MASTERFORMAT™

2004 EDITION NUMBERS & TITLES


The numbers and titles presented here are identical to the MasterFormat™ 2004 Edition Numbers and Titles that were distributed on June 8, 2004 and revised in August 2004, save for additional selected title corrections that were made in the process of copy editing the MasterFormat publication. These corrections are listed separately on http://www.csinet.org/MasterFormat. The numbers and titles presented here are identical to the numbers and titles presented in the full MasterFormat 2004 publication available for purchase from CSI and CSC.

MasterFormat™ is the specifications-writing standard for most commercial building design and construction projects in North America. It lists titles and section numbers for organizing data about construction requirements, products, and activities. By standardizing such information, MasterFormat facilitates communication among architects, specifiers, contractors and suppliers, which helps them meet building owners’ requirements, timelines and budgets.

This revision of MasterFormat is the most significant in the product’s 40-year history, and reflects the growing volume and complexity of information generated for commercial construction projects. MasterFormat 2004 Edition: Numbers & Titles was developed by a team of individuals representing all stakeholders in the industry – owners, architects, engineers, contractors, manufacturers and facility managers. MasterFormat is intended to address specification requirements through the entire built lifecycle.

The Numbers and Titles are intentionally structured for anticipated growth and expansion in the future. CSI encourages all interested parties to provide input to CSI so that as the built environment evolves so can MasterFormat.

To learn more about MasterFormat 2004 Edition, go to http://www.csinet.org/MasterFormat for education programs, training, certification and local chapter information.
INTRODUCTION

Over the last forty years, MasterFormat™ has become the leading standard for organizing commercial construction specifications, and is now almost omnipresent in the AEC industry, thanks to the many applications to which it has been put. In 2001, the Construction Specifications Institute (CSI), along with sister organization Construction Specifications Canada (CSC), charged the MasterFormat Expansion Task Team with examining whether there was a need to revise and possibly expand the 1995 edition of MasterFormat to accommodate changes that have taken place in the industry since that version was published. The task team worked to develop a revised and expanded version of MasterFormat, consulting with all types of users, creating and distributing drafts, collecting and evaluating commentary, and attempting to bring all of this information into line with a vision of the construction industry that equally addresses the needs of next year and those of forty years from today. The 2004 edition of MasterFormat promises to be the most dramatic revision in the document’s forty-year history, and one that will position it to excel at organizing construction information for a wider array of project types and currently unforeseen technology for the next forty years and beyond.

MasterFormat 2004 Edition: Numbers and Titles is a master list of numbers and subject titles for organizing information about construction work results, requirements, products, and activities into a standard sequence. Construction projects use many different delivery methods, products, and installation methods. Successful completion of projects requires effective communication among the people involved. Information retrieval is nearly impossible without a standard filing system familiar to each user. MasterFormat Numbers and Titles facilitate standard filing and retrieval schemes throughout the construction industry. MasterFormat Numbers and Titles are suitable for use in project manuals, for organizing cost data, reference keynotes on drawings, for filing product information and other technical data, for identifying drawing objects and for presenting construction market data.

Each MasterFormat number and title defines a “section,” arranged in “levels” depending on their breadth of coverage. The broadest collections of related construction products and activities are level one titles, otherwise known as “divisions.” Each division in the MasterFormat 2004 Edition: Numbers and Titles is made up of level two, level three, and occasionally level four numbers and titles assigned by MasterFormat, each of which delineate a gradually more detailed area of work results to be specified. Work results are defined as traditional construction practices that typically result from an application of skills to construction products or resources. A further explanation of how to use each of the individual titles listed in MasterFormat 2004 Edition: Numbers and Titles is provided in the complete MasterFormat 2004 Edition publication, available from CSI and CSC in late 2004. Along with these scope and usage notes, the complete publication includes other added information designed to make its use easier, including a keyword index of requirements, products, and activities to help users find appropriate numbers and titles for construction subjects and an application guide to advise users of best practices for the use of MasterFormat titles and numbers.

MASTER FORMAT 2004 EDITION DEVELOPMENT:

The MasterFormat Expansion Task Team started their work in April 2001 by reaching out to the AEC industry and soliciting commentary on the proposal to revise and expand MasterFormat. Based on this commentary, the task team embarked on the long process of revising and developing content for the 2004 edition. Throughout its work, the task team’s progress from draft to draft was driven by evaluating the commentary given by MasterFormat’s users, and integrating that with the central challenge – maintaining a balance between meeting the needs of today and working to help implement a broader vision of an integrated construction information marketplace that will soon be pervasive in the way we conduct our everyday work. The task team explored many possible options for maintaining this balance between the demands of the present and those of the near future, and the need that underlies it, to create...
the best and most flexible and forward-thinking expansion, and do so without taking this effort beyond the bounds of user acceptance. For just as it would be senseless to create a 2004 edition of MasterFormat that was not flexible or forward-thinking and was thus ill-equipped to meet the challenges and needs that lie ahead, so too would it be pointless to create one that was so forward-thinking that it was unacceptable to today’s users and as a result was not implemented. Having incorporated the input of literally hundreds of individuals and organizations into their work, the task team is proud to now present the title and number contents and organization of the next edition of this industry standard, MasterFormat 2004 Edition: Numbers and Titles.

MASTERFORMAT 2004 EDITION NUMBERING REVISION EXPLAINED:

One of the most significant changes in the MasterFormat 2004 Edition is the adoption of a six-digit numbering system in place of the familiar five-digit system that has been used in MasterFormat since the 1978 edition. This six-digit system was first introduced in drafts issued in early 2003, and then accepted by the task team for all subsequent drafts, and provides exponentially more expansion spaces per level than the five-digit system, all but eliminating concerns about future expansion.

The familiar five-digit numbers in MasterFormat 1995 Edition are divided in the following fashion:

03 20 00 – Concrete Reinforcement

The first two digits, in this case “03” represent the division number, otherwise known as “level one.” Each of the next three digits are taken individually, each representing one level of classification, or levels two, three, and four. Typically in MasterFormat, level four numbers are not assigned and are left as zero, to provide maximum flexibility for individual users.

The new six-digit MasterFormat 2004 numbers work in a slightly different fashion:

03 20 00 – Concrete Reinforcing

As was the case with the old numbers, the first two digits, in this case also “03,” still represent the division number, otherwise still known as “level one.” But here’s where the difference comes in. The next pair of numbers, in this case “20” represents level two, and the third pair, “00,” represents level three. Generally, level four numbers are not defined by the listed MasterFormat numbers, but when they are, an additional pair of digits is attached to the end, preceded by a “dot.” Level four numbers have only been used at locations in which the amount of detail merits the additional level of classification. Level four numbers appear like this:

03 52 16.13 Lightweight Cellular Insulating Concrete

Additional recommendations for the use of level four and level five will be included in the MasterFormat 2004 Edition application guide and throughout the full publication, preserving a level of user modifiable numbers for flexibility. More importantly, because each level of classification is represented by a pair of digits, there is room to address over ten times as many subjects at each level, providing flexibility and room for expansion that the five digit numbers could never provide, and providing it where it will have the most impact in addressing future needs for expansion to address new subject matter.

MASTERFORMAT 2004 EDITION DIVISION CONTENTS:

Though changes too numerous to list have been incorporated into the 2004 edition of MasterFormat, the following is a summary that compares the contents of the divisions that will compose MasterFormat 2004 Edition with MasterFormat 1995 Edition.
Division 00 – Procurement and Contracting Requirements: Essentially the same scope as MasterFormat 1995 Edition.

Division 01 – General Requirements: Area for performance requirements added to allow for writing performance requirements for elements that overlap work sections (building envelope, structure, etc.). This allows for a mixture of broad performance specifications and prescriptive specifications in a project manual.

Division 02 – Existing Conditions: This division is now limited to “existing conditions,” construction practices that relate to items at the site at the commencement of work – selective demolition, subsurface and other investigation, surveying, site decontamination, and site remediation, among others. All site construction as well as heavy civil and infrastructure subject matter, including utility and pavement work, has been relocated to the Site and Infrastructure Subgroup.

Divisions 03 – Concrete, 04 – Masonry, and 05 – Metals: Essentially the same scope as MasterFormat 1995 Edition.


Division 08 – Openings: Renamed but with essentially the same scope of as MasterFormat 1995 Edition with the addition of some other openings such as louvers and grilles.


Division 11 – Equipment: Equipment related to process engineering has been relocated to the Process Equipment Subgroup and equipment related to infrastructure has been relocated to the Site and Infrastructure Subgroup.

Division 12 – Furnishings: Essentially the same scope as MasterFormat 1995 Edition.

Division 13 – Special Construction: Special construction related to process engineering has been relocated to the Process Equipment Subgroup. Security access, building automation, detection and alarm, and fire suppression subjects have been relocated to the Facility Services Subgroup.

Division 14 – Conveying Equipment: Renamed with process related material handling subjects relocated to the Process Equipment Subgroup.

Division 15 – Mechanical: Division 15 has been reserved for future expansion and material has been relocated to Division 22 – Plumbing and Division 23 – Heating, Ventilating, and Air Conditioning in the Facility Services Subgroup.

Division 16 - Electrical: Division 16 has been reserved for future expansion and material has been relocated to Divisions 26 – Electrical and 27 – Communications in the Facility Services Subgroup.

Facility Services Subgroup: This subgroup retains the same basic content as published in Draft 4, but with some new divisions, arranged in a revised order.


Site and Infrastructure Subgroup: This subgroup contains heavy civil and utility subject matter, as well as site construction material moved from Division 2 in MasterFormat 1995 Edition.


Division 40 – Process Integration: Process facilities are composed of a variety of subsystems, tied together and integrated by distribution pathways, control, and instrumentation. All of these systems must work together as a whole. This division includes elements used to tie these systems together: piping, heat tracing, insulation, and instrumentation and control systems, and also provides a place to specify commissioning requirements for the subsystems and the facility as a whole.

Division 41 – Material Processing and Handling Equipment: Equipment for processing and conditioning of raw materials; material handling equipment for bulk materials as well as discrete units; manufacturing equipment and machinery, test equipment, and packaging / shipping systems.

Division 42 – Process Heating, Cooling, and Drying Equipment: Equipment for process heating, cooling and drying of materials, liquids, gases and manufactured items and materials.

Division 43 – Process Gas and Liquid Handling, Purification and Storage Equipment: Equipment for handling, purification and storage of process liquids, gases, slurries; includes atmospheric tanks as well as pressure vessels.

Division 44 – Pollution Control Equipment: Equipment for controlling emission of contaminants from manufacturing processes and treatment of air, water, soils and noise contaminants.

Division 45 – Industry-Specific Manufacturing Equipment: A division in which users can specify equipment that is used only within a single industry. All industries currently identified within the North American Industry Classification System (NAICS) are allocated space within the division.

Division 48 – Electrical Power Generation: Plants and equipment for the generation and control of electrical power from fossil fuel, nuclear energy, hydroelectric, wind, solar energy, geothermal energy, electrochemical energy, and fuel cells.

Divisions not named above are explicitly reserved to provide space for future development and expansion. To minimize costs resulting from potential future expansions, it's not recommended that users populate these divisions with their own material.

MASTERFORMAT 2004 EDITION AND OTHER INDUSTRY CLASSIFICATION EFFORTS

The MasterFormat Expansion Task Team's work also envisions the expanded content of MasterFormat serving to inform Table 22 (Work Results) of the OmniClass Construction Classification System (OCCS), a multi-table system for organizing information used by the AEC industry. CSI has worked with the cross-industry group responsible for the creation and maintenance of this standard, the OCCS Development Committee, to ensure that MasterFormat is compatible with OmniClass. As a result, the full version of MasterFormat will be one of the first applications of the OCCS. Once fully developed, the OCCS will be the basis for deriving relational applications, and will support and empower the transfer and use of information in the construction marketplace, ultimately serving all participants who work to sustain the built environment throughout the entire life cycle. MasterFormat’s 2004 edition will play an important role in this activity.

The 2004 edition of MasterFormat replaces the 1995 edition and is produced jointly by The Construction Specifications Institute (CSI); (800) 689-2900, and Construction Specifications Canada (CSC); (416)777-2198. For those interested in more information about MasterFormat and its use in the construction industry contact CSI Member Service at (800) 689-2900 or consult the web at www.CSI.net/MasterFormat.
## Division Numbers and Titles

### PROCUREMENT AND CONTRACTING REQUIREMENTS GROUP
- **Division 00** Procurement and Contracting Requirements

### SPECIFICATIONS GROUP

<table>
<thead>
<tr>
<th>General Requirements Subgroup</th>
<th>Site and Infrastructure Subgroup</th>
</tr>
</thead>
<tbody>
<tr>
<td>Division 01 General Requirements</td>
<td>Division 30 Reserved</td>
</tr>
<tr>
<td><strong>Facility Construction Subgroup</strong></td>
<td>Division 31 Earthwork</td>
</tr>
<tr>
<td>Division 02 Existing Conditions</td>
<td>Division 32 Exterior Improvements</td>
</tr>
<tr>
<td>Division 03 Concrete</td>
<td>Division 33 Utilities</td>
</tr>
<tr>
<td>Division 04 Masonry</td>
<td>Division 34 Transportation</td>
</tr>
<tr>
<td>Division 05 Metals</td>
<td>Division 35 Waterway and Marine Construction</td>
</tr>
<tr>
<td>Division 06 Wood, Plastics, and Composites</td>
<td>Division 36 Reserved</td>
</tr>
<tr>
<td>Division 07 Thermal and Moisture Protection</td>
<td>Division 37 Reserved</td>
</tr>
<tr>
<td>Division 08 Openings</td>
<td>Division 38 Reserved</td>
</tr>
<tr>
<td>Division 09 Finishes</td>
<td>Division 39 Reserved</td>
</tr>
<tr>
<td>Division 10 Specialties</td>
<td><strong>Process Equipment Subgroup</strong></td>
</tr>
<tr>
<td>Division 11 Equipment</td>
<td>Division 40 Process Integration</td>
</tr>
<tr>
<td>Division 12 Furnishings</td>
<td>Division 41 Material Processing and Handling Equipment</td>
</tr>
<tr>
<td>Division 13 Special Construction</td>
<td>Division 42 Process Heating, Cooling, and Drying Equipment</td>
</tr>
<tr>
<td>Division 14 Conveying Equipment</td>
<td>Division 43 Process Gas and Liquid Handling, Purification, and Storage Equipment</td>
</tr>
<tr>
<td><strong>Facility Services Subgroup</strong></td>
<td>Division 44 Pollution Control Equipment</td>
</tr>
<tr>
<td>Division 20 Reserved</td>
<td>Division 45 Industry-Specific Manufacturing Equipment</td>
</tr>
<tr>
<td>Division 21 Fire Suppression</td>
<td>Division 46 Reserved</td>
</tr>
<tr>
<td>Division 22 Plumbing</td>
<td>Division 47 Reserved</td>
</tr>
<tr>
<td>Division 23 Heating, Ventilating, and Air Conditioning</td>
<td>Division 48 Electrical Power Generation</td>
</tr>
<tr>
<td>Division 24 Reserved</td>
<td>Division 49 Reserved</td>
</tr>
<tr>
<td>Division 25 Integrated Automation</td>
<td></td>
</tr>
<tr>
<td>Division 26 Electrical</td>
<td></td>
</tr>
<tr>
<td>Division 27 Communications</td>
<td></td>
</tr>
<tr>
<td>Division 28 Electronic Safety and Security</td>
<td></td>
</tr>
<tr>
<td>Division 29 Reserved</td>
<td></td>
</tr>
<tr>
<td>Division 30 Reserved</td>
<td></td>
</tr>
</tbody>
</table>
DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

00 00 00  PROCUREMENT AND CONTRACTING REQUIREMENTS

INTRODUCTORY INFORMATION

00 01 01  Project Title Page
00 01 05  Certifications Page
00 01 07  Seals Page
00 01 10  Table of Contents
00 01 15  List of Drawing Sheets
00 01 20  List of Schedules

PROCUREMENT REQUIREMENTS

00 10 00  SOLICITATION

00 11 00  Advertisements and Invitations
00 11 13  Advertisement for Bids
00 11 16  Invitation to Bid
00 11 19  Request for Proposal
00 11 53  Request for Qualifications

00 20 00  INSTRUCTIONS FOR PROCUREMENT

00 21 00  Instructions
00 21 13  Instructions to Bidders
00 21 16  Instructions to Proposers

00 22 00  Supplementary Instructions
00 22 13  Supplementary Instructions to Bidders
00 22 16  Supplementary Instructions to Proposers

00 23 00  Procurement Definitions

00 24 00  Procurement Scopes
00 24 13  Scopes of Bids
00 24 13.13  Scopes of Bids (Multiple Contracts)
00 24 13.16  Scopes of Bids (Multiple-Prime Contract)
00 24 16  Scopes of Proposals
00 24 16.13  Scopes of Proposals (Multiple Contracts)
00 24 16.16  Scopes of Proposals (Multiple-Prime Contract)

00 25 00  Procurement Meetings
00 25 13  Pre-Bid Meetings
00 25 16  Pre-Proposal Meetings

00 26 00  Procurement Substitution Procedures

00 30 00  AVAILABLE INFORMATION

00 31 00  Available Project Information
00 31 13  Preliminary Schedules
00 31 13.13 Preliminary Project Schedule
00 31 13.16 Preliminary Construction Schedule
00 31 13.23 Preliminary Project Phases
00 31 13.26 Preliminary Project Sequencing
00 31 13.33 Preliminary Project Milestones
00 31 16 Project Budget Information
00 31 19 Existing Condition Information
  00 31 19.13 Movement and Vibration Information
  00 31 19.16 Acoustic Information
  00 31 19.19 Traffic Information
00 31 21 Survey Information
  00 31 21.13 Site Survey Information
  00 31 21.16 Measured Drawing Information
  00 31 21.19 Photographic Information
00 31 24 Environmental Assessment Information
  00 31 24.13 Soil Contamination Report
  00 31 24.23 Environmental Impact Study Report
  00 31 24.26 Environmental Impact Report Evaluation
  00 31 24.29 Record of Environmental Impact Decision
  00 31 24.33 Environmental Impact Mitigation Report
00 31 25 Existing Material Information
  00 31 25.16 Existing Concrete Information
  00 31 25.19 Existing Masonry Information
  00 31 25.23 Existing Metals Information
  00 31 25.26 Existing Wood, Plastics, and Composites Information
  00 31 25.29 Existing Thermal and Moisture Protection Information
00 31 26 Existing Hazardous Material Information
  00 31 26.23 Existing Asbestos Information
  00 31 26.26 Existing Lead Information
  00 31 26.29 Existing Polychlorinate Biphenyl Information
  00 31 26.33 Existing Mold Information
  00 31 26.36 Existing Hazardous Waste Drum Information
00 31 31 Geophysical Data
  00 31 31.13 Seismic Investigations Information
  00 31 31.16 Gravity Investigations Information
  00 31 31.19 Magnetic Investigations Information
  00 31 31.23 Electromagnetic Investigations Information
  00 31 31.26 Electrical Resistivity Investigations Information
  00 31 31.29 Magnetotelluric Investigations Information
00 31 32 Geotechnical Data
  00 31 32.13 Subsurface Drilling and Sampling Information
  00 31 32.16 Material Testing Information
  00 31 32.19 Exploratory Excavation Information
  00 31 32.23 Geotechnical Monitoring Information
00 31 43 Permit Application

00 40 00 PROCUREMENT FORMS AND SUPPLEMENTS
00 41 00 Bid Forms
  00 41 13 Bid Form – Stipulated Sum (Single-Prime Contract)
  00 41 16 Bid Form – Stipulated Sum (Multiple-Prime Contract)
  00 41 23 Bid Form – Construction Management (Single-Prime Contract)
  00 41 26 Bid Form – Construction Management (Multiple-Prime Contract)
  00 41 33 Bid Form – Cost Plus-Fee (Single-Prime Contract)
  00 41 36 Bid Form – Cost-Plus-Fee (Multiple-Prime Contract)
00 41 43  Bid Form – Unit Price (Single-Prime Contract)
00 41 46  Bid Form – Unit Price (Multiple-Prime Contract)
00 41 53  Bid Form – Design/Build (Single-Prime Contract)
00 41 56  Bid Form – Design/Build (Multiple-Prime Contract)
00 41 63  Bid Form – Purchase Contract

00 42 00  Proposal Forms
00 42 13  Proposal Form – Stipulated Sum (Single-Prime Contract)
00 42 16  Proposal Form – Stipulated Sum (Multiple-Prime Contract)
00 42 23  Proposal Form – Construction Management (Single-Prime Contract)
00 42 26  Proposal Form – Construction Management (Multiple-Prime Contract)
00 42 33  Proposal Form – Cost-Plus-Fee (Single-Prime Contract)
00 42 36  Proposal Form – Cost-Plus-Fee (Multiple-Prime Contract)
00 42 43  Proposal Form – Unit Price (Single-Prime Contract)
00 42 46  Proposal Form – Unit Price (Multiple-Prime Contract)
00 42 53  Proposal Form – Design/Build (Single-Prime Contract)
00 42 56  Proposal Form – Design/Build (Multiple-Prime Contract)
00 42 63  Proposal Form – Purchase Contract

00 43 00  Procurement Form Supplements
00 43 13  Bid Security Form
00 43 21  Allowance Form
00 43 22  Unit Prices Form
00 43 23  Alternates Form
00 43 25  Substitution Request Form (During Procurement)
00 43 26  Estimated Quantities Form
00 43 33  Proposed Products Form
00 43 36  Proposed Subcontractors Form
00 43 39  Minority Business Enterprise Statement of Intent Form
00 43 43  Wage Rates Form
00 43 73  Proposed Schedule of Values Form
00 43 83  Proposed Construction Schedule Form
00 43 86  Proposed Work Plan Schedule Form
00 43 93  Bid Submittal Checklist

00 45 00  Representations and Certifications
00 45 13  Bidder’s Qualifications
00 45 16  Proposer’s Qualifications
00 45 19  Non-Collusion Affidavit
00 45 23  Statement of Disposal Facility
00 45 26  Worker’s Compensation Certificate Schedule
00 45 33  Non-Segregated Facilities Affidavit
00 45 36  Equal Employment Opportunity Affidavit
00 45 39  Minority Business Enterprise Affidavit
00 45 43  Corporate Resolutions
00 45 46  Governmental Certifications

CONTRACTING REQUIREMENTS

00 50 00  CONTRACTING FORMS AND SUPPLEMENTS
00 51 00  Notice of Award
00 52 00  Agreement Forms
00 52 13  Agreement Form – Stipulated Sum (Single-Prime Contract)
00 52 16 Agreement Form – Stipulated Sum (Multiple-Prime Contract)
00 52 23 Agreement Form – Construction Management (Single-Prime Contract)
00 52 26 Agreement Form – Construction Management (Multiple-Prime Contract)
00 52 33 Agreement Form – Cost Plus-Fee (Single-Prime Contract)
00 52 36 Agreement Form – Cost-Plus-Fee (Multiple-Prime Contract)
00 52 43 Agreement Form – Unit Price (Single-Prime Contract)
00 52 46 Agreement Form – Unit Price (Multiple-Prime Contract)
00 52 53 Agreement Form – Design/Build (Single-Prime Contract)
00 52 56 Agreement Form – Design/Build (Multiple-Prime Contract)
00 52 63 Agreement Form – Purchase

00 54 00 Agreement Form Supplements
00 54 13 Supplementary Scope Statement
00 54 21 Allowances Schedule
00 54 22 Unit Prices Schedule

00 55 00 Notice to Proceed

00 60 00 PROJECT FORMS

00 61 00 Bond Forms
00 61 13 Performance and Payment Bond Form
00 61 13.13 Performance Bond Form
00 61 13.16 Payment Bond Form
00 61 16 Lien Bond Form
00 61 19 Maintenance Bond Form
00 61 23 Retainage Bond Form
00 61 26 Special Bond Form

00 62 00 Certificates and Other Forms
00 62 11 Submittal Transmittal Form
00 62 16 Certificate of Insurance Form
00 62 19 Infection Control Form
00 62 23 Construction Waste Diversion Form
00 62 33 Products Form
00 62 34 Recycled Content of Materials Form
00 62 39 Minority Business Enterprise Certification Form
00 62 73 Schedule of Values Form
00 62 76 Application for Payment Form
00 62 76.13 Sales Tax Form
00 62 76.16 Consent of Surety to Reduction of Retainage Form
00 62 79 Stored Material Form
00 62 83 Construction Schedule Form
00 62 86 Work Plan Schedule Form
00 62 89 Construction Equipment Form

00 63 00 Clarification and Modification Forms
00 63 13 Request for Interpretation Form
00 63 19 Clarification Form
00 63 25 Substitution Request Form (During Construction)
00 63 33 Supplemental Instruction Form
00 63 36 Field Order Form
00 63 43 Written Amendment Form
00 63 46 Construction Change Directive Form
00 63 49 Work Change Directive Form
00 63 53 Request for Proposal Form
00 63 54  Proposal Worksheet Summary Form
00 63 55  Proposal Worksheet Detail Form
00 63 57  Change Order Request Form
00 63 63  Change Order Form

00 65 00  Closeout Forms
00 65 13  Certificate of Compliance Form
00 65 16  Certificate of Substantial Completion Form
00 65 19  Certificate of Completion Form
00 65 19.13 Affidavit of Payment of Debts and Claims Form
00 65 19.16 Affidavit of Release of Liens Form
00 65 19.19 Consent of Surety to Final Payment Form
00 65 19.23 Acceptance Certificate Form
00 65 19.26 Final Settlement Certificate Form
00 65 36  Warranty Form
00 65 73  Statutory Declaration Form

00 70 00  CONDITIONS OF THE CONTRACT
00 71 00  Contracting Definitions
00 72 00  General Conditions
00 72 13  General Conditions – Stipulated Sum (Single-Prime Contract)
00 72 16  General Conditions – Stipulated Sum (Multiple-Prime Contract)
00 72 23  General Conditions – Construction Management (Single-Prime Contract)
00 72 26  General Conditions – Construction Management (Multiple-Prime Contract)
00 72 33  General Conditions – Cost Plus-Fee (Single-Prime Contract)
00 72 36  General Conditions – Cost-Plus-Fee (Multiple-Prime Contract)
00 72 43  General Conditions – Unit Price (Single-Prime Contract)
00 72 46  General Conditions – Unit Price (Multiple-Prime Contract)
00 72 53  General Conditions – Design/Build (Single-Prime Contract)
00 72 56  General Conditions – Design/Build (Multiple-Prime Contract)

00 73 00  Supplementary Conditions
00 73 16  Insurance Requirements
00 73 19  Health and Safety Requirements
00 73 23  Purchase Contracts
00 73 26  Assigned Contracts
00 73 33  Non-Segregated Facilities Requirements
00 73 36  Equal Employment Opportunity Requirements
00 73 43  Wage Rate Requirements
00 73 46  Wage Determination Schedule
00 73 49  Labor Stabilization Agreement
00 73 53  Anti-Pollution Measures
00 73 63  Security Requirements
00 73 73  Statutory Requirements

00 80 00  Unassigned

00 90 00  REVISIONS, CLARIFICATIONS, AND MODIFICATIONS
00 91 00  Precontract Revisions
00 91 13  Addenda
00 91 16  Bid Revisions
00 91 19  Proposal Revisions

00 93 00  Record Clarifications and Proposals
00 93 13  Record Requests for Interpretation
00 93 19  Record Clarification Notices
00 93 53  Record Proposal Requests
00 93 54  Record Proposal Worksheet Summaries
00 93 57  Record Change Order Requests

00 94 00  Record Modifications
00 94 33  Record Minor Changes in the Work
00 94 36  Record Supplemental Instructions
00 94 39  Record Field Orders
00 94 43  Record Amendments
00 94 46  Record Construction Change Directives
00 94 49  Record Work Change Directives
00 94 63  Record Change Orders
DIVISION 01 – GENERAL REQUIREMENTS

01 00 00  GENERAL REQUIREMENTS

01 10 00  SUMMARY

01 11 00  Summary of Work
  01 11 13  Work Covered by Contract Documents
  01 11 16  Work by Owner
  01 11 19  Purchase Contracts

01 12 00  Multiple Contract Summary
  01 12 13  Summary of Contracts
  01 12 16  Work Sequence
  01 12 19  Contract Interface

01 14 00  Work Restrictions
  01 14 13  Access to Site
  01 14 16  Coordination with Occupants
  01 14 19  Use of Site

01 18 00  Project Utility Sources

01 20 00  PRICE AND PAYMENT PROCEDURES

01 21 00  Allowances
  01 21 13  Cash Allowances
  01 21 16  Contingency Allowances
  01 21 19  Testing and Inspecting Allowances
  01 21 23  Installation Allowances
  01 21 26  Product Allowances
  01 21 29  Quantity Allowances
  01 21 43  Time Allowances

01 22 00  Unit Prices
  01 22 13  Unit Price Measurement
  01 22 16  Unit Price Payment

01 23 00  Alternates

01 24 00  Value Analysis
  01 24 13  Value Engineering

01 25 00  Substitution Procedures
  01 25 13  Product Substitution Procedures
  01 25 16  Execution Substitution Procedures

01 26 00  Contract Modification Procedures
  01 26 13  Requests for Interpretation
  01 26 19  Clarification Notices
  01 26 33  Minor Changes in the Work
  01 26 36  Supplemental Instructions
  01 26 39  Field Orders
  01 26 43  Amendments
  01 26 46  Construction Change Directives
  01 26 49  Work Change Directives
  01 26 53  Proposal Requests
  01 26 54  Proposal Worksheet Summaries
01 26 57 Change Order Requests
01 26 63 Change Orders

01 29 00 Payment Procedures
01 29 73 Schedule of Values
01 29 76 Progress Payment Procedures
01 29 83 Payment Procedures for Testing Laboratory Services

01 30 00 ADMINISTRATIVE REQUIREMENTS

01 31 00 Project Management and Coordination
01 31 13 Project Coordination
01 31 16 Multiple Contract Coordination
01 31 19 Project Meetings
01 31 19.13 Preconstruction Meetings
01 31 19.16 Site Mobilization Meetings
01 31 19.23 Progress Meetings
01 31 19.33 Preinstallation Meetings
01 31 23 Project Web Site

01 32 00 Construction Progress Documentation
01 32 13 Scheduling of Work
01 32 16 Construction Progress Schedule
01 32 16.13 Network Analysis Schedules
01 32 19 Submittals Schedule
01 32 23 Survey and Layout Data
01 32 26 Construction Progress Reporting
01 32 29 Periodic Work Observation
01 32 33 Photographic Documentation
01 32 43 Purchase Order Tracking

01 33 00 Submittal Procedures
01 33 13 Certificates
01 33 16 Design Data
01 33 19 Field Test Reporting
01 33 23 Shop Drawings, Product Data, and Samples
01 33 26 Source Quality Control Reporting
01 33 29 Sustainable Design Reporting

01 35 00 Special Procedures
01 35 13 Special Project Procedures
01 35 13.13 Special Project Procedures for Airport Facilities
01 35 13.16 Special Project Procedures for Detention Facilities
01 35 13.19 Special Project Procedures for Healthcare Facilities
01 35 13.43 Special Project Procedures for Contaminated Sites
01 35 16 Alteration Project Procedures
01 35 23 Owner Safety Requirements
01 35 26 Governmental Safety Requirements
01 35 29 Health, Safety, and Emergency Response Procedures
01 35 29.13 Health, Safety, and Emergency Response Procedures for Contaminated Sites
01 35 33 Infection Control Procedures
01 35 43 Environmental Procedures
01 35 43.13 Environmental Procedures for Hazardous Materials
01 35 43.16 Environmental Procedures for Toxic Materials
01 35 53 Security Procedures
01 35 91 Historic Treatment Procedures
01 40 00  QUALITY REQUIREMENTS
  
  01 41 00  Regulatory Requirements
    01 41 13  Codes
    01 41 16  Laws
    01 41 19  Rules
    01 41 23  Fees
    01 41 26  Permits
  
  01 42 00  References
    01 42 13  Abbreviations and Acronyms
    01 42 16  Definitions
    01 42 19  Reference Standards
  
  01 43 00  Quality Assurance
    01 43 13  Manufacturer Qualifications
    01 43 16  Supplier Qualifications
    01 43 19  Fabricator Qualifications
    01 43 23  Installer Qualifications
    01 43 26  Testing and Inspecting Agency Qualifications
    01 43 29  Code-Required Special Inspector Qualifications
    01 43 33  Manufacturer's Field Services
    01 43 36  Field Samples
    01 43 39  Mockups
  
  01 45 00  Quality Control
    01 45 13  Source Quality Control Procedures
    01 45 16  Field Quality Control Procedures
      01 45 16.13  Contractor Quality Control
    01 45 23  Testing and Inspecting Services
    01 45 26  Plant Inspection Procedures
    01 45 29  Testing Laboratory Services
    01 45 33  Code-Required Special Inspections and Procedures
  
01 50 00  TEMPORARY FACILITIES AND CONTROLS
  
  01 51 00  Temporary Utilities
    01 51 13  Temporary Electricity
    01 51 16  Temporary Fire Protection
    01 51 19  Temporary Fuel Oil
    01 51 23  Temporary Heating, Cooling, and Ventilating
    01 51 26  Temporary Lighting
    01 51 29  Temporary Natural-Gas
    01 51 33  Temporary Telecommunications
    01 51 36  Temporary Water
  
  01 52 00  Construction Facilities
    01 52 13  Field Offices and Sheds
    01 52 16  First Aid Facilities
    01 52 19  Sanitary Facilities
  
  01 53 00  Temporary Construction
    01 53 13  Temporary Bridges
    01 53 16  Temporary Decking
    01 53 19  Temporary Overpasses
    01 53 23  Temporary Ramps
    01 53 26  Temporary Runarounds

01 - 3
01 54 00 Construction Aids
   01 54 13 Temporary Elevators
   01 54 16 Temporary Hoists
   01 54 19 Temporary Cranes
   01 54 23 Temporary Scaffolding and Platforms
   01 54 26 Temporary Swing Staging

01 55 00 Vehicular Access and Parking
   01 55 13 Temporary Access Roads
   01 55 16 Haul Routes
   01 55 19 Temporary Parking Areas
   01 55 23 Temporary Roads
   01 55 26 Traffic Control
   01 55 29 Staging Areas

01 56 00 Temporary Barriers and Enclosures
   01 56 13 Temporary Air Barriers
   01 56 16 Temporary Dust Barriers
   01 56 19 Temporary Noise Barriers
   01 56 23 Temporary Barricades
   01 56 26 Temporary Fencing
   01 56 29 Temporary Protective Walkways
   01 56 33 Temporary Security Barriers
   01 56 36 Temporary Security Enclosures
   01 56 39 Temporary Tree and Plant Protection

01 57 00 Temporary Controls
   01 57 13 Temporary Erosion and Sediment Control
   01 57 16 Temporary Pest Control
   01 57 19 Temporary Environmental Controls
   01 57 23 Temporary Storm Water Pollution Control

01 58 00 Project Identification
   01 58 13 Temporary Project Signage
   01 58 16 Temporary Interior Signage

01 60 00 PRODUCT REQUIREMENTS

01 61 00 Common Product Requirements
   01 61 13 Software Licensing Requirements

01 62 00 Product Options

01 64 00 Owner-Furnished Products

01 65 00 Product Delivery Requirements

01 66 00 Product Storage and Handling Requirements
   01 66 13 Product Storage and Handling Requirements for Hazardous Materials
   01 66 16 Product Storage and Handling Requirements for Toxic Materials

01 70 00 EXECUTION AND CLOSEOUT REQUIREMENTS

01 71 00 Examination and Preparation
   01 71 13 Mobilization
   01 71 16 Acceptance of Conditions
   01 71 23 Field Engineering
      01 71 23.13 Construction Layout
      01 71 23.16 Construction Surveying
   01 71 33 Protection of Adjacent Construction

01 73 00 Execution
01 73 13 Application
01 73 16 Erection
01 73 19 Installation
01 73 23 Bracing and Anchoring
01 73 26 Existing Products
01 73 29 Cutting and Patching

01 74 00 Cleaning and Waste Management
01 74 13 Progress Cleaning
01 74 16 Site Maintenance
01 74 19 Construction Waste Management and Disposal
01 74 23 Final Cleaning

01 75 00 Starting and Adjusting
01 75 13 Checkout Procedures
01 75 16 Startup Procedures

01 76 00 Protecting Installed Construction

01 77 00 Closeout Procedures
01 77 13 Preliminary Closeout Reviews
01 77 16 Final Closeout Review
01 77 19 Closeout Requirements

01 78 00 Closeout Submittals
01 78 13 Completion and Correction List
01 78 19 Maintenance Contracts
01 78 23 Operation and Maintenance Data
  01 78 23.13 Operation Data
  01 78 23.16 Maintenance Data
  01 78 23.19 Preventative Maintenance Instructions
01 78 29 Final Site Survey
01 78 33 Bonds
01 78 36 Warranties
01 78 39 Project Record Documents
01 78 43 Spare Parts
01 78 46 Extra Stock Materials
01 78 53 Sustainable Design Closeout Documentation

01 79 00 Demonstration and Training

01 80 00 PERFORMANCE REQUIREMENTS

01 81 00 Facility Performance Requirements
01 81 13 Sustainable Design Requirements
01 81 16 Facility Environmental Requirements
01 81 19 Indoor Air Quality Requirements

01 82 00 Facility Substructure Performance Requirements
01 82 13 Foundation Performance Requirements
01 82 16 Basement Construction Performance Requirements

01 83 00 Facility Shell Performance Requirements
01 83 13 Superstructure Performance Requirements
01 83 16 Exterior Enclosure Performance Requirements
01 83 19 Roofing Performance Requirements

01 84 00 Interiors Performance Requirements
01 84 13 Interior Construction Performance Requirements
01 84 16 Stairways Performance Requirements
01 84 19 Interior Finishes Performance Requirements
01 85 00  Conveying Equipment Performance Requirements
01 86 00  Facility Services Performance Requirements
  01 86 13  Fire Suppression Performance Requirements
  01 86 16  Plumbing Performance Requirements
  01 86 19  HVAC Performance Requirements
  01 86 23  Integrated Automation Performance Requirements
  01 86 26  Electrical Performance Requirements
  01 86 29  Communications Performance Requirements
  01 86 33  Electronic Safety and Security Performance Requirements
01 87 00  Equipment and Furnishings Performance Requirements
  01 87 13  Equipment Performance Requirements
  01 87 16  Furnishings Performance Requirements
01 88 00  Other Facility Construction Performance Requirements
  01 88 13  Special Construction Performance Requirements
  01 88 16  Selective Construction Performance Requirements
01 89 00  Site Construction Performance Requirements
  01 89 13  Site Preparation Performance Requirements
  01 89 16  Site Improvements Performance Requirements
  01 89 19  Site Plumbing Utilities Performance Requirements
  01 89 23  Site HVAC Utilities Performance Requirements
  01 89 26  Site Electrical Utilities Performance Requirements
  01 89 29  Other Site Construction Performance Requirements

01 90 00  LIFE CYCLE ACTIVITIES
01 91 00  Commissioning
  01 91 13  General Commissioning Requirements
  01 91 16  Facility Substructure Commissioning
    01 91 16.13  Foundation Commissioning
    01 91 16.53  Basement Construction Commissioning
  01 91 19  Facility Shell Commissioning
    01 91 19.13  Superstructure Commissioning
    01 91 19.43  Exterior Enclosure Commissioning
    01 91 19.73  Roofing Commissioning
  01 91 23  Interiors Commissioning
    01 91 23.13  Interior Construction Commissioning
    01 91 23.43  Stairways Commissioning
    01 91 23.73  Interior Finishes Commissioning
01 92 00  Facility Operation
  01 92 13  Facility Operation Procedures
01 93 00  Facility Maintenance
  01 93 13  Facility Maintenance Procedures
  01 93 16  Recycling Programs
01 94 00  Facility Decommissioning
  01 94 13  Facility Decommissioning Procedures
DIVISION 02 – EXISTING CONDITIONS

02 00 00 EXISTING CONDITIONS
  02 01 00 Maintenance of Existing Conditions
    02 01 50 Maintenance of Site Remediation
    02 01 65 Maintenance of Underground Storage Tank Removal
    02 01 80 Maintenance of Facility Remediation
    02 01 86 Maintenance of Hazardous Waste Drum Handling
  02 05 00 Common Work Results for Existing Conditions
    02 05 19 Geosynthetics for Existing Conditions
      02 05 19.13 Geotextiles for Existing Conditions
      02 05 19.16 Geomembranes for Existing Conditions
      02 05 19.19 Geogrids for Existing Conditions
  02 06 00 Schedules for Existing Conditions
    02 06 30 Schedules for Subsurface Investigations
      02 06 30.13 Boring or Test Pit Log Schedule
    02 06 50 Schedules for Site Remediation
    02 06 65 Schedules for Underground Storage Tank Removal
    02 06 80 Schedules for Facility Remediation
    02 06 86 Schedules for Hazardous Waste Drum Handling
  02 08 00 Commissioning of Existing Conditions

