEER to file, when applicable.

1.02 PROTECTION OF STORM SEWERS

- A. Prevent construction material, pavement, concrete, earth or other debris from entering existing storm sewer or sewer structure.

1.03 PROTECTION OF WATERWAYS

- A. Observe rules and regulations of the State of New York and agencies of U.S. government prohibiting pollution of lakes, streams, rivers or wetlands by dumping of refuse, rubbish, dredge material or debris.
- B. Disposal of materials into waters of state must conform to requirements of the State of New York and the U.S. Army Corps of Engineers. All permits will be obtained by CONTRACTOR, copies provided to the ENGINEER, and posted on the job site.
- C. Apply appropriate soil conservation measures to protect project area and adjacent lands. These measures may include, but not be limited to, mulching, rapid growth vegetation, fabric mat, filter barriers, sediment traps, and basins.
- D. All work for this section shall be performed in strict accordance with "New York State Standards and Specifications for Erosion and Sediment Control", NYSDEC, latest edition, (i.e., Standards). The Standards are incorporated herein by reference.
- E. Prepare and submit the following to ENGINEER:
 - 1. Limits of disturbance.
 - 2. Sequence of construction as it relates to installation, phasing, and removal of sediment control measures.
- F. Provide erosion control measures, in place, before commencing work on project site.
 - 1. Maintain erosion control measure during course of construction.
 - 2. Remove erosion control measures upon establishment of permanent, surface stabilization.
- G. Complete temporary or permanent stabilization of surface of perimeter controls, dikes, swales, ditches, perimeter slopes, and slopes greater than 3:1 within 7 calendar days following initial soil disturbance. Stabilize other disturbed or graded areas within 14 calendar days.

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1.04 DISPOSAL OF EXCESS EXCAVATED AND OTHER WASTE MATERIALS

- A. Excess excavated material not required or suitable not for backfill and other waste material shall be disposed of in accordance with State and local regulatory requirements.
- B. Provide watertight conveyance for liquid, semi-liquid or saturated solids which tend to bleed during transport. Liquid loss from transported materials is not permitted, whether being delivered to construction site or hauled away for disposal. Fluid materials hauled for disposal must be specifically acceptable at selected disposal site.

1.05 PROTECTION OF AIR QUALITY

- A. Minimize air pollution by requiring use of properly operating combustion emission control devices on construction vehicles and equipment and encourage shutdown of motorized equipment not in use.
- B. Do not burn trash on construction site.
- C. If temporary heating devices are necessary for protection of Work, they shall not cause air pollution.

1.06 THAWING OF FROZEN GROUND

- A. Obtain permit from appropriate local authority before building fire to thaw frozen ground, and comply with conditions of permit.
- B. Use fuel which does not create air pollution or inconvenience public.
- C. ENGINEER reserves right to prohibit fires for thawing whenever deemed undesirable.

1.07 USE OF CHEMICALS

- A. Chemicals used during project construction or furnished for project operation, whether herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall be approved by U.S. EPA or U.S. Department of Agriculture or any other applicable regulatory agency.
- B. Use and disposal of chemicals and residues shall comply manufacturer's instructions.

1.08 NOISE CONTROL

- A. Conduct operations to cause least annoyance to residents in vicinity of Work, and comply with applicable local ordinances.
- B. Equip compressors, hoists, and other apparatus with mechanical devices necessary to minimize noise and dust. Equip compressors with silencers on intake lines.
- C. Equip gasoline or oil-operated equipment with silencers or mufflers on intake and exhaust lines.
- D. Line storage bins and hoppers with material that will deaden sounds.

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- E. Conduct operation of dumping rock and of carrying rock away in trucks so as to cause minimum of noise and dust.
- F. Route vehicles carrying rock, concrete or other material over such streets as will cause least annoyance to public and do not operate on public streets between hours of 6:00 p.m. and 7:00 a.m., or on Saturdays, Sundays or legal holidays unless approved by ENGINEER.

1.09 DUST CONTROL

- A. Due to close geographic location of Project to other off-site facilities and residential homes, take special care in providing and maintaining temporary site roadways, OWNER'S existing roads, and public roads used during construction operations in clean, dust free condition.
- B. Comply with state and local environmental regulations for dust control. If CONTRACTOR'S dust control measures are considered inadequate by ENGINEER, ENGINEER may require CONTRACTOR to take additional dust control measures.
- C. The use of calcium chloride is prohibited.

