

SECTION 01781 - PROJECT RECORD DOCUMENTS - CONSTRUCTION MANAGER EDITION

PART 1 - GENERAL

1.1 Summary:

- A. Throughout progress of Work, maintain an accurate record of changes in Contract Documents.
- B. Upon completion of Work, transfer recorded changes to a set of Final Project Record Documents.

1.2 Related Sections:

- A. Documents affecting Work of this Section include General Conditions and Sections in Division 1 of these Specifications.
- B. Other requirements affecting Project Record Documents may appear in pertinent other Sections of these Specifications.

1.3 Quality Assurance:

- A. Delegate responsibility for maintenance of Record Documents to one person on Contractor's staff as approved by Construction Manager and Architect.
- B. Accuracy of records:
 - 1. Thoroughly coordinate changes within Record Documents, making adequate and proper entries on each page of Specifications and each sheet of Drawings and other Documents where such entry is required to show change properly.
 - 2. Accuracy of records shall be such that a future search for items shown in Contract Documents may rely reasonably on information obtained from Project Record Documents.
 - 3. Make entries within 72 hours after receipt of information that change has occurred.
- C. Product Handling:
 - 1. Maintain Job Set of Record Documents completely protected from deterioration and from loss and damage until completion of Work and transfer of recorded data to final Project Record Documents.
 - 2. In event of loss of recorded data, use means necessary to again secure data to Construction Manager's and Architect's approval.
 - 3. Such means shall include, if necessary in opinion of Construction Manager and Architect, removal and replacement of concealing materials.
 - 4. In such case, provide replacements to standards originally required by Contract Documents.

1.4 Submittals:

- A. Comply with pertinent provisions of Section 01330.
- B. Construction Manager's and Architect's approval of current status of Project Record Documents will be a prerequisite to Construction Manager's and Architect's approval of requests for progress payment and request for final payment under Contract.
- C. Prior to submitting each request for progress payment, secure Construction Manager's and Architect's approval of current status of Project Record Documents.
- D. Prior to submitting request for final payment, submit final Project Record Documents to Construction Manager and Architect and secure approval.

PART 2 - PRODUCTS

2.1 Job Set:

- A. Promptly following receipt of Owner's Notice to Proceed, secure from Architect at no charge to Contractor one complete conforming set of Documents comprising Contract.

2.2 Final Project Record Documents:

- A. The purpose of Final Project Record Documents is to provide factual information regarding aspects of Work, both concealed and visible, to enable future modifications of Work to proceed without lengthy and expensive site measurement, investigation, and examination. The document set shall include:
 - 1. Final Record Drawings: At a time nearing completion of Work, transfer information from Job Set to Final Record Drawings.
 - 2. Specifications: At a time nearing completion of Work prepare Specification Sections received from Architect with revisions and addenda added.
 - 3. Submittal Set: At a time nearing completion of Work, as per Section 01330, prepare approved submittal documents for review including revisions if any.
 - a. Collect approved submittal documents and prepare an index including following information:
 - 1) Specification Section
 - 2) Date approved
 - 3) Submittal number
 - 4) Brief description
 - b. Index shall be organized per Specification Section.

PART 3 - EXECUTION

3.1 Job Set:

- A. Immediately upon receipt of conforming set described above, identify each Document with title, "RECORD DOCUMENTS - JOB SET."

- B. Preservation:
1. Consider number of occasions upon which Job Set must be taken out for new entries and for examination, and conditions under which these activities will be performed, devise a suitable method for protecting Job Set for approval of Construction Manager and Architect.
 2. Do not use Job Set for any purpose except entry of new data and for review by Construction Manager and Architect, until start of transfer of data to Final Project Record Documents.
 3. Maintain Job Set at site of Work as that site is designated by Construction Manager and Architect.
- C. Making entries on Drawings
1. Using an erasable colored pencil (not ink or indelible pencil), clearly describe change by graphic line and note as required.
 2. Date entries.
 3. Call attention to entry by a "cloud" drawn around area or areas affected.
 4. In event of overlapping changes, use different colors for overlapping changes.
- D. Make entries in pertinent other Documents as approved by Construction Manager and Architect.
- E. Conversion of schematic layouts:
1. In some cases on Drawings, arrangements of conduits, circuits, piping, ducts, and similar items, are shown schematically and are not intended to portray precise physical layout.
 - a. Final physical arrangement is determined by Contractor, subject to Construction Manager's and Architect's approval.
 - b. However, design of future modifications of facility may require accurate information as to final physical layout of items which are shown only schematically on Drawings.
 2. Show on Job Set of Record Drawings, by dimension accurate to within one inch, the centerline of each run of items such as are described in subparagraph 3.1-E-1 above.
 - a. Clearly identify item by accurate note such as "cast iron drain," "galv. water," etc.
 - b. Show, by symbol or note, vertical location of item ("under slab," "in ceiling plenum," "exposed," etc).
 - c. Make identification sufficiently descriptive that it may be related reliably to Specifications.
 3. Construction Manager and Architect may waive requirements for conversion of schematic layouts where, in Architect's judgment, conversion serves no useful

purpose. However, do not rely upon waivers being issued except as specifically issued in writing by Architect.