02 10 00 Unassigned

02 20 00 ASSESSMENT
  02 21 00 Surveys
    02 21 13 Site Surveys
      02 21 13.13 Boundary and Survey Markers
    02 21 16 Measured Drawings
  02 22 00 Existing Conditions Assessment
    02 22 13 Movement and Vibration Assessment
    02 22 16 Acoustic Assessment
    02 22 19 Traffic Assessment
    02 22 23 Accessibility Assessment
  02 24 00 Environmental Assessment
    02 24 13 Natural Environment Assessment
      02 24 13.13 Air Assessment
      02 24 13.43 Water Assessment
      02 24 13.73 Land Assessment
    02 24 23 Chemical Sampling and Analysis of Soils
    02 24 43 Transboundary and Global Environmental Aspects Assessment
  02 25 00 Existing Material Assessment
    02 25 16 Existing Concrete Assessment
      02 25 16.13 Concrete Assessment Drilling
    02 25 19 Existing Masonry Assessment
      02 25 19.13 Masonry Assessment Drilling
    02 25 23 Existing Metals Assessment
      02 25 23.13 Welding Investigations
    02 25 26 Existing Wood, Plastics, and Composites Assessment
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>02 25 29</td>
<td>Existing Thermal and Moisture Protection Assessment</td>
</tr>
<tr>
<td>02 25 29.13</td>
<td>Waterproofing Investigations</td>
</tr>
<tr>
<td>02 25 29.23</td>
<td>Roofing Investigations</td>
</tr>
<tr>
<td>02 26 00</td>
<td>Hazardous Material Assessment</td>
</tr>
<tr>
<td>02 26 23</td>
<td>Asbestos Assessment</td>
</tr>
<tr>
<td>02 26 26</td>
<td>Lead Assessment</td>
</tr>
<tr>
<td>02 26 29</td>
<td>Polychlorinate Biphenyl Assessment</td>
</tr>
<tr>
<td>02 26 33</td>
<td>Biological Assessment</td>
</tr>
<tr>
<td>02 26 33.13</td>
<td>Mold Assessment</td>
</tr>
<tr>
<td>02 26 36</td>
<td>Hazardous Waste Drum Assessment</td>
</tr>
<tr>
<td>02 30 00</td>
<td>SUBSURFACE INVESTIGATION</td>
</tr>
<tr>
<td>02 31 00</td>
<td>Geophysical Investigations</td>
</tr>
<tr>
<td>02 31 13</td>
<td>Seismic Investigations</td>
</tr>
<tr>
<td>02 31 16</td>
<td>Gravity Investigations</td>
</tr>
<tr>
<td>02 31 19</td>
<td>Magnetic Investigations</td>
</tr>
<tr>
<td>02 31 23</td>
<td>Electromagnetic Investigations</td>
</tr>
<tr>
<td>02 31 26</td>
<td>Electrical Resistivity Investigations</td>
</tr>
<tr>
<td>02 31 29</td>
<td>Magnetotelluric Investigations</td>
</tr>
<tr>
<td>02 32 00</td>
<td>Geotechnical Investigations</td>
</tr>
<tr>
<td>02 32 13</td>
<td>Subsurface Drilling and Sampling</td>
</tr>
<tr>
<td>02 32 19</td>
<td>Exploratory Excavations</td>
</tr>
<tr>
<td>02 32 23</td>
<td>Geotechnical Monitoring Before Construction</td>
</tr>
<tr>
<td>02 33 23.13</td>
<td>Groundwater Monitoring Before Construction</td>
</tr>
<tr>
<td>02 40 00</td>
<td>DEMOLITION AND STRUCTURE MOVING</td>
</tr>
<tr>
<td>02 41 00</td>
<td>Demolition</td>
</tr>
<tr>
<td>02 41 13</td>
<td>Selective Site Demolition</td>
</tr>
<tr>
<td>02 41 13.13</td>
<td>Paving Removal</td>
</tr>
<tr>
<td>02 41 13.23</td>
<td>Utility Line Removal</td>
</tr>
<tr>
<td>02 41 13.33</td>
<td>Railtrack Removal</td>
</tr>
<tr>
<td>02 41 16</td>
<td>Structure Demolition</td>
</tr>
<tr>
<td>02 41 16.13</td>
<td>Building Demolition</td>
</tr>
<tr>
<td>02 41 16.23</td>
<td>Tower Demolition</td>
</tr>
<tr>
<td>02 41 16.33</td>
<td>Bridge Demolition</td>
</tr>
<tr>
<td>02 41 16.43</td>
<td>Dam Demolition</td>
</tr>
<tr>
<td>02 41 19</td>
<td>Selective Structure Demolition</td>
</tr>
<tr>
<td>02 41 19.13</td>
<td>Selective Building Demolition</td>
</tr>
<tr>
<td>02 41 91</td>
<td>Selective Historic Demolition</td>
</tr>
<tr>
<td>02 42 00</td>
<td>Removal and Salvage of Construction Materials</td>
</tr>
<tr>
<td>02 42 91</td>
<td>Removal and Salvage of Historic Construction Materials</td>
</tr>
<tr>
<td>02 43 00</td>
<td>Structure Moving</td>
</tr>
<tr>
<td>02 43 13</td>
<td>Structure Relocation</td>
</tr>
<tr>
<td>02 43 13.13</td>
<td>Building Relocation</td>
</tr>
<tr>
<td>02 43 16</td>
<td>Structure Raising</td>
</tr>
<tr>
<td>02 43 16.13</td>
<td>Building Raising</td>
</tr>
<tr>
<td>02 50 00</td>
<td>SITE REMEDIATION</td>
</tr>
<tr>
<td>02 51 00</td>
<td>Physical Decontamination</td>
</tr>
<tr>
<td>02 51 13</td>
<td>Coagulation and Flocculation Decontamination</td>
</tr>
<tr>
<td>02 51 16</td>
<td>Reverse-Osmosis Decontamination</td>
</tr>
<tr>
<td>02 51 19</td>
<td>Solidification and Stabilization Decontamination</td>
</tr>
</tbody>
</table>
02 51 23 Mechanical Filtration Decontamination
02 51 26 Radioactive Decontamination
02 51 29 Surface Cleaning Decontamination
  02 51 29.13 High-Pressure Water Cleaning Decontamination
  02 51 29.16 Vacuum Sweeping Cleaning Decontamination
02 51 33 Surface Removal Decontamination
  02 51 33.13 Surface Removal Decontamination by Grinding
  02 51 33.16 Surface Removal Decontamination by Sand Blasting
  02 51 33.19 Surface Removal Decontamination by Ultrasound
02 52 00 Chemical Decontamination
  02 52 13 Chemical Precipitation Decontamination
  02 52 16 Ion Change Decontamination
  02 52 19 Neutralization Decontamination
02 53 00 Thermal Decontamination
  02 53 13 Incineration Decontamination
  02 53 13.13 Remediation of Contaminated Soils and Sludges by Incineration
  02 53 16 Thermal Desorption Decontamination
  02 53 16.13 Remediation of Contaminated Soils by Thermal Desorption
  02 53 19 Vitrification Decontamination
02 54 00 Biological Decontamination
  02 54 13 Aerobic Processes Decontamination
  02 54 16 Anaerobic Processes Decontamination
  02 54 19 Bioremediation Decontamination
  02 54 19.13 Bioremediation Using Landfarming
  02 54 19.16 Bioremediation of Soils Using Windrow Composting
  02 54 19.19 Bioremediation Using Bacteria Injection
  02 54 23 Soil Washing through Separation/Solubilization
  02 54 26 Organic Decontamination
02 55 00 Remediation Soil Stabilization
02 56 00 Site Containment
  02 56 13 Waste Containment
  02 56 13.13 Geomembrane Waste Containment
  02 56 19 Gas Containment
  02 56 19.13 Fluid-Applied Gas Barrier
02 57 00 Sinkhole Remediation
  02 57 13 Sinkhole Remediation by Grouting
  02 57 13.13 Sinkhole Remediation by Compaction Grouting
  02 57 13.16 Sinkhole Remediation by Cap Grouting
  02 57 16 Sinkhole Remediation by Backfilling
02 58 00 Snow Control
  02 58 13 Snow Fencing
  02 58 16 Snow Avalanche Control
02 60 00 CONTAMINATED SITE MATERIAL REMOVAL
  02 61 00 Removal and Disposal of Contaminated Soils
    02 61 13 Excavation and Handling of Contaminated Material
    02 61 23 Removal and Disposal of Polychlorinate Biphenyl Contaminated Soils
    02 61 26 Removal and Disposal of Asbestos Contaminated Soils
    02 61 29 Removal and Disposal of Organically Contaminated Soils
  02 62 00 Hazardous Waste Recovery Processes
    02 62 13 Air and Steam Stripping
    02 62 16 Soil Vapor Extraction
02 62 19 Soil Washing and Flushing
02 65 00 Underground Storage Tank Removal
02 66 00 Landfill Construction and Storage

02 70 00 WATER REMEDIATION
02 71 00 Groundwater Treatment
02 72 00 Water Decontamination
  02 72 13 Chemical Water Decontamination
  02 72 16 Biological Water Decontamination
  02 72 19 Electrolysis Water Decontamination

02 80 00 FACILITY REMEDIATION
02 81 00 Transportation and Disposal of Hazardous Materials
02 82 00 Asbestos Remediation
  02 82 13 Asbestos Abatement
    02 82 13.13 Glovebag Asbestos Abatement
    02 82 13.16 Precautions for Asbestos Abatement
    02 82 13.19 Asbestos Floor Tile and Mastic Abatement
  02 82 16 Engineering Control of Asbestos Containing Materials
  02 82 33 Removal and Disposal of Asbestos Containing Materials

02 83 00 Lead Remediation
  02 83 13 Lead Hazard Control Activities
  02 83 19 Lead-Based Paint Remediation
    02 83 19.13 Lead-Based Paint Abatement
    02 83 33 Removal and Disposal of Material Containing Lead
    02 83 33.13 Lead-Based Paint Removal and Disposal

02 84 00 Polychlorinate Biphenyl Remediation
  02 84 16 Handling of Lighting Ballasts and Lamps Containing PCBs and Mercury
  02 84 33 Removal and Disposal of Polychlorinate Biphenyls

02 85 00 Mold Remediation
  02 85 13 Precautions for Mold Remediation
  02 85 16 Mold Remediation Preparation and Containment
  02 85 19 Mold Remediation Clearance Air Sampling
  02 85 33 Removal and Disposal of Materials with Mold

02 86 00 Hazardous Waste Drum Handling
DIVISION 03 – CONCRETE

03 00 00  CONCRETE
  03 01 00  Maintenance of Concrete
    03 01 10  Maintenance of Concrete Forming and Accessories
    03 01 20  Maintenance of Concrete Reinforcing
    03 01 23  Maintenance of Stressing Tendons
    03 01 30  Maintenance of Cast-in-Place Concrete
      03 01 30.51  Cleaning of Cast-in-Place Concrete
      03 01 30.61  Resurfacing of Cast-in-Place Concrete
      03 01 30.71  Rehabilitation of Cast-in-Place Concrete
      03 01 30.72  Strengthening of Cast-in-Place Concrete
    03 01 40  Maintenance of Precast Concrete
      03 01 40.51  Cleaning of Precast Concrete
      03 01 40.61  Resurfacing of Precast Concrete
      03 01 40.71  Rehabilitation of Precast Concrete
      03 01 40.72  Strengthening of Precast Concrete
    03 01 50  Maintenance of Cast Decks and Underlayment
      03 01 50.51  Cleaning Cast Decks and Underlayment
      03 01 50.61  Resurfacing of Cast Decks and Underlayment
      03 01 50.71  Rehabilitation of Cast Decks and Underlayment
      03 01 50.72  Strengthening of Cast Decks and Underlayment
    03 01 60  Maintenance of Grouting
    03 01 70  Maintenance of Mass Concrete
    03 01 80  Maintenance of Concrete Cutting and Boring

03 05 00  Common Work Results for Concrete
  03 06 00  Schedules for Concrete
    03 06 10  Schedules for Concrete Forming and Accessories
    03 06 20  Schedules for Concrete Reinforcing
      03 06 20.13  Concrete Beam Reinforcing Schedule
      03 06 20.16  Concrete Slab Reinforcing Schedule
    03 06 30  Schedules for Cast-in-Place Concrete
      03 06 30.13  Concrete Footing Schedule
      03 06 30.16  Concrete Column Schedule
      03 06 30.19  Concrete Slab Schedule
      03 06 30.23  Concrete Shaft Schedule
      03 06 30.26  Concrete Beam Schedule
    03 06 40  Schedules for Precast Concrete
      03 06 40.13  Precast Concrete Panel Schedule
    03 06 50  Schedules for Cast Decks and Underlayment
    03 06 60  Schedules for Grouting
    03 06 70  Schedules for Mass Concrete
    03 06 80  Schedules for Concrete Cutting and Boring

03 08 00  Commissioning of Concrete

03 10 00  CONCRETE FORMING AND ACCESSORIES
  03 11 00  Concrete Forming
    03 11 13  Structural Cast-in-Place Concrete Forming
03 11 13.13 Concrete Slip Forming
03 11 13.16 Concrete Shoring
03 11 13.19 Falsework
03 11 16 Architectural Cast-in Place Concrete Forming
03 11 16.13 Concrete Form Liners
03 11 19 Insulating Concrete Forming
03 11 23 Permanent Stair Forming

03 15 00 Concrete Accessories
03 15 13 Waterstops

03 20 00 CONCRETE REINFORCING
03 21 00 Reinforcing Steel
03 21 13 Galvanized Reinforcing Steel
03 21 16 Epoxy-Coated Reinforcing Steel
03 22 00 Welded Wire Fabric Reinforcing
03 22 13 Galvanized Welded Wire Fabric Reinforcing
03 22 16 Epoxy-Coated Welded Wire Fabric Reinforcing
03 23 00 Stressing Tendons
03 24 00 Fibrous Reinforcing

03 30 00 CAST-IN-PLACE CONCRETE
03 30 53 Miscellaneous Cast-in-Place Concrete

03 31 00 Structural Concrete
03 31 13 Heavyweight Structural Concrete
03 31 16 Lightweight Structural Concrete
03 31 19 Shrinkage-Compensating Structural Concrete
03 31 23 High-Performance Structural Concrete
03 31 26 Self-Compacting Concrete

03 33 00 Architectural Concrete
03 33 13 Heavyweight Architectural Concrete
03 33 16 Lightweight Architectural Concrete

03 34 00 Low Density Concrete

03 35 00 Concrete Finishing
03 35 13 High-Tolerance Concrete Floor Finishing
03 35 16 Heavy-Duty Concrete Floor Finishing
03 35 19 Colored Concrete Finishing
03 35 23 Exposed Aggregate Concrete Finishing
03 35 26 Grooved Concrete Surface Finishing
03 35 29 Tooled Concrete Finishing
03 35 33 Stamped Concrete Finishing

03 37 00 Specialty Placed Concrete
03 37 13 Shotcrete
03 37 16 Pumped Concrete
03 37 19 Pneumatically Placed Concrete
03 37 23 Roller-Compacted Concrete
03 37 26 Underwater Placed Concrete

03 38 00 Post-Tensioned Concrete
03 38 13 Post-Tensioned Concrete Preparation
03 38 16 Unbonded Post-Tensioned Concrete
03 38 19 Bonded Post-Tensioned Concrete

03 39 00 Concrete Curing
03 39 13 Water Concrete Curing
03 39 16 Sand Concrete Curing
03 39 23 Membrane Concrete Curing
  03 39 23.13 Chemical Compound Membrane Concrete Curing
  03 39 23.23 Sheet Membrane Concrete Curing

03 40 00 PRECAST CONCRETE

03 41 00 Precast Structural Concrete
  03 41 13 Precast Concrete Hollow Core Planks
  03 41 16 Precast Concrete Slabs
  03 41 23 Precast Concrete Stairs
  03 41 33 Precast Structural Pretensioned Concrete
  03 41 36 Precast Structural Post-Tensioned Concrete

03 45 00 Precast Architectural Concrete
  03 45 13 Faced Architectural Precast Concrete
  03 45 33 Precast Architectural Pretensioned Concrete
  03 45 36 Precast Architectural Post-Tensioned Concrete

03 47 00 Site-Cast Concrete
  03 47 13 Tilt-Up Concrete
  03 47 16 Lift-Slab Concrete

03 48 00 Precast Concrete Specialties
  03 48 13 Precast Concrete Bollards
  03 48 16 Precast Concrete Splash Blocks
  03 48 19 Precast Concrete Stair Treads
  03 48 43 Precast Concrete Trim

03 49 00 Glass-Fiber-Reinforced Concrete
  03 49 13 Glass-Fiber-Reinforced Concrete Column Covers
  03 49 16 Glass-Fiber-Reinforced Concrete Spandrels
  03 49 43 Glass-Fiber-Reinforced Concrete Trim

03 50 00 CAST DECKS AND UNDERLAYMENT

03 51 00 Cast Roof Decks
  03 51 13 Cementitious Wood Fiber Decks
  03 51 16 Gypsum Concrete Roof Decks

03 52 00 Lightweight Concrete Roof Insulation
  03 52 13 Composite Concrete Roof Insulation
  03 52 16 Lightweight Insulating Concrete
    03 52 16.13 Lightweight Cellular Insulating Concrete
    03 52 16.16 Lightweight Aggregate Insulating Concrete

03 53 00 Concrete Topping
  03 53 13 Emery-Aggregate Concrete Topping
  03 53 16 Iron-Aggregate Concrete Topping

03 54 00 Cast Underlayment
  03 54 13 Gypsum Cement Underlayment
  03 54 16 Hydraulic Cement Underlayment

03 60 00 GROUTING

03 61 00 Cementitious Grouting
  03 61 13 Dry-Pack Grouting

03 62 00 Non-Shrink Grouting
  03 62 13 Non-Metallic Non-Shrink Grouting
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>03 62 16</td>
<td>Metallic Non-Shrink Grouting</td>
</tr>
<tr>
<td>03 63 00</td>
<td>Epoxy Grouting</td>
</tr>
<tr>
<td>03 64 00</td>
<td>Injection Grouting</td>
</tr>
<tr>
<td>03 64 23</td>
<td>Epoxy Injection Grouting</td>
</tr>
</tbody>
</table>

**03 70 00**  MASS CONCRETE

- 03 71 00  Mass Concrete for Raft Foundations
- 03 72 00  Mass Concrete for Dams

**03 80 00**  CONCRETE CUTTING AND BORING

- 03 81 00  Concrete Cutting
  - 03 81 13  Flat Concrete Sawing
  - 03 81 16  Track Mounted Concrete Wall Sawing
  - 03 81 19  Wire Concrete Wall Sawing
  - 03 81 23  Hand Concrete Wall Sawing
  - 03 81 26  Chain Concrete Wall Sawing
- 03 82 00  Concrete Boring
  - 03 82 13  Concrete Core Drilling

**03 90 00**  Unassigned
DIVISION 04 – MASONRY

04 00 00 MASONRY
04 01 00 Maintenance of Masonry
04 01 20 Maintenance of Unit Masonry
04 01 20.51 Unit Masonry Maintenance
04 01 20.52 Unit Masonry Cleaning
04 01 20.91 Unit Masonry Restoration
04 01 20.93 Testing and Sampling Brick Units for Restoration
04 01 40 Maintenance of Stone Assemblies
04 01 40.51 Stone Maintenance
04 01 40.52 Stone Cleaning
04 01 40.91 Stone Restoration
04 01 50 Maintenance of Refractory Masonry
04 01 60 Maintenance of Corrosion-Resistant Masonry
04 01 70 Maintenance of Manufactured Masonry

04 05 00 Common Work Results for Masonry
04 05 13 Masonry Mortaring
04 05 13.16 Chemical-Resistant Masonry Mortaring
04 05 13.19 Epoxy Masonry Mortaring
04 05 13.23 Surface Bonding Masonry Mortaring
04 05 13.26 Engineered Masonry Mortaring
04 05 13.29 Refractory Masonry Mortaring
04 05 13.91 Masonry Restoration Mortaring
04 05 16 Masonry Grouting
04 05 16.16 Chemical-Resistant Masonry Grouting
04 05 16.26 Engineered Masonry Grouting
04 05 19 Masonry Anchorage and Reinforcing
04 05 19.13 Continuous Joint Reinforcing
04 05 19.16 Masonry Anchors
04 05 19.26 Masonry Reinforcing Bars
04 05 19.29 Stone Anchors
04 05 23 Masonry Accessories
04 05 19.13 Masonry Control and Expansion Joints
04 05 19.16 Masonry Embedded Flashing
04 05 19.19 Masonry Cavity Drainage, Weepholes, and Vents

04 06 00 Schedules for Masonry
04 06 20 Schedules for Unit Masonry
04 06 20.13 Masonry Unit Schedule
04 06 40 Schedules for Stone Assemblies
04 06 50 Schedules for Refractory Masonry
04 06 60 Schedules for Corrosion-Resistant Masonry
04 06 70 Schedules for Manufactured Masonry

04 08 00 Commissioning of Masonry
04 10 00 Unassigned

04 20 00 UNIT MASONRY
04 21 00 Clay Unit Masonry
04 21 13 Brick Masonry
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2004</td>
<td></td>
</tr>
</tbody>
</table>

### Div. 04 – Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 21 13.13</td>
<td>Brick Veneer Masonry</td>
</tr>
<tr>
<td>04 21 13.23</td>
<td>Surface-Bonded Brick Masonry</td>
</tr>
<tr>
<td>04 21 16</td>
<td>Ceramic Glazed Clay Masonry</td>
</tr>
<tr>
<td>04 21 19</td>
<td>Clay Tile Masonry</td>
</tr>
<tr>
<td>04 21 23</td>
<td>Structural Clay Tile Masonry</td>
</tr>
<tr>
<td>04 21 26</td>
<td>Glazed Structural Clay Tile Masonry</td>
</tr>
<tr>
<td>04 21 29</td>
<td>Terra Cotta Masonry</td>
</tr>
</tbody>
</table>

#### 04 22 00 Concrete Unit Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 22 00.13</td>
<td>Concrete Unit Veneer Masonry</td>
</tr>
<tr>
<td>04 22 00.16</td>
<td>Surface-Bonded Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 19</td>
<td>Insulated Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23</td>
<td>Architectural Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.13</td>
<td>Exposed Aggregate Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.16</td>
<td>Fluted Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.19</td>
<td>Molded-Face Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.23</td>
<td>Prefaced Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.26</td>
<td>Sound-Absorbing Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 23.29</td>
<td>Split-Face Concrete Unit Masonry</td>
</tr>
<tr>
<td>04 22 33</td>
<td>Interlocking Concrete Unit Masonry</td>
</tr>
</tbody>
</table>

#### 04 23 00 Glass Unit Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 23 13</td>
<td>Vertical Glass Unit Masonry</td>
</tr>
<tr>
<td>04 23 16</td>
<td>Glass Unit Masonry Floors</td>
</tr>
<tr>
<td>04 23 19</td>
<td>Glass Unit Masonry Skylights</td>
</tr>
</tbody>
</table>

#### 04 24 00 Adobe Unit Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 24 13</td>
<td>Site-Cast Adobe Unit Masonry</td>
</tr>
<tr>
<td>04 24 16</td>
<td>Manufactured Adobe Unit Masonry</td>
</tr>
</tbody>
</table>

#### 04 25 00 Unit Masonry Panels

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 25 13</td>
<td>Metal-Supported Unit Masonry Panels</td>
</tr>
</tbody>
</table>

#### 04 27 00 Multiple-Wythe Unit Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 27 13</td>
<td>Composite Unit Masonry</td>
</tr>
<tr>
<td>04 27 23</td>
<td>Cavity Wall Unit Masonry</td>
</tr>
</tbody>
</table>

#### 04 28 00 Concrete Form Masonry Units

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 28 13</td>
<td>Dry-Stacked, Concrete-Filled Masonry Units</td>
</tr>
<tr>
<td>04 28 23</td>
<td>Mortar-Set, Concrete-Filled Masonry Units</td>
</tr>
</tbody>
</table>

#### 04 30 00 Unassigned

#### 04 40 00 Stone Assemblies

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 41 00</td>
<td>Dry-Placed Stone</td>
</tr>
<tr>
<td>04 42 00</td>
<td>Exterior Stone Cladding</td>
</tr>
<tr>
<td>04 42 13</td>
<td>Masonry-Supported Stone Cladding</td>
</tr>
<tr>
<td>04 42 16</td>
<td>Steel-Stud-Supported Stone Cladding</td>
</tr>
<tr>
<td>04 42 19</td>
<td>Strongback-Frame-Supported Stone Cladding</td>
</tr>
<tr>
<td>04 42 23</td>
<td>Truss-Supported Stone Cladding</td>
</tr>
<tr>
<td>04 42 26</td>
<td>Grid-System-Supported Stone Cladding</td>
</tr>
<tr>
<td>04 42 43</td>
<td>Stone Panels for Curtain Walls</td>
</tr>
</tbody>
</table>

#### 04 50 00 Refractory Masonry

<table>
<thead>
<tr>
<th>Numbers &amp; Titles</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>04 51 00</td>
<td>Flue Liner Masonry</td>
</tr>
<tr>
<td>04 52 00</td>
<td>Combustion Chamber Masonry</td>
</tr>
<tr>
<td>04 53 00</td>
<td>Castable Refractory Masonry</td>
</tr>
</tbody>
</table>
04 54 00 Refractory Brick Masonry
04 57 00 Masonry Fireplaces

04 60 00 CORROSION-RESISTANT MASONRY
04 61 00 Chemical-Resistant Brick Masonry
04 62 00 Vitrified Clay Liner Plate

04 70 00 MANUFACTURED MASONRY
04 71 00 Manufactured Brick Masonry
   04 71 13 Calcium Silicate Manufactured Brick Masonry
04 72 00 Cast Stone Masonry
04 73 00 Manufactured Stone Masonry
   04 73 13 Calcium Silicate Manufactured Stone Masonry

04 80 00 Unassigned
04 90 00 Unassigned
DIVISION 05 – METALS

05 00 00 METALS
05 01 00 Maintenance of Metals
  05 01 10 Maintenance of Structural Metal Framing
  05 01 20 Maintenance of Metal Joists
  05 01 30 Maintenance of Metal Decking
  05 01 40 Maintenance of Cold-Formed Metal Framing
  05 01 50 Maintenance of Metal Fabrications
  05 01 70 Maintenance of Decorative Metal
    05 01 70.91 Historic Treatment of Decorative Metal
05 05 00 Common Work Results for Metals
  05 05 13 Shop-Applied Coatings for Metal
  05 05 23 Metal Fastenings
  05 05 53 Security Metal Fastenings
05 06 00 Schedules for Metals
  05 06 10 Schedules for Structural Metal Framing
    05 06 10.10 Steel Column Schedule
    05 06 10.16 Steel Beam Schedule
  05 06 20 Schedules for Metal Joists
    05 06 20.10 Steel Joist Schedule
  05 06 30 Schedules for Metal Decking
  05 06 40 Schedules for Cold-Formed Metal Framing
  05 06 50 Schedules for Metal Fabrications
  05 06 70 Schedules for Decorative Metal
05 08 00 Commissioning of Metals

05 10 00 STRUCTURAL METAL FRAMING
05 12 00 Structural Steel Framing
  05 12 13 Architecturally-Exposed Structural Steel Framing
  05 12 16 Fabricated Fireproofed Steel Columns
  05 12 23 Structural Steel for Buildings
  05 12 33 Structural Steel for Bridges
05 13 00 Structural Stainless-Steel Framing
05 14 00 Structural Aluminum Framing
  05 14 13 Architecturally-Exposed Structural Aluminum Framing
05 15 00 Wire Rope Assemblies
  05 15 13 Aluminum Wire Rope Assemblies
  05 15 16 Steel Wire Rope Assemblies
  05 15 19 Stainless-Steel Wire Rope Assemblies
05 16 00 Structural Cabling
  05 16 33 Bridge Cabling

05 20 00 METAL JOISTS
05 21 00 Steel Joist Framing
  05 21 13 Deep Longspan Steel Joist Framing
  05 21 16 Longspan Steel Joist Framing
  05 21 19 Open Web Steel Joist Framing
05 21 23 Steel Joist Girder Framing
05 25 00 Aluminum Joist Framing

05 30 00 METAL DECKING
05 31 00 Steel Decking
  05 31 13 Steel Floor Decking
  05 31 23 Steel Roof Decking
  05 31 33 Steel Form Decking
05 33 00 Aluminum Decking
  05 33 13 Aluminum Floor Decking
  05 33 23 Aluminum Roof Decking
05 34 00 Acoustical Metal Decking
05 35 00 Raceway Decking Assemblies
05 36 00 Composite Metal Decking
  05 36 13 Composite Steel Plate and Elastomer Decking

05 40 00 COLD-FORMED METAL FRAMING
05 41 00 Structural Metal Stud Framing
05 42 00 Cold-Formed Metal Joist Framing
  05 42 13 Cold-Formed Metal Floor Joist Framing
  05 42 23 Cold-Formed Metal Roof Joist Framing
05 43 00 Slotted Channel Framing
05 44 00 Cold-Formed Metal Trusses
05 45 00 Metal Support Assemblies
  05 45 13 Mechanical Metal Supports
  05 45 16 Electrical Metal Supports
  05 45 19 Communications Metal Supports
  05 45 23 Healthcare Metal Supports

05 50 00 METAL FABRICATIONS
05 51 00 Metal Stairs
  05 51 13 Metal Pan Stairs
  05 51 16 Metal Floor Plate Stairs
  05 51 19 Metal Grating Stairs
  05 51 23 Metal Fire Escapes
  05 51 33 Metal Ladders
    05 51 33.13 Vertical Metal Ladders
    05 51 33.16 Inclined Metal Ladders
    05 51 33.23 Alternating Tread Ladders
  05 51 36 Catwalks
    05 51 36.13 Metal Catwalks
05 52 00 Metal Railings
  05 52 13 Pipe and Tube Railings
05 53 00 Metal Gratings
05 54 00 Metal Floor Plates
05 55 00 Metal Stair Treads and Nosings
  05 55 13 Metal Stair Treads
  05 55 16 Metal Stair Nosings
05 56 00 Metal Castings
05 58 00 Formed Metal Fabrications
  05 58 13 Column Covers
05 58 16  Formed Metal Enclosures
05 58 19  Heating/Cooling Unit Covers
**05 59 00  Metal Specialties**
05 59 63  Detention Enclosures

05 60 00  Unassigned

**05 70 00  DECORATIVE METAL**

05 71 00  Decorative Metal Stairs
05 71 13  Fabricated Metal Spiral Stairs

05 73 00  Decorative Metal Railings
05 73 13  Glazed Decorative Metal Railings
05 73 16  Wire Rope Decorative Metal Railings

05 74 00  Decorative Metal Castings

05 75 00  Decorative Formed Metal

05 76 00  Decorative Forged Metal

05 80 00  Unassigned

05 90 00  Unassigned
DIVISION 06 – WOOD, PLASTICS, AND COMPOSITES

06 00 00  WOOD, PLASTICS, AND COMPOSITES
06 01 00  Maintenance of Wood, Plastics, and Composites
06 01 10  Maintenance of Rough Carpentry
06 01 10.71  Rough Carpentry Rehabilitation
06 01 10.91  Rough Carpentry Restoration
06 01 10.92  Rough Carpentry Preservation
06 01 20  Maintenance of Finish Carpentry
06 01 20.71  Finish Carpentry Rehabilitation
06 01 20.91  Finish Carpentry Restoration
06 01 20.92  Finish Carpentry Preservation
06 01 40  Maintenance of Architectural Woodwork
06 01 40.51  Architectural Woodwork Cleaning
06 01 40.61  Architectural Woodwork Refinishing
06 01 40.91  Architectural Woodwork Restoration
06 01 50  Maintenance of Structural Plastics
06 01 60  Maintenance of Plastic Fabrications
06 01 60.51  Plastic Cleaning
06 01 60.71  Plastic Rehabilitation
06 01 60.91  Plastic Restoration
06 01 60.92  Plastic Preservation
06 01 70  Maintenance of Structural Composites
06 01 80  Maintenance of Composite Assemblies
06 01 80.51  Composite Cleaning
06 01 80.71  Composite Rehabilitation
06 01 80.91  Composite Restoration
06 01 80.92  Composite Preservation
06 05 00  Common Work Results for Wood, Plastics, and Composites
06 05 23  Wood, Plastic, and Composite Fastenings
06 05 73  Wood Treatment
06 05 73.13  Fire-Retardant Wood Treatment
06 05 73.33  Preservative Wood Treatment
06 05 73.91  Long-Term Wood Treatment
06 05 73.93  Eradication of Insects in Wood
06 05 73.96  Antiseptic Treatment of Wood
06 05 83  Shop-Applied Wood Coatings
06 06 00  Schedules for Wood, Plastics, and Composites
06 06 10  Schedules for Rough Carpentry
06 06 10.13  Nailing Schedule
06 06 10.16  Wood Beam Schedule
06 06 10.19  Plywood Shear Wall Schedule
06 06 10.23  Plywood Web Joist Schedule
06 06 10.26  Wood Truss Schedule
06 06 20  Schedules for Finish Carpentry
06 06 40  Schedules for Architectural Woodwork
06 06 50  Schedules for Structural Plastics
06 06 60  Schedules for Plastic Fabrications
06 06 70  Schedules for Structural Composites
06 06 80  Schedules for Composite Assemblies
06 08 00 Commissioning of Wood, Plastics, and Composites

06 10 00 ROUGH CARPENTRY
06 10 53 Miscellaneous Rough Carpentry
06 10 91 Curved Wood Members

06 11 00 Wood Framing
06 11 13 Engineered Wood Products
06 11 16 Mechanically Graded Lumber

06 12 00 Structural Panels
06 12 13 Cementitious Reinforced Panels
06 12 16 Stressed Skin Panels

06 13 00 Heavy Timber
06 13 13 Log Construction
06 13 13.91 Period Horizontal Log Work
06 13 16 Pole Construction
06 13 23 Heavy Timber Construction
06 13 33 Heavy Timber Pier Construction

06 14 00 Treated Wood Foundations

06 15 00 Wood Decking
06 15 13 Wood Floor Decking
06 15 13.91 Carvel Planking
06 15 16 Wood Roof Decking
06 15 19 Timber Decking
06 15 23 Laminated Wood Decking
06 15 33 Wood Patio Decking

06 16 00 Sheathing
06 16 13 Insulating Sheathing
06 16 23 Subflooring
06 16 26 Underlayment
06 16 29 Acoustical Underlayment
06 16 33 Wood Board Sheathing
06 16 36 Wood Panel Product Sheathing
06 16 43 Gypsum Sheathing
06 16 53 Moisture-Resistant Sheathing Board
06 16 63 Cementitious Sheathing

06 17 00 Shop-Fabricated Structural Wood
06 17 13 Laminated Veneer Lumber
06 17 23 Parallel Strand Lumber
06 17 33 Wood I-Joists
06 17 36 Metal-Web Wood Joists
06 17 43 Rim Boards
06 17 53 Shop-Fabricated Wood Trusses

06 18 00 Glued-Laminated Construction
06 18 13 Glued-Laminated Beams
06 18 16 Glued-Laminated Columns

06 20 00 FINISH CARPENTRY
06 20 13 Exterior Finish Carpentry
06 20 23 Interior Finish Carpentry

06 22 00 Millwork
06 22 13 Standard Pattern Wood Trim
06 25 00  Prefinished Paneling
  06 25 13  Prefinished Hardboard Paneling
  06 25 16  Prefinished Plywood Paneling

06 26 00  Board Paneling
  06 26 13  Profile Board Paneling

06 30 00  Unassigned

06 40 00  Architectural Woodwork
  06 40 13  Exterior Architectural Woodwork
  06 40 23  Interior Architectural Woodwork

06 41 00  Architectural Wood Casework
  06 41 13  Wood-Veneer-Faced Architectural Cabinets
  06 41 16  Plastic-Laminate-Clad Architectural Cabinets

06 42 00  Wood Paneling
  06 42 13  Solid Lumber Paneling
  06 42 16  Wood-Veneer Paneling
  06 42 19  Plastic-Laminate-Faced Wood Paneling

06 43 00  Wood Stairs and Railings
  06 43 13  Wood Stairs
  06 43 16  Wood Railings

06 44 00  Ornamental Woodwork
  06 44 13  Wood Turnings
  06 44 16  Wood Pilasters
  06 44 19  Wood Grilles
  06 44 23  Wood Corbels
  06 44 26  Wood Cupolas
  06 44 29  Wood Finials
  06 44 33  Wood Mantels
  06 44 36  Wood Pediment Heads
  06 44 39  Wood Posts and Columns

06 46 00  Wood Trim
  06 46 13  Wood Door and Window Casings
  06 46 16  Wood Aprons
  06 46 19  Wood Base and Shoe Moldings
  06 46 23  Wood Chair Rails
  06 46 26  Wood Cornices
  06 46 29  Wood Fascia and Soffits
  06 46 33  Wood Stops, Stools, and Sills
  06 46 91  Splicing of Wooden Components

06 48 00  Wood Frames
  06 48 13  Exterior Wood Door Frames
  06 48 16  Interior Wood Door Frames
  06 48 19  Ornamental Wood Frames
  06 48 23  Stick-Built Wood Windows
  06 48 26  Wood-Veneer Frames

06 49 00  Wood Screens and Exterior Wood Shutters
  06 49 13  Wood Screens
  06 49 16  Exterior Wood Blinds
  06 49 19  Exterior Wood Shutters
06 50 00  STRUCTURAL PLASTICS
  06 51 00  Structural Plastic Shapes and Plates
            06 51 13  Plastic Lumber
  06 52 00  Plastic Structural Assemblies
  06 53 00  Plastic Decking
            06 53 13  Solid Plastic Decking

06 60 00  PLASTIC FABRICATIONS
  06 61 00  Simulated Stone Fabrications
            06 61 13  Cultured Marble Fabrications
            06 61 16  Solid Surfacing Fabrications
            06 61 19  Quartz Surfacing Fabrications
  06 63 00  Plastic Railings
  06 64 00  Plastic Paneling
  06 65 00  Plastic Simulated Wood Trim
  06 66 00  Custom Ornamental Simulated Woodwork

06 70 00  STRUCTURAL COMPOSITES
  06 71 00  Structural Composite Shapes and Plates
            06 71 13  Composite Lumber
  06 72 00  Composite Structural Assemblies
            06 72 13  Composite Joist Assemblies
  06 73 00  Composite Decking
            06 73 13  Composite Structural Decking

06 80 00  COMPOSITE FABRICATIONS
  06 81 00  Composite Railings
  06 82 00  Glass-Fiber-Reinforced Plastic

06 90 00  Unassigned
DIVISION 07 – THERMAL AND MOISTURE PROTECTION

<table>
<thead>
<tr>
<th>07 00 00</th>
<th>THERMAL AND MOISTURE PROTECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 01 00</td>
<td>Operation and Maintenance of Thermal and Moisture Protection</td>
</tr>
<tr>
<td>07 01 10</td>
<td>Maintenance of Dampproofing and Waterproofing</td>
</tr>
<tr>
<td>07 01 10.81</td>
<td>Waterproofing Replacement</td>
</tr>
<tr>
<td>07 01 20</td>
<td>Maintenance of Thermal Protection</td>
</tr>
<tr>
<td>07 01 30</td>
<td>Maintenance of Steep Slope Roofing</td>
</tr>
<tr>
<td>07 01 40</td>
<td>Maintenance of Roofing and Siding Panels</td>
</tr>
<tr>
<td>07 01 50</td>
<td>Maintenance of Membrane Roofing</td>
</tr>
<tr>
<td>07 01 50.13</td>
<td>Roof Moisture Survey</td>
</tr>
<tr>
<td>07 01 50.16</td>
<td>Roof Maintenance Program</td>
</tr>
<tr>
<td>07 01 50.19</td>
<td>Preparation for Re-Roofing</td>
</tr>
<tr>
<td>07 01 50.23</td>
<td>Roof Removal</td>
</tr>
<tr>
<td>07 01 50.61</td>
<td>Roof Re-Coating</td>
</tr>
<tr>
<td>07 01 50.81</td>
<td>Roof Replacement</td>
</tr>
<tr>
<td>07 01 50.91</td>
<td>Roofing Restoration</td>
</tr>
<tr>
<td>07 01 60</td>
<td>Maintenance of Flashing and Sheet Metal</td>
</tr>
<tr>
<td>07 01 60.71</td>
<td>Flashing and Sheet Metal Rehabilitation</td>
</tr>
<tr>
<td>07 01 60.91</td>
<td>Flashing and Sheet Metal Restoration</td>
</tr>
<tr>
<td>07 01 60.92</td>
<td>Flashing and Sheet Metal Preservation</td>
</tr>
<tr>
<td>07 01 70</td>
<td>Operation and Maintenance of Roof Specialties and Accessories</td>
</tr>
<tr>
<td>07 01 80</td>
<td>Maintenance of Fire and Smoke Protection</td>
</tr>
<tr>
<td>07 01 90</td>
<td>Maintenance of Joint Protection</td>
</tr>
<tr>
<td>07 01 90.71</td>
<td>Joint Sealant Rehabilitation</td>
</tr>
<tr>
<td>07 01 90.81</td>
<td>Joint Sealant Replacement</td>
</tr>
</tbody>
</table>

| 07 05 00 | Common Work Results for Thermal and Moisture Protection |
| 07 06 00 | Schedules for Thermal and Moisture Protection |
| 07 06 10 | Schedules for Dampproofing and Waterproofing |
| 07 06 20 | Schedules for Thermal Protection |
| 07 06 30 | Schedules for Steep Slope Roofing |
| 07 06 40 | Schedules for Roofing and Siding Panels |
| 07 06 50 | Schedules for Membrane Roofing |
| 07 06 60 | Schedules for Flashing and Sheet Metal |
| 07 06 70 | Schedules for Roof Specialties and Accessories |
| 07 06 80 | Schedules for Fire and Smoke Protection |
| 07 06 80.13 | Fireproofing Schedule |
| 07 06 80.16 | Firestopping Schedule |
| 07 06 90 | Schedules for Joint Protection |
| 07 06 90.13 | Joint Sealant Schedule |

| 07 08 00 | Commissioning of Thermal and Moisture Protection |
| 07 10 00 | DAMPPROOFING AND WATERPROOFING |
| 07 11 00 | Dampproofing |
| 07 11 13 | Bituminous Dampproofing |
| 07 11 16 | Cementitious Dampproofing |
| 07 11 19 | Sheet Dampproofing |
| 07 12 00 | Built-Up Bituminous Waterproofing |
| 07 12 13 | Built-Up Asphalt Waterproofing |
07 12 16  Built-Up Coal Tar Waterproofing

07 13 00  Sheet Waterproofing
07 13 13  Bituminous Sheet Waterproofing
07 13 26  Self-Adhering Sheet Waterproofing
07 13 52  Modified Bituminous Sheet Waterproofing
07 13 53  Elastomeric Sheet Waterproofing
07 13 54  Thermoplastic Sheet Waterproofing

07 14 00  Fluid-Applied Waterproofing
07 14 13  Hot Fluid-Applied Rubberized Asphalt Waterproofing
07 14 16  Cold Fluid-Applied Waterproofing

07 15 00  Sheet Metal Waterproofing

07 16 00  Cementitious and Reactive Waterproofing
07 16 13  Polymer Modified Cement Waterproofing
07 16 16  Crystalline Waterproofing
07 16 19  Metal Oxide Waterproofing

07 17 00  Bentonite Waterproofing
07 17 13  Bentonite Panel Waterproofing
07 17 16  Bentonite Composite Sheet Waterproofing

07 18 00  Traffic Coatings
07 18 13  Pedestrian Traffic Coatings
07 18 16  Vehicular Traffic Coatings

07 19 00  Water Repellents
07 19 13  Acrylic Water Repellents
07 19 16  Silane Water Repellents
07 19 19  Silicone Water Repellents
07 19 23  Siloxane Water Repellents
07 19 26  Stearate Water Repellents

07 20 00  THERMAL PROTECTION

07 21 00  Thermal Insulation
07 21 13  Board Insulation
 07 21 13.13  Foam Board Insulation
 07 21 13.16  Fibrous Board Insulation
 07 21 13.19  Mineral Board Insulation
07 21 16  Blanket Insulation
07 21 19  Foamed-in-Place Insulation
07 21 23  Loose-Fill Insulation
07 21 26  Blown Insulation
07 21 29  Sprayed Insulation

07 22 00  Roof and Deck Insulation
07 22 13  Asphalitic Perlite Concrete Deck
07 22 16  Roof Board Insulation

07 24 00  Exterior Insulation and Finish Systems
07 24 13  Polymer-Based Exterior Insulation and Finish System
07 24 16  Polymer-Modified Exterior Insulation and Finish System
07 24 19  Water-Drainage Exterior Insulation and Finish System

07 25 00  WEATHER BARRIERS

07 26 00  Vapor Retarders
07 26 13  Above-Grade Vapor Retarders
07 26 16  Below-Grade Vapor Retarders
07 26 23 Below-Grade Gas Retarders

07 27 00 Air Barriers
  07 27 13 Modified Bituminous Sheet Air Barriers
  07 27 16 Sheet Metal Membrane Air Barriers
  07 27 19 Plastic Sheet Air Barriers
  07 27 23 Board Product Air Barriers
  07 27 26 Fluid-Applied Membrane Air Barriers

07 30 00 STEEP SLOPE ROOFING
  07 30 91 Canvas Roofing

07 31 00 Shingles and Shakes
  07 31 13 Asphalt Shingles
    07 31 13.13 Fiberglass-Reinforced Asphalt Shingles
  07 31 16 Metal Shingles
  07 31 19 Mineral-Fiber Cement Shingles
  07 31 23 Porcelain Enamel Shingles
  07 31 26 Slate Shingles
  07 31 29 Wood Shingles and Shakes
    07 31 29.13 Wood Shingles
    07 31 29.16 Wood Shakes
  07 31 33 Composite Rubber Shingles
  07 31 53 Plastic Shakes

07 32 00 Roof Tiles
  07 32 13 Clay Roof Tiles
  07 32 16 Concrete Roof Tiles
  07 32 19 Metal Roof Tiles
  07 32 23 Mineral-Fiber Cement Roof Tiles
  07 32 26 Plastic Roof Tiles
  07 32 29 Rubber Tiles/Panels

07 33 00 Natural Roof Coverings
  07 33 13 Sod Roofing
  07 33 16 Thatched Roofing
  07 33 63 Vegetated Roofing

07 40 00 ROOFING AND SIDING PANELS

07 41 00 Roof Panels
  07 41 13 Metal Roof Panels
  07 41 23 Wood Roof Panels
  07 41 33 Plastic Roof Panels
  07 41 43 Composite Roof Panels
  07 41 63 Fabricated Roof Panel Assemblies

07 42 00 Wall Panels
  07 42 13 Metal Wall Panels
  07 42 23 Wood Wall Panels
  07 42 33 Plastic Wall Panels
  07 42 43 Composite Wall Panels
  07 42 63 Fabricated Wall Panel Assemblies

07 44 00 Faced Panels
  07 44 13 Aggregate Coated Panels
  07 44 16 Porcelain Enameled Faced Panels
  07 44 19 Tile-Faced Panels
07 44 23 Ceramic-Tile-Faced Panels
07 44 53 Glass-Fiber-Reinforced Cementitious Panels
07 44 56 Mineral-Fiber-Reinforced Cementitious Panels
07 44 63 Fabricated Faced Panel Assemblies

07 46 00 Siding
07 46 16 Aluminum Siding
07 46 19 Steel Siding
07 46 23 Wood Siding
07 46 26 Hardboard Siding
07 46 29 Plywood Siding
07 46 33 Plastic Siding
07 46 43 Composition Siding
07 46 46 Mineral-Fiber Cement Siding
07 46 63 Fabricated Panel Assemblies with Siding

07 50 00 MEMBRANE ROOFING

07 51 00 Built-Up Bituminous Roofing
07 51 13 Built-Up Asphalt Roofing
07 51 13.13 Cold-Applied Built-Up Asphalt Roofing
07 51 16 Built-Up Coal Tar Roofing
07 51 23 Glass-Fiber-Reinforced Asphalt Emulsion Roofing

07 52 00 Modified Bituminous Membrane Roofing
07 52 13 Atactic-Polypropylene-Modified Bituminous Membrane Roofing
07 52 16 Styrene-Butadiene-Styrene Modified Bituminous Membrane Roofing
07 52 19 Self-Adhering Modified Bituminous Membrane Roofing

07 53 00 Elastomeric Membrane Roofing
07 53 13 Chlorinated-Polyethylene Roofing
07 53 16 Chlorosulfonate-Polyethylene Roofing
07 53 23 Ethylene-Propylene-Diene-Monomer Roofing
07 53 29 Polyisobutylene Roofing

07 54 00 Thermoplastic Membrane Roofing
07 54 13 Copolymer-Alloy Roofing
07 54 16 Ethylene-Interpolymer Roofing
07 54 19 Polyvinyl-Chloride Roofing
07 54 23 Thermoplastic-Polyolefin Roofing
07 54 26 Nitrile-Butadiene-Polymer Roofing

07 55 00 Protected Membrane Roofing
07 55 13 Built-Up Bituminous Protected Membrane Roofing
07 55 22 Modified Bituminous Protected Membrane Roofing
07 55 33 Elastomeric Protected Membrane Roofing
07 55 43 Thermoplastic Protected Membrane Roofing
07 55 56 Fluid-Applied Protected Membrane Roofing
07 55 63 Hot-Applied Rubberized Asphalt Protected Membrane Roofing