1.10 FUELS AND LUBRICANTS

- A. Comply with local, state and federal regulations concerning transportation and storage of fuels and lubricants.
- B. Fuel storage area and fuel equipment shall be approved by OWNER prior to installation. Submit containment provisions to OWNER for approval.
- C. Keep motorized equipment in good working order with no fuel or lubricant leakage. In the event of a leak, protect ground surface from leakage using tarps or other methods, and immediately remove leaking equipment or make repairs. Report spills or leaks from fueling equipment or construction equipment to OWNER and cleanup as required.
- D. OWNER may require CONTRACTOR to remove damaged or leaking equipment from Project site.
- E. Refueling, lubrication, and any other maintenance of equipment shall not be performed in or near any streams or wetland areas. Maintenance tasks shall be conducted at an upland staging area at least 100 feet away from any waters or wetlands. The CONTRACTOR shall have spill-kits on site at all times.

PART 2 PRODUCTS

2.01 (Not Used)

PART 3 EXECUTION

3.01 (Not Used)

END OF SECTION

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PROTECTION OF THE ENVIRONMENT

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SECTION 022830
ASBESTOS REMOVAL

PART 1. GENERAL

1.01 SUMMARY

- A. This asbestos abatement work will consist of the removal and disposal of asbestos-containing materials (ACMs) and presumed asbestos-containing materials (PACMs).
- B. The asbestos abatement work shall include but not be limited to the removal of the following materials:
 - 1. 4,000-gallon tank in lower level of treatment plant.
 - 2. Pipe insulation only as encountered and required in order to perform other work.
- C. The Contractor shall be aware of all conditions of the Project and is responsible for verifying quantities and locations of all Work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor and materials necessary to perform the Work.
- D. All Work shall be performed in strict accordance with the Project Documents and all governing codes, rules, and regulations. Where conflicts occur between the Project Documents and applicable codes, rules, and regulations, the more stringent shall apply.
- E. Asbestos abatement activities including, but not limited to, work area preparation, gross removal activities, cleaning activities, waste removal, etc. may need to be performed during 'off-hours'. The Contractor shall coordinate and schedule all Work with the facility and Owner's representative.

1.02 REFERENCES

- A. New York State Department of Environmental Conservation (DEC) 6NYCRR:
 - 1. Part 360 Solid Waste Management Facilities.
 - 2. Part 364 Waste Transporter Permits.
 - 3. Part 370 Hazardous Waste Management System-General.
 - 4. Part 371 Identification and Listing of Hazardous Wastes.
 - 5. Part 372 Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities.
 - 6. Part 373 Hazardous Waste Management Facilities.
- B. Occupational Safety and Health Administration (OSHA): Asbestos Regulations (29 CFR Part 1926.1101).
- C. U.S. Environmental Protection Agency (EPA):
 - 1. National Emission Standards for Hazardous Air Pollutants; Asbestos NESHAP Revision; Final Rule.
 - 2. Asbestos Emergency Response Act (AHERA) (40 CFR Part 763, Subpart E).

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D. New York State Department of Labor (DOL): Industrial Code Rule 56.

1.03 DEFINITIONS

A. Authorized Personnel: Engineer and all other personnel who are authorized officials of any regulating agency, be it State, Local, Federal or Private entity who possess legal authority for enforcement or inspection of the work.

1.04 ABBREVIATIONS

A. ASTM: American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

B. CFR: Code of Federal Regulations
Government Printing Office
Washington, DC 20402

C. DOL: New York State Department of Labor
Harriman State Office Building Campus
Albany, NY

D. NIOSH: National Institute for Occupational Safety and Health
Building J.N.E. Room 3007
Atlanta, Georgia 30333

E. OSHA: Occupational Safety and Health Administration
200 Constitution Avenue
Washington, DC 20210

F. USEPA: United States Environmental Protection Agency
401 M Street SW
Washington, DC 20460

1.05 SUBMITTALS

A. Quality Control Submittals:

1. Notification Compliance Data: Within 2 days after notification is sent to the regulatory agencies submit one copy of each notice sent to each regulatory agency (EPA and DOL).
2. Asbestos Removal Company Data: Name and address of proposed asbestos removal company and abatement contractor license issued by DOL.
3. Asbestos Worker Certification Data: Name and address of proposed asbestos abatement workers and licenses issued by DOL.
4. Work Plan: For information only, submit one copy of the work plan required under Quality Assurance Article.
5. Waste Transporter Permit: One copy of transporter's current waste transporter permit from NYS DEC (NYS Part 364 Permit).

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6. Landfill: Landfill to be used for ACM disposal shall be licensed to receive asbestos waste by NYS DEC (NYS Part 360 Permit) and by EPA. Out of state landfills shall provide licenses from local agencies having jurisdiction.
7. Negative Air Pressure Equipment: Copy of manufacturer's and performance data of all units and HEPA filters used.

B. Contract Closeout Submittals:

1. Disposal Site Receipts: Copy of waste shipment record and disposal site receipt showing that the ACM has been properly disposed.
2. Waste disposal site receipt shall be received less than thirty five days after the ACM waste leaves the project site. Otherwise, notify the Engineer and EPA in writing within forty five days of ACM waste leaving the project site. A copy of the shipment record shall be provided at the time the waste leaves the site.

