

SECTION 01733 – CUTTING AND PATCHING

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections of these Specifications for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
- C. Contractor is responsible for cutting, fitting or patching required to complete the Work or to make its part fit together properly. Contractor shall not damage or endanger a portion of the Work or fully or partially completed Work by cutting, patching or otherwise altering such construction, or by excavation.

1.2 GENERAL REQUIREMENTS

- A. Take all precautions 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.
- B. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would 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 satisfactory manner.
 - 1. Retain the original installer or fabricator to cut and patch work, or if it is not possible engage a recognized experienced and specialized firm.
 - 2. Coordinate cutting and patching work with pattern or joints of exposed finished work. Extend perimeter cut if no additional structural or safety involvement is encountered to allow for blending of finished material or pattern.

1.3 DEFINITION

- A. "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition.
- B. "Cutting and patching" is performed for coordination of the work, to uncover work for access or inspection, to obtain samples for testing, to permit alterations to be performed or for other similar purposes.
- C. Cutting and patching performed during the manufacture of products, or during the initial fabrication, erection or installation processes is not considered to be "cutting and patching" under this definition. Drilling of holes to install fasteners and similar operations are also not considered to be "cutting and patching".
- D. "Selective Demolition" is recognized as related-but-separate categories of work, which may or may not require cutting and patching as defined in this Section; refer to "Selective Demolition" Section 01738.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: The following procedures are required for structural elements, before proceeding, submit a proposal describing procedures in advance of the time cutting and patching will be performed. Include the following information:
 - 1. Describe the extent of cutting and patching required and how it is to be performed; indicate why it cannot be avoided.
 - 2. Describe anticipated results; include changes to structural elements and operating components and changes in the building's appearance and other visual elements.
 - 3. List products to be used and entities that will perform Work.
 - 4. Indicate dates when cutting and patching is to be performed.

5. List utilities that will be disturbed, including those that will be relocated and those that will be temporarily out-of service. Indicate how long service will be disrupted.
6. Approval by the Architect to proceed does not waive the Architect's right to later require complete removal and replacement of Work found to be unsatisfactory.

1.5 QUALITY ASSURANCE

- A. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- B. Performance: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
 1. Cut existing construction to provide for the installation of other components or the performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

1.6 PROJECT CONDITIONS

- A. Provide tenting or barriers as necessary to protect adjacent finished work and equipment from dust and debris.
- B. Provide water dams and control for cutting operations, which require water dispersal of cuttings.
- C. 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 the Architect's approval to proceed with cutting and patching before cutting and patching the following structural elements:
 1. Foundation construction.
 2. Bearing and retaining walls.
 3. Structural concrete.
 4. Lintels.
 5. Structural decking.
 6. Miscellaneous structural metals.
 7. Exterior curtain wall construction.
 8. Equipment supports.
 9. Piping, ductwork, vessels and equipment.

1.7 OPERATIONAL AND SAFETY LIMITATIONS:

- A. Operational and Safety Limitations: Do not cut and patch operating elements or safety components in a manner that would reduce their capacity to perform as intended, or would increase maintenance, or decrease operational life or safety. Obtain approval of the cutting and patching proposal before cutting and patching operating elements or safety related systems.
- B. 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, safety, or energy performance.
- C. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems.
 1. Shoring, bracing, and sheeting.
 2. Primary operational systems and equipment.
 3. Air or smoke barriers.
 4. Water, moisture or vapor barriers.
 5. Membranes and flashings.
 6. Fire protection systems.
 7. Noise and vibration control elements and systems.
 8. Control systems.
 9. Communication systems.
 10. Electrical wiring systems.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Materials: Use materials 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. Use materials whose performance will equal or surpass of existing materials.

PART 3 – EXECUTION

3.1 EXAMINATION/ PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.

3.2 EXECUTION

- A. Cutting: Cut existing construction using methods least likely to damage elements to be retained or adjoining construction. Where possible review procedures with the original installer; comply with the original installer's recommendations.
 - 1. Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
 - 2. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.
 - 3. Comply with requirements of applicable sections where cutting and patching requires excavating and backfilling.
 - 4. 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 bypassing and cutting.
- B. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
 - 1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
 - 2. 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.
 - 3. Where the 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.
 - a. 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.
 - 4. Patch, repair or re-hang existing ceilings as necessary to provide an even plane surface of uniform appearance.

3.3 VISUAL REQUIREMENTS

- A. Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would, in the Owner's Construction Manager's opinion, reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work which has been cut and patched in a visually unsatisfactory manner.

3.4 PROTECTION

- A. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.

3.5 CLEAN UP

- A. Cleaning: Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied. Restore damaged pipe covering to its original condition.
- B. Inspect area with Architect and Project Manager prior to removing barriers. Repair areas where barriers have marred surface of finished work.
- C. 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.

END OF SECTION 01733