07 56 00 Fluid-Applied Roofing

07 57 00 Coated Foamed Roofing
07 57 13 Sprayed Polyurethane Foam Roofing

07 58 00 Roll Roofing

07 60 00 FLASHING AND SHEET METAL

07 61 00 Sheet Metal Roofing
07 61 13 Standing Seam Sheet Metal Roofing
07 61 16 Batten Seam Sheet Metal Roofing
07 61 19 Flat Seam Sheet Metal Roofing
07 61 91 Tinplate and Ternplate Roofing
07 62 00 Sheet Metal Flashing and Trim
07 63 00 Sheet Metal Roofing Specialties
07 65 00 Flexible Flashing
07 65 13 Laminated Sheet Flashing
07 65 16 Modified Bituminous Sheet Flashing
07 65 19 Plastic Sheet Flashing
07 65 23 Rubber Sheet Flashing
07 65 26 Self-Adhering Sheet Flashing

07 70 00 ROOF AND WALL SPECIALTIES AND ACCESSORIES
07 71 00 Roof Specialties
07 71 13 Manufactured Copings
07 71 16 Manufactured Counterflushing Systems
07 71 19 Manufactured Gravel Stops and Facias
07 71 23 Manufactured Gutters and Downspouts
07 71 26 Reglets
07 71 29 Manufactured Roof Expansion Joints
07 71 33 Manufactured Scuppers
07 72 00 Roof Accessories
07 72 13 Manufactured Curbs
07 72 23 Relief Vents
07 72 26 Ridge Vents
07 72 33 Roof Hatches
07 72 36 Smoke Vents
07 72 43 Roof Walk Boards
07 72 46 Roof Walkways
07 72 53 Snow Guards
07 72 63 Waste Containment Assemblies
07 76 00 Roof Pavers
07 76 13 Roof Ballast Pavers
07 76 16 Roof Decking Pavers

07 77 00 Wall Specialties

07 80 00 FIRE AND SMOKE PROTECTION
07 81 00 Applied Fireproofing
07 81 13 Cement Aggregate Fireproofing
07 81 16 Cementitious Fireproofing
07 81 19 Foamed Magnesium-Oxychloride Fireproofing
07 81 23 Intumescent Mastic Fireproofing
07 81 26 Magnesium Cement Fireproofing
07 81 29 Mineral-Fiber Cementitious Fireproofing
07 81 33 Mineral-Fiber Fireproofing
07 82 00 Board Fireproofing
07 82 13 Calcium-Silicate Board Fireproofing
07 82 16 Slag-Fiber Board Fireproofing
07 84 00 Firestopping
07 84 13 Penetration Firestopping
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>07 84 13.13</td>
<td>Penetration Firestopping Mortars</td>
</tr>
<tr>
<td>08 84 13.16</td>
<td>Penetration Firestopping Devices</td>
</tr>
<tr>
<td>07 84 16</td>
<td>Annular Space Protection</td>
</tr>
<tr>
<td>07 84 23</td>
<td>Silicone Firestopping Foams</td>
</tr>
<tr>
<td>07 84 26</td>
<td>Thermal Barriers for Plastics</td>
</tr>
<tr>
<td>07 84 43</td>
<td>Fire-Resistant Joint Sealants</td>
</tr>
<tr>
<td>07 84 53</td>
<td>Building Perimeter Firestopping</td>
</tr>
<tr>
<td>07 84 56</td>
<td>Fire Safing</td>
</tr>
<tr>
<td>07 84 56.13</td>
<td>Fibrous Fire Safing</td>
</tr>
<tr>
<td>07 86 00</td>
<td>Smoke Seals</td>
</tr>
<tr>
<td>07 87 00</td>
<td>Smoke Containment Barriers</td>
</tr>
<tr>
<td>07 90 00</td>
<td>Joint Protection</td>
</tr>
<tr>
<td>07 91 00</td>
<td>Preformed Joint Seals</td>
</tr>
<tr>
<td>07 91 13</td>
<td>Compression Seals</td>
</tr>
<tr>
<td>07 91 16</td>
<td>Joint Gaskets</td>
</tr>
<tr>
<td>07 91 23</td>
<td>Backer Rods</td>
</tr>
<tr>
<td>07 91 26</td>
<td>Joint Fillers</td>
</tr>
<tr>
<td>07 92 00</td>
<td>Joint Sealants</td>
</tr>
<tr>
<td>07 92 13</td>
<td>Elastomeric Joint Sealants</td>
</tr>
<tr>
<td>07 92 16</td>
<td>Rigid Joint Sealants</td>
</tr>
<tr>
<td>07 92 19</td>
<td>Acoustical Joint Sealants</td>
</tr>
<tr>
<td>07 95 00</td>
<td>Expansion Control</td>
</tr>
<tr>
<td>07 95 13</td>
<td>Expansion Joint Cover Assemblies</td>
</tr>
<tr>
<td>07 95 53</td>
<td>Joint Slide Bearings</td>
</tr>
<tr>
<td>07 95 63</td>
<td>Bridge Expansion Joint Cover Assemblies</td>
</tr>
</tbody>
</table>
DIVISION 08 – OPENINGS

08 00 00 OPENINGS

08 01 00 Operation and Maintenance of Openings

08 01 10 Operation and Maintenance of Doors and Frames
08 01 11 Operation and Maintenance of Metal Doors and Frames
08 01 14 Operation and Maintenance of Wood Doors
08 01 15 Operation and Maintenance of Plastic Doors
08 01 16 Operation and Maintenance of Composite Doors
08 01 17 Operation and Maintenance of Integrated Door Opening Assemblies
08 01 30 Operation and Maintenance of Specialty Doors and Frames
08 01 32 Operation and Maintenance of Sliding Glass Doors
08 01 33 Operation and Maintenance of Coiling Doors and Grilles
08 01 34 Operation and Maintenance of Special Function Doors
08 01 35 Operation and Maintenance of Folding Doors and Grilles
08 01 36 Operation and Maintenance of Panel Doors
08 01 39 Operation and Maintenance of Traffic Doors
08 01 40 Operation and Maintenance of Entrances, Storefronts, and Curtain Walls
08 01 41 Operation and Maintenance of Entrances
08 01 42 Operation and Maintenance of Storefronts
08 01 44 Operation and Maintenance of Curtain Walls
08 01 50 Operation and Maintenance of Windows
08 01 51 Operation and Maintenance of Metal Windows
08 01 52 Operation and Maintenance of Wood Windows

08 01 52.61 Wood Window Repairs
08 01 52.71 Wood Window Rehabilitation
08 01 52.81 Wood Window Replacement
08 01 52.91 Wood Window Restoration
08 01 52.93 Historic Treatment of Wood Windows

08 01 53 Operation and Maintenance of Plastic Windows
08 01 54 Operation and Maintenance of Composite Windows
08 01 56 Operation and Maintenance of Special Function Windows
08 01 60 Operation and Maintenance of Skylights and Roof Windows
08 01 61 Operation and Maintenance of Roof Windows
08 01 62 Operation and Maintenance of Unit Skylights
08 01 63 Operation and Maintenance of Metal-Framed Skylights
08 01 64 Operation and Maintenance of Plastic-Framed Skylights

08 01 70 Operation and Maintenance of Hardware
08 01 71 Operation and Maintenance of Door Hardware
08 01 74 Operation and Maintenance of Access Control Hardware
08 01 75 Operation and Maintenance of Window Hardware
08 01 80 Maintenance of Glazing
08 01 81 Maintenance of Glass Glazing
08 01 84 Maintenance of Plastic Glazing
08 01 88 Maintenance of Special Function Glazing
08 01 90 Operation and Maintenance of Louvers and Vents
08 01 91 Operation and Maintenance of Louvers
08 01 92 Operation and Maintenance of Louvered Equipment Enclosures
08 01 95  Operation and Maintenance of Vents

08 05 00  Common Work Results for Openings

08 06 00  Schedules for Openings
  08 06 10  Door Schedule
    08 06 10.13  Door Type Schedule
    08 06 10.16  Frame Type Schedule
  08 06 40  Schedules for Entrances, Storefronts, and Curtain Walls
  08 06 41  Entrance Schedule
  08 06 42  Storefront Schedule
  08 06 50  Skylight Schedule
  08 06 60  Hardware Schedule
  08 06 70  Hardware Schedule
  08 06 71  Door Hardware Schedule
  08 06 80  Glazing Schedule
  08 06 90  Louver and Vent Schedule

08 08 00  Commissioning of Openings

08 10 00  DOORS AND FRAMES

08 11 00  Metal Doors and Frames
  08 11 13  Hollow Metal Doors and Frames
    08 11 13.13  Standard Hollow Metal Doors and Frames
    08 11 13.16  Custom Hollow Metal Doors and Frames
  08 11 16  Aluminum Doors and Frames
  08 11 19  Stainless-Steel Doors and Frames
  08 11 23  Bronze Doors and Frames
  08 11 63  Metal Screen and Storm Doors and Frames
    08 11 63.13  Steel Screen and Storm Doors and Frames
    08 11 63.23  Aluminum Screen and Storm Doors and Frames
  08 11 66  Metal Screen Doors and Frames
    08 11 66.13  Steel Screen Doors and Frames
    08 11 66.23  Aluminum Screen Doors and Frames
  08 11 69  Metal Storm Doors and Frames
    08 11 69.13  Steel Storm Doors and Frames
    08 11 69.23  Aluminum Storm Doors and Frames
  08 11 73  Sliding Metal Firedoors
  08 11 74  Sliding Metal Grilles

08 12 00  Metal Frames
  08 12 13  Hollow Metal Frames
    08 12 13.13  Standard Hollow Metal Frames
    08 12 13.53  Custom Hollow Metal Frames
  08 12 16  Aluminum Frames
  08 12 19  Stainless-Steel Frames
  08 12 23  Bronze Frames

08 13 00  Metal Doors
  08 13 13  Hollow Metal Doors
    08 13 13.13  Standard Hollow Metal Doors
    08 13 13.53  Custom Hollow Metal Doors
  08 13 16  Aluminum Doors
  08 13 19  Stainless-Steel Doors
  08 13 23  Bronze Doors
  08 13 73  Sliding Metal Doors
  08 13 76  Bifolding Metal Doors
08 14 00  Wood Doors
  08 14 13  Carved Wood Doors
  08 14 16  Flush Wood Doors
  08 14 23  Clad Wood Doors
    08 14 23.13  Metal-Faced Wood Doors
    08 14 23.16  Plastic-Laminate-Faced Wood Doors
    08 14 23.19  Molded-Hardboard-Faced Wood Doors
  08 14 29  Prefinished Wood Doors
  08 14 33  Stile and Rail Wood Doors
  08 14 66  Wood Screen Doors
  08 14 69  Wood Storm Doors
  08 14 73  Sliding Wood Doors
  08 14 76  Bifolding Wood Doors

08 15 00  Plastic Doors
  08 15 13  Laminated Plastic Doors
  08 15 16  Solid Plastic Doors
  08 15 66  Plastic Screen Doors
  08 15 69  Plastic Storm Doors
  08 15 73  Sliding Plastic Doors
  08 15 76  Bifolding Plastic Doors

08 16 00  Composite Doors
  08 16 13  Fiberglass Doors
  08 16 73  Sliding Composite Doors
  08 16 76  Bifolding Composite Doors

08 17 00  Integrated Door Opening Assemblies
  08 17 13  Integrated Metal Door Opening Assemblies
  08 17 23  Integrated Wood Door Opening Assemblies
  08 17 33  Integrated Plastic Door Opening Assemblies
  08 17 43  Integrated Composite Door Opening Assemblies

08 20 00  Unassigned

08 30 00  Specialty Doors and Frames

08 31 00  Access Doors and Panels
  08 31 13  Access Doors and Frames
    08 31 13.53  Security Access Doors and Frames
  08 31 16  Access Panels and Frames

08 32 00  Sliding Glass Doors
  08 32 13  Sliding Aluminum-Framed Glass Doors
  08 32 16  Sliding Plastic-Framed Glass Doors
  08 32 19  Sliding Wood-Framed Glass Doors

08 33 00  Coiling Doors and Grilles
  08 33 13  Coiling Counter Doors
  08 33 16  Coiling Counter Grilles
  08 33 23  Overhead Coiling Doors
  08 33 26  Overhead Coiling Grilles
  08 33 33  Side Coiling Doors
  08 33 36  Side Coiling Grilles

08 34 00  Special Function Doors
  08 34 13  Cold Storage Doors
  08 34 16  Hangar Doors
08 34 19  Industrial Doors
08 34 33  Lightproof Doors
08 34 36  Darkroom Doors
08 34 46  Radio-Frequency-Interference Shielding Doors
08 34 49  Radiation Shielding Doors and Frames
 08 34 49.13  Neutron Shielding Doors and Frames
08 34 53  Security Doors and Frames
08 34 56  Security Gates
08 34 59  Vault Doors and Day Gates
08 34 63  Detention Doors and Frames
 08 34 63.13  Steel Detention Doors and Frames
 08 34 63.16  Steel Plate Detention Doors and Frames
 08 34 63.33  Detention Door Frame Protection
08 34 73  Sound Control Door Assemblies

08 35 00  Folding Doors and Grilles
08 35 13  Folding Doors
 08 35 13.13  Accordion Folding Doors
 08 35 13.23  Folding Fire Doors
 08 35 13.33  Panel Folding Doors
08 35 16  Folding Grilles
 08 35 16.13  Accordion Folding Grilles

08 36 00  Panel Doors
08 36 13  Sectional Doors
08 36 16  Single-Panel Doors
08 36 19  Multi-Leaf Vertical Lift Doors
08 36 23  Telescoping Vertical Lift Doors

08 38 00  Traffic Doors
08 38 13  Flexible Strip Doors
08 38 16  Flexible Traffic Doors
08 38 19  Rigid Traffic Doors

08 39 00  Pressure-Resistant Doors
08 39 13  Airtight Doors
08 39 19  Watertight Doors
08 39 53  Blast-Resistant Doors

08 40 00  ENTRANCES, STOREFRONTS, AND CURTAIN WALLS

08 41 00  Entrances and Storefronts
08 41 13  Aluminum-Framed Entrances and Storefronts
08 41 16  Bronze-Framed Entrances and Storefronts
08 41 19  Stainless-Steel-Framed Entrances and Storefronts
08 41 23  Steel-Framed Entrances and Storefronts
08 41 26  All-Glass Entrances and Storefronts

08 42 00  Entrances
08 42 26  All-Glass Entrances
08 42 29  Automatic Entrances
 08 42 29.13  Folding Automatic Entrances
 08 42 29.23  Sliding Automatic Entrances
 08 42 29.33  Swinging Automatic Entrances
08 42 33  Revolving Door Entrances
 08 42 33.13  Security Revolving Door Entrances
08 42 36  Balanced Door Entrances
08 42 39  Pressure-Resistant Entrances
08 42 43  Intensive Care Unit/Critical Care Unit Entrances

08 43 00  Storefronts
08 43 13  Aluminum-Framed Storefronts
08 43 16  Bronze-Framed Storefronts
08 43 19  Stainless-Steel-Framed Storefronts
08 43 23  Steel-Framed Storefronts
08 43 26  All-Glass Storefronts
08 43 29  Sliding Storefronts

08 44 00  Curtain Wall and Glazed Assemblies
08 44 13  Glazed Aluminum Curtain Walls
08 44 16  Glazed Bronze Curtain Walls
08 44 19  Glazed Stainless-Steel Curtain Walls
08 44 26  Structural Glass Curtain Walls
08 44 26.13 Structural Sealant Glazed Assemblies
08 44 33  Sloped Glazing Assemblies

08 45 00  Translucent Wall and Roof Assemblies
08 45 13  Structured-Polycarbonate-Panel Assemblies
08 45 23  Fiberglass-Sandwich-Panel Assemblies

08 50 00  WINDOWS

08 51 00  Metal Windows
08 51 13  Aluminum Windows
08 51 16  Bronze Windows
08 51 19  Stainless-Steel Windows
08 51 23  Steel Windows
08 51 66  Metal Window Screens
08 51 69  Metal Storm Windows

08 52 00  Wood Windows
08 52 13  Metal-Clad Wood Windows
08 52 16  Plastic-Clad Wood Windows
08 52 66  Wood Window Screens
08 52 69  Wood Storm Windows

08 53 00  Plastic Windows
08 53 13  Vinyl Windows
08 53 66  Vinyl Window Screens
08 53 69  Vinyl Storm Windows

08 54 00  Composite Windows
08 54 13  Fiberglass Windows
08 54 66  Fiberglass Window Screens
08 54 69  Fiberglass Storm Windows

08 55 00  Pressure-Resistant Windows

08 56 00  Special Function Windows
08 56 19  Pass Windows
08 56 46  Radio-Frequency-Interference Shielding Windows
08 56 49  Radiation Shielding Windows
08 56 53  Security Windows
08 56 66  Detention Window Screens
08 56 69  Service and Teller Window Units
08 56 73  Sound Control Windows

08 60 00  ROOF WINDOWS AND SKYLIGHTS
  08 61 00  Roof Windows
    08 61 13  Metal Roof Windows
    08 61 16  Wood Roof Windows
  08 62 00  Unit Skylights
    08 62 13  Domed Unit Skylights
    08 62 16  Pyramidal Unit Skylights
    08 62 19  Vaulted Unit Skylights
  08 63 00  Metal-Framed Skylights
    08 63 13  Domed Metal-Framed Skylights
    08 63 16  Pyramidal Metal-Framed Skylights
    08 63 19  Vaulted Metal-Framed Skylights
    08 63 23  Ridge Metal-Framed Skylights
    08 63 53  Motorized Metal-Framed Skylights
  08 64 00  Plastic-Framed Skylights
  08 67 00  Skylight Protection and Screens

08 70 00  HARDWARE
  08 71 00  Door Hardware
    08 71 13  Automatic Door Operators
    08 71 53  Security Door Hardware
    08 71 63  Detention Door Hardware
  08 74 00  Access Control Hardware
    08 74 13  Card Key Access Control Hardware
    08 74 16  Keypad Access Control Hardware
    08 74 19  Biometric Identity Access Control Hardware
  08 75 00  Window Hardware
    08 75 13  Automatic Window Equipment
    08 75 16  Window Operators
  08 78 00  Special Function Hardware
  08 79 00  Hardware Accessories
    08 79 13  Key Storage Equipment

08 80 00  GLAZING
  08 81 00  Glass Glazing
    08 81 13  Decorative Glass Glazing
  08 83 00  Mirrors
    08 83 13  Mirrored Glass Glazing
    08 83 16  Mirrored Plastic Glazing
  08 84 00  Plastic Glazing
    08 84 13  Decorative Plastic Glazing
  08 85 00  Glazing Accessories
  08 87 00  Glazing Surface Films
    08 87 13  Solar Control Films
    08 87 16  Safety Films
    08 87 53  Security Films
  08 88 00  Special Function Glazing
    08 88 19  Hurricane-Resistant Glazing
08 88 23  Cable Suspended Glazing
08 88 33  Transparent Mirrored Glazing
08 88 39  Pressure-Resistant Glazing
08 88 49  Radiation-Resistant Glazing
08 88 53  Security Glazing
08 88 56  Ballistics-Resistant Glazing

08 90 00  LOUVERS AND VENTS
08 91 00  Louvers
   08 91 13  Motorized Wall Louvers
   08 91 16  Operable Wall Louvers
   08 91 19  Fixed Louvers
   08 91 26  Door Louvers

08 92 00  Louvered Equipment Enclosures

08 95 00  Vents
   08 95 13  Soffit Vents
   08 95 16  Wall Vents
DIVISION 09 – FINISHES

09 00 00  FINISHES
09 01 00  Maintenance of Finishes
09 01 20  Maintenance of Plaster and Gypsum Board
09 01 20.91  Plaster Restoration
09 01 30  Maintenance of Tiling
09 01 30.91  Tile Restoration
09 01 50  Maintenance of Ceilings
09 01 60  Maintenance of Flooring
09 01 60.91  Flooring Restoration
09 01 70  Maintenance of Wall Finishes
09 01 70.91  Wall Finish Restoration
09 01 80  Maintenance of Acoustic Treatment
09 01 90  Maintenance of Painting and Coating
09 01 90.51  Paint Cleaning
09 01 90.52  Maintenance Repainting
09 01 90.53  Maintenance Coatings
09 01 90.61  Repainting
09 01 90.91  Paint Restoration
09 01 90.92  Coating Restoration
09 01 90.93  Paint Preservation

09 05 00  Common Work Results for Finishes
09 05 13  Common Finishes

09 06 00  Schedules for Finishes
09 06 00.13  Room Finish Schedule
09 06 20  Schedules for Plaster and Gypsum Board
09 06 30  Schedules for Tiling
09 06 50  Schedules for Ceilings
09 06 60  Schedules for Flooring
09 06 70  Schedules for Wall Finishes
09 06 80  Schedules for Acoustical Treatment
09 06 90  Schedules for Painting and Coating
09 06 90.13  Paint Schedule

09 08 00  Commissioning of Finishes

09 10 00  Unassigned

09 20 00  PLASTER AND GYPSUM BOARD
09 21 00  Plaster and Gypsum Board Assemblies
09 21 13  Plaster Assemblies
09 21 16  Gypsum Board Assemblies
09 21 16.23  Gypsum Board Shaft Wall Assemblies
09 21 16.33  Gypsum Board Area Separation Wall Assemblies

09 22 00  Supports for Plaster and Gypsum Board
09 22 13  Metal Furring
09 22 13.13  Metal Channel Furring
09 22 13.23  Resilient Channel Furring
09 22 16  Non-Structural Metal Framing
09 22 16.13 Non-Structural Metal Stud Framing
09 22 26 Suspension Systems
  09 22.26.23 Metal Suspension Systems
  09 22.26.33 Plastic Suspension Systems
09 22 36 Lath
  09 22 36.13 Gypsum Lath
  09 22 36.23 Metal Lath
09 22 39 Veneer Plaster Base

09 23 00 Gypsum Plastering
  09 23 13 Acoustical Gypsum Plastering
  09 23 82 Fireproof Gypsum Plastering

09 24 00 Portland Cement Plastering
  09 24 13 Adobe Finish
  09 24 23 Portland Cement Stucco
  09 24 33 Portland Cement Parging

09 25 00 Other Plastering
  09 25 13 Acrylic Plastering
       09 25.13.13 Acrylic Plaster Finish
  09 25 23 Lime Based Plastering

09 26 00 Veneer Plastering
  09 26 13 Gypsum Veneer Plastering

09 27 00 Plaster Fabrications
  09 27 13 Glass-Fiber-Reinforced Plaster Fabrications
  09 27 23 Simulated Plaster Fabrications

09 28 00 Backing Boards and Underlayments
  09 28 13 Cementitious Backing Boards
  09 28 16 Glass-Mat Faced Gypsum Backing Boards
  09 28 19 Fibered Gypsum Backing Boards

09 29 00 Gypsum Board
  09 29 82 Gypsum Board Fireproofing

09 30 00 TILING
  09 30 13 Ceramic Tiling
  09 30 16 Quarry Tiling
  09 30 19 Paver Tiling
  09 30 23 Glass Mosaic Tiling
  09 30 26 Plastic Tiling
  09 30 29 Metal Tiling
  09 30 33 Stone Tiling

09 31 00 Thin-Set Tiling
  09 31 13 Thin-Set Ceramic Tiling
  09 31 16 Thin-Set Quarry Tiling
  09 31 19 Thin-Set Paver Tiling
  09 31 23 Thin-Set Glass Mosaic Tiling
  09 31 26 Thin-Set Plastic Tiling
  09 31 29 Thin-Set Metal Tiling
  09 31 33 Thin-Set Stone Tiling

09 32 00 Mortar-Bed Tiling
  09 32 13 Mortar-Bed Ceramic Tiling
  09 32 16 Mortar-Bed Quarry Tiling
  09 32 19 Mortar-Bed Paver Tiling
09 32 23  Mortar-Bed Glass Mosaic Tiling
09 32 26  Mortar-Bed Plastic Tiling
09 32 29  Mortar-Bed Metal Tiling
09 32 33  Mortar-Bed Stone Tiling

09 33 00  Conductive Tiling
09 33 13  Conductive Ceramic Tiling
09 33 16  Conductive Quarry Tiling
09 33 19  Conductive Paver Tiling
09 33 23  Conductive Glass Mosaic Tiling
09 33 26  Conductive Plastic Tiling
09 33 29  Conductive Metal Tiling
09 33 33  Conductive Stone Tiling

09 34 00  Waterproofing-Membrane Tiling
09 34 13  Waterproofing-Membrane Ceramic Tiling
09 34 16  Waterproofing-Membrane Quarry Tiling
09 34 19  Waterproofing-Membrane Paver Tiling
09 34 23  Waterproofing-Membrane Glass Mosaic Tiling
09 34 26  Waterproofing-Membrane Plastic Tiling
09 34 29  Waterproofing-Membrane Metal Tiling
09 34 33  Waterproofing-Membrane Stone Tiling

09 35 00  Chemical-Resistant Tiling
09 35 13  Chemical-Resistant Ceramic Tiling
09 35 16  Chemical-Resistant Quarry Tiling
09 35 19  Chemical-Resistant Paver Tiling
09 35 23  Chemical-Resistant Glass Mosaic Tiling
09 35 26  Chemical-Resistant Plastic Tiling
09 35 29  Chemical-Resistant Metal Tiling
09 35 33  Chemical-Resistant Stone Tiling

09 40 00  Unassigned

09 50 00  Ceilings

09 51 00  Acoustical Ceilings
09 51 13  Acoustical Panel Ceilings
09 51 23  Acoustical Tile Ceilings
09 51 33  Acoustical Metal Pan Ceilings
09 51 33.13  Acoustical Snap-in Metal Pan Ceilings
09 51 53  Direct-Applied Acoustical Ceilings

09 53 00  Acoustical Ceiling Suspension Assemblies
09 53 13  Curved Profile Ceiling Suspension Assemblies
09 53 23  Metal Acoustical Ceiling Suspension Assemblies
09 53 33  Plastic Acoustical Ceiling Suspension Assemblies

09 54 00  Specialty Ceilings
09 54 13  Open Metal Mesh Ceilings
09 54 16  Luminous Ceilings
09 54 19  Mirror Panel Ceilings
09 54 23  Linear Metal Ceilings
09 54 26  Linear Wood Ceilings
09 54 33  Decorative Panel Ceilings
09 54 36  Suspended Decorative Grids
09 54 43  Stretched-Fabric Ceiling Systems

09 - 3
09 54 46  Fabric-Wrapped Ceiling Panels

09 56 00  Textured Ceilings
  09 56 13  Gypsum-Panel Textured Ceilings
  09 56 16  Metal-Panel Textured Ceilings

09 57 00  Special Function Ceilings
  09 57 53  Security Ceiling Assemblies

09 58 00  Integrated Ceiling Assemblies

09 60 00  FLOORING

09 61 00  Flooring Treatment
  09 61 13  Slip-Resistant Flooring Treatment
  09 61 36  Static-Resistant Flooring Treatment

09 62 00  Specialty Flooring
  09 62 13  Asphalitic Plank Flooring
  09 62 19  Laminate Flooring
  09 62 23  Bamboo Flooring
  09 62 26  Leather Flooring
  09 62 29  Cork Flooring
  09 62 35  Acid-Resistant Flooring
  09 62 48  Acoustic Flooring

09 63 00  Masonry Flooring
  09 63 13  Brick Flooring
  09 63 13.35  Chemical-Resistant Brick Flooring
  09 63 40  Stone Flooring
  09 63 43  Composition Stone Flooring

09 64 00  Wood Flooring
  09 64 16  Wood Block Flooring
  09 64 19  Wood Composition Flooring
  09 64 23  Wood Parquet Flooring
  09 64 23.13  Acrylic-Impregnated Wood Parquet Flooring
  09 64 29  Wood Strip and Plank Flooring
  09 64 33  Laminated Wood Flooring
  09 64 53  Resilient Wood Flooring Assemblies
  09 64 66  Wood Athletic Flooring

09 65 00  Resilient Flooring
  09 65 13  Resilient Base and Accessories
  09 65 13.13  Resilient Base
  09 65 13.23  Resilient Stair Treads and Risers
  09 65 13.26  Resilient Stair Nosings
  09 65 13.33  Resilient Accessories
  09 65 13.36  Resilient Carpet Transitions
  09 65 16  Resilient Sheet Flooring
  09 65 16.13  Linoleum Flooring
  09 65 19  Resilient Tile Flooring
  09 65 33  Conductive Resilient Flooring
  09 65 36  Static-Control Resilient Flooring
  09 65 36.13  Static-Dissipative Resilient Flooring
  09 65 36.16  Static-Resistant Resilient Flooring
  09 65 66  Resilient Athletic Flooring

09 66 00  Terrazzo Flooring
  09 66 13  Portland Cement Terrazzo Flooring
09 66 13.13 Sand Cushion Terrazzo Flooring
09 66 13.16 Monolithic Terrazzo Flooring
09 66 13.19 Bonded Terrazzo Flooring
09 66 13.23 Palladina Terrazzo Flooring
09 66 13.26 Rustic Terrazzo Flooring
09 66 13.33 Structural Terrazzo Flooring

09 66 16 Terrazzo Floor Tile
09 66 16.13 Portland Cement Terrazzo Floor Tile
09 66 16.16 Plastic-Matrix Terrazzo Floor Tile

09 66 23 Resinous Matrix Terrazzo Flooring
09 66 23.13 Polycrystalline Modified Cementitious Terrazzo Flooring
09 66 23.16 Epoxy-Resin Terrazzo Flooring
09 66 23.19 Polyester-Resin Terrazzo Flooring

09 66 33 Conductive Terrazzo Flooring
09 66 33.13 Conductive Epoxy-Resin Terrazzo
09 66 33.16 Conductive Polyester-Resin Terrazzo Flooring
09 66 33.19 Conductive Plastic-Matrix Terrazzo Flooring

09 67 00 Fluid-Applied Flooring
09 67 13 Elastomeric Liquid Flooring
09 67 13.33 Conductive Elastomeric Liquid Flooring
09 67 16 Epoxy-Marble Chip Flooring
09 67 19 Magnesium-Oxychloride Flooring
09 67 23 Resinous Flooring
09 67 26 Quartz Flooring
09 67 66 Fluid-Applied Athletic Flooring

09 68 00 Carpeting
09 68 13 Tile Carpeting
09 68 16 Sheet Carpeting

09 69 00 Access Flooring
09 69 13 Rigid-Grid Access Flooring
09 69 16 Snap-on Stringer Access Flooring
09 69 19 Stringerless Access Flooring
09 69 53 Access Flooring Accessories
09 69 56 Access Flooring Stairs and Stringers

09 70 00 WALL FINISHES

09 72 00 Wall Coverings
09 72 13 Cork Wall Coverings
09 72 16 Vinyl-Coated Fabric Wall Coverings
09 72 16.13 Flexible Vinyl Wall Coverings
09 72 16.16 Rigid-Sheet Vinyl Wall Coverings
09 72 19 Textile Wall Coverings
09 72 23 Wallpapering

09 73 00 Wall Carpeting

09 74 00 Flexible Wood Sheets
09 74 13 Wood Wall Coverings
09 74 16 Flexible Wood Veneers

09 75 00 Stone Facing

09 76 00 Plastic Blocks

09 77 00 Special Wall Surfacing
09 77 13 Stretched-Fabric Wall Systems
09 77 23 Fabric-Wrapped Panels
09 80 00  ACOUSTIC TREATMENT
  09 81 00  Acoustic Insulation
    09 81 13  Acoustic Board Insulation
    09 81 16  Acoustic Blanket Insulation
    09 81 29  Sprayed Acoustic Insulation
  09 83 00  Acoustic Finishes
    09 83 13  Acoustic Wall Coating
    09 83 16  Acoustic Ceiling Coating
    09 83 22  Acoustic Drapery
  09 84 00  Acoustic Room Components
    09 84 13  Fixed Sound-Absorptive Panels
    09 84 16  Fixed Sound-Reflective Panels
    09 84 23  Moveable Sound-Absorptive Panels
    09 84 26  Moveable Sound-Reflective Panels
    09 84 33  Sound-Absorbing Wall Units
    09 84 36  Sound-Absorbing Ceiling Units

09 90 00  PAINTING AND COATING
  09 91 00  Painting
    09 91 13  Exterior Painting
    09 91 23  Interior Painting
  09 93 00  Staining and Transparent Finishing
    09 93 13  Exterior Staining and Finishing
      09 93 13.13  Exterior Staining
      09 93 13.53  Exterior Finishing
    09 93 23  Interior Staining and Finishing
      09 93 23.13  Interior Staining
      09 93 23.53  Interior Finishing
  09 94 00  Decorative Finishing
    09 94 13  Textured Finishing
    09 94 16  Faux Finishing
    09 94 19  Multicolor Interior Finishing
  09 96 00  High-Performance Coatings
    09 96 13  Abrasion-Resistant Coatings
    09 96 23  Graffiti-Resistant Coatings
    09 96 26  Marine Coatings
    09 96 33  High-Temperature-Resistant Coatings
    09 96 35  Chemical-Resistant Coatings
    09 96 43  Fire-Retardant Coatings
    09 96 46  Intumescent Painting
    09 96 53  Elastomeric Coatings
    09 96 56  Epoxy Coatings
    09 96 59  High-Build Glazed Coatings
    09 96 63  Textured Plastic Coatings
    09 96 66  Aggregate Wall Coatings
  09 97 00  Special Coatings
    09 97 13  Steel Coatings
      09 97 13.13  Interior Steel Coatings
      09 97 13.23  Exterior Steel Coatings
    09 97 23  Concrete and Masonry Coatings
    09 97 26  Cementitious Coatings
MasterFormat™ 2004 Edition – Numbers & Titles

November 2004

09 97 26.13 Interior Cementitious Coatings
09 97 26.23 Exterior Cementitious Coatings
DIVISION 10 – SPECIALTIES

10 00 00 SPECIALTIES
  10 01 00 Operation and Maintenance of Specialties
    10 01 10 Operation and Maintenance of Information Specialties
    10 01 20 Operation and Maintenance of Interior Specialties
    10 01 30 Operation and Maintenance of Fireplaces and Stoves
    10 01 40 Operation and Maintenance of Safety Specialties
    10 01 50 Operation and Maintenance of Storage Specialties
    10 01 70 Operation and Maintenance of Exterior Specialties
    10 01 80 Operation and Maintenance of Other Specialties

10 05 00 Common Work Results for Specialties

10 06 00 Schedules for Specialties
  10 06 10 Schedules for Information Specialties
    10 06 10.13 Exterior Signage Schedule
    10 06 10.16 Interior Signage Schedule
  10 06 20 Schedules for Interior Specialties
    10 06 20.13 Toilet, Bath, and Laundry Accessory Schedule
  10 06 30 Schedules for Fireplaces and Stoves
  10 06 40 Schedules for Safety Specialties
  10 06 50 Schedules for Storage Specialties
  10 06 70 Schedules for Exterior Specialties
  10 06 80 Schedules for Other Specialties

10 08 00 Commissioning of Specialties

10 10 00 INFORMATION SPECIALTIES
  10 11 00 Visual Display Surfaces
    10 11 13 Chalkboards
      10 11 13.13 Fixed Chalkboards
      10 11 13.23 Modular-Support-Mounted Chalkboards
      10 11 13.33 Rail-Mounted Chalkboards
      10 11 13.43 Portable Chalkboards
    10 11 16 Markerboards
      10 11 16.13 Fixed Markerboards
      10 11 16.23 Modular-Support-Mounted Markerboards
      10 11 16.33 Rail-Mounted Markerboards
      10 11 16.43 Portable Markerboards
      10 11 16.53 Electronic Markerboards
    10 11 23 Tackboards
      10 11 23.13 Fixed Tackboards
      10 11 23.23 Modular-Support-Mounted Tackboards
      10 11 23.33 Rail-Mounted Tackboards
      10 11 23.43 Portable Tackboards
  10 11 33 Sliding Visual Display Units
    10 11 33.13 Horizontal-Sliding Visual Display Units
    10 11 33.23 Vertical-Sliding Visual Display Units
  10 11 36 Visual Display Conference Units
  10 11 39 Visual Display Rails
  10 11 43 Visual Display Wall Panels
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>November 2004</td>
<td></td>
</tr>
</tbody>
</table>

**10 11 46** Visual Display Fabrics

**10 12 00** Display Cases

**10 13 00** Directories

10 13 13 Electronic Directories

**10 14 00** Signage

10 14 16 Plaques
10 14 19 Dimensional Letter Signage
10 14 23 Panel Signage
10 14 23.13 Engraved Panel Signage
10 14 26 Post and Panel/Pylon Signage
10 14 33 Illuminated Panel Signage
10 14 36 Non-Illuminated Panel Signage
10 14 43 Photoluminescent Signage
10 14 53 Traffic Signage
10 14 53.13 Transportation Reference Markers
10 14 63 Electronic Message Signage
10 14 66 Floating Signage

**10 17 00** Telephone Specialties

10 17 13 Telephone Directory Units
10 17 16 Telephone Enclosures
10 17 16.13 Telephone Stalls
10 17 16.16 Telephone Alcoves
10 17 19 Telephone Shelving

**10 18 00** Informational Kiosks

**10 20 00** INTERIOR SPECIALTIES

**10 21 00** Compartments and Cubicles

10 21 13 Toilet Compartments
10 21 13.13 Metal Toilet Compartments
10 21 13.16 Plastic-Laminate-Clad Toilet Compartments
10 21 13.19 Plastic Toilet Compartments
10 21 13.23 Particleboard Toilet Compartments
10 21 13.40 Stone Toilet Compartments
10 21 16 Shower and Dressing Compartments
10 21 16.13 Metal Shower and Dressing Compartments
10 21 16.16 Plastic-Laminate-Clad Shower and Dressing Compartments
10 21 16.19 Plastic Shower and Dressing Compartments
10 21 16.23 Particleboard Shower and Dressing Compartments
10 21 16.40 Stone Shower and Dressing Compartments
10 21 23 Cubicles
10 21 23.13 Cubicle Curtains
10 21 23.16 Cubicle Track and Hardware

**10 22 00** Partitions

10 22 13 Wire Mesh Partitions
10 22 16 Folding Gates
10 22 19 Demountable Partitions
10 22 19.13 Demountable Metal Partitions
10 22 19.23 Demountable Wood Partitions
10 22 19.33 Demountable Plastic Partitions
10 22 19.43 Demountable Composite Partitions
10 22 19.53 Demountable Gypsum Partitions
10 22 23 Portable Partitions, Screens, and Panels

---

All contents copyright © 2004, The Construction Specifications Institute and Construction Specifications Canada. All rights reserved.
10 22 23.13 Wall Screens
10 22 23.23 Movable Panel Systems
10 22 26 Operable Partitions
  10 22 26.13 Accordion Folding Partitions
  10 22 26.23 Coiling Partitions
  10 22 26.33 Folding Panel Partitions
  10 22 26.43 Sliding Partitions
10 25 00 Service Walls
  10 25 13 Patient Bed Service Walls
  10 25 16 Modular Service Walls
10 26 00 Wall and Door Protection
  10 26 13 Corner Guards
  10 26 16 Bumper Guards
    10 26 16.13 Bumper Rails
    10 26 16.16 Protective Corridor Handrails
  10 26 23 Protective Wall Covering
    10 26 23.13 Impact Resistant Wall Protection
  10 26 33 Door and Frame Protection
10 28 00 Toilet, Bath, and Laundry Accessories
  10 28 13 Toilet Accessories
    10 28 13.13 Commercial Toilet Accessories
    10 28 13.19 Healthcare Toilet Accessories
    10 28 13.53 Security Toilet Accessories
    10 28 13.63 Detention Toilet Accessories
  10 28 16 Bath Accessories
    10 28 16.13 Residential Bath Accessories
  10 28 19 Tub and Shower Doors
    10 28 19.16 Shower Doors
    10 28 19.19 Tub Doors
  10 28 23 Laundry Accessories
    10 28 23.13 Built-In Ironing Boards
    10 28 23.16 Clothes Drying Racks
10 30 00 Fireplaces and Stoves
10 31 00 Manufactured Fireplaces
  10 31 13 Manufactured Fireplace Chimneys
  10 31 16 Manufactured Fireplace Forms
10 32 00 Fireplace Specialties
  10 32 13 Fireplace Dampers
  10 32 16 Fireplace Inserts
  10 32 19 Fireplace Screens
  10 32 23 Fireplace Doors
  10 32 26 Fireplace Water Heaters
10 35 00 Stoves
  10 35 13 Heating Stoves
  10 35 23 Cooking Stoves
10 40 00 Safety Specialties
10 41 00 Emergency Access and Information Cabinets
  10 41 13 Fire Department Plan Cabinets
  10 41 16 Emergency Key Cabinets
10 43 00 Emergency Aid Specialties
10 43 13 Defibrillator Cabinets
10 43 16 First Aid Cabinets

10 44 00 Fire Protection Specialties
10 44 13 Fire Extinguisher Cabinets
10 44 13.53 Security Fire Extinguisher Cabinets
10 44 16 Fire Extinguishers
10 44 16.13 Portable Fire Extinguishers
10 44 16.16 Wheeled Fire Extinguisher Units
10 44 33 Fire Blankets and Cabinets
10 44 43 Fire Extinguisher Accessories

10 50 00 STORAGE SPECIALTIES

10 51 00 Lockers
10 51 13 Metal Lockers
10 51 16 Wood Lockers
10 51 23 Plastic-Laminate-Clad lockers
10 51 26 Plastic Lockers
10 51 26.13 Recycled Plastic Lockers
10 51 33 Glass Lockers
10 51 43 Wire Mesh Storage Lockers
10 51 53 Locker Room Benches

10 55 00 Postal Specialties
10 55 13 Central Mail Delivery Boxes
10 55 13.13 Cluster Box Units
10 55 16 Mail Collection Boxes
10 55 19 Receiving Boxes
10 55 23 Mail Boxes
10 55 23.13 Apartment Mail Boxes
10 55 23.16 Mail Box Directories
10 55 23.19 Mail Box Key Keepers
10 55 26 Parcel Lockers
10 55 33 Data Distribution Boxes
10 55 36 Package Depositories
10 55 91 Mail Chutes

10 56 00 Storage Assemblies
10 56 13 Metal Storage Shelving
10 56 13.13 End-Panel-Support Metal Storage Shelving
10 56 13.16 Post-and-Shelf Metal Storage Shelving
10 56 13.19 Post-and-Beam Metal Storage Shelving
10 56 13.23 Cantilever Metal Storage Shelving
10 56 16 Fabricated Wood Storage Shelving
10 56 19 Plastic Storage Shelving
10 56 19.13 Recycled Plastic Storage Shelving
10 56 23 Wire Storage Shelving
10 56 26 Mobile Storage Shelving
10 56 26.13 Manual Mobile Storage Shelving
10 56 26.23 Motorized Mobile Storage Shelving
10 56 29 Storage Racks
<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 56 29.13</td>
<td>Flow Storage Racks</td>
</tr>
<tr>
<td>10 56 29.16</td>
<td>Pallet Storage Racks</td>
</tr>
<tr>
<td>10 56 29.19</td>
<td>Movable-Shelf Storage Racks</td>
</tr>
<tr>
<td>10 56 29.23</td>
<td>Stacker Storage Racks</td>
</tr>
<tr>
<td>10 56 29.26</td>
<td>Cantilever Storage Racks</td>
</tr>
<tr>
<td>10 56 29.29</td>
<td>Drive-In Storage Racks</td>
</tr>
<tr>
<td>10 56 29.33</td>
<td>Drive-Through Storage Racks</td>
</tr>
<tr>
<td>10 56 33</td>
<td>Mercantile Storage Assemblies</td>
</tr>
<tr>
<td>10 57 00</td>
<td>Wardrobe and Closet Specialties</td>
</tr>
<tr>
<td>10 57 13</td>
<td>Hat and Coat Racks</td>
</tr>
<tr>
<td>10 57 23</td>
<td>Closet and Utility Shelving</td>
</tr>
<tr>
<td>10 57 23.13</td>
<td>Wire Closet and Utility Shelving</td>
</tr>
<tr>
<td>10 57 23.16</td>
<td>Plastic-Laminate-Clad Closet and Utility Shelving</td>
</tr>
<tr>
<td>10 57 23.19</td>
<td>Wood Closet and Utility Shelving</td>
</tr>
<tr>
<td>10 57 33</td>
<td>Closet and Utility Shelving Hardware</td>
</tr>
<tr>
<td>10 60 00</td>
<td>Unassigned</td>
</tr>
<tr>
<td>10 70 00</td>
<td>Exterior Specialties</td>
</tr>
<tr>
<td>10 71 00</td>
<td>Exterior Protection</td>
</tr>
<tr>
<td>10 71 13</td>
<td>Exterior Sun Control Devices</td>
</tr>
<tr>
<td>10 71 13.13</td>
<td>Exterior Shutters</td>
</tr>
<tr>
<td>10 71 13.19</td>
<td>Rolling Exterior Shutters</td>
</tr>
<tr>
<td>10 71 13.23</td>
<td>Coiling Exterior Shutters</td>
</tr>
<tr>
<td>10 71 13.26</td>
<td>Decorative Exterior Shutters</td>
</tr>
<tr>
<td>10 71 13.29</td>
<td>Side-Hinged Exterior Shutters</td>
</tr>
<tr>
<td>10 71 13.43</td>
<td>Fixed Sun Screens</td>
</tr>
<tr>
<td>10 71 16</td>
<td>Storm Panels</td>
</tr>
<tr>
<td>10 71 16.13</td>
<td>Demountable Storm Panels</td>
</tr>
<tr>
<td>10 71 16.16</td>
<td>Movable Storm Panels</td>
</tr>
<tr>
<td>10 73 00</td>
<td>Protective Covers</td>
</tr>
<tr>
<td>10 73 13</td>
<td>Awnings</td>
</tr>
<tr>
<td>10 73 16</td>
<td>Canopies</td>
</tr>
<tr>
<td>10 73 23</td>
<td>Car Shelters</td>
</tr>
<tr>
<td>10 73 26</td>
<td>Walkway Coverings</td>
</tr>
<tr>
<td>10 73 33</td>
<td>Marquees</td>
</tr>
<tr>
<td>10 73 43</td>
<td>Transportation Stop Shelters</td>
</tr>
<tr>
<td>10 74 00</td>
<td>Manufactured Exterior Specialties</td>
</tr>
<tr>
<td>10 74 13</td>
<td>Exterior Clocks</td>
</tr>
<tr>
<td>10 74 23</td>
<td>Cupolas</td>
</tr>
<tr>
<td>10 74 26</td>
<td>Spires</td>
</tr>
<tr>
<td>10 74 29</td>
<td>Steeples</td>
</tr>
<tr>
<td>10 74 33</td>
<td>Weathervanes</td>
</tr>
<tr>
<td>10 74 43</td>
<td>Below-Grade Egress Assemblies</td>
</tr>
<tr>
<td>10 74 46</td>
<td>Window Wells</td>
</tr>
<tr>
<td>10 75 00</td>
<td>Flagpoles</td>
</tr>
<tr>
<td>10 75 13</td>
<td>Automatic Flagpoles</td>
</tr>
<tr>
<td>10 75 16</td>
<td>Ground-Set Flagpoles</td>
</tr>
<tr>
<td>10 75 19</td>
<td>Nautical Flagpoles</td>
</tr>
<tr>
<td>10 75 23</td>
<td>Wall-Mounted Flagpoles</td>
</tr>
<tr>
<td>10 80 00</td>
<td>Other Specialties</td>
</tr>
<tr>
<td>10 81 00</td>
<td>Pest Control Devices</td>
</tr>
</tbody>
</table>
10 81 13  Bird Control Devices
10 81 16  Insect Control Devices
10 81 19  Rodent Control Devices