1.06 QUALITY ASSURANCE

- A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local laws, rules, and regulations pertaining to Work practices, protection of Workers, authorized visitors to the site, persons, and property adjacent to the Work.
- B. Pre-Work Conference: Before the Work of this Section is scheduled to commence, a conference will be held by the Engineer at the Site for the purpose of reviewing the Contract Documents, discussing requirements for the Work, and reviewing the Work procedures.
 1. The conference shall be attended by the Contractor, the asbestos removal subcontractor, and the testing laboratory employed by the Contractor.

1.07 Work Plan: At the conclusion of the pre-work conference, before the physical abatement Work begins, prepare a detailed work plan.

1. The work plan shall include, but not be limited to, work procedures, types of equipment, crew size, and emergency procedures for fire and medical emergencies and for failure of containment barriers.
2. If a site specific variance is sought, do not finalize the work plan until the Department of Labor decision is received.

1.08 PROJECT CONDITIONS

- A. In addition to the postings required by law, maintain at the abatement area the following documents:
 1. Copy of the printed Work plan.
 2. Copy of Industrial Code Rule 56.

1.09 HEALTH AND SAFETY

- A. Where in the performance of the work, workers, supervisory personnel or sub-contractors may encounter, disturb, or otherwise function in the immediate vicinity of contaminated

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items and materials, all personnel shall take appropriate continuous measures as necessary to protect the public from the potential ACM exposure.

1. Such measures shall include the procedures and methods described herein and shall be in compliance with all applicable regulations of Federal, State and Local agencies.

1.10 PERSONAL PROTECTIVE CLOTHING AND EQUIPMENT

- A. Workers must wear personal protective equipment for all projects as per OSHA and DOL regulations. Provide respiratory protection in accordance with OSHA regulation 1910.134 and ANSI Z88.2, when required.

1.11 COMPETANT PERSON:

- A. Prior to commencing the demolition and removal of the Asbestos containing material, the contractor shall have at least one worker as a "Competent Person", who is State certified and capable of identifying existing asbestos hazards at the work place, is qualified to train other workers, and has the authority to take prompt corrective measures to eliminate a hazardous exposure.

PART 2. MATERIALS

NOT USED

PART 3. EXECUTION

3.01 REGULATIONS

- A. The Contractor shall comply with NYSDOL Code 56-11.6 and all other applicable regulations for the exterior project removal of non-friable ACM transite. In addition, the following minimum abatement procedures shall apply for exterior removal of non-friable asbestos-containing transite currently in a non-friable intact condition, unless the ACM is rendered friable during removal. Should the Contractor cause the material to be rendered friable during removal, the Contractor shall notify the Engineer immediately. In addition, the Contractor will be responsible for all additional notification, removal and disposal requirements at no additional cost to the Owner.

3.02 PREPARATION

- A. Establish a regulated work area (RWA) using barricade tape.
- B. Provide a hand/face wash station at the entry point to the RWA.
- C. Post asbestos-warning signs at the RWA entry point.
- D. Establish a waste load-out area attached to the RWA.
- E. Once RWA is established and work begins, no access should be permitted without the required personal protective equipment.

3.03 AIR MONITORING AND SAMPLING OF EXPOSURE TO AIRBORNE ASBESTOS FIBERS

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- A. Air monitoring is not required unless the material becomes friable. Should the Contractor cause the material to be rendered friable during removal, the Contractor shall notify the Engineer immediately.

3.04 ASBESTOS REMOVAL

- A. Protective clothing and equipment shall consist of at a minimum...steel toe boots, hard hats, safety glasses, rubber or leather gloves.
- B. All cutting or breaking operations require adequate wetting with potable water to prevent A-C materials from being crumbled by hand pressure and the asbestos fibers becoming air-borne (friable).
- C. Plan cuts/breaks as necessary to accommodate the size/weight of the material being removed. Workers completing the cuts should be trained and equipped with minimum required respiratory breathing equipment.
- D. Use a sledge hammer or wheel-type cutter (or equivalent tool) to make the initial cut.
- E. When possible, remove material in an “intact” condition. Wet and containerize waste materials throughout the work.
- F. Identify A-C materials and stock-pile the waste in a designated load-out area with the following label warnings:

DANGER

Contains Asbestos Fibers

Avoid Creating Dust

Cancer and Lung Disease Hazard

Note: The label must also identify the Contractor as the generator of the ACP waste.

- G. Waste shall be wrapped and sealed in accordance with regulatory requirements using a minimum two layers of 6 mil thick, clear, fire retardant polyethylene.

