SECTION 02221

DEMOLITION

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preparation of demolition areas.

B. General demolition requirements.

C. Dust and debris control.

D. Protection of facilities.

E. Fire protection measures.

F. Patching

G. Disposition of material.

H. Clean up of area.

1.2 RELATED SECTIONS

A. Division 1 - General Requirements.

1.3 REFERENCES

A. ANSI A10.6 - Demolition Operations Safety Requirements.

B. NFPA 241 - Safeguarding Construction Alteration, and Demolition Operations.

C. NFPA 5000 - Building Construction and Safety Code.

D. OSHA 29 CFR 1926 - Construction Industry Subpart T: Demolition.

1.4 SUBMITTALS

A. Section 01330 - Submittal Procedures: Requirements for submittals.

B. Shop Drawings: Indicate location and construction of barricades, fences, and temporary work.

C. Record of Existing Conditions: The Contractor shall record, in the presence of the Owner's On Site Representative, the condition of structures and other facilities adjacent to areas of alteration or removal. Such record shall contain the location and extent of cracks and other damage and description of surface conditions that exist prior to the start of work. Copies of the record, signed by the Contractor and co-signed by the Owner's On Site Representative shall be submitted and the stated conditions before starting work shall be verified.

D. Demolition Plan: Submit proposed demolition and removal procedures to the Owner's On Site Representative for approval before work is started. Include coordination with other work in progress, a detailed description of methods and equipment to be used for each operation and of sequence of operations.

1.5 CLOSEOUT SUBMITTALS

A. Section 01700 - Execution Requirements: Requirements for submittals.

B. Project Record Documents: Accurately record actual locations of capped utilities and subsurface obstructions.

1.6 QUALIFICATIONS

A. Demolition Firm: Company specializing in performing the Work of this Section with minimum ten years documented experience.

1.7 PRE-INSTALLATION MEETING

A. Section 01300 - Administrative Requirements: Pre-installation meeting.

1.8 REGULATORY REQUIREMENTS

A. Conform to applicable codes (federal, state and local) for demolition of structures, safety of adjacent structures, dust control, runoff control and disposal.

B. Obtain required permits from authorities.

C. Notify affected utility companies before starting work and comply with their requirements.

D. Do not close or obstruct roadways, sidewalks or hydrants without permits.

E. Conform to applicable regulatory procedures when discovering hazardous or contaminated materials.

1.9 JOB CONDITIONS

A. Inspect project work and check conditions under which work will be done.

B. The Owner assumes no responsibility for actual conditions of the work to be demolished. Conditions at the time of inspection for bidding purposes will be maintained by the Owner insofar as practicable, however, variations may occur due to the Owner's removal and storage operations prior to the commencement of the demolition work.

C. Structural and other conditions shall be verified with the Owner's On Site Representative before proceeding with the work. Notify the

Owner's On Site Representative in writing of any conditions detrimental to the execution and timing of the work.

D. The Contractor shall ensure coordination of his work with the Owner and all concerned so that all entrances and exits to adjacent areas of building remain accessible at all times.

E. Proceeding with the work shall be evidence of the acceptance by the Contractor of job conditions.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide, erect, and maintain temporary barriers and security devices.

B. Protect existing appurtenances and structures which are not to be demolished.

C. Prevent movement or settlement of adjacent structures. Provide bracing and shoring.

D. Mark location of utilities.

3.2 DEMOLITION REQUIREMENTS

A. Use of explosives is not permitted.

B. Conduct demolition to minimize interference with adjacent structures or occupancies.

C. Cease operations immediately if adjacent structures appear to be in danger. Notify Architect/Engineer. Do not resume operations until directed.

D. Conduct operations with minimum interference to public or private accesses. Maintain protected egress and access at all times.

E. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.

3.3 DUST AND DEBRIS CONTROL

A. Prevent the spread of dust and debris and avoid the creation of a nuisance or hazard in the surrounding area.

B. Do not use water if it results in hazardous or objectionable conditions such as, but not limited to, flooding or pollution.

C. Clean the work area daily. The Owner reserves the right to cleanup any condition that in the Owner's On Site Representative's judgement is detrimental to the Owner and shall charge the cleanup expense to the amount due to the Contractor.

3.4 PROTECTION

A. Traffic Control Signs: Where pedestrian and driver safety is endangered in the area of removal work, use traffic barricades with flashing lights. Notify Owner's On Site Representative prior to beginning work.

B. Existing Work: Protect existing work which is to remain in place. Repair items which are to remain and which are damaged during performance of the work to their original condition, or replace with new. Do not overload structural elements. Provide new supports and reinforcement for existing construction weakened by demolition or removal work. Repairs, reinforcement or structural replacement shall have Owner's approval.