10 82 00  Grilles and Screens
  10 82 13  Exterior Grilles and Screens
  10 82 23  Interior Grilles and Screens

10 83 00  Flags and Banners
  10 83 13  Flags
  10 83 16  Banners

10 86 00  Security Mirrors and Domes

10 88 00  Scales

10 90 00  Unassigned
DIVISION 11 – EQUIPMENT

11 00 00  EQUIPMENT
   11 01 00  Operation and Maintenance of Equipment
       11 01 10  Operation and Maintenance of Vehicle and Pedestrian Equipment
       11 01 15  Operation and Maintenance of Security, Bank, and Detention Equipment
       11 01 20  Operation and Maintenance of Commercial Equipment
       11 01 30  Operation and Maintenance of Residential Equipment
       11 01 40  Operation and Maintenance of Foodservice Equipment
       11 01 50  Operation and Maintenance of Educational and Scientific Equipment
       11 01 56  Operation and Maintenance of Observatory Equipment
       11 01 60  Operation and Maintenance of Entertainment Equipment
       11 01 65  Operation and Maintenance of Athletic and Recreational Equipment
       11 01 70  Operation and Maintenance of Healthcare Equipment
       11 01 80  Operation and Maintenance of Collection and Disposal Equipment
       11 01 90  Operation and Maintenance of Other Equipment

   11 05 00  Common Work Results for Equipment

   11 06 00  Schedules for Equipment
       11 06 10  Schedules for Vehicle and Pedestrian Equipment
       11 06 15  Schedules for Security, Bank, and Detention Equipment
       11 06 15.13  Teller and Service Equipment Schedule
       11 06 20  Schedules for Commercial Equipment
       11 06 30  Schedules for Residential Equipment
       11 06 40  Schedules for Foodservice Equipment
       11 06 40.13  Foodservice Equipment Schedule
       11 06 50  Schedules for Educational and Scientific Equipment
       11 06 60  Schedules for Entertainment Equipment
       11 06 65  Schedules for Athletic and Recreational Equipment
       11 06 70  Schedules for Healthcare Equipment
       11 06 70.13  Healthcare Equipment Schedule
       11 06 80  Schedules for Collection and Disposal Equipment
       11 06 90  Schedules for Other Equipment

   11 08 00  Commissioning of Equipment

11 10 00  VEHICLE AND PEDESTRIAN EQUIPMENT
   11 11 00  Vehicle Service Equipment
       11 11 13  Compressed-Air Vehicle Service Equipment
       11 11 19  Vehicle Lubrication Equipment
       11 11 23  Tire-Changing Equipment
       11 11 26  Vehicle-Washing Equipment

   11 12 00  Parking Control Equipment
       11 12 13  Parking Key and Card Control Units
       11 12 16  Parking Ticket Dispensers
       11 12 23  Parking Meters
       11 12 26  Parking Fee Collection Equipment
       11 12 26.13  Parking Fee Coin Collection Equipment
       11 12 33  Parking Gates

   11 13 00  Loading Dock Equipment
11 13 13 Loading Dock Bumpers
11 13 16 Loading Dock Seals and Shelters
   11 13 16.13 Loading Dock Seals
   11 13 16.23 Loading Dock Shelters
   11 13 16.33 Loading Dock Rail Shelters
11 13 19 Stationary Loading Dock Equipment
   11 13 19.13 Loading Dock Levelers
   11 13 19.23 Stationary Loading Dock Lifts
   11 13 19.26 Loading Dock Truck Lifts
   11 13 19.33 Loading Dock Truck Restraints
11 13 23 Portable Dock Equipment
   11 13 23.13 Portable Dock Lifts
   11 13 23.16 Portable Dock Ramps
   11 13 23.19 Portable Dock Bridges
   11 13 23.23 Portable Dock Platforms
11 13 26 Loading Dock Lights
11 14 00 Pedestrian Control Equipment
11 14 13 Pedestrian Gates
   11 14 13.13 Portable Posts and Railings
   11 14 13.16 Rotary Gates
   11 14 13.19 Turnstiles
11 14 16 Money-Changing Equipment
   11 14 16.19 Money-Changing Machines
11 14 26 Pedestrian Fare Collection Equipment
   11 14 26.13 Pedestrian Coin Fare Collection Equipment
11 14 43 Pedestrian Detection Equipment
   11 14 43.13 Electronic Detection and Counting Systems
11 14 53 Pedestrian Security Equipment
11 15 00 SECURITY, DETENTION AND BANKING EQUIPMENT
11 16 00 Vault Equipment
   11 16 13 Safe Deposit Boxes
   11 16 16 Safes
   11 16 23 Vault Ventilators
11 17 00 Teller and Service Equipment
   11 17 13 Teller Equipment Systems
   11 17 16 Automatic Banking Systems
   11 17 23 Money Handling Equipment
   11 17 33 Money Cart Pass-Through
   11 17 36 Package Transfer Units
11 18 00 Security Equipment
   11 18 13 Deal Drawers
   11 18 16 Gun Ports
   11 18 23 Valuable Material Storage
11 19 00 Detention Equipment
   11 19 13 Detention Pass-Through Doors
   11 19 16 Detention Gun Lockers
11 20 00 COMMERCIAL EQUIPMENT
11 21 00 Mercantile and Service Equipment
   11 21 13 Cash Registers and Checking Equipment
   11 21 23 Vending Equipment
11 21 23.13 Vending Machines
11 21 33 Checkroom Equipment
11 21 43 Weighing and Wrapping Equipment
11 21 53 Barber and Beauty Shop Equipment

11 22 00 Refrigerated Display Equipment

11 23 00 Commercial Laundry and Dry Cleaning Equipment
11 23 13 Dry Cleaning Equipment
11 23 16 Drying and Conditioning Equipment
11 23 19 Finishing Equipment
11 23 23 Commercial Ironing Equipment
11 23 26 Commercial Washers and Extractors
11 23 33 Coin-Operated Laundry Equipment
11 23 43 Hanging Garment Conveyors

11 24 00 Maintenance Equipment
11 24 13 Floor and Wall Cleaning Equipment
11 24 16 Housekeeping Carts
11 24 19 Vacuum Cleaning Systems
11 24 23 Window Washing Systems

11 25 00 Hospitality Equipment
11 25 13 Registration Equipment

11 26 00 Unit Kitchens
11 26 13 Metal Unit Kitchens
11 26 16 Wood Unit Kitchens
11 26 19 Plastic-Laminate-Clad Unit Kitchens

11 27 00 Photographic Processing Equipment
11 27 13 Darkroom Processing Equipment
11 27 16 Film Transfer Cabinets

11 28 00 Office Equipment
11 28 13 Computers
11 28 16 Printers
11 28 19 Self-Contained Facsimile Machines
11 28 23 Copiers

11 29 00 Postal, Packaging, and Shipping Equipment
11 29 23 Packaging Equipment
11 29 33 Shipping Equipment
11 29 55 Postal Equipment

11 30 00 RESIDENTIAL EQUIPMENT
11 31 00 Residential Appliances
11 31 13 Residential Kitchen Appliances
11 31 23 Residential Laundry Appliances

11 33 00 Retractable Stairs

11 40 00 FOODSERVICE EQUIPMENT
11 41 00 Food Storage Equipment
11 41 13 Refrigerated Food Storage Cases
11 41 23 Walk-In Coolers
11 41 26 Walk-In Freezers

11 42 00 Food Preparation Equipment
11 43 00 Food Delivery Carts and Conveyors
11 43 13 Food Delivery Carts
11 43 16 Food Delivery Conveyors

11 44 00 Food Cooking Equipment
11 44 13 Commercial Ranges
11 44 16 Commercial Ovens

11 46 00 Food Dispensing Equipment
11 46 13 Bar Equipment
11 46 16 Service Line Equipment
11 46 19 Soda Fountain Equipment

11 47 00 Ice Machines

11 48 00 Cleaning and Disposal Equipment
11 48 13 Commercial Dishwashers

11 50 00 Educational and Scientific Equipment

11 51 00 Library Equipment
11 51 13 Automated Book Storage and Retrieval Systems
11 51 16 Book Depositories
11 51 19 Book Theft Protection Equipment
11 51 23 Library Stack Systems
11 51 23.13 Metal Library Shelving

11 52 00 Audio-Visual Equipment
11 52 13 Projection Screens
11 52 13.13 Fixed Projection Screens
11 52 13.16 Portable Projection Screens
11 52 13.19 Rear Projection Screens
11 52 16 Projectors
11 52 16.13 Movie Projectors
11 52 16.16 Slide Projectors
11 52 16.19 Overhead Projectors
11 52 16.23 Opaque Projectors
11 52 16.26 Video Projectors
11 52 19 Players and Recorders

11 53 00 Laboratory Equipment
11 53 13 Laboratory Fume Hoods
11 53 13.13 Recirculating Laboratory Fume Hoods
11 53 16 Laboratory Incubators
11 53 19 Laboratory Sterilizers
11 53 23 Laboratory Refrigerators
11 53 33 Emergency Safety Appliances
11 53 43 Service Fittings and Accessories
11 53 53 Biological Safety Cabinets

11 55 00 Planetarium Equipment
11 55 13 Planetarium Projectors
11 55 16 Planetarium Pendulums

11 56 00 Observatory Equipment
11 56 13 Telescopes
11 56 16 Telescope Mounts
11 56 19 Telescope Drive Mechanisms
11 56 23 Telescope Domes

11 57 00 Vocational Shop Equipment

11 59 00 Exhibit Equipment
11 60 00  ENTERTAINMENT EQUIPMENT
11 61 00  Theater and Stage Equipment
  11 61 13  Acoustical Shells
  11 61 23  Folding and Portable Stages
  11 61 33  Rigging Systems and Controls
  11 61 43  Stage Curtains
11 62 00  Musical Equipment
  11 62 13  Bells
  11 62 16  Carillons
  11 62 19  Organs

11 65 00  ATHLETIC AND RECREATIONAL EQUIPMENT
11 66 00  Athletic Equipment
  11 66 13  Exercise Equipment
  11 66 23  Gymnasium Equipment
    11 66 23.13  Basketball Equipment
    11 66 23.23  Volleyball Equipment
    11 66 23.33  Interior Tennis Equipment
    11 66 23.43  Interior Track and Field Equipment
    11 66 23.53  Wall Padding
    11 66 23.56  Mat Storage
  11 66 43  Interior Scoreboards
  11 66 53  Gymnasium Dividers
    11 66 53.13  Batting/Golf Cages
11 67 00  Recreational Equipment
  11 67 13  Bowling Alley Equipment
  11 67 23  Shooting Range Equipment
  11 67 33  Climbing Walls
  11 67 43  Table Games Equipment
    11 67 43.13  Pool Tables
    11 67 43.23  Ping-Pong Tables
  11 67 53  Game Room Equipment
    11 67 53.13  Video Games
    11 67 53.23  Pinball Machines
11 68 00  Play Field Equipment and Structures
  11 68 13  Playground Equipment
  11 68 16  Play Structures
  11 68 23  Exterior Court Athletic Equipment
    11 68 23.13  Exterior Basketball Equipment
    11 68 23.23  Exterior Volleyball Equipment
    11 68 23.33  Tennis Equipment
  11 68 33  Athletic Field Equipment
    11 68 33.13  Football Field Equipment
    11 68 33.23  Soccer and Field Hockey Equipment
    11 68 33.33  Baseball Field Equipment
    11 68 33.43  Track and Field Equipment
  11 68 43  Exterior Scoreboards

11 70 00  HEALTHCARE EQUIPMENT
11 71 00  Medical Sterilizing Equipment
11 72 00  Examination and Treatment Equipment
  11 72 13  Examination Equipment
11 72 53 Treatment Equipment
11 73 00 Patient Care Equipment
11 74 00 Dental Equipment
11 75 00 Optical Equipment
11 76 00 Operating Room Equipment
11 77 00 Radiology Equipment
11 78 00 Mortuary Equipment
   11 78 13 Mortuary Refrigerators
   11 78 16 Crematorium Equipment
   11 78 19 Mortuary Lifts
11 78 00 Therapy Equipment
11 80 00 COLLECTION AND DISPOSAL EQUIPMENT
11 82 00 Solid Waste Handling Equipment
   11 82 13 Solid Waste Bins
   11 82 19 Packaged Incinerators
   11 82 23 Recycling Equipment
   11 82 26 Waste Compactors and Destructors
   11 82 29 Composting Equipment
11 90 00 OTHER EQUIPMENT
11 91 00 Religious Equipment
   11 91 13 Baptisteries
11 92 00 Agricultural Equipment
   11 92 13 Milkers
   11 92 16 Stock Feeders
   11 92 19 Stock Waterers
   11 92 23 Agricultural Waste Clean-Up Equipment
11 93 00 Horticultural Equipment
   11 93 13 Hydroponic Growing Systems
   11 93 16 Seeders
   11 93 19 Transplanters
   11 93 23 Potting Machines
   11 93 26 Flat Fillers
   11 93 29 Baggers
   11 93 33 Soil Mixers
DIVISION 12 – FURNISHINGS

12 00 00  FURNISHINGS
  12 01 00  Operation and Maintenance of Furnishings
    12 01 10  Operation and Maintenance of Art
    12 01 20  Operation and Maintenance of Window Treatments
    12 01 30  Operation and Maintenance of Casework
    12 01 40  Operation and Maintenance of Furnishings and Accessories
    12 01 50  Operation and Maintenance of Furniture
    12 01 60  Operation and Maintenance of Multiple Seating
    12 01 90  Operation and Maintenance of Other Furnishings
  12 05 00  Common Work Results for Furnishings
    12 05 13  Fabrics
  12 06 00  Schedules for Furnishings
    12 06 10  Schedules for Art
    12 06 20  Schedules for Window Treatments
      12 06 20.13  Window Treatment Schedule
    12 06 30  Schedules for Casework
      12 06 30.13  Manufactured Casework Schedule
    12 06 40  Schedules for Furnishings and Accessories
      12 06 40.13  Furnishings Schedule
    12 06 50  Schedules for Furniture
    12 06 60  Schedules for Multiple Seating
    12 06 90  Schedules for Other Furnishings
  12 08 00  Commissioning of Furnishings

12 10 00  ART
  12 11 00  Murals
    12 11 13  Photo Murals
    12 11 16  Sculptured Brick Panels
    12 11 23  Brick Murals
    12 11 26  Ceramic Tile Murals
    12 11 33  Trompe l’oeil
  12 12 00  Wall Decorations
    12 12 13  Commissioned Paintings
    12 12 16  Framed Paintings
    12 12 19  Framed Prints
    12 12 23  Tapestries
    12 12 26  Wall Hangings
  12 14 00  Sculptures
    12 14 13  Carved Sculpture
    12 14 16  Cast Sculpture
    12 14 19  Constructed Sculpture
    12 14 23  Relief Art
  12 17 00  Art Glass
    12 17 13  Etched Glass
    12 17 16  Stained Glass
  12 19 00  Religious Art
12 20 00 WINDOW TREATMENTS

12 21 00 Window Blinds
12 21 13 Horizontal Louver Blinds
  12 21 13.13 Metal Horizontal Louver Blinds
  12 21 13.23 Wood Horizontal Louver Blinds
  12 21 13.33 Plastic Horizontal Louver Blinds
12 21 16 Vertical Louver Blinds
  12 21 16.13 Metal Vertical Louver Blinds
  12 21 16.23 Wood Vertical Louver Blinds
  12 21 16.33 Plastic Vertical Louver Blinds
12 21 23 Roll-Down Blinds
12 21 26 Black-Out Blinds

12 22 00 Curtains and Drapes
12 22 13 Draperies
12 22 16 Drapery Track and Accessories

12 23 00 Interior Shutters

12 24 00 Window Shades
12 24 13 Roller Window Shades
12 24 16 Pleated Window Shades

12 25 00 Window Treatment Operating Hardware
12 25 13 Motorized Drapery Rods

12 30 00 CASEWORK

12 31 00 Manufactured Metal Casework
12 31 16 Manufactured Metal Sandwich Panel Casework

12 32 00 Manufactured Wood Casework
12 32 13 Manufactured Wood-Veneer-Faced Casework
12 32 16 Manufactured Plastic-Laminate-Clad Casework

12 34 00 Manufactured Plastic Casework
12 34 16 Manufactured Solid-Plastic Casework

12 35 00 Specialty Casework
12 35 17 Bank Casework
12 35 25 Hospitality Casework
12 35 30 Residential Casework
  12 35 30.13 Kitchen Casework
  12 35 30.23 Bathroom Casework
  12 35 30.43 Dormitory Casework
12 35 33 Utility Room Casework
12 35 50 Educational/Library Casework
  12 35 50.13 Educational Casework
  12 35 50.53 Library Casework
  12 35 50.56 Built-In Study Carrels
12 35 53 Laboratory Casework
  12 35 53.13 Metal Laboratory Casework
  12 35 53.16 Plastic-Laminate-Clad Laboratory Casework
  12 35 53.19 Wood Laboratory Casework
  12 35 53.23 Solid-Plastic Laboratory Casework
12 35 59 Display Casework
12 35 70 Healthcare Casework
12 35 70.13 Hospital Casework
12 35 70.16 Nurse Station Casework
12 35 70.19 Exam Room Casework
12 35 70.74 Dental Casework
12 35 91 Religious Casework

12 36 00 Countertops
12 36 13 Concrete Countertops
12 36 16 Metal Countertops
12 36 19 Wood Countertops
12 36 23 Plastic Countertops
12 36 23.13 Plastic-Laminate-Clad Countertops
12 36 40 Stone Countertops
12 36 53 Laboratory Countertops
12 36 61 Simulated Stone Countertops
12 36 61.13 Cultured Marble Countertops
12 36 61.16 Solid Surfacing Countertops
12 36 61.19 Quartz Surfacing Countertops

12 40 00 Furnishings and Accessories

12 41 00 Office Accessories
12 41 13 Desk Accessories

12 42 00 Table Accessories
12 42 13 Ceramics
12 42 16 Flatware
12 42 16.13 Silverware
12 42 19 Hollowware
12 42 23 Glassware
12 42 26 Table Linens
12 42 26.13 Napery

12 43 00 Portable Lamps
12 43 13 Lamps
12 43 13.13 Desk Lamps
12 43 13.16 Table Lamps
12 43 13.19 Floor Lamps

12 44 00 Bath Furnishings
12 44 13 Bath Linens
12 44 13.13 Bath Mats
12 44 13.16 Bath Towels
12 44 16 Shower Curtains

12 45 00 Bedroom Furnishings
12 45 13 Bed Linens
12 45 13.13 Blankets
12 45 13.16 Comforters
12 45 16 Pillows

12 46 00 Furnishing Accessories
12 46 13 Ash Receptacles
12 46 16 Bowls
12 46 19 Clocks
12 46 23 Decorative Crafts
12 46 26 Decorative Screens
12 46 29 Vases
12 46 33 Waste Receptacles
12 48 00  Rugs and Mats
  12 48 13  Entrance Floor Mats and Frames
   12 48 13.13  Entrance Floor Mats
   12 48 13.16  Entrance Floor Mat Frames
  12 48 16  Entrance Floor Grilles
  12 48 19  Entrance Floor Gratings
  12 48 23  Entrance Floor Grids
  12 48 26  Entrance Tile
  12 48 43  Floor Mats
   12 48 43.13  Chair Mats
  12 48 53  Rugs
   12 48 53.13  Runners
   12 48 53.16  Oriental Rugs

12 50 00  Furniture

12 51 00  Office Furniture
  12 51 16  Case Goods
    12 51 16.13  Metal Case Goods
    12 51 16.16  Wood Case Goods
    12 51 16.19  Plastic-Laminate-Clad Case Goods
  12 51 19  Filing Cabinets
   12 51 19.13  Lateral Filing Cabinets
   12 51 19.16  Vertical Filing Cabinets
  12 51 83  Custom Office Furniture

12 52 00  Seating
  12 52 13  Chairs
  12 52 19  Upholstered Seating
  12 52 23  Office Seating
  12 52 70  Healthcare Seating
  12 52 83  Custom Seating

12 53 00  Retail Furniture
  12 53 83  Custom Retail Furniture

12 54 00  Hospitality Furniture
  12 54 13  Hotel and Motel Furniture
  12 54 16  Restaurant Furniture
  12 54 83  Custom Hospitality Furniture

12 55 00  Detention Furniture
  12 55 13  Detention Bunks
  12 55 16  Detention Desks
  12 55 19  Detention Stools
  12 55 23  Detention Tables
  12 55 26  Detention Safety Clothes Hooks
  12 55 83  Custom Detention Furniture

12 56 00  Institutional Furniture
  12 56 33  Classroom Furniture
  12 56 39  Lecterns
  12 56 43  Dormitory Furniture
  12 56 51  Library Furniture
    12 56 51.13  Book Shelves
    12 56 51.16  Study Carrels
    12 56 51.19  Index Card File Cabinets
  12 56 52  Audio-Visual Furniture
12 56 53 Laboratory Furniture
12 56 70 Healthcare Furniture
12 56 83 Custom Institutional Furniture

12 57 00 Industrial Furniture
12 57 13 Welding Benches
12 57 16 Welding Screens
12 57 83 Custom Industrial Furniture

12 58 00 Residential Furniture
12 58 13 Couches and Loveseats
12 58 13.13 Futons
12 58 16 Residential Chairs
12 58 16.13 Reclining Chairs
12 58 19 Dining Tables and Chairs
12 58 23 Coffee Tables
12 58 26 Entertainment Centers
12 58 29 Beds
12 58 29.13 Daybeds
12 58 33 Dressers
12 58 33.13 Armoires
12 58 36 Nightstands
12 58 83 Custom Residential Furniture

12 59 00 Systems Furniture
12 59 13 Panel-Hung Component System Furniture
12 59 16 Free-Standing Component System Furniture
12 59 19 Beam System Furniture
12 59 23 Desk System Furniture
12 59 83 Custom Systems Furniture

12 60 00 MULTIPLE SEATING

12 61 00 Fixed Audience Seating
12 61 13 Upholstered Audience Seating
12 61 16 Molded-Plastic Audience Seating

12 62 00 Portable Audience Seating
12 62 13 Folding Chairs
12 62 16 Interlocking Chairs
12 62 19 Stacking Chairs

12 63 00 Stadium and Arena Seating
12 63 13 Stadium and Arena Bench Seating
12 63 23 Stadium and Arena Seats

12 64 00 Booths and Tables

12 65 00 Multiple-Use Fixed Seating

12 66 00 Telescoping Stands
12 66 13 Telescoping Bleachers
12 66 23 Telescoping Chair Platforms

12 67 00 Pews and Benches
12 67 13 Pews
12 67 23 Benches

12 68 00 Seat and Table Assemblies
12 68 13 Pedestal Tablet Arm Chairs

12 70 00 Unassigned
12 80 00  Unassigned

12 90 00  OTHER FURNISHINGS

12 92 00  Interior Planters and Artificial Plants
  12 92 13  Interior Artificial Plants
  12 92 33  Interior Planters
  12 92 43  Interior Landscaping Accessories

12 93 00  Site Furnishings
  12 93 13  Bicycle Racks
  12 93 23  Trash and Litter Receptors
  12 93 33  Manufactured Planters
  12 93 43  Site Seating and Tables
    12 93 43.13  Site Seating
    12 93 43.53  Site Tables
DIVISION 13 – SPECIAL CONSTRUCTION

13 00 00 SPECIAL CONSTRUCTION
  13 01 00 Operation and Maintenance of Special Construction
    13 01 10 Operation and Maintenance of Special Facility Components
    13 01 11 Operation and Maintenance of Swimming Pools
    13 01 12 Operation and Maintenance of Fountains
    13 01 13 Operation and Maintenance of Aquariums
    13 01 14 Operation and Maintenance of Amusement Park Structures and Equipment
    13 01 18 Operation and Maintenance of Ice Rinks
    13 01 20 Operation and Maintenance of Special Purpose Rooms
    13 01 21 Operation and Maintenance of Controlled Environment Rooms
    13 01 23 Operation and Maintenance of Planetariums
    13 01 30 Operation and Maintenance of Special Structures
    13 01 40 Operation and Maintenance of Integrated Construction
    13 01 49 Operation and Maintenance of Radiation Protection
    13 01 50 Operation and Maintenance of Special Instrumentation
    13 01 51 Operation and Maintenance of Stress Instrumentation
    13 01 52 Operation and Maintenance of Seismic Instrumentation
    13 01 53 Operation and Maintenance of Meteorological Instrumentation
  13 05 00 Common Work Results for Special Construction
  13 06 00 Schedules for Special Construction
    13 06 10 Schedules for Special Facility Components
    13 06 20 Schedules for Special Purpose Rooms
    13 06 30 Schedules for Special Structures
    13 06 40 Schedules for Integrated Construction
    13 06 50 Schedules for Special Instrumentation
  13 08 00 Commissioning of Special Construction
    13 08 10 Commissioning of Special Facility Components
    13 08 11 Commissioning of Swimming Pools
    13 08 12 Commissioning of Fountains
    13 08 13 Commissioning of Aquariums
    13 08 14 Commissioning of Amusement Park Structures and Equipment
    13 08 18 Commissioning of Ice Rinks
    13 08 20 Commissioning of Special Purpose Rooms
    13 08 21 Commissioning of Controlled Environment Rooms
    13 08 23 Commissioning of Planetariums
    13 08 30 Commissioning of Special Structures
    13 08 40 Commissioning of Integrated Construction
    13 08 50 Commissioning of Special Instrumentation

13 10 00 SPECIAL FACILITY COMPONENTS
  13 11 00 Swimming Pools
    13 11 13 Below-Grade Swimming Pools
    13 11 23 On-Grade Swimming Pools
    13 11 33 Elevated Swimming Pools
    13 11 43 Recirculating Gutter Systems
    13 11 46 Swimming Pool Accessories
13 11 49 Swimming Pool Cleaning Equipment
13 11 53 Movable Pool Bulkheads
13 11 56 Movable Pool Floors

13 12 00 Fountains
13 12 13 Exterior Fountains
13 12 23 Interior Fountains

13 13 00 Aquariums

13 14 00 Amusement Park Structures and Equipment
13 14 13 Water Slides
13 14 16 Wave Generating Equipment
13 14 23 Amusement Park Rides

13 17 00 Tubs and Pools
13 17 13 Hot Tubs
13 17 23 Therapeutic Pools
13 17 33 Whirlpool Tubs

13 18 00 Ice Rinks
13 18 13 Ice Rink Floor Systems
13 18 16 Ice Rink Dasher Boards

13 19 00 Kennels and Animal Shelters
13 19 13 Kennel Enclosures and Gates
13 19 16 Kennel Feeding Devices

13 20 00 SPECIAL PURPOSE ROOMS

13 21 00 Controlled Environment Rooms
13 21 13 Clean Rooms
13 21 16 Hyperbaric Rooms
13 21 23 Insulated Rooms
13 21 26 Cold Storage Rooms
13 21 29 Constant Temperature Rooms
13 21 48 Sound-Conditioned Rooms

13 22 00 Office Shelters and Booths

13 23 00 Planetariums

13 24 00 Special Activity Rooms
13 24 16 Saunas
13 24 26 Steam Baths
13 24 66 Athletic Rooms

13 26 00 Fabricated Rooms

13 27 00 Vaults
13 27 16 Modular Fire Vaults
13 27 53 Security Vaults
13 27 53.13 Modular Concrete Security Vaults
13 27 53.16 Modular Metal-Clad Laminated Security Vaults

13 28 00 Athletic and Recreational Special Construction
13 28 13 Indoor Soccer Boards
13 28 16 Safety Netting
13 28 19 Arena Football Boards
13 28 26 Floor Sockets
13 28 33 Athletic and Recreational Court Walls
13 28 66 Demountable Athletic Surfaces
13 30 00 SPECIAL STRUCTURES

13 31 00 Fabric Structures
  13 31 13 Air-Supported Fabric Structures
    13 31 13.13 Single-Walled Air-Supported Structures
    13 31 13.16 Multiple-Walled Air-Supported Structures
  13 31 23 Tensioned Fabric Structures
  13 31 33 Framed Fabric Structures

13 32 00 Space Frames
  13 32 13 Metal Space Frames
  13 32 23 Wood Space Frames

13 33 00 Geodesic Structures
  13 33 13 Geodesic Domes

13 34 00 Fabricated Engineered Structures
  13 34 13 Glazed Structures
    13 34 13.13 Greenhouses
    13 34 13.16 Solariums
    13 34 13.19 Swimming Pool Enclosures
    13 34 13.23 Sunrooms
    13 34 13.26 Conservatories
  13 34 16 Grandstands and Bleachers
    13 34 16.13 Grandstands
    13 34 16.53 Bleachers
  13 34 19 Metal Building Systems
  13 34 23 Fabricated Structures
    13 34 23.13 Portable and Mobile Buildings
    13 34 23.16 Fabricated Control Booths
    13 34 23.19 Fabricated Dome Structures
    13 34 23.23 Fabricated Substation Control Rooms
  13 34 56 Observatories

13 36 00 Towers
  13 36 13 Metal Towers
  13 36 13.13 Steel Towers
  13 36 23 Wood Towers

13 40 00 INTEGRATED CONSTRUCTION

13 42 00 Building Modules
  13 42 25 Hospitality Unit Modules
  13 42 33 Apartment Unit Modules
  13 42 43 Dormitory Unit Modules
  13 42 63 Detention Cell Modules
    13 42 63.13 Precast-Concrete Detention Cell Modules
    13 42 63.16 Steel Detention Cell Modules

13 44 00 Modular Mezzanines

13 48 00 Sound, Vibration, and Seismic Control
  13 48 13 Manufactured Sound and Vibration Control Components
  13 48 23 Fabricated Sound and Vibration Control Assemblies
  13 48 53 Manufactured Seismic Control Components
  13 48 63 Fabricated Seismic Control Assemblies

13 49 00 Radiation Protection
  13 49 13 Lead Sheet
  13 49 16 Lead Bricks
  13 49 19 Lead-Lined Materials
13 49 19.13  Lead-Lined Lath
13 49 23  Modular Shielding Partitions

13 50 00  SPECIAL INSTRUMENTATION
13 51 00  Stress Instrumentation
13 52 00  Seismic Instrumentation
13 53 00  Meteorological Instrumentation
13 53 13  Solar Instrumentation
13 53 23  Wind Instrumentation

13 60 00  Unassigned
13 70 00  Unassigned
13 80 00  Unassigned
13 90 00  Unassigned
DIVISION 14 – CONVEYING EQUIPMENT

14 00 00 CONVEYING EQUIPMENT
14 01 00 Operation and Maintenance of Conveying Equipment
  14 01 10 Operation and Maintenance of Dumbwaiters
  14 01 10.71 Dumbwaiter Rehabilitation
  14 01 20 Operation and Maintenance of Elevators
  14 01 20.71 Elevator Rehabilitation
  14 01 30 Operation and Maintenance of Escalators and Moving Walks
  14 01 30.71 Escalators and Moving Walks Rehabilitation
  14 01 40 Operation and Maintenance of Lifts
  14 01 40.71 Lifts Rehabilitation
  14 01 70 Operation and Maintenance of Turntables
  14 01 80 Operation and Maintenance of Scaffolding
  14 01 90 Operation and Maintenance of Other Conveying Equipment

14 05 00 Common Work Results for Conveying Equipment
14 06 00 Schedules for Conveying Equipment
  14 06 10 Schedules for Dumbwaiters
  14 06 20 Schedules for Elevators
  14 06 20.13 Elevator Equipment Schedule
  14 06 30 Schedules for Escalators and Moving Walks
  14 06 40 Schedules for Lifts
  14 06 40.13 Lift Schedule
  14 06 70 Schedules for Turntables
  14 06 80 Schedules for Scaffolding
  14 06 90 Schedules for Other Conveying Equipment

14 08 00 Commissioning of Conveying Equipment
  14 08 10 Commissioning of Dumbwaiters
  14 08 20 Commissioning of Elevators
  14 08 30 Commissioning of Escalators and Moving Walks
  14 08 40 Commissioning of Lifts
  14 08 70 Commissioning of Turntables
  14 08 80 Commissioning of Scaffolding

14 10 00 DUMBWAITERS
  14 11 00 Manual Dumbwaiters
  14 12 00 Electric Dumbwaiters
  14 14 00 Hydraulic Dumbwaiters

14 20 00 ELEVATORS
  14 21 00 Electric Traction Elevators
    14 21 13 Electric Traction Freight Elevators
    14 21 23 Electric Traction Passenger Elevators
    14 21 33 Electric Traction Residential Elevators
    14 21 43 Electric Traction Service Elevators
  14 24 00 Hydraulic Elevators
    14 24 13 Hydraulic Freight Elevators
    14 24 23 Hydraulic Passenger Elevators
14 24 33  Hydraulic Residential Elevators
14 24 43  Hydraulic Service Elevators
14 26 00  Limited-Use/Limited-Application Elevators
14 27 00  Custom Elevator Cabs
14 27 13  Custom Elevator Cab Finishes
14 28 00  Elevator Equipment and Controls
14 28 13  Elevator Doors
14 28 16  Elevator Controls
14 28 19  Elevator Equipment
14 28 19.13 Elevator Safety Equipment
14 28 19.16 Elevator Hoistway Equipment

14 30 00  ESCALATORS AND MOVING WALKS
14 31 00  Escalators
14 32 00  Moving Walks
14 33 00  Moving Ramps
14 33 13  Motorized Ramps
14 33 16  Powered Ramps

14 40 00  LIFTS
14 41 00  People Lifts
14 41 13  Counterbalanced People Lifts
14 41 16  Endless-Belt People Lifts
14 42 00  Wheelchair Lifts
14 42 13  Inclined Wheelchair Lifts
14 42 16  Vertical Wheelchair Lifts
14 43 00  Platform Lifts
14 43 13  Orchestra Lifts
14 43 16  Stage Lifts
14 44 00  Sidewalk Lifts
14 45 00  Vehicle Lifts

14 50 00  Unassigned
14 60 00  Unassigned

14 70 00  TURNTABLES
14 71 00  Industrial Turntables
14 71 11  Vehicle Turntables
14 72 00  Hospitality Turntables
14 72 25  Restaurant Turntables
14 73 00  Exhibit Turntables
14 73 59  Display Turntables
14 74 00  Entertainment Turntables
14 74 61  Stage Turntables

14 80 00  SCAFFOLDING
14 81 00  Suspended Scaffolding
14 81 13  Beam Scaffolding
14 81 16  Carriage Scaffolding
14 81 19  Hook Scaffolding
14 82 00  Rope Climbers
14 82 13 Manual Rope Climbers
14 82 16 Powered Rope Climbers

14 83 00 Elevating Platforms
14 83 13 Telescoping Platform Lifts
  14 83 13.13 Electric and Battery Telescoping Platform Lifts
  14 83 13.16 Pneumatic Telescoping Platform Lifts
14 83 16 Scissor Lift Platforms
14 83 19 Multi-Axis Platform Lifts

14 84 00 Powered Scaffolding
14 84 13 Window Washing Scaffolding
14 84 23 Window Washing Hoists

14 90 00 Other Conveying Equipment
14 91 00 Facility Chutes
  14 91 13 Coal Chutes
  14 91 23 Escape Chutes
  14 91 33 Laundry and Linen Chutes
  14 91 82 Trash Chutes
14 92 00 Pneumatic Tube Systems
DIVISION 21 – FIRE SUPPRESSION

21 00 00 FIRE SUPPRESSION
  21 01 00 Operation and Maintenance of Fire Suppression
    21 01 10 Operation and Maintenance of Water-Based Fire-Suppression Systems
    21 01 20 Operation and Maintenance of Fire-Extinguishing Systems
    21 01 30 Operation and Maintenance of Fire-Suppression Equipment
  21 05 00 Common Work Results for Fire Suppression
    21 05 13 Common Motor Requirements for Fire-Suppression Equipment
    21 05 16 Expansion Fittings and Loops for Fire-Suppression Piping
    21 05 19 Meters and Gages for Fire-Suppression Systems
    21 05 23 General-Duty Valves for Water-Based Fire-Suppression Piping
    21 05 29 Hangers and Supports for Fire-Suppression Piping and Equipment
    21 05 33 Heat Tracing for Fire-Suppression Piping
    21 05 48 Vibration and Seismic Controls for Fire-Suppression Piping and Equipment
    21 05 53 Identification for Fire-Suppression Piping and Equipment
  21 06 00 Schedules for Fire Suppression
    21 06 10 Schedules for Water-Based Fire-Suppression Systems
    21 06 20 Schedules for Fire-Extinguishing Systems
    21 06 30 Schedules for Fire-Suppression Equipment
  21 07 00 Fire Suppression Systems Insulation
    21 07 16 Fire-Suppression Equipment Insulation
    21 07 19 Fire-Suppression Piping Insulation
  21 08 00 Commissioning of Fire Suppression
  21 09 00 Instrumentation and Control for Fire-Suppression Systems

21 10 00 WATER-BASED FIRE-SUPPRESSION SYSTEMS
  21 11 00 Facility Fire-Suppression Water-Service Piping
    21 11 16 Facility Fire Hydrants
    21 11 19 Fire-Department Connections
  21 12 00 Fire-Suppression Standpipes
    21 12 13 Fire-Suppression Hoses and Nozzles
    21 12 16 Fire-Suppression Hose Reels
    21 12 19 Fire-Suppression Hose Racks
    21 12 23 Fire-Suppression Hose Valves
    21 12 26 Fire-Suppression Valve and Hose Cabinets
  21 13 00 Fire-Suppression Sprinkler Systems
    21 13 13 Wet-Pipe Sprinkler Systems
    21 13 16 Dry-Pipe Sprinkler Systems
    21 13 19 Preaction Sprinkler Systems
    21 13 23 Combined Dry-Pipe and Preaction Sprinkler Systems
    21 13 26 Deluge Fire-Suppression Sprinkler Systems
    21 13 29 Water Spray Fixed Systems
    21 13 36 Antifreeze Sprinkler Systems
    21 13 39 Foam-Water Systems

21 20 00 FIRE-EXTINGUISHER SYSTEMS
  21 21 00 Carbon-Dioxide Fire-Extinguishing Systems
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>21 21</td>
<td>Carbon-Dioxide Fire-Extinguishing Piping</td>
</tr>
<tr>
<td>21 21</td>
<td>Carbon-Dioxide Fire-Extinguishing Equipment</td>
</tr>
<tr>
<td>21 22</td>
<td>Clean-Agent Fire-Extinguishing Systems</td>
</tr>
<tr>
<td>21 22</td>
<td>Clean-Agent Fire-Extinguishing Piping</td>
</tr>
<tr>
<td>21 22</td>
<td>Clean-Agent Fire-Extinguishing Equipment</td>
</tr>
<tr>
<td>21 23</td>
<td>Wet-Chemical Fire-Extinguishing Systems</td>
</tr>
<tr>
<td>21 23</td>
<td>Wet-Chemical Fire-Extinguishing Piping</td>
</tr>
<tr>
<td>21 23</td>
<td>Wet-Chemical Fire-Extinguishing Equipment</td>
</tr>
<tr>
<td>21 24</td>
<td>Dry-Chemical Fire-Extinguishing Systems</td>
</tr>
<tr>
<td>21 24</td>
<td>Dry-Chemical Fire-Extinguishing Piping</td>
</tr>
<tr>
<td>21 24</td>
<td>Dry-Chemical Fire-Extinguishing Equipment</td>
</tr>
<tr>
<td>21 30</td>
<td>FIRE PUMPS</td>
</tr>
<tr>
<td>21 31</td>
<td>Centrifugal Fire Pumps</td>
</tr>
<tr>
<td>21 31</td>
<td>Electric-Drive, Centrifugal Fire Pumps</td>
</tr>
<tr>
<td>21 31</td>
<td>Diesel-Drive, Centrifugal Fire Pumps</td>
</tr>
<tr>
<td>21 32</td>
<td>Vertical-Turbine Fire Pumps</td>
</tr>
<tr>
<td>21 32</td>
<td>Electric-Drive, Vertical-Turbine Fire Pumps</td>
</tr>
<tr>
<td>21 32</td>
<td>Diesel-Drive, Vertical-Turbine Fire Pumps</td>
</tr>
<tr>
<td>21 33</td>
<td>Positive-Displacement Fire Pumps</td>
</tr>
<tr>
<td>21 33</td>
<td>Electric-Drive, Positive-Displacement Fire Pumps</td>
</tr>
<tr>
<td>21 33</td>
<td>Diesel-Drive, Positive-Displacement Fire Pumps</td>
</tr>
<tr>
<td>21 40</td>
<td>FIRE-SUPPRESSION WATER STORAGE</td>
</tr>
<tr>
<td>21 41</td>
<td>Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Pressurized Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Elevated Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Roof Mounted Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Ground Suction Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Underground Storage Tanks for Fire-Suppression Water</td>
</tr>
<tr>
<td>21 41</td>
<td>Storage Tanks for Fire-Suppression Water Additives</td>
</tr>
<tr>
<td>21 50</td>
<td>Unassigned</td>
</tr>
<tr>
<td>21 60</td>
<td>Unassigned</td>
</tr>
<tr>
<td>21 70</td>
<td>Unassigned</td>
</tr>
<tr>
<td>21 80</td>
<td>Unassigned</td>
</tr>
<tr>
<td>21 90</td>
<td>Unassigned</td>
</tr>
</tbody>
</table>
DIVISION 22 – PLUMBING

### 22 00 00 PLUMBING

#### 22 01 00 Operation and Maintenance of Plumbing
- 22 01 10 Operation and Maintenance of Plumbing Piping and Pumps
- 22 01 30 Operation and Maintenance of Plumbing Equipment
- 22 01 40 Operation and Maintenance of Plumbing Fixtures
- 22 01 50 Operation and Maintenance of Pool and Fountain Plumbing Systems
- 22 01 60 Operation and Maintenance of Laboratory and Healthcare Systems

#### 22 05 00 Common Work Results for Plumbing
- 22 05 13 Common Motor Requirements for Plumbing Equipment
- 22 05 16 Expansion Fittings and Loops for Plumbing Piping
- 22 05 19 Meters and Gages for Plumbing Piping
- 22 05 23 General-Duty Valves for Plumbing Piping
- 22 05 29 Hangers and Supports for Plumbing Piping and Equipment
- 22 05 33 Heat Tracing for Plumbing Piping
- 22 05 48 Vibration and Seismic Controls for Plumbing Piping and Equipment
- 22 05 53 Identification for Plumbing Piping and Equipment
- 22 05 73 Facility Drainage Manholes
- 22 05 76 Facility Drainage Piping Cleanouts