3.05 DISPOSAL OF ASBESTOS-CONTAINING MATERIAL AND RELATED DEBRIS

- A. Remove all waste generated as part of the asbestos project from the site within five calendar days from the site after completion of the asbestos removal operation or within one day of the waste disposal container/trailer becomes full, whichever occurs first.
- B. Transport and dispose of all the asbestos-containing waste, related debris, to an approved disposal site.
- C. All generated waste removed from the site must be documented, accounted for and disposed of in compliance with regulatory requirements.
- D. Comply also with the standards referenced in Part 1 of this Section.

3.06 RESTORATION

- A. Remove temporary facilities and restore area designated for these facilities to its original

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condition or better.

- B. Where existing work is damaged or contaminated, restore work to its original condition or better.

END OF SECTION

SECTION 024110
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. Demolition and removal of buildings and site improvements.
 - 2. Disconnecting, capping or sealing, and abandoning in-place/removing site utilities.
 - 3. Salvaging items for reuse by Owner.

1.3 DEFINITIONS

- A. Remove: Detach items from existing construction and dispose of them off-site unless indicated to be salvaged.
- B. Remove and Salvage: Detach items from existing construction, in a manner to prevent damage, and deliver to Owner ready for reuse. 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 PREDEMOLITION MEETINGS

- A. Predemolition Conference: Conduct conference at Project site.
 - 1. Inspect and discuss condition of construction to be demolished.
 - 2. Review structural load limitations of existing structures.
 - 3. Review and finalize 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.

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7. Review items to be salvaged and returned to Owner.

1.6 INFORMATIONAL SUBMITTALS

- A. Proposed Protection Measures: Submit report, including Drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.
 1. Adjacent Buildings: Detail special measures proposed to protect adjacent buildings to remain including means of egress from those buildings.
- B. 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 or re-routing of utility services.
- C. Predemolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by demolition operations.

1.7 CLOSEOUT SUBMITTALS

- A. Inventory: Submit a list of items that have been removed and salvaged.

1.8 FIELD CONDITIONS

- A. Owner will occupy portions of building/facility immediately adjacent to demolition area. Conduct demolition so Owner's operations will not be disrupted.
- B. Buildings, tanks, and systems to be demolished will be vacated and their use discontinued before start of the Work.
- C. Provide not less than 72 hours' notice of activities that will affect operations of adjacent occupied buildings.
- D. Maintain access to existing walkways, exits, and other facilities used by occupants of adjacent buildings.
- E. Do not close or obstruct walkways, exits, or other facilities used by occupants of adjacent buildings without written permission from authorities having jurisdiction.
- F. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
 1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner.
- G. On-site storage or sale of removed items or materials is not permitted.

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1.9 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

2.1 PERFORMANCE REQUIREMENTS

- A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Standards: Comply with ASSE A10.6 and NFPA 241.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that utilities have been disconnected and capped before starting demolition operations.
- B. Review Project Record Documents of existing construction or other existing condition and hazardous material information provided by Owner. Owner does not guarantee that existing conditions are same as those indicated in Project Record Documents.
- C. Steel Tendons: Locate tensioned steel tendons and include recommendations for de-tensioning.
- D. Verify that hazardous materials have been remediated before proceeding with building demolition operations.
- E. 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.

3.2 PREPARATION

- A. 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.

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3.3 UTILITY SERVICES AND MECHANICAL/ELECTRICAL SYSTEMS

- A. Existing Utilities to be Disconnected: Locate, identify, disconnect, and seal or cap off utilities serving buildings and structures to be demolished.
1. Owner will arrange to shut off utilities when requested by Contractor.
 2. Arrange to shut off 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 below grade. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing according to requirements of authorities having jurisdiction.
 5. Do not start demolition work until utility disconnecting and sealing have been completed and verified in writing.

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. 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 progress of demolition.
- C. Existing Utilities to Remain: 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 72 hours' notice to occupants of affected buildings if shutdown of service is required during changeover.
- D. Temporary Protection: Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
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.

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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.
- E. 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 building elements 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 30 minutes 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. 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 trafficways 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.
- C. 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 below:

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1. None.
- D. Below-Grade Construction: Abandon foundation walls and other below-grade construction. Cut below-grade construction flush with grade.
- E. Existing Utilities: Demolish and remove existing utilities and below-grade utility structures.

3.7 SITE RESTORATION

- A. Below-Grade Areas: Rough grade below-grade areas ready for further excavation or new construction.
- B. 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.

3.8 REPAIRS

- A. Promptly repair damage to adjacent buildings caused by demolition operations.

3.9 DISPOSAL OF DEMOLISHED MATERIALS

- A. Remove demolition waste materials from Project site and dispose of them at a licensed landfill.
 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.

3.10 CLEANING

- A. Clean adjacent structures and improvements 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 024116

Division 03

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