

DIVISION 1 - GENERAL REQUIREMENT

SECTION 01045 - CUTTING AND PATCHING

I. GENERAL

A. STIPULATIONS

The "Special Requirements" and "General Conditions" to the contract form a part of this section by this reference thereto and shall have the same force and effect as if printed herewith in full.

B. RELATED DOCUMENTS

The Contract Drawings and the Standard Form of Agreement apply to this Section.

C. SUMMARY

1. This section specifies administrative and procedural requirements for cutting and patching.
2. Refer to the drawings and other sections of these specifications for specific requirements and limitations applicable to cutting and patching individual parts of the work.

Requirements of this section apply to HVAV and electrical installations. Refer to Division-15 and Division-16 sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

3. Demolition of selected portions of the building for alterations is included in Specification Section "Demolition".

D. SUBMITTALS

1. Cutting and Patching Proposal: Where approval of procedures for cutting and patching is required before proceeding, submit a proposal describing procedures well in advance of the time cutting and patching will be performed and request approval to proceed. Include the following information, as applicable, in the proposal:
 - a. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.

- b. Describe anticipated results in terms of changes to existing construction; include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.
- c. List products to be used and firms or entities that will perform work.
- d. Indicate dates when cutting and patching is to be performed.
- e. List utilities that will be distributed or affected, including those that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.
- f. Where cutting and patching involves addition of reinforcement to structural elements, submit details and engineering calculations to show how reinforcement is integrated with the original structure.
- g. Approval by the Professional to proceed with cutting and patching does not waive the Professional's right to later require complete removal and replacement of a part of the work found to be unsatisfactory.

E. QUALITY ASSURANCE

- 1. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would reduce their load-carrying capacity or load-deflection ratio.

Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:

- (a) Foundation construction
- (b) Bearing and retaining walls
- (c) Structural concrete
- (d) Structural steel
- (e) Lintels
- (f) Structural decking
- (g) Stair systems
- (h) Miscellaneous structural metals
- (i) Exterior curtain wall construction
- (j) Equipment supports
- (k) Piping, ductwork, vessels and equipment
- (l) Structural systems of special construction in Division-13

2. Operational and Safety Limitations: Do not cut and patch operating elements or safety related components in a manner that would result in reducing their capacity to perform as intended, or result in increased maintenance, or decreased operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:

- (a) Shoring, bracing, and sheeting
- (b) Primary operational systems and equipment
- (c) Air or smoke barriers
- (d) Water, moisture, or vapor barriers
- (e) Membranes and flashings
- (f) Fire protection systems
- (g) Noise and vibration control elements and systems
- (h) Control systems
- (i) Communication systems
- (j) Conveying systems
- (k) Electrical wiring systems
- (l) Special construction specified by Division-13 sections

3. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Professional's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace work cut and patched in a visually unsatisfactory manner.

If possible retain the original installer or fabricator to cut and patch the following categories of exposed work, or if it is not possible to engage the original installer or fabricator, engage another recognized experienced and specialized firm:

- (a) Processed concrete finishes
- (b) Ornamental metal
- (c) Matched-veneer woodwork
- (d) Window wall system
- (e) Stucco and ornamental plaster
- (f) Acoustical ceilings
- (g) Carpeting
- (h) HVAC enclosures, cabinets or covers

4. Cutting and patching, such as where piping and ducts are removed, or new ducts and piping are installed through existing construction for openings larger than 36 square inches or holes larger than 6 inches in diameter will be provided by the general contractor. Cutting and patching, and patching such as where piping and ducts are removed, or new ducts and piping are installed through existing construction for openings 36 square inches or smaller or holes 6 inches

in diameter or smaller will be provided by the respective M/E trade. Cutting will also apply to the metal decking at the penthouse roof.

5. Where work is to be provided above existing removable ceiling not indicated for replacement, such ceilings will be removed, stored and replaced by the general contractor.

II. PRODUCTS

A. Materials

Use materials that are identical to existing materials. If identical materials are not available or cannot be used where exposed surfaces are involved, use materials that match existing adjacent surfaces to the fullest extent possible with regard to visual effect. Use materials whose installed performance will equal or surpass that of existing materials.

III. EXECUTION

A. Inspection

Before cutting existing surfaces, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.

B. Preparation

1. Temporary Support: Provide temporary support of work to be cut.
2. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the project that might be exposed during cutting and patching operations.
3. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
4. Take all precautions necessary to avoid cutting existing pipe, conduit or ductwork serving the building, but scheduled to be removed or relocated until provisions have been made to bypass them.

C. PERFORMANCE

1. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

- a. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
2. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review proposed procedures with the original installer, comply with the original installer's recommendations.
- a. In general, where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots neatly to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - b. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - c. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 - d. Comply with requirements of applicable sections of Division-2 where cutting and patching requires excavating and backfilling.
 - e. By-pass utility services such as pipe or conduit, before cutting, where services are shown or required to be removed, relocated or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after by-passing and cutting.
3. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
- a. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 - b. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
 - c. Where removal of walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space to provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if

necessary to achieve uniform color and appearance.

- (1) Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken containing the patch, after the patched area has received primer and second coat.

- d. Patch, repair or rehang existing ceilings as necessary to provide an even plane surface of uniform appearance.

D. CLEANING

Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove completely paint, mortar, oils, putty and items of similar nature. Thoroughly clean piping, conduit and similar features before painting or other finishing is applied. Restore damaged pipe covering to its original condition.