#### 22 06 00 Schedules for Plumbing
- 22 06 10 Schedules for Plumbing Piping and Pumps
  - 22 06 10.13 Plumbing Pump Schedule
- 22 06 12 Schedules for Facility Potable Water Storage
- 22 06 15 Schedules for General Service Compressed-Air Equipment
- 22 06 30 Schedules for Plumbing Equipment
  - 22 06 30.13 Domestic Water Heater Schedule
- 22 06 40 Schedules for Plumbing Fixtures
  - 22 06 40.13 Plumbing Fixture Schedule
- 22 06 50 Schedules for Pool and Fountain Plumbing Systems
- 22 06 60 Schedules for Laboratory and Healthcare Systems

#### 22 07 00 Plumbing Insulation
- 22 07 16 Plumbing Equipment Insulation
- 22 07 19 Plumbing Piping Insulation

#### 22 08 00 Commissioning of Plumbing

#### 22 09 00 Instrumentation and Control for Plumbing

### 22 10 00 PLUMBING PIPING AND PUMPS

#### 22 11 00 Facility Water Distribution
- 22 11 13 Facility Water Distribution Piping
- 22 11 16 Domestic Water Piping
- 22 11 19 Domestic Water Piping Specialties
- 22 11 23 Domestic Water Pumps
22 11 23.13 Domestic-Water Packaged Booster Pumps
22 11 23.23 Close-Coupled, In-Line, Sealless Centrifugal Domestic-Water Pumps
22 11 23.26 Close-Coupled, Horizontally Mounted, In-Line Centrifugal Domestic-Water Pumps
22 11 23.29 Close-Coupled, Vertically Mounted, In-Line Centrifugal Domestic-Water Pumps
22 11 23.33 Separately Coupled, In-Line Centrifugal Domestic-Water Pumps
22 11 23.36 Separately Coupled, Horizontally Mounted, In-Line Centrifugal Domestic-Water Pumps

22 12 00 Facility Potable-Water Storage Tanks
22 12 13 Facility Roof-Mounted, Potable-Water Storage Tanks
22 12 16 Facility Elevated, Potable-Water Storage Tanks
22 12 19 Facility Ground-Mounted, Potable-Water Storage Tanks
22 12 23 Facility Indoor Potable-Water Storage Tanks
22 12 23.13 Facility Steel, Indoor Potable-Water Storage Pressure Tanks
22 12 23.16 Facility Steel, Indoor Potable-Water Storage Non-Pressure Tanks
22 12 23.23 Facility Plastic, Indoor Potable-Water Storage Pressure Tanks
22 12 23.26 Facility Plastic, Indoor Potable-Water Storage Non-Pressure Tanks

22 13 00 Facility Sanitary Sewerage
22 13 13 Facility Sanitary Sewers
22 13 16 Sanitary Waste and Vent Piping
22 13 19 Sanitary Waste Piping Specialties
22 13 19.13 Sanitary Drains
22 13 19.23 Fats, Oils, and Grease Disposal Systems
22 13 19.26 Grease Removal Devices
22 13 19.33 Backwater Valves
22 13 19.36 Air-Admittance Valves
22 13 23 Sanitary Waste Interceptors
22 13 26 Sanitary Waste Separators
22 13 29 Sanitary Sewerage Pumps
22 13 29.13 Wet-Pit-Mounted, Vertical Sewerage Pumps
22 13 29.16 Submersible Sewerage Pumps
22 13 29.23 Sewerage Pump Reverse-Flow Assemblies
22 13 29.33 Sewerage Pump Basins and Pits
22 13 33 packaged, Submersible Sewerage Pump Units
22 13 36 packaged, Wastewater Pump Units
22 13 43 Facility Packaged Sewage Pumping Stations
22 13 43.13 Facility Dry-Well Packaged Sewage Pumping Stations
22 13 43.16 Facility Wet-Well Packaged Sewage Pumping Stations
22 13 53 Facility Septic Tanks

22 14 00 Facility Storm Drainage
22 14 13 Facility Storm Drainage Piping
22 14 16 Rainwater Leaders
22 14 19 Sump Pump Discharge Piping
22 14 23 Storm Drainage Piping Specialties
22 14 26 Facility Storm Drains
22 14 26.13 Roof Drains
22 14 26.16 Facility Area Drains
22 14 26.19 Facility Trench Drains
22 14 29 Sump Pumps
22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps
22 14 29.16 Submersible Sump Pumps
22 14 29.19 Sump-Pump Basins and Pits
22 14 33 packaged, Pedestal Drainage Pump Units
22 14 36 packaged, Submersible, Drainage Pump Units

22 15 00 General Service Compressed-Air Systems
22 15 13  General Service Compressed-Air Piping
22 15 16  General Service Compressed-Air Valves
22 15 19  General Service Packaged Air Compressors and Receivers
   22 15 19.13  General Service Packaged Reciprocating Air Compressors
   22 15 19.16  General Service Packaged Liquid-Ring Air Compressors
   22 15 19.19  General Service Packaged Rotary-Screw Air Compressors
   22 15 19.23  General Service Packaged Sliding-Vane Air Compressors

22 20 00  Unassigned

22 30 00  PLUMBING EQUIPMENT

22 31 00  Domestic Water Softeners
   22 31 13  Residential Domestic Water Softeners
   22 31 16  Commercial Domestic Water Softeners

22 32 00  Domestic Water Filtration Equipment
   22 32 13  Domestic-Water Bag-Type Filters
   22 32 16  Domestic-Water Freestanding Cartridge Filters
   22 32 19  Domestic-Water Off-Floor Cartridge Filters
   22 32 23  Domestic-Water Carbon Filters
   22 32 26  Domestic-Water Sand Filters
   22 32 26.13  Domestic-Water Circulating Sand Filters
   22 32 26.16  Domestic-Water Multimedia Sand Filters
   22 32 26.19  Domestic-Water Greensand Filters

22 33 00  Electric Domestic Water Heaters
   22 33 13  Instantaneous Electric Domestic Water Heaters
   22 33 13.13  Flow-Control, Instantaneous Electric Domestic Water Heaters
   22 33 13.16  Thermostat-Control, Instantaneous Electric Domestic Water Heaters
   22 33 30  Residential, Electric Domestic Water Heaters
   22 33 30.13  Residential, Small-Capacity Electric Domestic Water Heaters
   22 33 30.16  Residential, Storage Electric Domestic Water Heaters
   22 33 30.23  Residential, Collector-to-Tank, Solar-Electric Domestic Water Heaters
   22 33 30.26  Residential, Collector-to-Tank, Heat-Exchanger-Coil, Solar-Electric Domestic Water Heaters
   22 33 33  Light-Commercial Electric Domestic Water Heaters
   22 33 36  Commercial Domestic Water Electric Booster Heaters
   22 33 36.13  Commercial Domestic Water Electric Booster Heaters
   22 33 36.16  Commercial Storage Electric Domestic Water Heaters

22 34 00  Fuel-Fired Domestic Water Heaters
   22 34 13  Instantaneous, Tankless, Gas Domestic Water Heaters
   22 34 30  Residential Gas Domestic Water Heaters
   22 34 30.13  Residential, Atmospheric, Gas Domestic Water Heaters
   22 34 30.16  Residential, Direct-Vent, Gas Domestic Water Heaters
   22 34 30.19  Residential, Power-Vent, Gas Domestic Water Heaters
   22 34 36  Commercial Gas Domestic Water Heaters
   22 34 36.13  Commercial, Atmospheric, Gas Domestic Water Heaters
   22 34 36.16  Commercial, Power-Burner, Gas Domestic Water Heaters
   22 34 36.19  Commercial, Power-Vent, Gas Domestic Water Heaters
   22 34 36.23  Commercial, High-Efficiency, Gas Domestic Water Heaters
   22 34 36.26  Commercial, Coil-Type, Finned-Tube, Gas Domestic Water Heaters
   22 34 36.29  Commercial, Grid-Type, Finned-Tube, Gas Domestic Water Heaters
   22 34 46  Oil-Fired Domestic Water Heaters
   22 34 46.13  Large-Capacity, Oil-Fired Domestic Water Heaters
   22 34 56  Dual-Fuel-Fired Domestic Water Heaters

22 35 00  Domestic Water Heat Exchangers
22 35 13  Instantaneous Domestic Water Heat Exchangers
   22 35 13.13  Heating-Fluid-in-Coil, Instantaneous Domestic Water Heat Exchangers
   22 35 13.16  Domestic-Water-in-Coil, Instantaneous Domestic Water Heat Exchangers
22 35 23  Circulating, Domestic Water Heat Exchangers
   22 35 23.13  Circulating, Compact Domestic Water Heat Exchangers
   22 35 23.16  Circulating, Storage Domestic Water Heat Exchangers
22 35 29  Noncirculating, Domestic Water Heat Exchangers
   22 35 29.13  Noncirculating, Compact Domestic Water Heat Exchangers
   22 35 29.16  Noncirculating, Storage Domestic Water Heat Exchangers
22 35 36  Domestic Water Brazed-Plate Heat Exchangers
22 35 39  Domestic Water Frame-and-Plate Heat Exchangers
22 35 43  Domestic Water Heat Reclaimers

22 40 00  PLUMBING FIXTURES

22 41 00  Residential Plumbing Fixtures
   22 41 13  Residential Water Closets, Urinals, and Bidets
   22 41 16  Residential Lavatories and Sinks
   22 41 19  Residential Bathtubs
   22 41 23  Residential Shower Receptors and Basins
   22 41 26  Residential Disposers
   22 41 36  Residential Laundry Trays
   22 41 39  Residential Faucets, Supplies, and Trim

22 42 00  Commercial Plumbing Fixtures
   22 42 13  Commercial Water Closets, Urinals, and Bidets
   22 42 16  Commercial Lavatories and Sinks
   22 42 19  Commercial Bathtubs
   22 42 23  Commercial Shower Receptors and Basins
   22 42 26  Commercial Disposers
   22 42 29  Shampoo Bowls
   22 42 33  Wash Fountains
   22 42 36  Commercial Laundry Trays
   22 42 39  Commercial Faucets, Supplies, and Trim
   22 42 43  Flushometers

22 43 00  Healthcare Plumbing Fixtures
   22 43 13  Healthcare Water Closets
   22 43 16  Healthcare Sinks
   22 43 19  Healthcare Bathtubs and Showers
   22 43 23  Healthcare Shower Receptors and Basins
   22 43 39  Healthcare Faucets
   22 43 43  Healthcare Plumbing Fixture Flushometers

22 45 00  Emergency Plumbing Fixtures
   22 45 13  Emergency Showers
   22 45 16  Eyewash Equipment
   22 45 19  Self-Contained Eyewash Equipment
   22 45 23  Personal Eyewash Equipment
   22 45 26  Eye/Face Wash Equipment
   22 45 29  Hand-Held Emergency Drench Hoses
   22 45 33  Combination Emergency Fixture Units
   22 45 36  Emergency Fixture Water-Tempering Equipment

22 46 00  Security Plumbing Fixtures
## Div. 22 – Plumbing

### 22 46 13 Security Water Closets and Urinals
### 22 46 16 Security Lavatories and Sinks
### 22 46 39 Security Faucets, Supplies, and Trim
### 22 46 43 Security Plumbing Fixture Flushometers
### 22 46 53 Security Plumbing Fixture Supports

### 22 47 00 Drinking Fountains and Water Coolers
- **22 47 13** Drinking Fountains
- **22 47 16** Pressure Water Coolers
- **22 47 19** Water-Station Water Coolers
- **22 47 23** Remote Water Coolers

### 22 50 00 Pool and Fountain Plumbing Systems

#### 22 51 00 Swimming Pool Plumbing Systems
- **22 51 13** Swimming Pool Piping
- **22 51 16** Swimming Pool Pumps
- **22 51 19** Swimming Pool Water Treatment Equipment
- **22 51 23** Swimming Pool Equipment Controls

#### 22 52 00 Fountain Plumbing Systems
- **22 52 13** Fountain Piping
- **22 52 16** Fountain Pumps
- **22 52 19** Fountain Water Treatment Equipment
- **22 52 23** Fountain Equipment Controls

### 22 60 00 Gas and Vacuum Systems for Laboratory and Healthcare Facilities

#### 22 61 00 Compressed-Air Systems for Laboratory and Healthcare Facilities
- **22 61 13** Compressed-Air Piping for Laboratory and Healthcare Facilities
  - **22 61 13.53** Laboratory Compressed-Air Piping
  - **22 61 13.70** Healthcare Compressed-Air Piping
  - **22 61 13.74** Dental Compressed-Air Piping
- **22 61 19** Compressed-Air Equipment for Laboratory and Healthcare Facilities
  - **22 61 19.53** Laboratory Compressed-Air Equipment
  - **22 61 19.70** Healthcare Compressed-Air Equipment
  - **22 61 19.74** Dental Compressed-Air Equipment

#### 22 62 00 Vacuum Systems for Laboratory and Healthcare Facilities
- **22 62 13** Vacuum Piping for Laboratory and Healthcare Facilities
  - **22 62 13.53** Laboratory Vacuum Piping
  - **22 62 13.70** Healthcare, Surgical Vacuum Piping
  - **22 62 13.74** Dental Vacuum Piping
- **22 62 19** Vacuum Equipment for Laboratory and Healthcare Facilities
  - **22 62 19.53** Laboratory Vacuum Equipment
  - **22 62 19.70** Healthcare Vacuum Equipment
  - **22 62 19.74** Dental Vacuum and Evacuation Equipment
- **22 62 23** Waste Anesthesia-Gas Piping

#### 22 63 00 Gas Systems for Laboratory and Healthcare Facilities
- **22 63 13** Gas Piping for Laboratory and Healthcare Facilities
  - **22 63 13.53** Laboratory Gas Piping
  - **22 63 13.70** Healthcare Gas Piping
- **22 63 19** Gas Storage Tanks for Laboratory and Healthcare Facilities
  - **22 63 19.53** Laboratory Gas Storage Tanks
  - **22 63 19.70** Healthcare Gas Storage Tanks

#### 22 66 00 Chemical-Waste Systems for Laboratory and Healthcare Facilities
- **22 66 53** Laboratory Chemical-Waste and Vent Piping
22 66 70  Healthcare Chemical-Waste and Vent Piping
22 66 83  Chemical-Waste Tanks
  22 66 83.13  Chemical-Waste Dilution Tanks
  22 66 83.16  Chemical-Waste Neutralization Tanks

22 67 00  Processed Water Systems for Laboratory and Healthcare Facilities
  22 67 13  Processed Water Piping for Laboratory and Healthcare Facilities
    22 67 13.13  Distilled-Water Piping
    22 67 13.16  Reverse-Osmosis Water Piping
    22 67 13.19  Deionized-Water Piping
  22 67 19  Processed Water Equipment for Laboratory and Healthcare Facilities
    22 67 19.13  Distilled-Water Equipment
    22 67 19.16  Reverse-Osmosis Water Equipment
    22 67 19.19  Deionized-Water Equipment

22 70 00  Unassigned
22 80 00  Unassigned
22 90 00  Unassigned
DIVISION 23 – HEATING, VENTILATING, AND AIR-CONDITIONING (HVAC)

23 00 00 Heating, Ventilating, and Air-Conditioning (HVAC)

23 01 00 Operation and Maintenance of HVAC Systems
23 01 10 Operation and Maintenance of Facility Fuel Systems
23 01 20 Operation and Maintenance of HVAC Piping and Pumps
23 01 30 Operation and Maintenance of HVAC Air Distribution
23 01 30.51 HVAC Air Duct Cleaning
23 01 50 Operation and Maintenance of Central Heating Equipment
23 01 60 Operation and Maintenance of Central Cooling Equipment
23 01 60.71 Refrigerant Recovery/Recycling
23 01 80 Operation and Maintenance of Decentralized HVAC Equipment
23 01 90 Diagnostic Systems for HVAC

23 05 00 Common Work Results for HVAC
23 05 13 Common Motor Requirements for HVAC Equipment
23 05 16 Expansion Fittings and Loops for HVAC Piping
23 05 19 Meters and Gages for HVAC Piping
23 05 23 General-Duty Valves for HVAC Piping
23 05 29 Hangers and Supports for HVAC Piping and Equipment
23 05 33 Heat Tracing for HVAC Piping
23 05 48 Vibration and Seismic Controls for HVAC Piping and Equipment
23 05 53 Identification for HVAC Piping and Equipment
23 05 63 Anti-Microbial Coatings for HVAC Ducts and Equipment
23 05 66 Anti-Microbial Ultraviolet Emitters for HVAC Ducts and Equipment
23 05 93 Testing, Adjusting, and Balancing for HVAC

23 06 00 Schedules for HVAC
23 06 10 Schedules for Facility Fuel Service Systems
23 06 20 Schedules for HVAC Piping and Pumps
23 06 20.13 Hydronic Pump Schedule
23 06 30 Schedules for HVAC Air Distribution
23 06 30.13 HVAC Fan Schedule
23 06 30.16 Air Terminal Unit Schedule
23 06 30.19 Air Outlet and Inlet Schedule
23 06 30.23 HVAC Air Cleaning Device Schedule
23 06 50 Schedules for Central Heating Equipment
23 06 50.13 Heating Boiler Schedule
23 06 60 Schedules for Central Cooling Equipment
23 06 60.13 Refrigerant Condenser Schedule
23 06 60.16 Packaged Water Chiller Schedule
23 06 70 Schedules for Central HVAC Equipment
23 06 70.13 Indoor, Central-Station Air-Handling Unit Schedule
23 06 70.16 Packaged Outdoor HVAC Equipment Schedule
23 06 80 Schedules for Decentralized HVAC Equipment
23 06 80.13 Decentralized Unitary HVAC Equipment Schedule
23 06 80.16 Convection Heating and Cooling Unit Schedule
23 06 80.19 Radiant Heating Unit Schedule

23 07 00 HVAC Insulation
23 07 13 Duct Insulation
23 07 16 HVAC Equipment Insulation
23 07 19 HVAC Piping Insulation

23 08 00 Commissioning of HVAC

23 09 00 Instrumentation and Control for HVAC
23 09 13 Instrumentation and Control Devices for HVAC
23 09 13.13 Actuators and Operators
23 09 13.23 Sensors and Transmitters
23 09 13.33 Control Valves
23 09 13.43 Control Dampers
23 09 23 Direct-Digital Control System for HVAC
23 09 33 Electric and Electronic Control System for HVAC
23 09 43 Pneumatic Control System for HVAC
23 09 53 Pneumatic and Electric Control System for HVAC
23 09 93 Sequence of Operations for HVAC Controls

23 10 00 FACILITY FUEL SYSTEMS

23 11 00 Facility Fuel Piping
23 11 13 Facility Fuel-Oil Piping
23 11 16 Facility Gasoline Piping
23 11 23 Facility Natural-Gas Piping
23 11 26 Facility Liquefied-Petroleum Gas Piping

23 12 00 Facility Fuel Pumps
23 12 13 Facility Fuel-Oil Pumps
23 12 16 Facility Gasoline Dispensing Pumps

23 13 00 Facility Fuel-Storage Tanks
23 13 13 Facility Underground Fuel-Oil, Storage Tanks
23 13 13.13 Double-Wall Steel, Underground Fuel-Oil, Storage Tanks
23 13 13.16 Composite, Steel, Underground Fuel-Oil, Storage Tanks
23 13 13.19 Jacketed, Steel, Underground Fuel-Oil, Storage Tanks
23 13 13.23 Glass-Fiber-Reinforced-Plastic, Underground Fuel-Oil, Storage Tanks
23 13 13.33 Fuel-Oil Storage Tank Pumps
23 13 23 Facility Aboveground Fuel-Oil, Storage Tanks
23 13 23.13 Vertical, Steel, Aboveground Fuel-Oil, Storage Tanks
23 13 23.16 Horizontal, Steel, Aboveground Fuel-Oil, Storage Tanks
23 13 23.19 Containment-Dike, Steel, Aboveground Fuel-Oil, Storage Tanks
23 13 23.23 Insulated, Steel, Aboveground Fuel-Oil, Storage Tanks
23 13 23.26 Concrete-Vaulted, Steel, Aboveground Fuel-Oil, Storage Tanks

23 20 00 HVAC PIPING AND PUMPS

23 21 00 Hydronic Piping and Pumps
23 21 13 Hydronic Piping
23 21 13.13 Underground Hydronic Piping
23 21 13.23 Aboveground Hydronic Piping
23 21 13.33 Ground-Loop Heat-Pump Piping
23 21 23 Hydronic Pumps
23 21 23.13 In-Line Centrifugal Hydronic Pumps
23 21 23.16 Base-Mounted, Centrifugal Hydronic Pumps
23 21 23.19 Vertical-Mounted, Double-Suction Centrifugal Hydronic Pumps
23 21 23.23 Vertical-Turbine Hydronic Pumps
23 21 29 Automatic Condensate Pump Units

23 22 00 Steam and Condensate Piping and Pumps
23 22 13 Steam and Condensate Heating Piping
23 22 13.13 Underground Steam and Condensate Heating Piping
23 22 13.23 Aboveground Steam and Condensate Heating Piping
23 22 23 Steam Condensate Pumps
23 22 23.13 Electric-Driven Steam Condensate Pumps
23 22 23.23 Pressure-Powered Steam Condensate Pumps

23 23 00 Refrigerant Piping
23 23 13 Refrigerant Piping Valves
23 23 16 Refrigerant Piping Specialties
23 23 19 Refrigerant Safety Relief Valve Discharge Piping
23 23 23 Refrigerants

23 24 00 Internal-Combustion Engine Piping
23 24 13 Internal-Combustion Engine Remote-Radiator Coolant Piping
23 24 16 Internal-Combustion Engine Exhaust Piping

23 25 00 HVAC Water Treatment
23 25 13 Water Treatment for Closed-Loop Hydronic Systems
23 25 16 Water Treatment for Open Hydronic Systems
23 25 19 Water Treatment for Steam System Feedwater
23 25 23 Water Treatment for Humidification Steam System Feedwater

23 30 00 HVAC Air Distribution

23 31 00 HVAC Ducts and Casings
23 31 13 Metal Ducts
23 31 13.13 Rectangular Metal Ducts
23 31 13.16 Round and Flat-Oval Spiral Ducts
23 31 13.19 Metal Duct Fittings
23 31 16 Nonmetal Ducts
23 31 16.13 Fibrous-Glass Ducts
23 31 16.16 Thermoset Fiberglass-Reinforced Plastic Ducts
23 31 16.19 PVC Ducts
23 31 16.26 Concrete Ducts
23 31 19 HVAC Casings

23 32 00 Air Plenums and Chases
23 32 13 Fabricated, Metal Air Plenums
23 32 33 Air-Distribution Ceiling Plenums
23 32 36 Air-Distribution Floor Plenums
23 32 39 Air-Distribution Wall Plenums
23 32 43 Air-Distribution Chases Formed by General Construction
23 32 48 Acoustical Air Plenums

23 33 00 Air Duct Accessories
23 33 13 Dampers
23 33 13.13 Volume-Control Dampers
23 33 13.16 Fire Dampers
23 33 13.19 Smoke-Control Dampers
23 33 13.23 Backdraft Dampers
23 33 19 Duct Silencers
23 33 23 Turning Vanes
23 33 33 Duct-Mounting Access Doors
23 33 43 Flexible Connectors
23 33 46 Flexible Ducts
23 33 53 Duct Liners

23 34 00 HVAC Fans
23 34 13 Axial HVAC Fans
23 34 16  Centrifugal HVAC Fans
23 34 23  HVAC Power Ventilators
23 34 33  Air Curtains

23 35 00  Special Exhaust Systems
23 35 13  Sawdust Collection Systems
23 35 16  Engine Exhaust Systems
    23 35 16.13  Positive-Pressure Engine Exhaust Systems
    23 35 16.16  Mechanical Engine Exhaust Systems

23 36 00  Air Terminal Units
23 36 13  Constant-Air-Volume Units
23 36 16  Variable-Air-Volume Units

23 37 00  Air Outlets and Inlets
23 37 13  Diffusers, Registers, and Grilles
23 37 16  Fabric Air Distribution Devices
23 37 23  HVAC Gravity Ventilators
    23 37 23.13  HVAC Gravity Dome Ventilators
    23 37 23.16  HVAC Gravity Louvered-Penthouse Ventilators
    23 37 23.19  HVAC Gravity Upblast Ventilators

23 38 00  Ventilation Hoods
23 38 13  Commercial-Kitchen Hoods
    23 38 13.13  Listed Commercial-Kitchen Hoods
    23 38 13.16  Standard Commercial-Kitchen Hoods
23 38 16  Fume Hoods

23 40 00  HVAC AIR CLEANING DEVICES

23 41 00  Particulate Air Filtration
23 41 13  Panel Air Filters
23 41 16  Renewable-Media Air Filters
23 41 19  Washable Air Filters
23 41 23  Extended Surface Filters
23 41 33  High-Efficiency Particulate Filtration
23 41 43  Ultra-Low Penetration Filtration
23 41 46  Super Ultra-Low Penetration Filtration

23 42 00  Gas-Phase Air Filtration
23 42 13  Activated-Carbon Air Filtration
23 42 16  Chemically-Impregnated Adsorption Air Filtration
23 42 19  Catalytic-Adsorption Air Filtration

23 43 00  Electronic Air Cleaners
23 43 13  Washable Electronic Air Cleaners
23 43 16  Agglomerator Electronic Air Cleaners
23 43 23  Self-Contained Electronic Air Cleaners

23 50 00  CENTRAL HEATING EQUIPMENT

23 51 00  Breechings, Chimneys, and Stacks
23 51 13  Draft Control Devices
    23 51 13.13  Draft-Induction Fans
    23 51 13.16  Vent Dampers
    23 51 13.19  Barometric Dampers
23 51 16  Fabricated Breechings and Accessories
23 51 19  Fabricated Stacks
23 51 23  Gas Vents
23 51 33  Insulated Sectional Chimneys
23 51 43 Flue-Gas Filtration Equipment
   23 51 43.13 Gaseous Filtration
   23 51 43.16 Particulate Filtration

23 52 00 Heating Boilers
23 52 13 Electric Boilers
23 52 16 Condensing Boilers
   23 52 16.13 Stainless-Steel Condensing Boilers
   23 52 16.16 Aluminum Condensing Boilers
23 52 19 Pulse Combustion Boilers
23 52 23 Cast-Iron Boilers
23 52 33 Water-Tube Boilers
   23 52 33.13 Finned Water-Tube Boilers
   23 52 33.16 Steel Water-Tube Boilers
   23 52 33.19 Copper Water-Tube Boilers
23 52 39 Fire-Tube Boilers
   23 52 39.13 Scotch Marine Boilers
   23 52 39.16 Steel Fire-Tube Boilers

23 53 00 Heating Boiler Feedwater Equipment
23 53 13 Boiler Feedwater Pumps
23 53 16 Deaerators

23 54 00 Furnaces
23 54 13 Electric-Resistance Furnaces
23 54 16 Fuel-Fired Furnaces
   23 54 16.13 Gas-Fired Furnaces
   23 54 16.16 Oil-Fired Furnaces

23 55 00 Fuel-Fired Heaters
23 55 13 Fuel-Fired Duct Heaters
   23 55 13.13 Oil-Fired Duct Heaters
   23 55 13.16 Gas-Fired Duct Heaters
23 55 23 Gas-Fired Radiant Heaters
23 55 33 Fuel-Fired Unit Heaters
   23 55 33.13 Oil-Fired Unit Heaters
   23 55 33.16 Gas-Fired Unit Heaters

23 56 00 Solar Energy Heating Equipment
23 56 13 Heating Solar Collectors
   23 56 13.13 Heating Solar Flat-Plate Collectors
   23 56 13.16 Heating Solar Concentrating Collectors
   23 56 13.19 Heating Solar Vacuum-Tube Collectors
23 56 16 Packaged Solar Heating Equipment

23 57 00 Heat Exchangers for HVAC
23 57 13 Steam-to-Steam Heat Exchangers
23 57 16 Steam-to-Water Heat Exchangers
23 57 19 Liquid-to-Liquid Heat Exchangers
   23 57 19.13 Plate-Type, Liquid-to-Liquid Heat Exchangers
   23 57 19.16 Shell-Type, Liquid-to-Liquid Heat Exchangers
23 57 33 Direct Geoexchange Heat Exchangers

23 60 00 CENTRAL COOLING EQUIPMENT
23 61 00 Refrigerant Compressors
   23 61 13 Centrifugal Refrigerant Compressors
   23 61 13.13 Non-Condensable Gas Purge Equipment
   23 61 16 Reciprocating Refrigerant Compressors
23 61 19  Scroll Refrigerant Compressors
23 61 23  Rotary-Screw Refrigerant Compressors

23 62 00  Packaged Compressor and Condenser Units
23 62 13  Packaged Air-Cooled Refrigerant Compressor and Condenser Units
23 62 23  Packaged Water-Cooled Refrigerant Compressor and Condenser Units

23 63 00  Refrigerant Condensers
23 63 13  Air-Cooled Refrigerant Condensers
23 63 23  Water-Cooled Refrigerant Condensers
23 63 33  Evaporative Refrigerant Condensers

23 64 00  Packaged Water Chillers
23 64 13  Absorption Water Chillers
   23 64 13.13  Direct-Fired Absorption Water Chillers
   23 64 13.16  Indirect-Fired Absorption Water Chillers
23 64 16  Centrifugal Water Chillers
23 64 19  Reciprocating Water Chillers
23 64 23  Scroll Water Chillers
23 64 26  Rotary-Screw Water Chillers

23 65 00  Cooling Towers
23 65 13  Forced-Draft Cooling Towers
   23 65 13.13  Open-Circuit, Forced-Draft Cooling Towers
   23 65 13.16  Closed-Circuit, Forced-Draft Cooling Towers
23 65 16  Natural-Draft Cooling Towers
23 65 23  Field-Erected Cooling Towers
23 65 33  Liquid Coolers

23 70 00  CENTRAL HVAC EQUIPMENT

23 71 00  Thermal Storage
23 71 13  Thermal Heat Storage
   23 71 13.13  Room Storage Heaters for Thermal Storage
   23 71 13.16  Heat-Pump Boosters for Thermal Storage
   23 71 13.19  Central Furnace Heat Storage Units
   23 71 13.23  Pressurized-Water Thermal Storage Tanks
23 71 16  Chilled-Water Thermal Storage
23 71 19  Ice Storage
   23 71 19.13  Internal Ice-on-Coil Thermal Storage
   23 71 19.16  External Ice-on-Coil Thermal Storage
   23 71 19.19  Encapsulated-Ice Thermal Storage
   23 71 19.23  Ice-Harvesting Thermal Storage
   23 71 19.26  Ice-Slurry Thermal Storage

23 72 00  Air-to-Air Energy Recovery Equipment
23 72 13  Heat-Wheel Air-to-Air Energy-Recovery Equipment
23 72 16  Heat-Pipe Air-to-Air Energy-Recovery Equipment
23 72 19  Fixed-Plate Air-to-Air Energy-Recovery Equipment
23 72 23  Packaged Air-to-Air Energy-Recovery Units

23 73 00  Indoor Central-Station Air-Handling Units
23 73 13  Modular Indoor Central-Station Air-Handling Units
23 73 23  Custom Indoor Central-Station Air-Handling Units
23 73 33  Indoor Indirect Fuel-Fired Heating and Ventilating Units
   23 73 33.13  Indoor Indirect Oil-Fired Heating and Ventilating Units
   23 73 33.16  Indoor Indirect Gas-Fired Heating and Ventilating Units
23 73 39  Indoor, Direct Gas-Fired Heating and Ventilating Units

23 74 00  Packaged Outdoor HVAC Equipment
23 74 13 Packaged, Outdoor, Central-Station Air-Handling Units
23 74 23 Packaged, Outdoor, Heating-Only Makeup-Air Units
  23 74 23.13 Packaged, Direct-Fired, Outdoor, Heating-Only Makeup-Air Units
  23 74 23.16 Packaged, Indirect-Fired, Outdoor, Heating-Only Makeup-Air Units
23 74 33 Packaged, Outdoor, Heating and Cooling Makeup Air-Conditioners

23 75 00 Custom-Packaged Outdoor HVAC Equipment
23 75 13 Custom-Packaged, Outdoor, Central-Station Air-Handling Units
23 75 23 Custom-Packaged, Outdoor, Heating and Ventilating Makeup-Air Units
23 75 33 Custom-Packaged, Outdoor, Heating and Cooling Makeup Air-Conditioners

23 76 00 Evaporative Air-Cooling Equipment
23 76 13 Direct Evaporative Air Coolers
23 76 16 Indirect Evaporative Air Coolers
23 76 19 Combined Direct and Indirect Evaporative Air Coolers

23 80 00 DECENTRALIZED HVAC EQUIPMENT
23 81 00 Decentralized Unitary HVAC Equipment
23 81 13 Packaged Terminal Air-Conditioners
23 81 16 Room Air-Conditioners
23 81 19 Self-Contained Air-Conditioners
  23 81 19.13 Small-Capacity Self-Contained Air-Conditioners
  23 81 19.16 Large-Capacity Self-Contained Air-Conditioners
23 81 23 Computer-Room Air-Conditioners
23 81 26 Split-System Air-Conditioners
23 81 43 Air-Source Unitary Heat Pumps
23 81 46 Water-Source Unitary Heat Pumps

23 82 00 Convection Heating and Cooling Units
23 82 13 Valance Heating and Cooling Units
23 82 16 Air Coils
23 82 19 Fan Coil Units
23 82 23 Unit Ventilators
23 82 26 Induction Units
23 82 29 Radiators
23 82 33 Convector
23 82 36 Finned-Tube Radiation Heaters
23 82 39 Unit Heaters
  23 82 39.13 Cabinet Unit Heaters
  23 82 39.16 Propeller Unit Heaters
  23 82 39.19 Wall and Ceiling Unit Heaters

23 83 00 Radiant Heating Units
23 83 13 Radiant-Heating Electric Cables
  23 83 13.16 Radiant-Heating Electric Mats
23 83 16 Radiant-Heating Hydronic Piping
23 83 23 Radiant-Heating Electric Panels
23 83 33 Electric Radiant Heaters

23 84 00 Humidity Control Equipment
23 84 13 Humidifiers
23 84 16 Dehumidifiers
23 84 19 Indoor Pool and Ice-Rink Dehumidification Units

23 90 00 Unassigned
DIVISION 25 – INTEGRATED AUTOMATION

25 00 00 INTEGRATED AUTOMATION

25 01 00 Operation and Maintenance of Integrated Automation
   25 01 10 Operation and Maintenance of Integrated Automation Network Equipment
   25 01 20 Operation and Maintenance of Integrated Equipment
   25 01 30 Operation and Maintenance of Integrated Automation Instrumentation and Terminal Devices
   25 01 90 Diagnostic Systems for Integrated Automation

25 05 00 Common Work Results for Integrated Automation
   25 05 13 Conductors and Cables for Integrated Automation
   25 05 26 Grounding and Bonding for Integrated Automation
   25 05 28 Pathways for Integrated Automation
      25 05 28.29 Hangers and Supports for Integrated Automation
      25 05 28.33 Conduits and Backboxes for Integrated Automation
      25 05 28.36 Cable Trays for Integrated Automation
      25 05 28.39 Surface Raceways for Integrated Automation
   25 05 48 Vibration and Seismic Controls for Integrated Automation
   25 05 53 Identification for Integrated Automation

25 06 00 Schedules for Integrated Automation
   25 06 11 Schedules for Integrated Automation Network
   25 06 12 Schedules for Integrated Automation Network Gateways
   25 06 13 Schedules for Integrated Automation Control and Monitoring Network
   25 06 14 Schedules for Integrated Automation Local Control Units
   25 06 30 Schedules for Integrated Automation Instrumentation and Terminal Devices

25 08 00 Commissioning of Integrated Automation

25 10 00 INTEGRATED AUTOMATION NETWORK EQUIPMENT

25 11 00 Integrated Automation Network Devices
   25 11 13 Integrated Automation Network Servers
   25 11 16 Integrated Automation Network Routers, Bridges, Switches, Hubs, and Modems
   25 11 19 Integrated Automation Network Operator Workstations

25 12 00 Integrated Automation Network Gateways
   25 12 13 Hardwired Integration Network Gateways
   25 12 16 Direct-Protocol Integration Network Gateways
   25 12 19 Neutral-Protocol Integration Network Gateways
   25 12 23 Client-Server Information/Database Integration Network Gateways

25 13 00 Integrated Automation Control and Monitoring Network
   25 13 13 Integrated Automation Control and Monitoring Network Supervisory Control
   25 13 16 Integrated Automation Control and Monitoring Network Integration Panels
   25 13 19 Integrated Automation Control and Monitoring Network Interoperability

25 14 00 Integrated Automation Local Control Units
   25 14 13 Integrated Automation Remote Control Panels
   25 14 16 Integrated Automation Application-Specific Control Panels
   25 14 19 Integrated Automation Terminal Control Units
   25 14 23 Integrated Automation Field Equipment Panels

25 15 00 Integrated Automation Software
   25 15 13 Integrated Automation Software for Network Gateways
   25 15 16 Integrated Automation Software for Control and Monitoring Networks
25 15 19  Integrated Automation Software for Local Control Units

25 20 00  Unassigned

25 30 00  INTEGRATED AUTOMATION INSTRUMENTATION AND TERMINAL DEVICES
  25 31 00  Integrated Automation Instrumentation and Terminal Devices for Facility Equipment
  25 32 00  Integrated Automation Instrumentation and Terminal Devices for Conveying Equipment
  25 33 00  Integrated Automation Instrumentation and Terminal Devices for Fire-Suppression Systems
  25 34 00  Integrated Automation Instrumentation and Terminal Devices for Plumbing
  25 35 00  Integrated Automation Instrumentation and Terminal Devices for HVAC
    25 35 13  Integrated Automation Actuators and Operators
    25 35 16  Integrated Automation Sensors and Transmitters
    25 35 19  Integrated Automation Control Valves
    25 35 23  Integrated Automation Control Dampers
    25 35 26  Integrated Automation Compressed Air Supply
  25 36 00  Integrated Automation Instrumentation and Terminal Devices for Electrical Systems
    25 36 13  Integrated Automation Power Meters
    25 36 16  Integrated Automation KW Transducers
    25 36 19  Integrated Automation Current Sensors
    25 36 23  Integrated Automation Battery Monitors
    25 36 26  Integrated Automation Lighting Relays
    25 36 29  Integrated Automation UPS Monitors
  25 37 00  Integrated Automation Instrumentation and Terminal Devices for Communications Systems
  25 38 00  Integrated Automation Instrumentation and Terminal Devices for Electronic Safety and Security Systems

25 40 00  Unassigned

25 50 00  INTEGRATED AUTOMATION FACILITY CONTROLS
  25 51 00  Integrated Automation Control of Facility Equipment
  25 52 00  Integrated Automation Control of Conveying Equipment
  25 53 00  Integrated Automation Control of Fire-Suppression Systems
  25 54 00  Integrated Automation Control of Plumbing
  25 55 00  Integrated Automation Control of HVAC
  25 56 00  Integrated Automation Control of Electrical Systems
  25 57 00  Integrated Automation Control of Communications Systems
  25 58 00  Integrated Automation Control of Electronic Safety and Security Systems

25 60 00  Unassigned

25 70 00  Unassigned

25 80 00  Unassigned

25 90 00  INTEGRATED AUTOMATION CONTROL SEQUENCES
  25 91 00  Integrated Automation Control Sequences for Facility Equipment

25 - 2

All contents copyright © 2004, The Construction Specifications Institute and Construction Specifications Canada. All rights reserved.
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 92 00</td>
<td>Integrated Automation Control Sequences for Conveying Equipment</td>
</tr>
<tr>
<td>25 93 00</td>
<td>Integrated Automation Control Sequences for Fire-Suppression Systems</td>
</tr>
<tr>
<td>25 94 00</td>
<td>Integrated Automation Control Sequences for Plumbing</td>
</tr>
<tr>
<td>25 95 00</td>
<td>Integrated Automation Control Sequences for HVAC</td>
</tr>
<tr>
<td>25 96 00</td>
<td>Integrated Automation Control Sequences for Electrical Systems</td>
</tr>
<tr>
<td>25 97 00</td>
<td>Integrated Automation Control Sequences for Communications Systems</td>
</tr>
<tr>
<td>25 98 00</td>
<td>Integrated Automation Control Sequences for Electronic Safety and Security Systems</td>
</tr>
</tbody>
</table>
DIVISION 26 – ELECTRICAL

26 00 00 ELECTRICAL
26 01 00 Operation and Maintenance of Electrical Systems
  26 01 10 Operation and Maintenance of Medium-Voltage Electrical Distribution
  26 01 20 Operation and Maintenance of Low-Voltage Electrical Distribution
  26 01 26 Maintenance Testing of Electrical Systems
  26 01 30 Operation and Maintenance of Facility Electrical Power Generating and Storing Equipment
  26 01 40 Operation and Maintenance of Electrical and Cathodic Protection Systems
  26 01 50 Operation and Maintenance of Lighting
    26 01 50.51 Luminaire Relamping
    26 01 50.81 Luminaire Replacement
26 05 00 Common Work Results for Electrical
  26 05 13 Medium-Voltage Cables
    26 05 13.13 Medium-Voltage Open Conductors
    26 05 13.16 Medium-Voltage, Single- and Multi-Conductor Cables
  26 05 19 Low-Voltage Electrical Power Conductors and Cables
    26 05 19.13 Undercarpet Electrical Power Cables
  26 05 23 Control-Voltage Electrical Power Cables
  26 05 26 Grounding and Bonding for Electrical Systems
  26 05 29 Hangers and Supports for Electrical Systems
  26 05 33 Raceway and Boxes for Electrical Systems
  26 05 36 Cable Trays for Electrical Systems
  26 05 39 Underfloor Raceways for Electrical Systems
  26 05 43 Underground Ducts and Raceways for Electrical Systems
  26 05 46 Utility Poles for Electrical Systems
  26 05 48 Vibration and Seismic Controls for Electrical Systems
  26 05 53 Identification for Electrical Systems
  26 05 73 Overcurrent Protective Device Coordination Study
26 06 00 Schedules for Electrical
  26 06 10 Schedules for Medium-Voltage Electrical Distribution
  26 06 20 Schedules for Low-Voltage Electrical Distribution
    26 06 20.13 Electrical Switchboard Schedule
    26 06 20.16 Electrical Panelboard Schedule
    26 06 20.19 Electrical Motor-Control Center Schedule
    26 06 20.23 Electrical Circuit Schedule
    26 06 20.26 Wiring Device Schedule
  26 06 30 Schedules for Facility Electrical Power Generating and Storing Equipment
  26 06 40 Schedules for Electrical and Cathodic Protection Systems
  26 06 50 Schedules for Lighting
    26 06 50.13 Lighting Panelboard Schedule
    26 06 50.16 Lighting Fixture Schedule
26 08 00 Commissioning of Electrical Systems
26 09 00 Instrumentation and Control for Electrical Systems
  26 09 13 Electrical Power Monitoring and Control
  26 09 23 Lighting Control Devices
  26 09 26 Lighting Control Panelboards
  26 09 33 Central Dimming Controls
26 09 33.13  Multichannel Remote-Controlled Dimmers
26 09 33.16  Remote-Controlled Dimming Stations
26 09 36  Modular Dimming Controls
26 09 36.13  Manual Modular Dimming Controls
26 09 36.16  Integrated Multipreset Modular Dimming Controls
26 09 43  Network Lighting Controls
26 09 43.13  Digital-Network Lighting Controls
26 09 43.16  Addressable Fixture Lighting Control
26 09 61  Theatrical Lighting Controls

26 10 00  MEDIUM-VOLTAGE ELECTRICAL DISTRIBUTION
26 11 00  Substations
26 11 13  Primary Unit Substations
26 11 16  Secondary Unit Substations
26 12 00  Medium-Voltage Transformers
26 12 13  Liquid-Filled, Medium-Voltage Transformers
26 12 16  Dry-Type, Medium-Voltage Transformers
26 12 19  Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers
26 13 00  Medium-Voltage Switchgear
26 13 13  Medium-Voltage Circuit Breaker Switchgear
26 13 16  Medium-Voltage Fusible Interrupter Switchgear
26 13 19  Medium-Voltage Vacuum Interrupter Switchgear
26 18 00  Medium-Voltage Circuit Protection Devices
26 18 13  Medium-Voltage Cutouts
26 18 16  Medium-Voltage Fuses
26 18 19  Medium-Voltage Lightning Arresters
26 18 23  Medium-Voltage Surge Arresters
26 18 26  Medium-Voltage Reclosers
26 18 29  Medium-Voltage Enclosed Bus
26 18 33  Medium-Voltage Enclosed Fuse Cutouts
26 18 36  Medium-Voltage Enclosed Fuses
26 18 39  Medium-Voltage Motor Controllers

26 20 00  LOW-VOLTAGE ELECTRICAL TRANSMISSION
26 21 00  Low-Voltage Overhead Electrical Power Systems
26 22 00  Low-Voltage Transformers
26 22 13  Low-Voltage Distribution Transformers
26 22 16  Low-Voltage Buck-Boost Transformers
26 22 19  Control and Signal Transformers
26 23 00  Low-Voltage Switchgear
26 23 13  Paralleling Low-Voltage Switchgear
26 24 00  Switchboards and Panelboards
26 24 13  Switchboards
26 24 16  Panelboards
26 24 19  Motor-Control Centers
26 25 00  Enclosed Bus Assemblies
26 26 00  Power Distribution Units
26 27 00  Low-Voltage Distribution Equipment
26 27 13  Electricity Metering
26 27 16  Electrical Cabinets and Enclosures
26 27 19  Multi-Outlet Assemblies
26 27 23 Indoor Service Poles
26 27 26 Wiring Devices
26 27 73 Door Chimes