3.2 Final Project Record Documents:

- A. Approval of recorded data prior to transfer:
 - 1. Following receipt of transparencies described above, and prior to start of transfer of recorded data thereto, secure Construction Manager's and Architect's approval of recorded data.
 - 2. Make required revisions.
- B. Transfer of data to Drawings:
 - 1. Carefully transfer change data shown on Job Set of Record Drawings to corresponding final record drawings, coordinating changes as required.
 - 2. Clearly indicate at each affected detail and other Drawing a full description of changes made during construction, and actual location of items described above.
 - 3. Call attention to each entry by drawing a "cloud" around area or areas affected.
 - 4. Make changes neatly, consistently, and with proper media to assure longevity and clear reproduction.
- C. Transfer of data to other Documents:
 - 1. If Documents other than Drawings have been kept clean during progress of Work, and if entries thereon have been orderly to approval of Construction Manager and Architect, Job Set of those Documents other than Drawings will be accepted as final Record Documents.
 - 2. If any such Document is not approved by Construction Manager and Architect, secure a new copy of that Document from Architect at Architect's usual charge for reproduction and handling, and carefully transfer change data to new copy to approval of Construction Manager and Architect.
- D. Review and submittal:
 - 1. Submit completed set of Final Project Record Documents to Construction Manager and Architect as described above.
 - 2. Participate in review meetings as required.
 - 3. Make required changes and deliver Final Project Record Documents to Construction Manager and Architect within 30 calendar days of substantial completion.
 - 4. Submittal of Final Project Record Documents shall be in following formats:
 - a. Final record drawings: One copy final record drawings in bond paper, and two in scanned digital format. The original pre-scanned documents shall be black print on bond paper.
 - b. Specifications: One copy 20 lb bond white paper and scanned digital format.

- c. Submittal documents: Scanned digital format.
 - d. O & M manual – Two copies 2016. bond white paper and two copies in scanned digital format.
 - e. Mechanical video demonstration: three copies in DVD format.
5. Scanned digital formats shall comply with following:
- a. For drawings:
 - 1) File type: TIFF Version 6.0 with LZW Compression
 - 2) Automatic despeckling at 7 pixel settings, unless other settings provide better legibility with prior approval by MCPS.
 - 3) Deskewing, cropping and rotation (landscape view optimum right angles)
 - 4) Attended scanning with maximized readability adjustments performed per sheet.
 - b. For specifications, submittals, and operating, maintenance and product data:
 - 1) File type: PDF version 1.7 (ISO 32000-1:2008) compatible with Adobe Acrobat 8.0 or higher
 - 2) Invert to be upright.
 - c. Scanned images are to be stored in CD ROM disk (ISO 9660). Provide two copies.
 - d. Prior to scanning, provide sample image of a typical sheet for approval by MCPS. Scanning service shall notify MCPS, Division of Construction of any probable illegible scans. Final file name format to be approved by MCPS, Division of Construction. For quantity, Contractor shall assume total number of Contract Drawings plus 10%. The final acceptable quality of scans shall be at the discretion of MCPS. It is intended that information on scans be legible.
 - e. Electronic directory structure shall include root directory with school name and subdirectories as follows:
 - 1) school name\drawings\ (each drawing shall be a separate file and file name shall be named to match sheet number -with sheet title - i.e. C1 Site Plan.)
 - 2) school name\specifications\ (entire specification shall be a single PDF file with a table of contents included with bookmarks to each specification section)
 - 3) school name\submittals\ (all submittals shall be a single PDF file with a table of contents included with bookmarks to each specification section and individual submittal)

- 4) school name\om_manual\ (entire O&M manual shall be a single PDF file with a table of contents included with bookmarks to each specification section)
- f. Organize specifications, submittals, and O&M manual documents as follows:
- (1) Specifications - set up with a table of contents in same order as CSI master format using specification section number and name in table of contents. (ie. Section 08520 - Aluminum Windows).
 - (2) Submittals - set up with a table of contents in same order as CSI master format using specification section number, title of submittal, and submittal number in table of contents. (ie. Section 08520 - Aluminum Windows - Submittal No. 1).
 - (3) O&M Manuals - set up with a table of contents in same order as CSI master format using specification section number and title of item described in table of contents. Also, list name of subcontractor (ie Section 08520 - Aluminum Windows - Frames, Subcontractor "Great Window Co.").
- E. Retention Reduction:
1. Retention reduction from 5 percent will not be made until all of Record Documents have been received.
- F. Changes Subsequent to Acceptance:
1. Changes to the Record Documents, including those resulting from Work performed under Warranty shall be provided in a Supplemental Submission. Contractor has no responsibility for recording changes in Work subsequent to Final Completion.

END OF SECTION