C. Weather Protection: For portions of the building to remain, protect building interior and materials and equipment from the weather at all times. Where removal of existing roofing is necessary to accomplish work, have materials and workmen ready to provide adequate and temporary covering of exposed areas so as to ensure effectiveness and to prevent displacement.

D. Facilities: Protect electrical and mechanical services and utilities. Where removal of existing utilities and pavement is specified or indicated, provide approved barricades, temporary covering of exposed areas, and temporary services or connections for electrical and mechanical utilities.

E. Provide enclosed dust chutes with control gates from each floor to carry debris to truck beds and govern flow of materials into truck. Provide overhead bridges of tight board or prefabricated metal construction at dust chutes to protect persons and property from falling debris.

3.5 FIRE PROTECTION DURING DEMOLITION PHASE

A. Wherever a cutting torch or other equipment that might cause a fire is used, provide and maintain fire extinguishers nearby ready for immediate use. All possible users shall be instructed in use of fire extinguishers.

B. Hydrants shall be accessible at all times. No debris shall be permitted to accumulate within a radius of 20 feet of fire hydrants.

C. An overall demolition fire safety program shall be developed by Contractor. Essential items to be included but not limited to:

1. Good housekeeping.

2. On-site security.

3. Installation of fire protection systems.

4. Preservation of existing systems during demolition.

5. Organization and training of an on-site fire brigade.

6. A pre-fire plan developed with the Owner.

7. Protection of existing structures and equipment from exposure to fire resulting from alternation and demolition operations.

3.6 DEMOLITION - GENERAL

A. Disconnect and cap designated utilities within demolition areas.

B. Remove demolished materials from site.

C. Do not burn or bury materials on site. Leave site in clean condition.

D. Remove temporary work.

3.7 SPECIFIC DEMOLITION PROCEDURES IF APPLIES

A. Utilities and Related Equipment: Remove existing utilities as indicated and terminate in a manner conforming to the nationally recognized code covering the specific utility and approved by the Owner's On Site Representative. Remove meters and related equipment and deliver to a location within Plan Site in accordance with the instructions of the Owner's On Site Representative. If utility lines are encountered that are not shown on drawings, contact the Owner's On Site Representative for further instructions.

B. Paving: Remove ground, scarified, or sawcut asphaltic concrete paving including aggregate base to a depth of 1 foot below existing adjacent grade. Provide neat sawcuts at limits of pavement removal as indicated.

C. Masonry: Sawcut and remove masonry so as to prevent damage to surfaces to remain and to facilitate the installation of new work. Where new masonry adjoins existing, the new work shall abut or tie into the existing construction as indicated or specified for the new work.

D. Concrete: Sawcut concrete along straight lines to a depth of not less than 2 inches. Make each cut in walls perpendicular to the face and in alignment with the cut in the opposite face. Break the remaining concrete provided that the broken area is concealed in the finished work, and the remaining concrete is sound. At locations where the broken face cannot be concealed, grind smooth or saw cut entirely through the concrete.

3.8 PATCHING

A. Where removals leave holes and damaged surfaces exposed in the finished work, patch and repair these holes and damaged surfaces to match adjacent finished surfaces.

B. Where new work is to be applied to existing surfaces, perform removals and patching in a manner to produce surfaces suitable for receiving new work.

C. Finished surfaces of patched area shall be flush with the adjacent existing surface and shall match the existing adjacent surface as closely as possible as to texture and finish.

D. Patching shall be as specified and indicated, and shall include:

1. Holes and depressions caused by previous physical damage or left as a result of removals in existing masonry walls to remain shall be completely filled with an approved masonry patching material, applied in accordance with the manufacturer's printed instructions.

3.9 DISPOSITION OF MATERIAL

A. Title to Materials: Except where specified in other sections, all materials and equipment removed, and not reused, shall become the property of the Contractor and shall be removed from job site. Title to materials resulting from demolition, and materials and equipment to be removed, is vested in the Contractor upon approval by the Owner's On Site Representative to begin demolition. The Owner will not be responsible for the condition or loss of, or damage to, such property after notice to proceed. Materials and equipment shall not be viewed by prospective purchasers or sold on the site.

3.10 CLEANUP

A. Debris and Rubbish: Remove and transport debris and rubbish in a manner that will prevent spillage on pavements, streets or adjacent areas. Limit to 3/8-cubic yard capacity buggies or other conveyances used on roofs and within the building to transport removed debris to chute locations. Clean up spillage from pavements, streets and adjacent areas.

END OF SECTION