26 28 00 Low-Voltage Circuit Protective Devices
26 28 13 Fuses
26 28 16 Enclosed Switches and Circuit Breakers

26 29 00 Low-Voltage Controllers
26 29 13 Enclosed Controllers
   26 29 13.13 Across-the-Line Motor Controllers
   26 29 13.16 Reduced-Voltage Motor Controllers
26 29 23 Variable-Frequency Motor Controllers

26 30 00 Facility Electrical Power Generating and Storing Equipment

26 31 00 Photovoltaic Collectors

26 32 00 Packaged Generator Assemblies
26 32 13 Engine Generators
   26 32 13.13 Diesel-Engine-Driven Generator Sets
   26 32 13.16 Gas-Engine-Driven Generator Sets
26 32 16 Steam-Turbine Generators
26 32 19 Hydro-Turbine Generators
26 32 23 Wind Energy Equipment
26 32 26 Frequency Changers
26 32 29 Rotary Converters
26 32 33 Rotary Uninterruptible Power Units

26 33 00 Battery Equipment
26 33 13 Batteries
26 33 16 Battery Racks
26 33 19 Battery Units
26 33 23 Central Battery Equipment
26 33 33 Static Power Converters
26 33 43 Battery Chargers
26 33 46 Battery Monitoring
26 33 53 Static Uninterruptible Power Supply

26 35 00 Power Filters and Conditioners
26 35 13 Capacitors
26 35 16 Chokes and Inductors
26 35 23 Electromagnetic-Interference Filters
26 35 26 Harmonic Filters
26 35 33 Power Factor Correction Equipment
26 35 36 Slip Controllers
26 35 43 Static-Frequency Converters
26 35 46 Radio-Frequency-Interference Filters
26 35 53 Voltage Regulators

26 36 00 Transfer Switches
26 36 13 Manual Transfer Switches
26 36 23 Automatic Transfer Switches

26 40 00 Electrical and Cathodic Protection

26 41 00 Facility Lightning Protection
26 41 13 Lightning Protection for Structures
26 41 13.13 Lightning Protection for Buildings
26 41 16 Lightning Prevention and Dissipation
26 41 19 Early Streamer Emission Lightning Protection
26 41 23 Lightning Protection Surge Arresters and Suppressors

26 42 00 Cathodic Protection
26 42 13 Passive Cathodic Protection for Underground and Submerged Piping
26 42 16 Passive Cathodic Protection for Underground Storage Tank

26 43 00 Transient Voltage Suppression
26 43 13 Transient-Voltage Suppression for Low-Voltage Electrical Power Circuits

26 50 00 LIGHTING
26 51 00 Interior Lighting
26 51 13 Interior Lighting Fixtures, Lamps, And Ballasts

26 52 00 Emergency Lighting

26 53 00 Exit Signs

26 54 00 Classified Location Lighting

26 55 00 Special Purpose Lighting
26 55 23 Outline Lighting
26 55 29 Underwater Lighting
26 55 33 Hazard Warning Lighting
26 55 36 Obstruction Lighting
26 55 53 Security Lighting
26 55 59 Display Lighting
26 55 61 Theatrical Lighting
26 55 63 Detention Lighting
26 55 70 Healthcare Lighting

26 56 00 Exterior Lighting
26 56 13 Lighting Poles and Standards
26 56 16 Parking Lighting
26 56 19 Roadway Lighting
26 56 23 Area Lighting
26 56 26 Landscape Lighting
26 56 29 Site Lighting
26 56 33 Walkway Lighting
26 56 36 Flood Lighting
26 56 68 Exterior Athletic Lighting

26 60 00 Unassigned

26 70 00 Unassigned

26 80 00 Unassigned

26 90 00 Unassigned
DIVISION 27 – COMMUNICATIONS

27 00 00  COMMUNICATIONS

27 01 00  Operation and Maintenance of Communications Systems
  27 01 10  Operation and Maintenance of Structured Cabling and Enclosures
  27 01 20  Operation and Maintenance of Data Communications
  27 01 30  Operation and Maintenance of Voice Communications
  27 01 40  Operation and Maintenance of Audio-Video Communications
  27 01 50  Operation and Maintenance of Distributed Communications and Monitoring

27 05 00  Common Work Results for Communications
  27 05 13  Communications Services
    27 05 13.13  Dialtone Services
    27 05 13.23  T1 Services
    27 05 13.33  DSL Services
    27 05 13.43  Cable Services
    27 05 13.53  Satellite Services
  27 05 26  Grounding and Bonding for Communications Systems
  27 05 28  Pathways for Communications Systems
    27 05 28.29  Hangers and Supports for Communications Systems
    27 05 28.33  Conduits and Backboxes for Communications Systems
    27 05 28.36  Cable Trays for Communications Systems
    27 05 28.39  Surface Raceways for Communications Systems
  27 05 43  Underground Ducts and Raceways for Communications Systems
  27 05 46  Utility Poles for Communications Systems
  27 05 48  Vibration and Seismic Controls for Communications Systems
  27 05 53  Identification for Communications Systems

27 06 00  Schedules for Communications
  27 06 10  Schedules for Structured Cabling and Enclosures
  27 06 20  Schedules for Data Communications
  27 06 30  Schedules for Voice Communications
  27 06 40  Schedules for Audio-Video Communications
  27 06 50  Schedules for Distributed Communications and Monitoring

27 08 00  Commissioning of Communications

27 10 00  STRUCTURED CABLEING

27 11 00  Communications Equipment Room Fittings
  27 11 13  Communications Entrance Protection
  27 11 16  Communications Cabinets, Racks, Frames and Enclosures
  27 11 19  Communications Termination Blocks and Patch Panels
  27 11 23  Communications Cable Management and Ladder Rack
  27 11 26  Communications Rack Mounted Power Protection and Power Strips

27 13 00  Communications Backbone Cabling
  27 13 13  Communications Copper Backbone Cabling
    27 13 13.13  Communications Copper Cable Splicing and Terminations
  27 13 23  Communications Optical Fiber Backbone Cabling
    27 13 23.13  Communications Optical Fiber Splicing and Terminations
  27 13 33  Communications Coaxial Backbone Cabling
    27 13 33.13  Communications Coaxial Splicing and Terminations
  27 13 43  Communications Services Cabling
27 13 43.13 Dialtone Services Cabling
27 13 43.23 T1 Services Cabling
27 13 43.33 DSL Services Cabling
27 13 43.43 Cable Services Cabling
27 13 43.53 Satellite Services Cabling

27 15 00 Communications Horizontal Cabling
27 15 00.16 Voice Communications Horizontal Cabling
27 15 00.19 Data Communications Horizontal Cabling
27 15 00.23 Audio-Video Communications Horizontal Cabling
27 15 00.39 Patient Monitoring and Telemetry Communications Horizontal Cabling
27 15 00.43 Nurse Call and Intercom Communications Horizontal Cabling
27 15 00.46 Paging Communications Horizontal Cabling
27 15 00.49 Intermediate Frequency/Radio Frequency Communications Horizontal Cabling
27 15 00.53 Antennas Communications Horizontal Cabling
27 15 13 Communications Copper Horizontal Cabling
27 15 23 Communications Optical Fiber Horizontal Cabling
27 15 33 Communications Coaxial Horizontal Cabling
27 15 43 Communications Faceplates and Connectors

27 16 00 Communications Connecting Cords, Devices and Adapters
27 16 13 Communications Custom Cable Assemblies
27 16 16 Communications Media Converters, Adapters, and Transceivers
27 16 19 Communications Patch Cords, Station Cords, and Cross Connect Wire

27 20 00 DATA COMMUNICATIONS

27 21 00 Data Communications Network Equipment
27 21 13 Data Communications Firewalls
27 21 16 Data Communications Routers, CSU/DSU, Multiplexers, Codec’s, and Modems
27 21 26 Data Communications Network Management
27 21 29 Data Communications Switches and Hubs
27 21 33 Data Communications Wireless Access Points

27 22 00 Data Communications Hardware
27 22 13 Data Communications Mainframes
27 22 16 Data Communications Storage and Backup
27 22 19 Data Communications Servers
27 22 23 Data Communications Desktops
27 22 26 Data Communications Laptops
27 22 29 Data Communications Handhelds

27 24 00 Data Communications Peripheral Data Equipment
27 24 13 Printers
27 24 16 Scanners
27 24 19 External Drives
27 24 23 Audio-Video Devices
27 24 26 Virtual Reality Equipment
27 24 29 Disaster Recovery Equipment

27 25 00 Data Communications Software
27 25 13 Virus Protection Software
27 25 16 Application Suites
27 25 19 Email Software
27 25 23 Graphics/Multimedia Software
27 25 26 Customer Relationship Management Software
27 25 29 Operating System Software
27 25 33 Database Software
27 25 37 Virtual Private Network Software
27 25 39 Internet Conferencing Software

27 26 00 Data Communications Programming and Integration Services
27 26 13 Web Development
27 26 16 Database Development
27 26 19 Application Development
27 26 23 Network Integration Requirements
27 26 26 Data Communications Integration Requirements

27 30 00 VOICE COMMUNICATIONS

27 31 00 Voice Communications Switching and Routing Equipment
27 31 13 PBX/ Key Systems
27 31 23 Internet Protocol Voice Switches

27 32 00 Voice Communications Telephone Sets, Facsimiles and Modems
27 32 13 Telephone Sets
27 32 16 Wireless Transceivers
27 32 23 Elevator Telephones
27 32 26 Ring-Down Emergency Telephones
27 32 29 Facsimiles and Modems
27 32 36 TTY Equipment

27 33 00 Voice Communications Messaging
27 33 16 Voice Mail and Auto Attendant
27 33 23 Interactive Voice Response
27 33 26 Facsimile Servers

27 34 00 Call Accounting
27 34 13 Toll Fraud Equipment and Software
27 34 16 Telemanagement Software

27 35 00 Call Management
27 35 13 Digital Voice Announcers
27 35 16 Automatic Call Distributors
27 35 19 Call Status and Management Displays
27 35 23 Dedicated 911 Systems

27 40 00 AUDIO-VIDEO COMMUNICATIONS

27 41 00 Audio-Video Systems
27 41 13 Architecturally Integrated Audio-Video Equipment
27 41 16 Integrated Audio-Video Systems and Equipment
27 41 16.25 Integrated Audio-Video Systems and Equipment for Restaurants and Bars
27 41 16.28 Integrated Audio-Video Systems and Equipment for Conference Rooms
27 41 16.29 Integrated Audio-Video Systems and Equipment for Board Rooms
27 41 16.51 Integrated Audio-Video Systems and Equipment for Classrooms
27 41 16.61 Integrated Audio-Video Systems and Equipment for Theaters
27 41 16.62 Integrated Audio-Video Systems and Equipment for Auditoriums
27 41 16.63 Integrated Audio-Video Systems and Equipment for Stadiums and Arenas
27 41 19 Portable Audio-Video Equipment
27 41 23 Audio-Video Accessories

27 42 00 Electronic Digital Systems
27 42 13 Point of Sale Systems
27 42 16 Transportation Information Display Systems
27 42 19 Public Information Systems
27 50 00  DISTRIBUTED COMMUNICATIONS AND MONITORING SYSTEMS

27 51 00  Distributed Audio-Video Communications Systems
  27 51 13  Paging Systems
    27 51 13.13  Overhead Paging Systems
  27 51 16  Public Address and Mass Notification Systems
  27 51 19  Sound Masking Systems
  27 51 23  Intercommunications and Program Systems
    27 51 23.20  Commercial Intercommunications and Program Systems
    27 51 23.30  Residential Intercommunications and Program Systems
    27 51 23.50  Educational Intercommunications and Program Systems
    27 51 23.63  Detention Intercommunications and Program Systems
    27 51 23.70  Healthcare Intercommunications and Program Systems

27 52 00  Healthcare Communications and Monitoring Systems
  27 52 13  Patient Monitoring and Telemetry Systems
  27 52 16  Telemedicine Systems
  27 52 19  Healthcare Imaging Systems
  27 52 23  Nurse Call/Code Blue Systems

27 53 00  Distributed Systems
  27 53 13  Clock Systems
  27 53 16  Infrared and Radio Frequency Tracking Systems
  27 53 19  Internal Cellular, Paging, and Antenna Systems

27 60 00  Unassigned

27 70 00  Unassigned

27 80 00  Unassigned

27 90 00  Unassigned
DIVISION 28 – ELECTRONIC SAFETY AND SECURITY

28 00 00  ELECTRONIC SAFETY AND SECURITY
28 01 00  Operation and Maintenance of Electronic Safety and Security
   28 01 10  Operation and Maintenance of Electronic Access Control and Intrusion Detection
   28 01 10.51  Maintenance and Administration of Electronic Access Control and Intrusion Detection
   28 01 10.71  Revisions and Upgrades of Electronic Access Control and Intrusion Detection
   28 01 20  Operation and Maintenance of Electronic Surveillance
   28 01 30  Operation and Maintenance of Electronic Detection and Alarm
   28 01 30.51  Maintenance and Administration of Electronic Detection and Alarm
   28 01 30.71  Revisions and Upgrades of Electronic Detection and Alarm
   28 01 40  Operation and Maintenance of Electronic Monitoring and Control
   28 01 40.51  Maintenance and Administration of Electronic Monitoring and Control
   28 01 40.71  Revisions and Upgrades of Electronic Monitoring and Control

28 05 00  Common Work Results for Electronic Safety and Security
   28 05 13  Conductors and Cables for Electronic Safety and Security
   28 05 13.13  CCTV Communications Conductors and Cables
   28 05 13.16  Access Control Communications Conductors and Cables
   28 05 13.19  Intrusion Detection Communications Conductors and Cables
   28 05 13.23  Fire Alarm Communications Conductors and Cables
   28 05 26  Grounding and Bonding for Electronic Safety and Security
   28 05 28  Pathways for Electronic Safety and Security
   28 05 28.29  Hangers and Supports for Electronic Safety and Security
   28 05 28.33  Conduits and Backboxes for Electronic Safety and Security
   28 05 28.36  Cable Trays for Electronic Safety and Security
   28 05 28.39  Surface Raceways for Electronic Safety and Security
   28 05 48  Vibration and Seismic Controls for Electronic Safety and Security
   28 05 53  Identification for Electronic Safety and Security

28 06 00  Schedules for Electronic Safety and Security
   28 06 10  Schedules for Electronic Access Control and Intrusion Detection
   28 06 20  Schedules for Electronic Surveillance
   28 06 30  Schedules for Electronic Detection and Alarm
   28 06 40  Schedules for Electronic Monitoring and Control

28 08 00  Commissioning of Electronic Safety and Security

28 10 00  ELECTRONIC ACCESS CONTROL AND INTRUSION DETECTION
28 13 00  Access Control
   28 13 13  Access Control Global Applications
   28 13 16  Access Control Systems and Database Management
   28 13 19  Access Control Systems Infrastructure
   28 13 26  Access Control Remote Devices
   28 13 33  Access Control Interfaces
   28 13 33.16  Access Control Interfaces to Access Control Hardware
   28 13 33.26  Access Control Interfaces to Intrusion Detection
   28 13 33.33  Access Control Interfaces to Video Surveillance
   28 13 33.36  Access Control Interfaces to Fire Alarm
   28 13 43  Access Control Identification Management Systems
   28 13 53  Security Access Detection
28 13 53.13 Security Access Metal Detectors
28 13 53.16 Security Access X-Ray Equipment
28 13 53.29 Security Access Sniffing Equipment
28 13 53.23 Security Access Explosive Detection Equipment

28 16 00 Intrusion Detection
28 16 13 Intrusion Detection Control, GUI, and Logic Systems
28 16 16 Intrusion Detection Systems Infrastructure
28 16 19 Intrusion Detection Remote Devices and Sensors
28 16 33 Intrusion Detection Interfaces
28 16 33.13 Intrusion Detection Interfaces to Remote Monitoring
28 16 33.16 Intrusion Detection Interfaces to Access Control Hardware
28 16 33.23 Intrusion Detection Interfaces to Access Control System
28 16 33.33 Intrusion Detection Interfaces to Video Surveillance
28 16 33.36 Intrusion Detection Interfaces to Fire Alarm
28 16 43 Perimeter Security Systems
28 16 46 Intrusion Detection Vehicle Control Systems

28 20 00 ELECTRONIC SURVEILLANCE
28 23 00 Video Surveillance
28 23 13 Video Surveillance Control and Management Systems
28 23 16 Video Surveillance Monitoring and Supervisory Interfaces
28 23 19 Digital Video Recorders and Analog Recording Devices
28 23 23 Video Surveillance Systems Infrastructure
28 23 26 Video Surveillance Remote Positioning Equipment
28 23 29 Video Surveillance Remote Devices and Sensors

28 26 00 Electronic Personal Protection Systems
28 26 13 Electronic Personal Safety Detection Systems
28 26 16 Electronic Personal Safety Alarm Annunciation and Control Systems
28 26 19 Electronic Personal Safety Interfaces to Remote Monitoring
28 26 23 Electronic Personal Safety Emergency Aid Devices

28 30 00 ELECTRONIC DETECTION AND ALARM
28 31 00 Fire Detection and Alarm
28 31 13 Fire Detection and Alarm Control, GUI, and Logic Systems
28 31 23 Fire Detection and Alarm Annunciation Panels and Fire Stations
28 31 33 Fire Detection and Alarm Interfaces
28 31 33.13 Fire Detection and Alarm Interfaces to Remote Monitoring
28 31 33.16 Fire Detection and Alarm Interfaces to Access Control Hardware
28 31 33.23 Fire Detection and Alarm Interfaces to Access Control System
28 31 33.26 Fire Detection and Alarm Interfaces to Intrusion Detection
28 31 33.33 Fire Detection and Alarm Interfaces to Video Surveillance
28 31 33.36 Fire Detection and Alarm Interfaces to Elevator Control
28 31 33.43 Fire Detection and Alarm Interfaces to Elevator Control
28 31 43 Fire Detection Sensors
28 31 46 Smoke Detection Sensors
28 31 49 Carbon-Monoxide Detection Sensors
28 31 53 Fire Alarm Initiating Devices
28 31 53.13 Fire Alarm Pull Stations
28 31 53.23 Fire Alarm Level Detectors Switches
28 31 53.33 Fire Alarm Flow Switches
28 31 53.43 Fire Alarm Pressure Sensors
28 31 63 Fire Alarm Integrated Audio Visual Evacuation Systems
28 31 63.13 Fire Alarm Horns and Strobes

28 32 00 Radiation Detection and Alarm
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>28 32 13</td>
<td>Radiation Detection and Alarm Control, GUI, and Logic Systems</td>
</tr>
<tr>
<td>28 32 23</td>
<td>Radiation Detection and Alarm Integrated Audio Evacuation Systems</td>
</tr>
<tr>
<td>23 32 33</td>
<td>Radiation and Alarm Detection Sensors</td>
</tr>
<tr>
<td>28 32 43</td>
<td>Radiation and Alarm Dosimeters</td>
</tr>
<tr>
<td><strong>28 33 00</strong></td>
<td>Fuel-Gas Detection and Alarm</td>
</tr>
<tr>
<td>28 33 13</td>
<td>Fuel-Gas Detection and Alarm Control, GUI, and Logic Systems</td>
</tr>
<tr>
<td>28 33 23</td>
<td>Fuel-Gas Detection and Alarm Integrated Audio Evacuation Systems</td>
</tr>
<tr>
<td>28 33 33</td>
<td>Fuel-Gas Detection Sensors</td>
</tr>
<tr>
<td><strong>28 34 00</strong></td>
<td>Fuel-Oil Detection and Alarm</td>
</tr>
<tr>
<td>28 34 13</td>
<td>Fuel-Oil Detection and Alarm Control, GUI, and Logic Systems</td>
</tr>
<tr>
<td>28 34 23</td>
<td>Fuel-Oil Detection and Alarm Integrated Audio Evacuation Systems</td>
</tr>
<tr>
<td>28 34 33</td>
<td>Fuel-Oil Detection Sensors</td>
</tr>
<tr>
<td><strong>28 35 00</strong></td>
<td>Refrigerant Detection and Alarm</td>
</tr>
<tr>
<td>28 35 13</td>
<td>Refrigerant Detection and Alarm Control, GUI, and Logic Systems</td>
</tr>
<tr>
<td>28 35 23</td>
<td>Refrigerant Detection and Alarm Integrated Audio Evacuation Systems</td>
</tr>
<tr>
<td>28 35 33</td>
<td>Refrigerant Detection Sensors</td>
</tr>
<tr>
<td><strong>28 40 00</strong></td>
<td>ELECTRONIC MONITORING AND CONTROL</td>
</tr>
<tr>
<td><strong>28 46 00</strong></td>
<td>Electronic Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 13</td>
<td>Hard-Wired Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 16</td>
<td>Relay-Logic Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 19</td>
<td>PLC Electronic Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 23</td>
<td>Computer-Based Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 26</td>
<td>Discreet-Logic Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td>28 46 29</td>
<td>Discreet-Distributed Intelligence Detention Monitoring and Control Systems</td>
</tr>
<tr>
<td><strong>28 50 00</strong></td>
<td>Unassigned</td>
</tr>
<tr>
<td><strong>28 60 00</strong></td>
<td>Unassigned</td>
</tr>
<tr>
<td><strong>28 70 00</strong></td>
<td>Unassigned</td>
</tr>
<tr>
<td><strong>28 80 00</strong></td>
<td>Unassigned</td>
</tr>
<tr>
<td><strong>28 90 00</strong></td>
<td>Unassigned</td>
</tr>
</tbody>
</table>
DIVISION 31 – EARTHWORK

31 00 00  EARTHWORK
  31 01 00  Maintenance of Earthwork
    31 01 10  Maintenance of Clearing
    31 01 20  Maintenance of Earth Moving
    31 01 40  Maintenance of Shoring and Underpinning
    31 01 50  Maintenance of Excavation Support and Protection
    31 01 60  Maintenance of Special Foundations and Load Bearing Elements
    31 01 62  Maintenance of Driven Piles
      31 01 62.61  Driven Pile Repairs
    31 01 63  Maintenance of Bored and Augered Piles
      31 01 63.61  Bored and Augered Pile Repairs
    31 01 70  Maintenance of Tunneling and Mining
      31 01 70.61  Tunnel Leak Repairs
  31 05 00  Common Work Results for Earthwork
    31 05 13  Soils for Earthwork
    31 05 16  Aggregates for Earthwork
    31 05 19  Geosynthetics for Earthwork
      31 05 19.13  Geotextiles for Earthwork
      31 05 19.16  Geomembranes for Earthwork
      31 05 19.19  Geogrids for Earthwork
    31 05 23  Cement and Concrete for Earthwork
  31 06 00  Schedules for Earthwork
    31 06 10  Schedules for Clearing
    31 06 20  Schedules for Earth Moving
      31 06 20.13  Trench Dimension Schedule
      31 06 20.16  Backfill Material Schedule
    31 06 40  Schedules for Shoring and Underpinning
    31 06 50  Schedules for Excavation Support and Protection
    31 06 60  Schedules for Special Foundations and Load Bearing Elements
      31 06 60.13  Driven Pile Schedule
      31 06 60.16  Caisson Schedule
    31 06 70  Schedules for Tunneling and Mining
  31 08 00  Commissioning of Earthwork
  31 09 00  Geotechnical Instrumentation and Monitoring of Earthwork
    31 09 13  Geotechnical Instrumentation and Monitoring
      31 09 13.13  Groundwater Monitoring During Construction
    31 09 16  Special Foundation and Load Bearing Elements Instrumentation and Monitoring
      31 09 16.13  Foundation Performance Instrumentation
      31 09 16.23  Driven Pile Load Tests
      31 09 16.26  Bored and Augered Pile Load Tests
  31 10 00  SITE CLEARING
  31 11 00  Clearing and Grubbing
  31 12 00  Selective Clearing
  31 13 00  Selective Tree and Shrub Removal and Trimming
    31 13 13  Selective Tree and Shrub Removal
    31 13 16  Selective Tree and Shrub Trimming
31 14 00  Earth Stripping and Stockpiling
  31 14 13  Soil Stripping and Stockpiling
    31 14 13.13  Soil Stripping
    31 14 13.16  Soil Stockpiling
    31 14 13.23  Topsoil Stripping and Stockpiling
  31 14 16  Sod Stripping and Stockpiling
    31 14 16.13  Sod Stripping
    31 14 16.16  Sod Stockpiling

31 20 00  EARTH MOVING

31 21 00  Off-Gassing Mitigation
  31 21 13  Radon Mitigation
    31 21 13.13  Radon Venting
  31 21 16  Methane Mitigation
    31 21 16.13  Methane Venting

31 22 00  Grading
  31 22 13  Rough Grading
  31 22 16  Fine Grading
    31 22 16.13  Roadway Subgrade Reshaping
  31 22 19  Finish Grading
    31 22 19.13  Spreading and Grading Topsoil

31 23 00  Excavation and Fill
  31 23 13  Subgrade Preparation
  31 23 16  Excavation
    31 23 16.13  Trenching
    31 23 16.16  Structural Excavation for Minor Structures
    31 23 16.26  Rock Removal
  31 23 19  Dewatering
  31 23 23  Fill
    31 23 23.13  Backfill
    31 23 23.23  Compaction
    31 23 23.33  Flowable Fill
    31 23 23.43  Geofoam
  31 23 33  Trenching and Backfilling

31 24 00  Embankments
  31 24 13  Roadway Embankments
  31 24 16  Railway Embankments

31 25 00  Erosion and Sedimentation Controls
  31 25 13  Erosion Controls
  31 25 23  Rock Barriers
  31 25 53  Sedimentation Controls
  31 25 63  Rock Basins

31 30 00  EARTHWORK METHODS

31 31 00  Soil Treatment
  31 31 13  Rodent Control
    31 31 13.16  Rodent Control Bait Systems
    31 31 13.19  Rodent Control Traps
    31 31 13.23  Rodent Control Electronic Systems
    31 31 13.26  Rodent Control Repellants
  31 31 16  Termite Control
31 31 16.13 Chemical Termite Control
31 31 16.16 Termite Control Bait Systems
31 31 16.19 Termite Control Barriers
31 31 19 Vegetation Control
31 31 19.13 Chemical Vegetation Control

31 32 00 Soil Stabilization
31 32 13 Soil Mixing Stabilization
  31 32 13.13 Asphalt Soil Stabilization
  31 32 13.16 Cement Soil Stabilization
  31 32 13.19 Lime Soil Stabilization
  31 32 13.23 Fly-Ash Soil Stabilization
  31 32 13.26 Lime-Fly-Ash Soil Stabilization
31 32 16 Chemical Treatment Soil Stabilization
  31 32 16.13 Polymer Emulsion Soil Stabilization
31 32 19 Geosynthetic Soil Stabilization and Layer Separation
  31 32 19.13 Geogrid Soil Stabilization
  31 32 19.16 Geotextile Soil Stabilization
  31 32 19.19 Geogrid Layer Separation
  31 32 19.23 Geotextile Layer Separation
31 32 23 Pressure Grouting Soil Stabilization
  31 32 23.13 Cementitious Pressure Grouting Soil Stabilization
  31 32 23.16 Chemical Pressure Grouting Soil Stabilization
31 32 33 Shotcrete Soil Slope Stabilization
31 32 36 Soil Nailing
  31 32 36.13 Driven Soil Nailing
  31 32 36.16 Grouted Soil Nailing
  31 32 36.19 Corrosion-Protected Soil Nailing
  31 32 36.23 Jet-Grouted Soil Nailing
  31 32 36.26 Launched Soil Nailing

31 33 00 Rock Stabilization
31 33 13 Rock Bolting and Grouting
31 33 23 Rock Slope Netting
31 33 26 Rock Slope Wire Mesh
31 33 33 Shotcrete Rock Slope Stabilization
31 33 43 Vegetated Rock Slope Stabilization

31 34 00 Soil Reinforcement
31 34 19 Geosynthetic Soil Reinforcement
  31 34 19.13 Geogrid Soil Reinforcement
  31 34 19.16 Geotextile Soil Reinforcement
31 34 23 Fiber Soil Reinforcement
  31 34 23.13 Geosynthetic Fiber Soil Reinforcement

31 35 00 Slope Protection
31 35 19 Geosynthetic Slope Protection
  31 35 19.13 Geogrid Slope Protection
  31 35 19.16 Geotextile Slope Protection
  31 35 19.19 Slope Protection with Mulch Control Netting
31 35 23 Slope Protection with Slope Paving
  31 35 23.13 Cast-In-Place Concrete Slope Paving
  31 35 23.16 Precast Concrete Slope Paving
  31 35 23.19 Concrete Unit Masonry Slope Paving
31 35 26 Containment Barriers
31 35 26.13 Clay Containment Barriers  
31 35 26.16 Geomembrane Containment Barriers  
31 35 26.23 Bentonite Slurry Trench

31 36 00 Gabions  
31 36 13 Gabion Boxes  
31 36 19 Gabion Mattresses  
31 36 19.13 Vegetated Gabion Mattresses

31 37 00 Riprap  
31 37 13 Machined Riprap  
31 37 16 Non-Machined Riprap  
31 37 16.13 Rubble-Stone Riprap  
31 37 16.16 Concrete Unit Masonry Riprap  
31 37 16.19 Sacked Sand-Cement Riprap

31 40 00 SHORING AND UNDERPINNING  
31 41 00 Shoring  
31 41 13 Timber Shoring  
31 41 16 Sheet Piling  
31 41 16.13 Steel Sheet Piling  
31 41 16.16 Plastic Sheet Piling  
31 41 19 Metal Hydraulic Shoring  
31 41 19.13 Aluminum Hydraulic Shoring  
31 41 23 Pneumatic Shoring  
31 41 33 Trench Shielding

31 43 00 Concrete Raising  
31 43 13 Pressure Grouting  
31 43 13.13 Concrete Pressure Grouting  
31 43 13.16 Polyurethane Pressure Grouting  
31 43 16 Compaction Grouting  
31 43 19 Mechanical Jacking

31 45 00 Vibroflotation and Densification  
31 45 13 Vibroflotation  
31 45 16 Densification

31 46 00 Needle Beams  
31 46 13 Cantilever Needle Beams

31 48 00 Underpinning  
31 48 13 Underpinning Piers  
31 48 19 Bracket Piers  
31 48 23 Jacked Piers  
31 48 33 Micropile Underpinning

31 50 00 EXCAVATION SUPPORT AND PROTECTION  
31 51 00 Anchor Tiebacks  
31 51 13 Excavation Soil Anchors  
31 51 16 Excavation Rock Anchors

31 52 00 Cofferdams  
31 52 13 Sheet Piling Cofferdams  
31 52 16 Timber Cofferdams  
31 52 19 Precast Concrete Cofferdams

31 53 00 Cribbing and Walers  
31 53 13 Timber Cribwork

31 54 00 Ground Freezing
31 56 00  Slurry Walls
31 56 13  Bentonite Slurry Walls
31 56 13.13  Soil-Bentonite Slurry Walls
31 56 13.16  Cement-Bentonite Slurry Walls
31 56 13.19  Slag-Cement-Bentonite Slurry Walls
31 56 13.23  Soil-Cement-Bentonite Slurry Walls
31 56 13.26  Pozzolan-Bentonite Slurry Walls
31 56 13.29  Organically-Modified Bentonite Slurry Walls
31 56 16  Attipulgite Slurry Walls
31 56 16.13  Soil-Attipulgite Slurry Walls
31 56 19  Slurry-Geomembrane Composite Slurry Walls
31 56 23  Lean Concrete Slurry Walls
31 56 26  Bio-Polymer Trench Drain

31 60 00  SPECIAL FOUNDATIONS AND LOAD-BEARING ELEMENTS
31 62 00  Driven Piles
31 62 13  Concrete Piles
31 62 13.13  Cast-in-Place Concrete Piles
31 62 13.16  Concrete Displacement Piles
31 62 13.19  Precast Concrete Piles
31 62 13.23  Prestressed Concrete Piles
31 62 13.26  Pressure-Injected Footings
31 62 16  Steel Piles
31 62 16.13  Sheet Steel Piles
31 62 16.16  Steel H Piles
31 62 16.19  Unfilled Tubular Steel Piles
31 62 19  Timber Piles
31 62 23  Composite Piles
31 62 23.13  Concrete-Filled Steel Piles
31 62 23.16  Wood and Cast-In-Place Concrete Piles

31 63 00  Bored Piles
31 63 13  Bored and Augered Test Piles
31 63 16  Auger Cast Grout Piles
31 63 19  Bored and Socketed Piles
31 63 19.13  Rock Sockets for Piles
31 63 23  Bored Concrete Piles
31 63 23.13  Bored and Belled Concrete Piles
31 63 23.16  Bored Friction Concrete Piles
31 63 26  Drilled Caissons
31 63 26.13  Fixed End Caisson Piles
31 63 26.16  Concrete Caissons for Marine Construction
31 63 29  Drilled Concrete Piers and Shafts
31 63 29.13  Uncased Drilled Concrete Piers
31 63 29.16  Cased Drilled Concrete Piers
31 63 33  Drilled Micropiles

31 64 00  Caissons
31 64 13  Box Caissons
31 64 16  Excavated Caissons
31 64 19  Floating Caissons
31 64 23  Open Caissons
31 64 26  Pneumatic Caissons
31 64 29  Sheeted Caissons

31 66 00  Special Foundations
31 66 13  Special Piles
31 66 16  Special Foundation Walls
  31 66 16.13  Anchored Foundation Walls
  31 66 16.23  Concrete Cribbing Foundation Walls
  31 66 16.26  Metal Cribbing Foundation Walls
  31 66 16.33  Manufactured Modular Foundation Walls
  31 66 16.43  Mechanically Stabilized Earth Foundation Walls
  31 66 16.46  Slurry Diaphragm Foundation Walls
  31 66 16.53  Soldier-Beam Foundation Walls
  31 66 16.56  Permanently-Anchored Soldier-Beam Foundation Walls
31 66 19  Refrigerated Foundations
31 68 00  Foundation Anchors
  31 68 13  Rock Foundation Anchors

31 70 00  TUNNELING AND MINING
31 71 00  Tunnel Excavation
  31 71 13  Shield Driving Tunnel Excavation
  31 71 16  Tunnel Excavation by Drilling and Blasting
  31 71 19  Tunnel Excavation by Tunnel Boring Machine
31 72 00  Tunnel Support Systems
  31 72 13  Rock Reinforcement and Initial Support
  31 72 16  Steel Ribs and Lagging
31 73 00  Tunnel Grouting
  31 73 13  Cement Tunnel Grouting
  31 73 16  Chemical Tunnel Grouting
31 74 00  Tunnel Construction
  31 74 13  Cast-in-Place Concrete Tunnel Lining
  31 74 16  Precast Concrete Tunnel Lining
  31 74 19  Shotcrete Tunnel Lining
31 75 00  Shaft Construction
  31 75 13  Cast-in-Place Concrete Shaft Lining
  31 75 16  Precast Concrete Shaft Lining
31 77 00  Submersible Tube Tunnels
  31 77 13  Trench Excavation for Submerged Tunnels
  31 77 16  Tube Construction (Outfitting Tunnel Tubes)
  31 77 19  Floating and Laying Submerged Tunnels

31 80 00  Unassigned
31 90 00  Unassigned
DIVISION 32 – EXTERIOR IMPROVEMENTS

32 00 00  EXTERIOR IMPROVEMENTS
  32 01 00  Operation and Maintenance of Exterior Improvements
    32 01 11  Paving Cleaning
       32 01 11.51  Rubber and Paint Removal from Paving
       32 01 11.52  Rubber Removal from Paving
       32 01 11.53  Paint Removal from Paving
    32 01 13  Flexible Paving Surface Treatment
       32 01 13.61  Slurry Seal (Latex Modified)
       32 01 13.62  Asphalt Surface Treatment
    32 01 16  Flexible Paving Rehabilitation
       32 01 16.71  Cold Milling Asphalt Paving
       32 01 16.72  Asphalt Paving Reuse
       32 01 16.73  In Place Cold Reused Asphalt Paving
       32 01 16.74  In Place Hot Reused Asphalt Paving
       32 01 16.75  Heater Scarifying of Asphalt Paving
    32 01 17  Flexible Paving Repair
       32 01 17.61  Sealing Cracks in Asphalt Paving
       32 01 17.62  Stress-Absorbing Membrane Interlayer
    32 01 19  Rigid Paving Surface Treatment
       32 01 19.61  Sealing of Joints in Rigid Paving
       32 01 19.62  Patching of Rigid Paving
    32 01 23  Base Course Reconditioning
    32 01 26  Rigid Paving Rehabilitation
       32 01 26.71  Grooving of Concrete Paving
       32 01 26.72  Grinding of Concrete Paving
       32 01 26.73  Milling of Concrete Paving
       32 01 26.74  Concrete Overlays
       32 01 26.75  Concrete Paving Reuse
    32 01 29  Rigid Paving Repair
       32 01 29.61  Partial Depth Patching of Rigid Paving
       32 01 29.62  Concrete Paving Raising
       32 01 29.63  Subsealing and Stabilization
    32 01 30  Operation and Maintenance of Site Improvements
    32 01 80  Operation and Maintenance of Irrigation
    32 01 90  Operation and Maintenance of Planting
       32 01 90.13  Fertilizing
       32 01 90.16  Amending Soils
       32 01 90.19  Mowing
       32 01 90.23  Pruning
       32 01 90.26  Watering
       32 01 90.29  Topsoil Preservation
       32 01 90.33  Tree and Shrub Preservation

32 05 00  Common Work Results for Exterior Improvements
  32 05 13  Soils for Exterior Improvements
  32 05 16  Aggregates for Exterior Improvements
  32 05 19  Geosynthetics for Exterior Improvements
32 05 19.13 Geotextiles for Exterior Improvements
32 05 19.16 Geomembranes for Exterior Improvements
32 05 19.19 Geogrids for Exterior Improvements
32 05 23 Cement and Concrete for Exterior Improvements
32 05 33 Common Work Results for Planting

32 06 00 Schedules for Exterior Improvements
32 06 10 Schedules for Bases, Ballasts, and Paving
  32 06 10.13 Pedestrian Walkway Schedule
32 06 30 Schedules for Site Improvements
  32 06 30.13 Retaining Wall Schedule
32 06 80 Schedules for Irrigation
  32 06 80.13 Irrigation Piping Schedule
32 06 90 Schedules for Planting
  32 06 90.13 Planting Schedule

32 08 00 Commissioning of Exterior Improvements

32 10 00 BASES, BALLASTS, AND PAVING

32 11 00 Base Courses
32 11 13 Subgrade Modifications
  32 11 13.13 Lime-Treated Subgrades
  32 11 13.16 Bituminous-Treated Subgrades
32 11 16 Subbase Courses
  32 11 16.13 Sand-Clay Subbase Courses
  32 11 16.16 Aggregate Subbase Courses
32 11 23 Aggregate Base Courses
  32 11 23.13 Sand-Clay Base Courses
  32 11 23.23 Base Course Drainage Layers
32 11 26 Asphaltic Base Courses
  32 11 26.13 Plant Mix Asphaltic Base Courses
  32 11 26.16 Road Mix Asphaltic Base Courses
  32 11 26.19 Bituminous-Stabilized Base Courses
32 11 29 Lime Treated Base Courses
  32 11 29.13 Lime-Fly Ash-Treated Base Courses
32 11 33 Cement-Treated Base Courses
  32 11 33.13 Portland Cement-Stabilized Base Courses
32 11 36 Concrete Base Courses
  32 11 36.13 Lean Concrete Base Courses
  32 11 36.16 Plain Cement Concrete Base Courses
  32 11 36.19 Hydraulic Cement Concrete Base Courses

32 12 00 Flexible Paving
32 12 13 Preparatory Coats
  32 12 13.13 Tack Coats
  32 12 13.16 Asphaltic Tack Coats
  32 12 13.19 Prime Coats
  32 12 13.23 Asphaltic Prime Coats
32 12 16 Asphalt Paving
32 12 16.13 Plant-Mix Asphalt Paving
32 12 16.16 Road-Mix Asphalt Paving
32 12 16.19 Cold-Mix Asphalt Paving
32 12 16.23 Reinforced Asphalt Paving
32 12 16.26 Fiber-Modified Asphalt Paving
32 12 16.29 Polymer-Modified Asphalt Paving
32 12 16.33 Granulated Rubber-Modified Asphalt Paving
32 12 16.36 Athletic Asphalt Paving
32 12 19 Asphalt Paving Wearing Courses
  32 12 19.13 Road-Mix Asphalt Paving Wearing Courses
  32 12 19.16 Resin-Modified Asphalt Paving Wearing Courses
  32 12 19.19 Porous Friction Asphalt Paving Wearing Courses
32 12 33 Flexible Paving Surface Treatments
32 12 36 Seal Coats
  32 12 36.13 Asphaltic Seal and Fog Coats
  32 12 36.16 Coal Tar Seal Coats
  32 12 36.19 Coal Tar Seal Coats with Unvulcanized Rubber
  32 12 36.23 Fuel-Resistant Sealers
32 12 43 Porous Flexible Paving
32 12 73 Asphalt Paving Joint Sealants

32 13 00 Rigid Paving
32 13 13 Concrete Paving
  32 13 13.13 Exposed Aggregate Concrete Paving
  32 13 13.16 Power-Compacted Concrete Paving
  32 13 13.19 Prestressed Concrete Paving
  32 13 13.23 Concrete Paving Surface Treatment
32 13 16 Decorative Concrete Paving
  32 13 16.13 Patterned Concrete Paving
  32 13 16.16 Roller-Compacted Concrete Paving
  32 13 16.19 Imprinted Concrete Paving
  32 13 16.23 Stamped Concrete Paving
32 13 73 Concrete Paving Joint Sealants
  32 13 73.13 Fuel-Resistant Concrete Paving Joint Sealants
  32 13 73.16 Field-Molded Concrete Paving Joint Sealants
  32 13 73.19 Compression Concrete Paving Joint Sealants

32 14 00 Unit Paving
32 14 13 Precast Concrete Unit Paving
  32 14 13.13 Interlocking Precast Concrete Unit Paving
  32 14 13.16 Precast Concrete Unit Paving Slabs
  32 14 13.19 Porous Precast Concrete Unit Paving
32 14 16 Brick Unit Paving
32 14 23 Asphalt Unit Paving
32 14 26 Wood Paving
32 14 29 Recycled-Rubber Paving
32 14 40 Stone Paving
32 14 43 Porous Unit Paving

32 15 00 Aggregate Surfacing
32 15 13 Cinder Surfacing
32 15 40 Crushed Stone Surfacing

32 16 00 Curbs and Gutters
32 16 13 Concrete Curbs and Gutters
32 16 13.13 Cast-In-Place Concrete Curbs and Gutters
32 16 13.16 Cast-In-Place Concrete Curbs
32 16 13.19 Cast-In-Place Concrete Gutters
32 16 13.23 Precast Concrete Curbs and Gutters
32 16 13.26 Precast Concrete Curbs
32 16 13.29 Precast Concrete Gutters
32 16 19 Asphalt Curbs
32 16 40 Stone Curbs
32 16 40.13 Manufactured Stone Curbs

32 17 00 Paving Specialties
32 17 13 Parking Bumpers
32 17 13.13 Metal Parking Bumpers
32 17 13.16 Plastic Parking Bumpers
32 17 13.19 Precast Concrete Parking Bumpers
32 17 13.23 Rubber Parking Bumpers
32 17 13.26 Wood Parking Bumpers
32 17 23 Pavement Markings
32 17 23.13 Painted Pavement Markings
32 17 23.23 Raised Pavement Markings
32 17 23.33 Plastic Pavement Markings
32 17 26 Tactile Warning Surfacing

32 18 00 Athletic and Recreational Surfacing
32 18 13 Synthetic Grass Surfacing
32 18 16 Synthetic Resilient Surfacing
32 18 16.13 Playground Protective Surfacing
32 18 23 Athletic Surfacing
32 18 23.13 Baseball Field Surfacing
32 18 23.16 Natural Baseball Field Surfacing
32 18 23.19 Synthetic Baseball Field Surfacing
32 18 23.23 Field Sport Surfacing
32 18 23.26 Natural Field Sport Surfacing
32 18 23.29 Synthetic Field Sport Surfacing
32 18 23.33 Running Track Surfacing
32 18 23.36 Natural Running Track Surfacing
32 18 23.39 Synthetic Running Track Surfacing
32 18 23.43 Recreational Court Surfacing
32 18 23.53 Tennis Court Surfacing
32 18 23.56 Natural Tennis Court Surfacing
32 18 23.59 Synthetic Tennis Court Surfacing

32 20 00 Unassigned

32 30 00 SITE IMPROVEMENTS
32 31 00 Fences and Gates
32 31 13 Chain Link Fences and Gates
32 31 13.23 Recreational Court Fences and Gates
32 31 13.26 Tennis Court Fences and Gates
32 31 13.29 Tennis Court Wind Breaker
32 31 13.33 Chain Link Backstops
32 31 13.53 High-Security Chain Link Fences and Gates
32 31 16 Welded Wire Fences and Gates
32 31 19 Decorative Metal Fences and Gates
32 31 23 Plastic Fences and Gates
32 31 26 Wire Fences and Gates
32 31 29  Wood Fences and Gates

32 32 00  Retaining Walls
  32 32 13  Cast-in-Place Concrete Retaining Walls
  32 32 16  Precast Concrete Retaining Walls
  32 32 19  Unit Masonry Retaining Walls
  32 32 23  Segmental Retaining Walls
    32 32 23.13  Segmental Concrete Unit Masonry Retaining Walls
    32 32 23.16  Manufactured Modular Walls
  32 32 26  Metal Crib Retaining Walls
  32 32 29  Timber Retaining Walls
  32 32 34  Reinforced Soil Retaining Walls
  32 32 36  Gabion Retaining Walls
  32 32 43  Soldier-Beam Retaining Walls

32 32 23.13  Segmental Concrete Unit Masonry Retaining Walls
32 32 23.16  Manufactured Modular Walls

32 32 23  Segmental Retaining Walls
  32 32 23.13  Segmental Concrete Unit Masonry Retaining Walls
  32 32 23.16  Manufactured Modular Walls

32 34 00  Fabricated Bridges

32 35 00  Screening Devices
  32 35 13  Screens and Louvers
  32 35 16  Sound Barriers

32 40 00  Unassigned

32 50 00  Unassigned

32 60 00  Unassigned

32 70 00  WETLANDS
  32 71 00  Constructed Wetlands
  32 72 00  Wetlands Restoration

32 72 00  Wetlands Restoration

32 80 00  IRRIGATION
  32 82 00  Irrigation Pumps
  32 84 00  Planting Irrigation
    32 84 13  Drip Irrigation
    32 84 23  Underground Sprinklers

32 84 00  Planting Irrigation
  32 84 13  Drip Irrigation
  32 84 23  Underground Sprinklers

32 86 00  Agricultural Irrigation

32 86 00  Agricultural Irrigation

32 90 00  PLANTING
  32 91 00  Planting Preparation
    32 91 13  Soil Preparation
      32 91 13.13  Hydro-Punching
      32 91 13.16  Mulching
      32 91 13.19  Planting Soil Mixing
      32 91 13.23  Structural Soil Mixing
      32 91 13.26  Planting Beds
    32 91 16  Planting Soil Stabilization
      32 91 16.13  Blanket Planting Soil Stabilization
      32 91 16.16  Mat Planting Soil Stabilization
      32 91 16.19  Netting Planting Soil Stabilization
    32 91 19  Landscape Grading
      32 91 19.13  Topsoil Placement and Grading

32 91 00  Planting Preparation
  32 91 13  Soil Preparation
    32 91 13.13  Hydro-Punching
    32 91 13.16  Mulching
    32 91 13.19  Planting Soil Mixing
    32 91 13.23  Structural Soil Mixing
    32 91 13.26  Planting Beds
  32 91 16  Planting Soil Stabilization
    32 91 16.13  Blanket Planting Soil Stabilization
    32 91 16.16  Mat Planting Soil Stabilization
    32 91 16.19  Netting Planting Soil Stabilization
  32 91 19  Landscape Grading
    32 91 19.13  Topsoil Placement and Grading

32 92 00  Turf and Grasses
    32 92 13  Hydro-Mulching
    32 92 16  Plugging
    32 92 19  Seeding

32 92 00  Turf and Grasses
  32 92 13  Hydro-Mulching
  32 92 16  Plugging
  32 92 19  Seeding
32 92 19.13 Mechanical Seeding
32 92 19.16 Hydraulic Seeding
32 92 23 Sodding
32 92 26 Sprigging
32 92 26.13 Stolonizing
32 93 00 Plants
  32 93 13 Ground Covers
  32 93 23 Plants and Bulbs
  32 93 33 Shrubs
  32 93 43 Trees
32 94 00 Planting Accessories
  32 94 13 Landscape Edging
  32 94 16 Landscape Timbers
  32 94 33 Planters
  32 94 43 Tree Grates
  32 94 46 Tree Grids
32 96 00 Transplanting
  32 96 13 Ground Cover Transplanting
  32 96 23 Plant and Bulb Transplanting
  32 96 33 Shrub Transplanting
  32 96 43 Tree Transplanting
## DIVISION 33 – UTILITIES

### 33 00 00 UTILITIES

#### 33 01 00 Operation and Maintenance of Utilities

- **33 01 10** Operation and Maintenance of Water Utilities
- **33 01 20** Operation and Maintenance of Wells
- **33 01 30** Operation and Maintenance of Sewer Utilities
  - **33 01 30.13** Sewer and Manhole Testing
  - **33 01 30.16** TV Inspection of Sewer Pipelines
  - **33 01 30.51** Maintenance of Sewer Utilities
  - **33 01 30.52** Pond and Reservoir Maintenance
  - **33 01 30.61** Sewer and Pipe Joint Sealing
  - **33 01 30.62** Manhole Grout Sealing
  - **33 01 30.71** Rehabilitation of Sewer Utilities
  - **33 01 30.72** Relining Sewers
- **33 01 50** Operation and Maintenance of Fuel Distribution Lines
  - **33 01 50.51** Cleaning Fuel-Storage Tanks
  - **33 01 50.71** Lining of Steel Fuel-Storage Tanks
- **33 01 60** Operation and Maintenance of Hydronic and Steam Energy Utilities
- **33 01 70** Operation and Maintenance of Electrical Utilities
- **33 01 80** Operation and Maintenance of Communications Utilities

#### 33 05 00 Common Work Results for Utilities

- **33 05 13** Manholes and Structures
  - **33 05 13.13** Manhole Grade Adjustment
- **33 05 16** Utility Structures
  - **33 05 16.13** Precast Concrete Utility Structures
  - **33 05 16.53** Rebuilding Utility Structures
- **33 05 19** Pressure Piping Tied Joint Restraint System
- **33 05 23** Trenchless Utility Installation
  - **33 05 23.13** Utility Horizontal Directional Drilling
  - **33 05 23.16** Utility Pipe Jacking
  - **33 05 23.19** Microtunneling
  - **33 05 23.23** Utility Pipe Ramming
  - **33 05 23.26** Utility Impact Moling
  - **33 05 23.29** Cable Trenching and Plowing
- **33 05 26** Utility Line Signs, Markers, and Flags

#### 33 06 00 Schedules for Utilities

- **33 06 10** Schedules for Water Utilities
- **33 06 20** Schedules for Wells
- **33 06 30** Schedules for Sanitary Sewerage Utilities
- **33 06 40** Schedules for Storm Drainage Utilities
  - **33 06 40.13** Storm Drainage Schedule
- **33 06 50** Schedules for Fuel Distribution Utilities
- **33 06 60** Schedules for Hydronic and Steam Energy Utilities
- **33 06 70** Schedules for Electrical Utilities
- **33 06 80** Schedules for Communications Utilities

#### 33 08 00 Commissioning of Utilities

- **33 08 10** Commissioning of Water Utilities
- **33 08 20** Commissioning of Wells
33 08 30 Commissioning of Sanitary Sewerage Utilities
33 08 40 Commissioning of Storm Drainage Utilities
33 08 50 Commissioning of Fuel Distribution Utilities
33 08 60 Commissioning of Hydronic and Steam Energy Utilities
33 08 70 Commissioning of Electrical Utilities
33 08 80 Commissioning of Communications Utilities

33 09 00 Instrumentation and Control for Utilities
33 09 10 Instrumentation and Control for Water Utilities
33 09 20 Instrumentation and Control for Wells
33 09 30 Instrumentation and Control for Sanitary Sewerage Utilities
33 09 40 Instrumentation and Control for Storm Drainage Utilities
33 09 50 Instrumentation and Control for Fuel Distribution Utilities
33 09 60 Instrumentation and Control for Hydronic and Steam Energy Utilities
33 09 70 Instrumentation and Control for Electrical Utilities
33 09 80 Instrumentation and Control for Communications Utilities

33 10 00 WATER UTILITIES
33 11 00 Water Utility Distribution Piping
33 11 13 Public Water Utility Distribution Piping
33 11 16 Site Water Utility Distribution Piping
33 11 19 Fire Suppression Utility Water Distribution Piping
33 12 00 Water Utility Distribution Equipment
33 12 13 Water Service Connections
33 12 13.13 Water Supply Backflow Preventer Assemblies
33 12 16 Water Utility Distribution Valves
33 12 19 Water Utility Distribution Fire Hydrants
33 12 23 Water Utility Pumping Stations
33 12 33 Water Utility Metering

33 13 00 Disinfecting of Water Utility Distribution
33 16 00 Water Utility Storage Tanks
33 16 13 Aboveground Water Utility Storage Tanks
33 16 13.13 Steel Aboveground Water Utility Storage Tanks
33 16 13.16 Prestressed Concrete Aboveground Water Utility Storage Tanks
33 16 16 Underground Water Utility Storage Tanks
33 16 19 Elevated Water Utility Storage Tanks

33 20 00 WELLS
33 21 00 Water Supply Wells
33 21 13 Public Water Supply Wells
33 21 16 Irrigation Water Wells
33 22 00 Test Wells
33 23 00 Extraction Wells
33 24 00 Monitoring Wells
33 24 13 Groundwater Monitoring Wells
33 25 00 Recharge Wells
33 26 00 Relief Wells
33 29 00 Well Abandonment

33 30 00 SANITARY SEWERAGE UTILITIES
33 31 00 Sanitary Utility Sewerage Piping
33 31 13 Public Sanitary Utility Sewerage Piping
33 32 00  Wastewater Utility Pumping Stations
33 32 13  Packaged Utility Lift Stations
  33 32 13.13  Packaged Sewage Lift Stations, Wet Well Type
33 32 16  Packaged Utility Wastewater Pumping Stations
  33 32 16.13  Packaged Sewage Grinder Pumping Units
33 32 19  Public Utility Wastewater Pumping Stations

33 33 00  Low Pressure Utility Sewerage
33 33 13  Sanitary Utility Sewerage
33 33 16  Combined Utility Sewerage

33 34 00  Sanitary Utility Sewerage Force Mains
33 34 13  Sanitary Utility Sewerage Inverted Siphons

33 36 00  Utility Septic Tanks
33 36 13  Utility Septic Tank and Effluent Wet Wells
33 36 16  Utility Septic Tank Effluent Pumps
33 36 33  Utility Drainage Field

33 39 00  Sanitary Utility Sewerage Structures
33 39 13  Sanitary Utility Sewerage Manholes, Frames, and Covers
33 39 23  Sanitary Utility Sewerage Cleanouts

33 40 00  STORM DRAINAGE UTILITIES

33 41 00  Storm Utility Drainage Piping
33 41 13  Public Storm Utility Drainage Piping

33 42 00  Culverts
33 42 13  Pipe Culverts
  33 42 13.13  Public Pipe Culverts
33 42 16  Concrete Culverts
  33 42 16.13  Precast Concrete Culverts
  33 42 16.16  Cast-in-Place Concrete Culverts

33 44 00  Storm Utility Water Drains
33 44 13  Utility Area Drains
  33 44 13.13  Catchbasins
33 44 16  Utility Trench Drains
33 44 19  Utility Storm Water Treatment
  33 44 19.13  In-Line Utility Storm Water Filters
  33 44 19.16  Catch Basin Insert Utility Storm Water Filters
  33 44 19.19  Utility Oil and Gas Separators

33 45 00  Storm Utility Drainage Pumps

33 46 00  Subdrainage
33 46 13  Foundation Drainage
  33 46 13.13  Foundation Drainage Piping
  33 46 13.16  Geocomposite Foundation Drainage
33 46 16  Subdrainage Piping
  33 46 16.13  Subdrainage Piping
    33 46 16.16  Geocomposite Subdrainage
    33 46 16.19  Pipe Underdrains
  33 46 19  Underslab Drainage
    33 46 19.13  Underslab Drainage Piping
    33 46 19.16  Geocomposite Underslab Drainage
33 46 23  Drainage Layers
33 46 23.16 Gravel Drainage Layers
33 46 23.19 Geosynthetic Drainage Layers
33 46 26 Geotextile Subsurface Drainage Filtration
33 46 33 Retaining Wall Drainage

33 47 00 Ponds and Reservoirs
33 47 13 Pond and Reservoir Liners
    33 47 13.13 Pond Liners
    33 47 13.53 Reservoir Liners
33 47 16 Pond and Reservoir Covers
    33 47 16.13 Pond Covers
    33 47 16.53 Reservoir Covers
33 47 19 Water Ponds and Reservoirs
    33 47 19.13 Water Distribution Ponds
    33 47 19.16 Water Retainage Reservoirs
    33 47 19.23 Cooling Water Ponds
    33 47 19.33 Fire-Protection Water Ponds
33 47 23 Sanitary Sewerage Lagoons
33 47 26 Storm Drainage Ponds and Reservoirs
    33 47 26.13 Stabilization Ponds
    33 47 26.16 Retention Basins
    33 47 26.19 Leaching Pits

33 49 00 Storm Drainage Structures
33 49 13 Storm Drainage Manholes, Frames, and Covers
33 49 23 Storm Drainage Water Retention Structures

33 50 00 FUEL DISTRIBUTION UTILITIES

33 51 00 Natural-Gas Distribution
33 51 13 Natural-Gas Piping
33 51 33 Natural-Gas Metering

33 52 00 Liquid Fuel Distribution
33 52 13 Fuel-Oil Distribution
    33 52 13.13 Fuel-Oil Piping
    33 52 13.23 Fuel-Oil Pumps
33 52 16 Gasoline Distribution
    33 52 16.13 Gasoline Piping
    33 52 16.23 Gasoline Pumps
33 52 19 Diesel Fuel Distribution
    33 52 19.13 Diesel Fuel Piping
    33 52 19.23 Diesel Fuel Pumps
33 52 43 Aviation Fuel Distribution
    33 52 43.13 Aviation Fuel Piping
    33 52 43.16 Aviation Fuel Connections
    33 52 43.19 Aviation Fuel Grounding
    33 52 43.23 Aviation Fuel Pumps

33 56 00 Fuel-Storage Tanks
33 56 13 Aboveground Fuel-Storage Tanks
33 56 16 Underground Fuel-Storage Tanks
33 56 43 Aviation Fuel-Storage Tanks
    33 56 43.13 Aboveground Aviation Fuel-Storage Tanks
    33 56 43.16 Underground Aviation Fuel-Storage Tanks
33 56 53 Compressed Gases Storage Tanks
### 33 60 00  HYDRONIC AND STEAM ENERGY UTILITIES

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 61 00</td>
<td>Hydronic Energy Distribution</td>
</tr>
<tr>
<td>33 61 13</td>
<td>Underground Hydronic Energy Distribution</td>
</tr>
<tr>
<td>33 61 23</td>
<td>Aboveground Hydronic Energy Distribution</td>
</tr>
<tr>
<td>33 61 33</td>
<td>Hydronic Energy Distribution Metering</td>
</tr>
<tr>
<td>33 63 00</td>
<td>Steam Energy Distribution</td>
</tr>
<tr>
<td>33 63 13</td>
<td>Underground Steam and Condensate Distribution Piping</td>
</tr>
<tr>
<td>33 63 23</td>
<td>Aboveground Steam and Condensate Distribution Piping</td>
</tr>
<tr>
<td>33 63 33</td>
<td>Steam Energy Distribution Metering</td>
</tr>
</tbody>
</table>

### 33 70 00  ELECTRICAL UTILITIES

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 71 00</td>
<td>Electrical Utility Transmission and Distribution</td>
</tr>
<tr>
<td>33 71 13</td>
<td>Electrical Utility Towers</td>
</tr>
<tr>
<td>33 71.13.13</td>
<td>Precast Concrete Electrical Utility Towers</td>
</tr>
<tr>
<td>33 71.13.23</td>
<td>Steel Electrical Utility Towers</td>
</tr>
<tr>
<td>33 71.13.33</td>
<td>Wood Electrical Utility Towers</td>
</tr>
<tr>
<td>33 71 16</td>
<td>Electrical Utility Poles</td>
</tr>
<tr>
<td>33 71.16.13</td>
<td>Precast Concrete Electrical Utility Poles</td>
</tr>
<tr>
<td>33 71.16.23</td>
<td>Steel Electrical Utility Poles</td>
</tr>
<tr>
<td>33 71.16.33</td>
<td>Wood Electrical Utility Poles</td>
</tr>
<tr>
<td>33 71 19</td>
<td>Electrical Underground Ducts and Manholes</td>
</tr>
<tr>
<td>33 71 23</td>
<td>Insulators and Fittings</td>
</tr>
<tr>
<td>33 71.23.13</td>
<td>Suspension Insulators</td>
</tr>
<tr>
<td>33 71.23.16</td>
<td>Post Insulators</td>
</tr>
<tr>
<td>33 71.23.23</td>
<td>Potheads</td>
</tr>
<tr>
<td>33 71 26</td>
<td>Transmission and Distribution Equipment</td>
</tr>
<tr>
<td>33 71 26.13</td>
<td>Capacitor Banks</td>
</tr>
<tr>
<td>33 71 26.16</td>
<td>Coupling Capacitors</td>
</tr>
<tr>
<td>33 71 26.23</td>
<td>Current Transformers</td>
</tr>
<tr>
<td>33 71 26.26</td>
<td>Potential Transformers</td>
</tr>
<tr>
<td>33 71 36</td>
<td>Extra-High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 36.13</td>
<td>Overhead Extra-High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 39</td>
<td>High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 39.13</td>
<td>Overhead High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 39.23</td>
<td>Underground High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 39.33</td>
<td>Underwater High-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 49</td>
<td>Medium-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 49.13</td>
<td>Overhead Medium-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 49.23</td>
<td>Underground Medium-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 49.33</td>
<td>Underwater Medium-Voltage Wiring</td>
</tr>
<tr>
<td>33 71 53</td>
<td>Direct-Current Transmission</td>
</tr>
<tr>
<td>33 71 73</td>
<td>Electrical Utility Services</td>
</tr>
<tr>
<td>33 71 73.33</td>
<td>Electric Meters</td>
</tr>
<tr>
<td>33 71 83</td>
<td>Transmission and Distribution Specialties</td>
</tr>
</tbody>
</table>

### 33 72 00  Utility Substations

<table>
<thead>
<tr>
<th>Number</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 72 13</td>
<td>Deadend Structures</td>
</tr>
<tr>
<td>33 72 23</td>
<td>Structural Bus Supports</td>
</tr>
<tr>
<td>33 72 23.13</td>
<td>Bus Support Insulators</td>
</tr>
<tr>
<td>33 72 26</td>
<td>Substation Bus Assemblies</td>
</tr>
<tr>
<td>33 72 26.13</td>
<td>Aluminum Substation Bus Assemblies</td>
</tr>
<tr>
<td>33 72 26.16</td>
<td>Copper Substation Bus Assemblies</td>
</tr>
<tr>
<td>33 72 33</td>
<td>Control House Equipment</td>
</tr>
</tbody>
</table>
33 72 33.13 Relays
33 72 33.16 Substation Control Panels
33 72 33.23 Power-Line Carriers
33 72 33.26 Substation Metering
33 72 33.33 Raceway and Boxes for Utility Substations
33 72 33.36 Cable Trays for Utility Substations
33 72 33.43 Substation Backup Batteries
33 72 33.46 Substation Converter Stations
33 72 43 Substation Control Wiring

33 73 00 Utility Transformers
33 73 13 Liquid-Filled Utility Transformers
33 73 23 Dry-Type Utility Transformers

33 75 00 High-Voltage Switchgear and Protection Devices
33 75 13 Air High-Voltage Circuit Breaker
33 75 16 Oil High-Voltage Circuit Breaker
33 75 19 Gas High-Voltage Circuit Breaker
33 75 23 Vacuum High-Voltage Circuit Breaker
33 75 36 High-Voltage Utility Fuses
33 75 39 High-Voltage Surge Arresters
33 75 43 Shunt Reactors

33 77 00 Medium-Voltage Utility Switchgear and Protection Devices
33 77 13 Air Medium-Voltage Circuit Breaker
33 77 16 Oil Medium-Voltage Circuit Breaker
33 77 19 Gas Medium-Voltage Circuit Breaker
33 77 23 Vacuum Medium-Voltage Circuit Breaker
33 77 26 Medium-Voltage Utility Fusible Interrupter Switchgear
33 77 33 Medium-Voltage Utility Cutouts
33 77 36 Medium-Voltage Utility Fuses
33 77 39 Medium-Voltage Utility Surge Arresters
33 77 53 Medium-Voltage Utility Reclosers

33 79 00 Site Grounding
33 79 13 Site Improvements Grounding
33 79 13.13 Electric Fence Grounding
33 79 16 Tower Grounding
33 79 16.13 Communications Tower Grounding
33 79 16.16 Antenna Tower Grounding
33 79 19 Utilities Grounding
33 79 19.13 Electrical Utilities Grounding
33 79 19.16 Communications Utilities Grounding
33 79 23 Utility Substation Grounding
33 79 83 Site Grounding Conductors
33 79 83.13 Grounding Wire, Bar, and Rod
33 79 83.16 Chemical Rod
33 79 83.23 Conductive Concrete
33 79 83.33 Earth Grounding Enhancement
33 79 83.43 Deep Earth Grounding
33 79 93 Site Lightning Protection
33 79 93.13 Lightning Strike Counters
33 79 93.16 Lightning Strike Warning Devices

33 80 00 COMMUNICATIONS UTILITIES
33 81 00 Communications Structures
33 81 13 Communications Transmission Towers
<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>33 81 16</td>
<td>Antenna Towers</td>
</tr>
<tr>
<td>33 81 19</td>
<td>Communications Utility Poles</td>
</tr>
<tr>
<td>33 81 23</td>
<td>Aerial Cable Installation Hardware</td>
</tr>
<tr>
<td>33 81 26</td>
<td>Communications Underground Ducts, Manholes, and Handholes</td>
</tr>
<tr>
<td>33 81 29</td>
<td>Communications Vaults, Pedestals and Enclosures</td>
</tr>
<tr>
<td>33 81 33</td>
<td>Communications Blowers, Fans, and Ventilation</td>
</tr>
<tr>
<td>33 82 00</td>
<td><strong>Communications Distribution</strong></td>
</tr>
<tr>
<td>33 82 13</td>
<td>Copper Communications Distribution Cabling</td>
</tr>
<tr>
<td>33 82 13.13</td>
<td>Copper Splicing and Terminations</td>
</tr>
<tr>
<td>33 82 23</td>
<td>Optical Fiber Communications Distribution Cabling</td>
</tr>
<tr>
<td>33 82 23.13</td>
<td>Optical Fiber Splicing and Terminations</td>
</tr>
<tr>
<td>33 82 33</td>
<td>Coaxial Communications Distribution Cabling</td>
</tr>
<tr>
<td>33 82 33.13</td>
<td>Coaxial Splicing and Terminations</td>
</tr>
<tr>
<td>33 82 43</td>
<td>Grounding and Bonding for Communications Distribution</td>
</tr>
<tr>
<td>33 82 46</td>
<td>Cable Pressurization Equipment</td>
</tr>
<tr>
<td>33 82 53</td>
<td>Cleaning, Lubrication and Restoration Chemicals</td>
</tr>
<tr>
<td>33 83 00</td>
<td><strong>Wireless Communications Distribution</strong></td>
</tr>
<tr>
<td>33 83 13</td>
<td>Laser Transmitters and Receivers</td>
</tr>
<tr>
<td>33 83 16</td>
<td>Microwave Transmitters and Receivers</td>
</tr>
<tr>
<td>33 83 19</td>
<td>Infrared Transmitters and Receivers</td>
</tr>
<tr>
<td>33 83 23</td>
<td>UHF/VHF Transmitters and Antennas</td>
</tr>
<tr>
<td>33 90 00</td>
<td><strong>Unassigned</strong></td>
</tr>
</tbody>
</table>
DIVISION 34 – TRANSPORTATION

34 00 00 TRANSPORTATION

34 01 00 Operation and Maintenance of Transportation

- 34 01 13 Operation and Maintenance of Roadways
- 34 01 23 Operation and Maintenance of Railways
  - 34 01 23.13 Track Removal and Salvage
  - 34 01 23.81 Track Crosstie Replacement
- 34 01 33 Operation and Maintenance of Airfields
- 34 01 43 Operation and Maintenance of Bridges

34 05 00 Common Work Results for Transportation

- 34 05 13 Common Work Results for Roadways
- 34 05 23 Common Work Results for Railways
- 34 05 33 Common Work Results for Airports
- 34 05 43 Common Work Results for Bridges

34 06 00 Schedules for Transportation

- 34 06 13 Schedules for Roadways
- 34 06 23 Schedules for Railways
- 34 06 33 Schedules for Airfields
- 34 06 43 Schedules for Bridges

34 08 00 Commissioning of Transportation

- 34 08 13 Commissioning of Roadways
- 34 08 23 Commissioning of Railways
- 34 08 33 Commissioning of Airfields
- 34 08 43 Commissioning of Bridges

34 10 00 GUIDEWAYS/RAILWAYS

34 11 00 Rail Tracks

- 34 11 13 Track Rails
  - 34 11 13.13 Light Rail Track
  - 34 11 13.23 Heavy Rail Track
- 34 11 16 Welded Track Rails
  - 34 11 16.13 In-Track Butt-Welded Track Rail
  - 34 11 16.16 Pressure-Welded Track Rail
  - 34 11 16.19 Thermite-Welded Track Rail
- 34 11 19 Track Rail Joints
- 34 11 23 Special Trackwork
  - 34 11 23.13 Ballasted Special Track Rail
  - 34 11 23.16 Direct-Fixation Track
  - 34 11 23.23 Running Rail
  - 34 11 23.26 Precurved Running Rail
- 34 11 26 Ballasted Track Rail
  - 34 11 26.13 Track Rail Ballast
  - 34 11 26.16 Track Rail Subballast
- 34 11 29 Embedded Track Rail
- 34 11 33 Track Cross Ties
34 11 33.13 Concrete Track Cross Ties
34 11 33.16 Timber Track Cross Ties
34 11 33.19 Resilient Track Cross Ties
34 11 36 Track Rail Fasteners
34 11 36.13 Direct-Fixation Fasteners
34 11 39 Track Collector Pans
34 11 39.13 Fiberglass Track Collector Pans
34 11 93 Track Appurtenances and Accessories

34 12 00 Monorails
34 12 13 Elevated Monorails
34 12 16 On-Grade Monorails
34 12 19 Below-Grade Monorails
34 12 23 Maglev Monorail
34 12 63 Monorail Track

34 13 00 Funiculars
34 13 13 Inclined Railway

34 14 00 Cable Transportation
34 14 13 Aerial Tramways
34 14 19 Gondolas
34 14 26 Funitels
34 14 33 Chairlifts
34 14 39 Surface Lifts
34 14 46 Ropeway Tows
34 14 53 Cable Car Systems

34 20 00 Traction Power
34 21 00 Traction Power Distribution
34 21 13 High Power Static Frequency Converters
34 21 16 Traction Power Substations
34 21 16.13 AC Traction Power Substations
34 21 16.16 DC Traction Power Substations
34 21 19 Traction Power Switchgear
34 21 19.13 AC Traction Power Switchgear
34 21 19.16 DC Traction Power Switchgear
34 21 19.23 Frequency Changer
34 21 23 Traction Power Transformer-Rectifier Units

34 23 00 Overhead Traction Power
34 23 13 Traction Power Poles
34 23 16 Overhead Cable Suspension
34 23 23 Overhead Traction Power Cables

34 24 00 Third Rail Traction Power
34 24 13 Bottom-Contact Third Rail
34 24 16 Side-Contact Third Rail
34 24 19 Top-Contact Third Rail

34 30 00 Unassigned

34 40 00 Transportation Signaling and Control Equipment
34 41 00 Roadway Signaling and Control Equipment
34 41 13 Traffic Signals
34 41 16 Traffic Control Equipment
34 41 23 Roadway Monitoring Equipment
34 42 00  Railway Signaling and Control Equipment
  34 42 13  Railway Signals
   34 42 13.13  General Railway Signal Requirements
   34 42 13.16  Signal Solid State Coded Track Circuits
  34 42 16  Train Control Wires and Cables
  34 42 19  Vital Interlocking Logic Controllers
  34 42 23  Railway Control Equipment
   34 42 23.13  Mainline Train Control Room Equipment
   34 42 23.16  Yard Train Control Room Equipment
   34 42 23.19  Integrated Control Equipment
   34 42 23.23  Interlocking Railway Control Equipment
  34 42 26  Rail Network Equipment
  34 42 29  Station Agent Equipment
  34 42 33  Yard Management Equipment
  34 42 36  Supervisory Control and Data Acquisition

34 43 00  Airfield Signaling and Control Equipment
  34 43 13  Airfield Signals
   34 43 13.13  Airfield Runway Identification Lights
   34 43 13.16  Airfield Runway and Taxiway Inset Lighting
  34 43 16  Airfield Landing Equipment
   34 43 16.13  Microwave Airfield Landing Equipment
   34 43 16.16  Instrument Airfield Landing Equipment
   34 43 16.19  Airfield Visual-Approach Slope Indicator Equipment
   34 43 16.23  Airfield Short-Approach Lighting Equipment
   34 43 16.26  Airfield Omni-Directional-Approach Lighting Equipment
   34 43 16.29  Airfield Low-Intensity-Approach Lighting Equipment
   34 43 16.33  Airfield High-Intensity-Approach Lighting Equipment
   34 43 16.36  Airfield Precision-Approach Path Indicator Equipment
  34 43 19  Airfield Traffic Control Tower Equipment
  34 43 23  Weather Observation Equipment
   34 43 23.13  Automatic Weather Observation Equipment
   34 43 23.16  Airfield Wind Cones
  34 43 26  Airfield Control Equipment
   34 43 26.13  Airfield Lighting Control Equipment
   34 43 26.16  Airfield Lighting PLC Control Equipment
   34 43 26.19  Airfield Lighting Regulator Assembly

34 48 00  Bridge Signaling and Control Equipment
  34 48 13  Operating Bridge Signals
  34 48 16  Operating Bridge Control Equipment

34 50 00  TRANSPORTATION FARE COLLECTION EQUIPMENT

34 52 00  Vehicle Fare Collection
  34 52 16  Vehicle Ticketing Equipment
   34 52 16.13  Vehicle Ticket Vending Machines
  34 52 26  Vehicle Fare Collection Equipment
   34 52 26.13  Vehicle Coin Fare Collection Equipment
   34 52 26.16  Vehicle Electronic Fare Collection Equipment
  34 52 33  Vehicle Fare Gates

34 54 00  Passenger Fare Collection
  34 54 16  Passenger Ticketing Equipment
34 54 16.13 Passenger Ticket Vending Machines
34 54 16.16 Passenger Addfare Machines
34 54 16.23 Passenger Intermodal Transfer Machines
34 54 26 Passenger Fare Collection Equipment
34 54 26.13 Passenger Coin Fare Collection Equipment
34 54 26.16 Passenger Electronic Fare Collection Equipment
34 54 33 Passenger Fare Gates

34 60 00 Unassigned

34 70 00 TRANSPORTATION CONSTRUCTION AND EQUIPMENT

34 71 00 Roadway Construction
34 71 13 Vehicle Barriers
  34 71 13.13 Vehicle Median Barriers
  34 71 13.16 Vehicle Crash Barriers
  34 71 13.19 Vehicle Traffic Barriers
  34 71 13.26 Vehicle Guide Rails
  34 71 13.29 Vehicle Barrier Fenders
34 71 16 Impact Attenuating Devices
34 71 19 Vehicle Delineators
  34 71 19.13 Fixed Vehicle Delineators
  34 71 19.16 Flexible Vehicle Delineators

34 72 00 Railway Construction
34 72 13 Railway Line
34 72 16 Railway Siding

34 73 00 Airfield Construction
34 73 13 Aircraft Tiedowns
34 73 16 Airfield Grounding
  34 73 16.13 Aircraft Static Grounding
34 73 19 Jet Blast Barriers
34 73 23 Manufactured Airfield Control Towers
34 73 26 Manufactured Helipads

34 75 00 Roadway Equipment
34 75 13 Operable Roadway Equipment
  34 75 13.13 Active Vehicle Barriers

34 76 00 Railway Equipment
34 76 13 Roadway Crossing Control Equipment

34 77 00 Transportation Equipment
34 77 13 Passenger Loading Bridges
  34 77 13.13 Fixed Aircraft Passenger Loading Bridges
  34 77 13.16 Movable Aircraft Passenger Loading Bridges
  34 77 13.23 Ship Passenger Loading Bridges
34 77 16 Baggage Handling Equipment
  34 77 16.13 Baggage Scanning Equipment
  34 77 16.16 Baggage Scales
  34 77 16.19 Baggage Conveying Equipment

34 80 00 BRIDGES

34 81 00 Bridge Machinery
34 81 13 Single-Swing Bridge Machinery
34 81 16 Double-Swing Bridge Machinery
34 81 19 Cantilever Bridge Machinery
34 81 23 Lift Bridge Machinery
34 81 26    Sliding Bridge Machinery

**34 82 00    Bridge Specialties**

34 82 13    Bridge Vibration Dampers
            34 82 13.13  Visco Elastic Bridge Vibration Dampers
            34 82 13.16  Tuned-Mass Bridge Vibration Dampers

34 82 19    Bridge Pier Protection
            34 82 19.13  Bridge Pier Ice Shields

34 90 00    Unassigned
DIVISION 35 – WATERWAY AND MARINE CONSTRUCTION

35 00 00  WATERWAY AND MARINE CONSTRUCTION
  35 01 00  Operation and Maintenance of Waterway and Marine Construction
    35 01 30  Operation and Maintenance of Coastal Construction
    35 01 40  Operation and Maintenance of Waterway Construction
      35 01 40.92  Preservation of Water Courses
    35 01 50  Operation and Maintenance of Marine Construction
      35 01 50.71  Channel Excavation, Cleaning and Deepening
    35 01 70  Operation and Maintenance of Dams
  35 05 00  Common Work Results for Waterway and Marine Construction
    35 05 30  Common Work Results for Coastal Construction
    35 05 40  Common Work Results for Waterway Construction
    35 05 50  Common Work Results for Marine Construction
    35 05 70  Common Work Results for Dams
  35 06 00  Schedules for Waterway and Marine Construction
    35 06 30  Schedules for Coastal Construction
    35 06 40  Schedules for Waterway Construction
    35 06 50  Schedules for Marine Construction
    35 06 70  Schedules for Dams
  35 08 00  Commissioning of Waterway and Marine Construction
    35 08 30  Commissioning of Coastal Construction
    35 08 40  Commissioning of Waterway Construction
    35 08 50  Commissioning of Marine Construction
    35 08 70  Commissioning of Dams

35 10 00  WATERWAY AND MARINE SIGNALING AND CONTROL EQUIPMENT
  35 11 00  Signaling and Control Equipment for Waterways
    35 11 13  Signaling Equipment for Waterways
    35 11 53  Control Equipment for Waterways
  35 12 00  Marine Signaling and Control Equipment
    35 12 13  Marine Signaling Equipment
      35 12 13.13  Lighthouse Equipment
    35 12 33  Marine Navigation Equipment
    35 12 53  Marine Control Equipment
  35 13 00  Signaling and Control Equipment for Dams
    35 13 13  Signaling Equipment for Dams
    35 13 53  Control Equipment for Dams

35 20 00  WATERWAY AND MARINE CONSTRUCTION AND EQUIPMENT
  35 20 13  Hydraulic Fabrications
    35 20 13.13  Hydraulic Bifurcation Panels
    35 20 13.16  Hydraulic Bulkheads
    35 20 13.19  Hydraulic Manifolds
    35 20 13.23  Hydraulic Penstocks
    35 20 13.26  Hydraulic Trashracks
    35 20 16  Hydraulic Gates
35 20 16.13 Hydraulic Spillway Crest Gates
35 20 16.19 Hydraulic Head Gates
35 20 16.26 Hydraulic Sluice Gates
35 20 16.33 Hydraulic Miter Gates
35 20 16.39 Hydraulic Sector Gates
35 20 16.46 Hydraulic Tainter Gates and Anchorages
35 20 16.53 Hydraulic Vertical Lift Gates
35 20 16.59 Hydraulic Closure Gates
35 20 19 Hydraulic Valves
35 20 19.13 Hydraulic Butterfly Valves
35 20 19.23 Hydraulic Regulating Valves
35 20 23 Dredging
35 20 23.13 Mechanical Dredging
35 20 23.23 Hydraulic Dredging
35 20 23.33 Integrated Dredging and Dewatering

35 30 00 COASTAL CONSTRUCTION
35 31 00 Shoreline Protection
35 31 16 Seawalls
35 31 16.13 Concrete Seawalls
35 31 16.16 Segmental Seawalls
35 31 16.19 Steel Sheet Piling Seawalls
35 31 16.23 Timber Seawalls
35 31 16.40 Stone Seawalls
35 31 19 Revetments
35 31 19.13 Sacked Cement-Sand Revetments
35 31 19.16 Concrete Unit Masonry Revetments
35 31 19.36 Gabion Revetments
35 31 19.40 Stone Revetments
35 31 23 Breakwaters
35 31 23.13 Rubble Mound Breakwaters
35 31 23.16 Precast Breakwater Modules
35 31 26 Jetties
35 31 26.13 Concrete Jetties
35 31 26.16 Concrete Unit Masonry Jetties
35 31 26.36 Gabion Jetties
35 31 26.40 Stone Jetties
35 31 29 Groins
35 31 29.13 Concrete Groins
35 31 29.16 Concrete Unit Masonry Groins
35 31 29.26 Steel Groins
35 31 29.36 Gabion Groins
35 31 29.40 Stone Groins

35 32 00 Artificial Reefs
35 32 13 Scrap Material Artificial Reefs
35 32 13.13 Scrap Concrete Artificial Reefs
35 32 13.19 Scrap Steel Artificial Reefs
35 32 13.33 Sunken Ship Artificial Reefs
35 32 16 Constructed Artificial Reefs
35 32 16.13 Constructed Concrete Artificial Reefs
35 32 16.19 Constructed Steel Artificial Reefs

35 40 00 WATERWAY CONSTRUCTION AND EQUIPMENT
35 41 00 Levees
35 41 13 Landside Levee Berms
35 41 13.13 Stability Landside Levee Berms
35 41 13.16 Seepage Landside Levee Berms
35 41 16 Levee Cutoff Trenches
35 41 19 Levee Relief Wells

35 42 00 Waterway Bank Protection
35 42 13 Piling Bank Protection
35 42 13.19 Steel Sheet Piling Bank Protection
35 42 13.23 Timber Piling Bank Protection
35 42 13.26 Plastic Piling Bank Protection
35 42 29 Grout-Bag Bank Protection
35 42 34 Soil Reinforcement Bank Protection
35 42 35 Slope Protection Bank Protection
35 42 36 Gabion Bank Protection
35 42 37 Riprap Bank Protection
35 42 53 Wall Bank Protection
35 42 53.16 Concrete Unit Masonry Wall Bank Protection
35 42 53.19 Segmental Wall Bank Protection
35 42 53.40 Stone Wall Bank Protection

35 43 00 Waterway Scour Protection
35 43 29 Grout-Bag Scour Protection
35 43 34 Soil Reinforcement Scour Protection
35 43 35 Slope Protection Scour Protection
35 43 36 Gabion Scour Protection
35 43 37 Riprap Scour Protection
35 43 53 Wall Scour Protection
35 43 53.13 Concrete Unit Masonry Wall Scour Protection
35 43 53.16 Segmental Wall Scour Protection
35 43 53.40 Stone Wall Scour Protection

35 49 00 Waterway Structures
35 49 13 Floodwalls
35 49 13.13 Concrete Floodwalls
35 49 13.16 Masonry Floodwalls
35 49 23 Waterway Locks
35 49 23.13 Concrete Waterway Locks
35 49 23.23 Piling Waterway Locks

35 50 00 Marine Construction and Equipment
35 51 00 Floating Construction
35 51 13 Floating Piers
35 51 13.23 Floating Wood Piers
35 51 13.26 Floating Plastic Piers
35 51 23 Pontoons

35 52 00 Offshore Platform Construction
35 52 13 Fixed Offshore Platform Construction
35 52 23 Semi-Submersible Offshore Platform Construction
35 52 33 Floating Offshore Platform Construction

35 53 00 Underwater Construction
35 53 23 Underwater Harbor Deepening
35 53 33 Underwater Pipeline Construction
35 53 43 Underwater Foundation Construction
35 53 53 Underwater Structures Construction
35 53 63 Underwater Waterproofing
35 59 00  Marine Specialties
35 59 13  Marine Fenders
  35 59 13.13  Prestressed Concrete Marine Fender Piling
  35 59 13.16  Resilient Foam-Filled Marine Fenders
  35 59 13.19  Rubber Marine Fenders
35 59 23  Buoys
  35 59 23.13  Mooring Buoys
  35 59 23.16  Anchor Pendant Buoys
  35 59 23.19  Navigation Buoys
35 59 29  Mooring Devices
  35 59 29.13  Quick-Release Mooring Hooks
  35 59 29.16  Laser Docking Systems
  35 59 29.19  Capstans
35 59 33  Marine Bollards and Cleats
  35 59 33.13  Cast-Steel Marine Bollards and Cleats
  35 59 33.16  Cast-Iron Marine Bollards and Cleats
  35 59 33.19  Stainless-Steel Marine Bollards and Cleats
  35 59 33.23  Plastic Marine Bollards and Cleats
35 59 93  Marine Chain and Accessories
  35 59 93.13  Marine Chain
  35 59 93.16  Marine Shackles
  35 59 93.19  Marine Chain Tensioners

35 60 00  Unassigned

35 70 00  DAM CONSTRUCTION AND EQUIPMENT
35 71 00  Gravity Dams
  35 71 13  Concrete Gravity Dams
  35 71 16  Masonry Gravity Dams
  35 71 19  Rockfill Gravity Dams
35 72 00  Arch Dams
  35 72 13  Concrete Arch Dams
35 73 00  Embankment Dams
  35 73 13  Earth Embankment Dam
  35 73 16  Rock Embankment Dams
35 74 00  Buttress Dams
  35 74 13  Concrete Buttress Dams
35 79 00  Auxiliary Dam Structures
  35 79 13  Fish Ladders
  35 79 13.13  Concrete Fish Ladders

35 80 00  Unassigned
35 90 00  Unassigned
DIVISION 40 – PROCESS INTEGRATION

40 00 00 PROCESS INTEGRATION

40 01 00 Operation and Maintenance of Process Integration
  40 01 10 Operation and Maintenance of Gas and Vapor Process Piping
  40 01 20 Operation and Maintenance of Liquids Process Piping
  40 01 30 Operation and Maintenance of Solid and Mixed Materials Piping and Chutes
  40 01 40 Operation and Maintenance of Process Piping and Equipment Protection

40 05 00 Common Work Results for Process Integration
  40 05 13 Common Work Results for Process Piping
    40 05 13.13 Steel Process Piping
    40 05 13.16 Lined or Internally-Coated Steel Process Piping
    40 05 13.19 Stainless-Steel Process Piping
    40 05 13.23 Aluminum Alloys Process Piping
    40 05 13.33 Brass, Bronze, Copper, and Copper Alloys Process Piping
    40 05 13.43 Nickel and Nickel Alloys Process Piping
    40 05 13.53 Ductile, Malleable, and Cast Iron Alloys Process Piping
    40 05 13.63 Titanium and Titanium Alloys Process Piping
    40 05 13.73 Plastic Process Piping
    40 05 13.76 Fiberglass-Reinforced Plastic and Resins Process Piping
    40 05 13.93 Other Metals Process Piping
  40 05 23 Common Work Results for Process Valves
    40 05 23.13 Carbon Steel Process Valves
    40 05 23.16 Low and Intermediate Alloy Steel Process Valves
    40 05 23.19 Stainless-Steel Process Valves
    40 05 23.33 Brass and Iron Process Valves
    40 05 23.43 Nickel and Nickel Alloys Steel Process Valves
    40 05 23.73 Plastic and Plastic Lined Process Valves
    40 05 23.93 Other Metals Process Valves

40 06 00 Schedules for Process Integration
  40 06 10 Schedules for Gas and Vapor Process Piping
  40 06 20 Schedules for Liquids Process Piping
  40 06 30 Schedules for Solid and Mixed Materials Piping and Chutes
  40 06 40 Schedules for Process Piping and Equipment Protection

40 10 00 GAS AND VAPOR PROCESS PIPING

40 11 00 Steam Process Piping
  40 11 13 Low-Pressure Steam Process Piping
  40 11 16 Intermediate-Pressure Steam Process Piping
  40 11 19 High-Pressure Steam Process Piping
  40 11 23 Condensate Process Piping

40 12 00 Compressed Air Process Piping
  40 12 13 Breathing Compressed Air Process Piping
  40 12 16 Non-Breathing Compressed Air Process Piping

40 13 00 Inert Gases Process Piping
  40 13 13 Argon Process Piping
  40 13 16 Carbon-Dioxide Process Piping
  40 13 19 Helium Process Piping
  40 13 23 Krypton Process Piping
40 13 26 Neon Process Piping
40 13 29 Nitrogen Process Piping
40 13 33 Xenon Process Piping
40 13 93 Mixed Inert Gases Process Piping

40 14 00 Fuel Gases Process Piping
40 14 13 Blast Furnace Piping
40 14 16 Blue (Water) Fuel Gas Piping
40 14 19 Butane Piping
40 14 23 Carbon-Monoxide Piping
40 14 26 Chlorine Fuel Gas Piping
40 14 29 Coke Oven Gas Piping
40 14 33 Ethane-Gas Piping
40 14 36 Hydrogen Fuel Gas Piping
40 14 39 Liquid Natural-Gas Process Piping
40 14 43 Methylacetylene-Propadiene Fuel Gas Piping
40 14 49 Natural-Gas Process Piping
    40 14 49.13 Synthetic Natural-Gas Piping
    40 14 49.23 Propane-Air Mixes Fuel Gas Piping
40 14 53 Octane Fuel Gas Piping
40 14 59 Propane Fuel Gas Process Piping
40 14 63 Sewage Fuel Gas Piping
40 14 93 Mixed Fuel Gases Piping

40 15 00 Combustion System Gas Piping
40 15 13 Combustion Air Piping
40 15 16 Oxygen Combustion System Gas Piping
40 15 19 Flue-Gas Combustion System Piping
40 15 23 Exothermic-Gas Combustion System Piping
40 15 26 Endothermic-Gas Combustion System Piping
40 15 29 Disassociated-Ammonia-Gas Combustion System Piping

40 16 00 Specialty and High-Purity Gases Piping
40 16 13 Ammonia Gas Piping
40 16 16 Boron Gas Piping
40 16 26 Diborane Gas Piping
40 16 29 Flourine Gas Piping
40 16 33 Hydrogen Sulfide Gas Piping
40 16 36 Nitrous-Oxide Gas Process Piping
40 16 39 Ozone Gas Piping
40 16 43 Phosphine Gas Piping
40 16 46 Silane Gas Piping
40 16 49 Sulphur-Dioxide Gas Piping
40 16 53 Specialty Gas Mixtures Piping
40 16 56 High-Purity Gas Piping Components

40 17 00 Welding and Cutting Gases Piping
40 17 13 Acetylene Welding and Cutting Piping
40 17 16 Acetylene-Hydrogen Mix Welding and Cutting Piping
40 17 19 Methylacetylene-Propadiene Welding and Cutting Piping
40 17 23 Oxygen Welding and Cutting Piping
40 17 26 Inert Gas Welding and Cutting Piping

40 18 00 Vacuum Systems Process Piping
40 18 13 Low-Vacuum Systems Process Piping
40 18 16 High-Vacuum Systems Process Piping
40 20 00  LIQUIDS PROCESS PIPING

40 21 00  Liquid Fuel Process Piping
   40 21 13  Bio Fuels Process Piping
   40 21 16  Gasoline Process Piping
   40 21 19  Diesel Process Piping
   40 21 23  Fuel-Oils Process Piping
      40 21 23.13  No. 2 Fuel-Oil Process Piping
      40 21 23.16  No. 4 Fuel-Oil Process Piping
      40 21 23.19  No. 5 Fuel-Oil Process Piping
      40 21 23.23  No. 6 Fuel-Oil Process Piping
      40 21 23.26  Kerosene Process Piping
      40 21 23.29  Tar Process Piping

40 22 00  Petroleum Products Piping
   40 22 13  Heavy-Fractions Petroleum Products Piping
   40 22 16  Light-Fractions Petroleum Products Piping

40 23 00  Water Process Piping
   40 23 13  De-Ionized Water Process Piping
   40 23 16  Distilled-Water Process Piping
   40 23 19  Process Plant Water Piping
   40 23 23  Potable Water Process Piping
   40 23 29  Recirculated Water Process Piping
   40 23 33  Reverse-Osmosis Water Process Piping
   40 23 36  Sanitary Water Process Piping

40 24 00  Specialty Liquid Chemicals Piping
   40 24 13  Alcohol Piping
   40 24 16  Gel Piping
   40 24 19  slurries Process Piping
   40 24 23  Thixotropic Liquid Piping

40 25 00  Liquid Acids and Bases Piping
   40 25 13  Liquid Acids Piping
   40 25 16  Liquid Bases Piping

40 26 00  Liquid Polymer Piping

40 30 00  SOLID AND MIXED MATERIALS PIPING AND CHUTES

40 32 00  Bulk Materials Piping and Chutes
   40 32 13  Abrasive Materials Piping and Chutes
   40 32 16  Nonabrasive Materials Piping and Chutes

40 33 00  Bulk Materials Valves
   40 33 13  Airlock Bulk Materials Valves
   40 33 16  Blind Bulk Materials Valves
   40 33 19  Butterfly Bulk Materials Valves
   40 33 23  Cone Bulk Materials Valves
   40 33 26  Diverter Bulk Materials Valves
   40 33 29  Double or Single Dump Bulk Materials Valves
   40 33 33  Knife and Slide Gate Bulk Materials Valves
   40 33 36  Pinch Bulk Materials Valves
   40 33 39  Swing Bulk Materials Valves
   40 33 43  Specialty Bulk Materials Valves

40 34 00  Pneumatic Conveying Lines
   40 34 13  Dense Phase Pneumatic Conveying Lines
   40 34 16  Dilute Phase Pneumatic Conveying Lines
40 40 00 PROCESS PIPING AND EQUIPMENT PROTECTION
  40 41 00 Process Piping and Equipment Heat Tracing
    40 41 13 Process Piping Heat Tracing
      40 41 13.13 Process Piping Electrical Resistance Heat Tracing
      40 41 13.16 Process Piping Electrical Conductance Heat Tracing
      40 41 13.19 Process Piping Gas Heat Tracing
      40 41 13.23 Process Piping Steam Heat Tracing
      40 41 13.26 Process Piping Thermal Fluids Heat Tracing
    40 41 23 Process Equipment Heat Tracing
      40 41 23.13 Process Equipment Electrical Resistance Heat Tracing
      40 41 23.16 Process Equipment Electrical Conductance Heat Tracing
      40 41 23.19 Process Equipment Gas Heat Tracing
      40 41 23.23 Process Equipment Steam Heat Tracing
      40 41 23.26 Process Equipment Thermal Fluids Heat Tracing
  40 42 00 Process Piping and Equipment Insulation
    40 42 13 Process Piping Insulation
      40 42 13.13 Cryogenic Temperature Process Piping Insulation
      40 42 13.16 Low Temperature Process Piping Insulation
      40 42 13.19 Intermediate Temperature Process Piping Insulation
      40 42 13.23 High Temperature Process Piping Insulation
      40 42 13.26 Process Piping Insulation for Specialty Applications
    40 42 23 Process Equipment Insulation
      40 42 23.13 Cryogenic Temperature Process Equipment Insulation
      40 42 23.16 Low Temperature Process Equipment Insulation
      40 42 23.19 Intermediate Temperature Process Equipment Insulation
      40 42 23.23 High Temperature Process Equipment Insulation
      40 42 23.26 Process Equipment Insulation for Specialty Applications
  40 46 00 Process Corrosion Protection
    40 46 16 Coatings and Wrappings for Process Corrosion Protection
    40 46 22 Cathodic Process Corrosion Protection
  40 47 00 Refractories
    40 47 13 Silica Refractories
    40 47 16 Alumina Refractories
    40 47 19 Carbon and Graphite Refractories
    40 47 23 Castable Refractories
    40 47 26 Rammed Refractories
    40 47 29 Refractory Concrete
  40 50 00 Unassigned
  40 60 00 Unassigned
  40 70 00 Unassigned
  40 80 00 COMMISSIONING OF PROCESS SYSTEMS
  40 90 00 INSTRUMENTATION AND CONTROL FOR PROCESS SYSTEMS
    40 91 00 Primary Process Measurement Devices
      40 91 13 Chemical Properties Process Measurement Devices
40 91 13 Ammonia Process Measurement Devices
40 91 13.13 Ammonia Process Measurement Devices
40 91 13.16 Chlorine Process Measurement Devices
40 91 13.19 Fluoride Process Measurement Devices
40 91 13.23 Gas Analysis Process Measurement Devices
40 91 13.26 Gas Chromatograph Process Measurement Devices
40 91 13.29 pH Level Process Measurement Devices
40 91 16 Electromagnetic Process Measurement Devices
40 91 16.13 Amperes Process Measurement Devices
40 91 16.16 Capacitance Process Measurement Devices
40 91 16.19 Conductivity Process Measurement Devices
40 91 16.23 Inductance Process Measurement Devices
40 91 16.26 Lumens Process Measurement Devices
40 91 16.29 Magnetic Field Process Measurement Devices
40 91 16.33 Electrical Power Process Measurement Devices
40 91 16.36 Radiation Process Measurement Devices
40 91 16.39 Electrical Resistance Process Measurement Devices
40 91 16.43 Ultraviolet Sensors
40 91 16.46 Voltage Process Measurement Devices
40 91 19 Physical Properties Process Measurement Devices
40 91 19.13 Density Process Measurement Devices
40 91 19.16 Humidity Process Measurement Devices
40 91 19.19 Mass Process Measurement Devices
40 91 19.23 Particle Counters Process Measurement Devices
40 91 19.26 Gas Pressure Process Measurement Devices
40 91 19.29 Liquid Pressure Process Measurement Devices
40 91 19.33 Stress/Strain Process Measurement Devices
40 91 19.36 Temperature Process Measurement Devices
40 91 19.39 Vapor Pressure Process Measurement Devices
40 91 19.43 Weight Process Measurement Devices
40 91 23 Miscellaneous Properties Measurement Devices
40 91 23.13 Acceleration Process Measurement Devices
40 91 23.16 Angle Process Measurement Devices
40 91 23.19 Color Process Measurement Devices
40 91 23.23 Count Process Measurement Devices
40 91 23.26 Distance Process Measurement Devices
40 91 23.29 Energy Process Measurement Devices
40 91 23.33 Flow Process Measurement Devices
40 91 23.36 Level Process Measurement Devices
40 91 23.39 Physical Resistance Process Measurement Devices
40 91 23.43 RPM Process Measurement Devices
40 91 23.46 Time Process Measurement Devices
40 91 23.49 Turbidity Process Measurement Devices
40 91 23.53 Velocity Process Measurement Devices
40 92 00 Primary Control Devices
40 92 13 Primary Control Valves
40 92 13.13 Electrically-Operated Primary Control Valves
40 92 13.16 Hydraulically-Operated Primary Control Valves
40 92 13.19 Pneumatically-Operated Primary Control Valves
40 92 13.23 Pressure-Relief Primary Control Valves
40 92 13.26 Solenoid Primary Control Valves
40 92 13.29 Specialty Primary Control Valves
40 92 29 Current-To-Pressure Converters
40 92 33 Self-Contained Flow Controllers
40 92 36 Linear Actuators and Positioners
40 92 39 Self-Contained Pressure Regulators
40 92 43  Rotary Actuators
40 92 46  Saturable Core Reactors
40 92 49  Variable Frequency Drives
40 92 53  Voltage-To-Pressure Converters

40 93 00  Analog Controllers/Recorders
40 93 13  Analog Controllers
   40 93 13.13  Electronic Analog Controllers
   40 93 13.16  Electro-Hydraulic Analog Controllers
   40 93 13.19  Electro-Pneumatic Analog Controllers
   40 93 13.23  Hydraulic Analog Controllers
   40 93 13.26  Pneumatic Analog Controllers
40 93 23  Chart Recorders

40 94 00  Digital Process Controllers
40 94 13  Digital Process Control Computers
   40 94 13.13  Host Digital Process Control Computers
   40 94 13.16  Personal Digital Process Control Computers
   40 94 13.19  Personal Digital Assistant Digital Process Control Computers
40 94 23  Distributed Process Control Systems
40 94 33  Human – Machine Interfaces
40 94 43  Programmable Logic Process Controllers

40 95 00  Process Control Hardware
40 95 13  Process Control Panels and Hardware
   40 95 13.13  Local Process Control Panels and Hardware
   40 95 13.23  Main Process Control Panels and Hardware
40 95 20  Process Control Display Devices
40 95 23  Process Control Input/Output Modules
40 95 26  Process Control Instrument Air Piping and Devices
40 95 33  Process Control Networks
   40 95 33.13  Cabled Process Control Networks
   40 95 33.23  Fiber Optic Process Control Networks
   40 95 33.33  Wireless Process Control Networks
40 95 43  Process Control Hardware Interfaces
40 95 46  Process Control Mounting Racks and Supports
40 95 49  Process Control Routers
40 95 53  Process Control Switches
40 95 56  Process Control Transformers
40 95 63  Process Control Wireless Equipment
   40 95 63.13  Process Control Wireless Transmitters
   40 95 63.16  Process Control Wireless Receivers
   40 95 63.19  Process Control Wireless Repeaters
40 95 73  Process Control Wiring
   40 95 73.23  Process Control Cable
   40 95 73.33  Process Control Conduit, Raceway and Supports
   40 95 73.43  Process Control Junction Boxes

40 96 00  Process Control Software
40 96 10  Process Control Software Architecture
40 96 15  Process Control Software Input/Output Lists
40 96 20  Process Control Software Instrument Lists
40 96 25  Process Control Software Logic Diagrams
40 96 30  Process Control Software Loop Diagrams
40 96 35  Process Control Software Programming
40 96 40  Process Control Software Reports
### 40 97 00  Process Control Auxiliary Devices

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>40 97 10</td>
<td>Process Control Annunciators</td>
</tr>
<tr>
<td>40 97 15</td>
<td>Process Control Gages</td>
</tr>
<tr>
<td>40 97 20</td>
<td>Process Control Rotameters</td>
</tr>
<tr>
<td>40 97 25</td>
<td>Process Control Potentiometers</td>
</tr>
<tr>
<td>40 97 30</td>
<td>Process Control Test Equipment</td>
</tr>
</tbody>
</table>
# DIVISION 41 – MATERIAL PROCESSING AND HANDLING EQUIPMENT

## 41 00 00  MATERIAL PROCESSING AND HANDLING EQUIPMENT

### 41 01 00  Operation and Maintenance of Material Processing and Handling Equipment
- **41 01 10** Operation and Maintenance of Bulk Material Processing Equipment
- **41 01 20** Operation and Maintenance of Piece Material Handling Equipment
- **41 01 30** Operation and Maintenance of Manufacturing Equipment
- **41 01 40** Operation and Maintenance of Container Processing and Packaging
- **41 01 50** Operation and Maintenance of Material Storage
- **41 01 60** Operation and Maintenance of Mobile Plant Equipment

### 41 06 00  Schedules for Material Processing and Handling Equipment
- **41 06 10** Schedules for Bulk Material Processing Equipment
- **41 06 20** Schedules for Piece Material Handling Equipment
- **41 06 30** Schedules for Manufacturing Equipment
- **41 06 40** Schedules for Container Processing and Packaging
- **41 06 50** Schedules for Material Storage
- **41 06 60** Schedules for Mobile Plant Equipment

### 41 08 00  Commissioning of Material Processing and Handling Equipment
- **41 08 10** Commissioning of Bulk Material Processing Equipment
- **41 08 20** Commissioning of Piece Material Handling Equipment
- **41 08 30** Commissioning of Manufacturing Equipment
- **41 08 40** Commissioning of Container Processing and Packaging
- **41 08 50** Commissioning of Material Storage
- **41 08 60** Commissioning of Mobile Plant Equipment

## 41 10 00  BULK MATERIAL PROCESSING EQUIPMENT

### 41 11 00  Bulk Material Sizing Equipment
- **41 11 13** Bulk Material Agglomerators
- **41 11 16** Bulk Material Air Mill Classifiers
- **41 11 19** Bulk Material Centrifuges
- **41 11 23** Bulk Material Crushers
- **41 11 26** Bulk Material Cyclones
- **41 11 29** Bulk Material Fluid Bed Separators
- **41 11 33** Bulk Material Grinders
- **41 11 36** Bulk Material Homogenizers
- **41 11 39** Bulk Material Lump Breakers
- **41 11 43** Bulk Material Mills
- **41 11 46** Bulk Material Pulverizers
- **41 11 49** Bulk Material Screens
- **41 11 53** Bulk Material Shredders
- **41 11 56** Bulk Material Sieves

### 41 12 00  Bulk Material Conveying Equipment
- **41 12 13** Bulk Material Conveyors
41 12 13.13 Airslide Bulk Material Conveyors
41 12 13.16 Auger Bulk Material Conveyors
41 12 13.19 Belt Bulk Material Conveyors
41 12 13.23 Container Bulk Material Conveyors
41 12 13.26 Drag Chain Bulk Material Conveyors
41 12 13.29 Hopper Bulk Material Conveyors
41 12 13.33 Reciprocating Bulk Material Conveyors
41 12 13.36 Screw Bulk Material Conveyors
41 12 13.39 Stacking and Reclaim Bulk Material Conveyors
41 12 13.43 Trough Bulk Material Conveyors
41 12 13.46 Tube Bulk Material Conveyors
41 12 13.49 Vibratory Bulk Material Conveyors
41 12 13.53 Weigh Belt Bulk Material Conveyors
41 12 16 Bucket Elevators
41 12 19 Pneumatic Conveyors
41 12 19.13 Dense Phase Pneumatic Conveyors
41 12 19.16 Dilute Phase Pneumatic Conveyors

41 13 00 Bulk Material Feeders
41 13 13 Bin Activators/Live Bin Bottoms
41 13 23 Feeders
41 13 23.13 Airlock Bulk Material Feeders
41 13 23.16 Apron Bulk Material Feeders
41 13 23.19 Rotary-Valve Bulk Material Feeders
41 13 23.23 Screw Bulk Material Feeders
41 13 23.26 Vibratory Bulk Material Feeders
41 13 23.29 Volumetric Bulk Material Feeders
41 13 23.33 Weigh Bulk Material Feeders

41 14 00 Batching Equipment
41 14 13 Bag-Handling Batching Equipment
41 14 16 Batch Cars/Transports
41 14 19 Batch Hoppers
41 14 23 Bulk Bag-Handling Batching Equipment
41 14 26 Blenders
41 14 29 Drum-Handling Batching Equipment
41 14 33 Mixers
41 14 36 Weigh Scales

41 20 00 PIECE MATERIAL HANDLING EQUIPMENT
41 21 00 Conveyors
41 21 13 Automatic Guided Vehicle Systems
41 21 23 Piece Material Conveyors
41 21 23.13 Belt Piece Material Conveyors
41 21 23.16 Container Piece Material Conveyors
41 21 23.19 Drag-Chain Piece Material Conveyors
41 21 23.23 Hopper Piece Material Conveyors
41 21 23.26 Monorail Piece Material Conveyors
41 21 23.29 Power and Free Piece Material Conveyors
41 21 23.33 Reciprocating Piece Material Conveyors
41 21 23.36 Roller Piece Material Conveyors
41 21 23.39 Vibratory Piece Material Conveyors
41 21 23.43 Walking-Beam Piece Material Conveyors
41 21 23.46 Weigh-Belt Piece Material Conveyors
41 21 23.53 Postal Conveyors
41 21 26 Piece Material Diverter Gates
41 21 29 Piece Material Gravity Slides
41 21 33 Piece Material Transfer Cars
41 21 36 Piece Material Turntables
41 21 39 Piece Material Feeders
41 21 39.13 Piece Material Vibratory Feeders

41 22 00 Cranes and Hoists
41 22 13 Cranes
41 22 13.13 Bridge Cranes
41 22 13.16 Gantry Cranes
41 22 13.19 Jib Cranes
41 22 13.23 Mobile Cranes
41 22 13.26 Tower Cranes
41 22 13.29 Specialty Cranes
41 22 23 Hoists
41 22 23.13 Fixed Hoists
41 22 23.16 Portable Hoists
41 22 23.19 Monorail Hoists
41 22 23.23 Specialty Hoists
41 22 33 Derricks

41 23 00 Lifting Devices
41 23 13 Clamps
41 23 16 Grabs
41 23 19 Hooks
41 23 23 Lifts
41 23 26 Slings
41 23 29 Spreader Bars/Beams
41 23 33 Tongs

41 24 00 Specialty Material Handling Equipment
41 24 13 Aeration Devices
41 24 16 Bin Vibrators
41 24 19 Dehydrators
41 24 23 Hydrators
41 24 26 Hydraulic Power Systems
41 24 29 Lubrication Systems
41 24 33 Magnetic Separators
41 24 36 Metal Detectors
41 24 39 Railcar Movers
41 24 43 Turnheads/Distributors
41 24 46 Sorting Machines
41 24 46.13 Postal Sorting Machines

41 30 00 MANUFACTURING EQUIPMENT
41 31 00 Manufacturing Lines and Equipment
41 31 13 Manufacturing Lines
41 31 13.13 Assembly Lines
41 31 13.16 Casting Lines
41 31 13.19 Coating Lines
41 31 13.23 Converting Lines
41 31 13.26 Disassembly Lines
41 31 13.29 Extrusion Lines
41 31 13.33 Machining Lines
41 31 13.36 Molding Lines
41 31 13.39 Finishing/Painting Lines
41 31 13.43 Painting Lines
41 31 13.46 Pickling Lines
41 31 13.49 Plating Lines
41 31 13.53 Polishing Lines
41 31 13.56 Press Lines
41 31 13.59 Rolling/Calendaring Lines
41 31 13.63 Web Processing Lines
41 31 16 Pick and Place Systems
41 31 19 Manufacturing-Line Robots
41 31 23 Specialty Assembly Machines

41 32 00 Forming Equipment
41 32 13 Bending Equipment
41 32 16 Blow-Molding Equipment
41 32 19 Brake-Forming Equipment
41 32 23 Cold-Forming Equipment
41 32 26 Die-Casting Equipment
41 32 29 Drawing Equipment
41 32 33 Electroforming Equipment
41 32 36 Forging Equipment
41 32 39 Extruding Equipment
41 32 43 Metal-Spinning Equipment
41 32 46 Piercing Equipment
41 32 49 Powder Metal-Forming Equipment
41 32 53 Pressing Equipment
41 32 56 Roll-Forming Equipment
41 32 59 Shearing Equipment
41 32 63 Spinning Equipment
41 32 66 Stretching/Leveling Equipment
41 32 69 Swaging Equipment

41 33 00 Machining Equipment
41 33 13 Automatic Screw Machining Equipment
41 33 16 Boring Equipment
41 33 19 Broaching Equipment
41 33 23 Drilling Equipment
41 33 26 Electro-Discharge Machining Equipment
41 33 29 Grinding Equipment
41 33 33 Hobbing Equipment
41 33 36 Lapping Equipment
41 33 39 Lathe Equipment
41 33 43 Leveling Equipment
41 33 46 Machining Center Equipment
41 33 53 Milling Equipment
41 33 53.13 Horizontal Milling Equipment
41 33 53.16 Vertical Milling Equipment
41 33 60 Multi-Axis Machine Equipment
41 33 63 Planing Equipment
41 33 66 Reaming Equipment
41 33 69 Routing Equipment
41 33 73 Sawing Equipment
41 33 76 Shaping Equipment
41 33 79 Threading Equipment

41 34 00 Finishing Equipment
41 34 13 Anodizing Equipment
41 34 16 Barrel Tumbling Equipment
41 34 23 Coating Equipment
  41 34 23.13 Diffusion Coating Equipment
  41 34 23.16 Dipping Coating Equipment
  41 34 23.19 Film Coating Equipment
  41 34 23.23 Phosphatizing Coating Equipment
  41 34 23.26 Plasma Coating Equipment
  41 34 23.29 Hardface Welding Coating Equipment
  41 34 23.33 Spray Painting Booth
41 34 26 Deburring Equipment
41 34 36 Electroplating Equipment
41 34 46 Grinding Equipment
41 34 49 Honing Equipment
41 34 53 Lapping Equipment
41 34 56 Shot Peening Equipment
41 34 59 Superfinishing/Polishing Equipment

41 35 00 Dies and Molds
41 35 13 Dies
  41 35 13.13 Drawing Dies
  41 35 13.16 Extrusion Dies
  41 35 13.19 Press Dies
  41 35 13.23 Rotary Dies
  41 35 13.26 Rule Dies
41 35 33 Molds

41 36 00 Assembly and Testing Equipment
41 36 13 Applicators
  41 36 13.13 Adhesive Applicators
  41 36 13.16 Lubricant Applicators
  41 36 13.19 Sealer Applicators
41 36 16 Fixtures and Jigs
41 36 19 Joining Equipment
  41 36 19.13 Adhesive Joining Equipment
  41 36 19.16 Arc-Welding Equipment
  41 36 19.19 Brazing Equipment
  41 36 19.23 Resistance-Welding Equipment
  41 36 19.26 Riveting Equipment
  41 36 19.29 Sintering Equipment
  41 36 19.33 Soldering Equipment
41 36 23 Cutting Equipment
41 36 23.13 Cutting Torches
41 36 23.16 High-Pressure Water Cutting Equipment
41 36 23.19 Laser Cutting Equipment
41 36 23.23 Plasma Cutting Equipment

41 36 26 Process Tools
41 36 26.13 Air Process Tools
41 36 26.16 Electric Process Tools
41 36 26.19 Hydraulic Process Tools
41 36 26.23 Manual Process Tools

41 36 29 Manufacturing Measurement and Testing Equipment
41 36 29.13 Gages, Rules, and Blocks
41 36 29.16 Penetrant Measurement and Testing Equipment
41 36 29.19 Laser Measurement and Testing Equipment
41 36 29.23 Magnaflux Measurement and Testing Equipment
41 36 29.26 Optical Comparators
41 36 29.29 Profilometers
41 36 29.33 Radiograph Measurement and Testing Equipment
41 36 29.36 Surface Tables
41 36 29.39 Ultrasonic Measurement and Testing Equipment
41 36 29.43 Test Weigh Scales

41 40 00 CONTAINER PROCESSING AND PACKAGING

41 41 00 Container Filling and Sealing
41 41 13 Bulk Container Fillers/Packers
41 41 16 Container Cappers
41 41 19 Container Fillers
41 41 19.13 Bag Fillers
41 41 19.16 Box Fillers
41 41 19.19 Bottle Fillers
41 41 23 Container Sealers

41 42 00 Container Packing Equipment
41 42 13 Box Packing Equipment
41 42 13.13 Box Makers
41 42 13.16 Box Packers
41 42 16 Bulk Material Loaders
41 42 16.13 Container Bulk Material Loaders
41 42 16.23 Truck Bulk Material Loaders
41 42 16.26 Railcar Bulk Material Loaders
41 42 16.29 Ship Bulk Material Loaders
41 42 16.33 Barge Bulk Material Loaders
41 42 19 Carton Packers
41 42 23 Carton Sealers
41 42 26 Carton Shrink Wrappers
41 42 29 Carton Stackers

41 43 00 Shipping Packaging
41 43 13 Banding/Strapping Equipment
41 43 16 Barcode Equipment
41 43 16.13 Barcode Readers
41 43 16.16 Barcode Printers
41 43 19 Labeling Equipment
41 43 23 Pallet Stacking/Wrapping Equipment

41 50 00 MATERIAL STORAGE

41 51 00 Automatic Material Storage
41 51 13  Automatic Storage/Automatic Retrieval Systems

41 52 00  Bulk Material Storage
  41 52 13  Bins and Hoppers
    41 52 13.13  Fixed Bins and Hoppers
    41 52 13.23  Portable Bins and Hoppers
    41 52 13.33  Bulk Material Containers
    41 52 13.43  Returnable Bins and Hoppers
    41 52 13.53  Throwaway Bins and Hoppers
  41 52 16  Silos
    41 52 16.13  Concrete Silos
    41 52 16.16  Concrete Masonry Unit Silos
    41 52 16.19  Steel Silos
  41 52 19  Material Storage Tanks
    41 52 19.13  Horizontal Material Storage Tanks
    41 52 19.23  Vertical Material Storage Tanks
    41 52 19.33  Portable Material Storage Tanks

41 53 00  Storage Equipment and Systems
  41 53 13  Storage Cabinets
  41 53 16  Container Storage Systems
  41 53 19  Flat Files
  41 53 23  Storage Racks
  41 53 26  Mezzanine Storage Systems

41 60 00  MOBILE PLANT EQUIPMENT

41 61 00  Mobile Earth Moving Equipment
  41 61 13  Backhoes
  41 61 16  Bulldozers
  41 61 19  Compactors
  41 61 23  Excavators
  41 61 26  Graders
  41 61 29  Payloaders
  41 61 33  Trenchers

41 62 00  Trucks
  41 62 13  Cement Mixer Trucks
  41 62 16  Dump Trucks
  41 62 19  Flatbed Trucks
  41 62 23  Forklift Trucks
  41 62 26  Pickup Trucks
  41 62 29  Tank Trucks

41 63 00  General Vehicles
  41 63 13  Bicycles
  41 63 16  Carts
  41 63 19  Maintenance Vehicles
  41 63 23  Utility Vehicles
  41 63 26  Vans
  41 63 29  Wagons

41 64 00  Rail Vehicles
  41 64 13  Locomotives
    41 64 13.13  Diesel Locomotives
    41 64 13.23  Electric Locomotives
  41 64 16  Mobile Railcar Movers

41 65 00  Mobile Support Equipment
| 41 65 13 | Mobile Air Compressors |
| 41 65 16 | Mobile Generators |
| 41 65 19 | Mobile Welders |

**41 66 00**  **Miscellaneous Mobile Equipment**
- 41 66 13  Mobile Boring and Drilling Rigs
- 41 66 16  Mobile Lifts and Cherrypickers
- 41 66 19  Mobile Paving Equipment
- 41 66 23  Mobile Sweepers/Vacuums

**41 67 00**  **Plant Maintenance Equipment**
- 41 67 13  Plant Lube Oil System
- 41 67 16  Plant Fall Protection Equipment
- 41 67 19  Plant Safety Equipment
- 41 67 23  Plant Maintenance Tools
- 41 67 26  Plant Maintenance Washing Equipment

| 41 70 00 | Unassigned |
| 41 80 00 | Unassigned |
| 41 90 00 | Unassigned |
DIVISION 42 – PROCESS HEATING, COOLING, AND DRYING EQUIPMENT

42 00 00 PROCESS HEATING, COOLING, AND DRYING EQUIPMENT
   42 01 00 Operation and Maintenance of Process Heating, Cooling, and Drying Equipment
      42 01 10 Operation and Maintenance of Process Heating Equipment
      42 01 20 Operation and Maintenance of Process Cooling Equipment
      42 01 30 Operation and Maintenance of Process Drying Equipment
   42 06 00 Schedules for Process Heating, Cooling, and Drying Equipment
      42 06 10 Schedules for Process Heating Equipment
      42 06 20 Schedules for Process Cooling Equipment
      42 06 30 Schedules for Process Drying Equipment
   42 08 00 Commissioning of Process Heating, Cooling, and Drying Equipment
      42 08 10 Commissioning of Heating Equipment
      42 08 20 Commissioning of Cooling Equipment
      42 08 30 Commissioning of Drying Equipment

42 10 00 PROCESS HEATING EQUIPMENT
   42 11 00 Process Boilers
      42 11 13 Low-Pressure Process Boilers
      42 11 16 Intermediate-Pressure Process Boilers
      42 11 19 High-Pressure Process Boilers
      42 11 23 Specialty Process Boilers
   42 12 00 Process Heaters
      42 12 13 Electric Process Heaters
      42 12 16 Fuel-Fired Process Heaters
      42 12 19 Thermoelectric Process Heaters
      42 12 23 Solar Process Heaters
      42 12 26 Specialty Process Heaters
   42 13 00 Industrial Heat Exchangers and Recuperators
      42 13 13 Industrial Gas-to-Gas Heat Exchangers
      42 13 16 Industrial Liquid-to-Gas/Gas-to-Liquid Heat Exchangers
      42 13 19 Industrial Liquid-to-Liquid Heat Exchangers
      42 13 23 Industrial Gas Radiation Heat Exchangers
      42 13 26 Industrial Solar Radiation Heat Exchangers
   42 14 00 Industrial Furnaces
      42 14 13 Annealing Furnaces
      42 14 16 Atmosphere Generators
      42 14 19 Industrial Baking Furnaces
      42 14 23 Industrial Brazing Furnaces
      42 14 26 Industrial Calcining Furnaces
      42 14 29 Industrial Heat-Treating Furnaces
      42 14 33 Industrial Melting Furnaces
         42 14 33.13 Ceramics and Glass Melting Furnaces
         42 14 33.16 Ferrous Melting Furnaces
         42 14 33.19 Non-Ferrous Melting Furnaces
      42 14 36 Primary Refining Furnaces
      42 14 43 Reactor Furnaces
      42 14 46 Industrial Reheat Furnaces
42 14 53 Industrial Sintering Furnaces
42 14 56 Industrial Vacuum Furnaces

42 15 00 Industrial Ovens
42 15 13 Industrial Drying Ovens
42 15 16 Industrial Curing Ovens
42 15 19 Industrial Specialty Ovens

42 20 00 PROCESS COOLING EQUIPMENT
42 21 00 Process Cooling Towers
42 21 13 Open-Circuit Process Cooling Towers
42 21 16 Closed-Circuit Process Cooling Towers

42 22 00 Process Chillers and Coolers
42 22 13 Centrifugal Process Chillers and Coolers
42 22 16 Reciprocating Process Chillers and Coolers
42 22 19 Refrigerant Process Chillers and Coolers
42 22 23 Rotary Process Chillers and Coolers
42 22 26 Thermoelectric Process Chillers and Coolers

42 23 00 Process Condensers and Evaporators
42 23 13 Process Condensers
42 23 16 Process Cooling Evaporators
42 23 19 Process Humidifiers

42 30 00 PROCESS DRYING EQUIPMENT
42 31 00 Gas Dryers and Dehumidifiers
42 31 13 Drying Evaporators
42 31 16 Desiccant Equipment
42 31 19 Regenerative Dryers
42 31 23 Refrigerant Dryers

42 32 00 Material Dryers
42 32 13 Centrifugal Material Dryers
42 32 16 Conveyor Material Dryers
42 32 19 Flash Material Dryers
42 32 23 Fluid-Bed Material Dryers
42 32 26 Material Roasters
42 32 29 Rotary-Kiln Material Dryers
42 32 33 Spray Material Dryers
42 32 36 Tower Material Dryers
42 32 39 Vacuum Material Dryers
42 32 43 Specialty Material Dryers

42 40 00 Unassigned
42 50 00 Unassigned
42 60 00 Unassigned
42 70 00 Unassigned
42 80 00 Unassigned
42 90 00 Unassigned
DIVISION 43 – PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT

43 00 00  PROCESS GAS AND LIQUID HANDLING, PURIFICATION, AND STORAGE EQUIPMENT
   43 01 00  Operation and Maintenance of Process Gas and Liquid Handling, Purification, and Storage Equipment
      43 01 10  Operation and Maintenance of Gas Handling Equipment
      43 01 20  Operation and Maintenance of Liquid Handling Equipment
      43 01 30  Operation and Maintenance of Gas and Liquid Hi-Purification Equipment
      43 01 40  Operation and Maintenance of Gas and Liquid Storage
   43 06 00  Schedules for Process Gas and Liquid Handling, Purification, and Storage Equipment
      43 06 10  Schedules for Gas Handling Equipment
      43 06 20  Schedules for Liquid Handling Equipment
      43 06 30  Schedules for Gas and Liquid Hi-Purification Equipment
      43 06 40  Schedules for Gas and Liquid Storage
   43 08 00  Commissioning of Process Gas and Liquid Handling, Purification, and Storage Equipment
      43 08 10  Commissioning of Gas Handling Equipment
      43 08 20  Commissioning of Liquid Handling Equipment
      43 08 30  Commissioning of Gas and Liquid Purification Equipment
      43 08 40  Commissioning of Gas and Liquid Storage

43 10 00  GAS HANDLING EQUIPMENT
   43 11 00  Gas Fans, Blowers and Pumps
      43 11 13  Gas Handling Fans
         43 11 13.13  Axial Gas Handling Fans
         43 11 13.16  Centrifugal Gas Handling Fans
      43 11 23  Gas Handling Blowers
      43 11 26  Gas Handling Jet Pumps
      43 11 29  Gas Handling Vacuum Pumps
   43 12 00  Gas Compressors
      43 12 13  Centrifugal Gas Compressors
      43 12 16  Piston Gas Compressors
      43 12 19  Positive Displacement Gas Compressors
      43 12 23  Rotary-Screw Gas Compressors
      43 12 26  Vane Gas Compressors
   43 13 00  Gas Process Equipment
      43 13 13  Process Gas Blenders
      43 13 16  Process Gas Meters
      43 13 19  Process Gas Mixers
      43 13 23  Process Gas Pressure Regulators

43 20 00  LIQUID HANDLING EQUIPMENT
   43 21 00  Liquid Pumps
      43 21 13  Centrifugal Liquid Pumps
      43 21 16  Diaphragm Liquid Pumps
43 21 19  Dispensing Liquid Pumps
43 21 23  Drum Liquid Pumps
43 21 26  Gear Liquid Pumps
43 21 29  Metering Liquid Pumps
43 21 33  Piston/Plunger Liquid Pumps
43 21 36  Positive Displacement Liquid Pumps
43 21 39  Submersible Liquid Pumps
43 21 43  Sump Liquid Pumps
43 21 46  Vane Liquid Pumps

43 22 00  Liquid Process Equipment
43 22 13  Liquid Aeration Devices
43 22 16  Liquid Agitators
43 22 19  Liquid Blenders
43 22 23  Liquid Centrifuges
43 22 26  Liquid Deaerators
43 22 29  Drum Handling Liquid Process Equipment
43 22 33  Liquid Emulsifiers
43 22 36  Liquid Evaporators
43 22 39  Liquid Feeders
43 22 43  Liquid Filters
   43 22 43.13  Cyclonic Liquid Filters
   43 22 43.16  Media Liquid Filters
   43 22 43.19  Press Liquid Filters
43 22 53  Liquid Process Meters
43 22 56  Liquid Process Mixers
43 22 59  Liquid Process Pressure Regulators
43 22 63  Liquid Separation Towers
43 22 66  Liquid Weigh Systems

43 30 00  GAS AND LIQUID PURIFICATION EQUIPMENT

43 31 00  Gas and Liquid Purification Filtration Equipment
43 31 13  Gas and Liquid Purification Filters
   43 31 13.13  Activated Carbon-Gas and Liquid Purification Filters
   43 31 13.16  Gas and Liquid Purification Filter Presses
   43 31 13.19  High-Purity Cartridge Gas and Liquid Purification Filters
   43 31 13.23  Membrane Diaphragm Gas and Liquid Purification Filters
   43 31 13.26  Multimedia Gas and Liquid Purification Filters
   43 31 13.29  Pretreatment Cartridge Gas and Liquid Purification Filters
   43 31 13.33  Ultrafilter Units

43 32 00  Gas and Liquid Purification Process Equipment
43 32 13  Gas and Liquid Purification Process Beds
   43 32 13.13  Anion-Gas and Liquid Purification Process Beds
   43 32 13.16  Cation-Gas and Liquid Purification Process Beds
43 32 23  Gas and Liquid Purification Process Clarifier Systems
43 32 26  Gas and Liquid Purification Decarbonators
43 32 29  Electronic De-Ionization Purification Units
43 32 33  External Regeneration Systems
43 32 36  Mixed-Bed Ion-Exchange Vessels
43 32 39  Gas and Liquid Purification Mixed Beds
   43 32 39.13  Externally Regenerable Gas and Liquid Purification Mixed Beds
   43 32 39.16  In-Situ Regenerable Gas and Liquid Purification Mixed Beds
43 32 53  Packed-Bed Ion-Exchange Vessels
43 32 56 Reverse-Osmosis Purification Units
43 32 59 Gas and Liquid Purification Scrubbers
43 32 63 Ultraviolet Sterilizers
43 32 66 Vacuum Degasifiers
43 32 69 Chemical Feed Systems
43 32 73 Ozonation Equipment
43 32 76 Chlorination Equipment

43 40 00 GAS AND LIQUID STORAGE

43 41 00 Gas and Liquid Storage Equipment
43 41 13 Gas and Liquid Pressure Vessels
  43 41 13.13 Ferrous Gas and Liquid Pressure Vessels
  43 41 13.16 Nonferrous Gas and Liquid Pressure Vessels
  43 41 13.19 Fiberglass Gas and Liquid Pressure Vessels
43 41 16 Atmospheric Tanks and Vessels
  43 41 16.13 Horizontal Atmospheric Tanks and Vessels
  43 41 16.16 Vertical Atmospheric Tanks and Vessels

43 50 00 Unassigned
43 60 00 Unassigned
43 70 00 Unassigned
43 80 00 Unassigned
43 90 00 Unassigned
DIVISION 44 – POLLUTION CONTROL EQUIPMENT

44 00 00  POLLUTION CONTROL EQUIPMENT
44 01 00  Operation and Maintenance of Pollution Control Equipment
  44 01 10  Operation and Maintenance of Air Pollution Control
  44 01 20  Operation and Maintenance of Noise Pollution Control
  44 01 40  Operation and Maintenance of Water Treatment Equipment
  44 01 50  Operation and Maintenance of Solid Waste Control
44 06 00  Schedules for Pollution Control Equipment
  44 06 10  Schedules for Air Pollution Control
  44 06 20  Schedules for Noise Pollution Control
  44 06 40  Schedules for Water Treatment Equipment
  44 06 50  Schedules for Solid Waste Control
44 08 00  Commissioning of Pollution Control Equipment
  44 08 10  Commissioning of Air Pollution Control
  44 08 20  Commissioning of Noise Pollution Control
  44 08 40  Commissioning Water Treatment Equipment
  44 08 50  Commissioning Solid Waste Control

44 10 00  AIR POLLUTION CONTROL
44 11 00  Air Pollution Control Equipment
  44 11 13  Cyclonic Separators
  44 11 16  Industrial Dust Collectors
  44 11 19  Air Pollution Filters
  44 11 23  Fugitive Dust Control
  44 11 26  Air Pollution Control Precipitators
  44 11 29  Air Pollution Scrubbers
    44 11 29.13  Dry-Air Pollution Scrubbers
    44 11 29.16  Wet-Air Pollution Scrubbers
  44 11 33  Thermal Oxidizers
  44 11 36  Vacuum Extraction Systems

44 20 00  NOISE POLLUTION CONTROL
44 21 00  Noise Pollution Control Equipment
  44 21 13  Noise Abatement Barriers
    44 21 13.13  Fixed Noise Abatement Barriers
    44 21 13.16  Flexible Noise Abatement Barriers
    44 21 13.19  Portable Noise Abatement Barriers
  44 21 23  Noise Pollution Silencers
  44 21 26  Frequency Cancellers

44 40 00  WATER TREATMENT EQUIPMENT
44 41 00  Packaged Water Treatment
  44 41 13  Packaged Water Treatment Plants
    44 41 13.13  Chemical Packaged Water Treatment Plants
    44 41 13.16  Biological Packaged Water Treatment Plants
    44 41 13.19  Thermal Packaged Water Treatment Plants
44 42 00  General Water Treatment Equipment
  44 42 13  Aeration Water Treatment Equipment
44 42 16 American Petroleum Institute Separators
44 42 19 Water Treatment Blowers
44 42 23 Water Treatment Clarifiers
44 42 26 Water Treatment Comminutors
44 42 29 Water Treatment Compressors
44 42 33 Water Treatment Digesters
44 42 36 Water Treatment Dissolved Air Flotation Equipment
44 42 39 Water Treatment Grit Collectors
44 42 43 Water Treatment Induced Air Flotation Equipment
44 42 46 Water Treatment Mixers
44 42 49 Water Treatment Oil/Grease Interceptors
44 42 53 Water Treatment Oil/Water Separators
44 42 56 Water Treatment Pumps
44 42 59 Water Treatment Reactors
44 42 63 Water Treatment Sediment Removal Equipment
44 42 66 Water Treatment Skimmers
44 42 69 Water Treatment Spray Equipment
44 42 73 Water Treatment Tanks/Tank Liners

44 43 00 Water Filtration Equipment
44 43 13 Water Filters
44 43 13.13 Bag Water Filters
44 43 13.16 Cartridge Water Filters
44 43 13.19 Fabric Water Filters
44 43 13.23 Multimedia Water Filters
44 43 13.26 Packaged Water Filters
44 43 23 Water Filter Presses
44 43 26 Rotary-Drum Water Filtration Equipment
44 43 29 Water Filtration Sand
44 43 33 Water Filtration Screens
44 43 36 Vacuum Water Filtration Equipment

44 44 00 Water Treatment Chemical Systems Equipment
44 44 13 Water Treatment Chemical Feed Equipment
44 44 16 Water Chlorinators
44 44 19 Water Coagulators
44 44 23 Water Dechlorinators
44 44 26 Dissolved-Solids Water Treatment Equipment
44 44 29 Water Emulsifiers
44 44 33 Water Emulsion Crackers
44 44 36 Water Flocculators
44 44 39 Water Flouridation Equipment
44 44 43 Water Heavy Metals Treatment Equipment
44 44 46 Water Hydrothermal Equipment
44 44 49 Water Oils Treatment Equipment
44 44 53 Water Oxidation/Reduction Equipment
44 44 56 Water Ozone Equipment
44 44 59 Water pH Adjustment Equipment
44 44 63 Water Polymers Equipment
44 44 66 Water Precipitators
44 44 69 Water Pretreatment Equipment
44 44 73 Water Ultraviolet Radiation Equipment

44 45 00 Water Treatment Biological Systems Equipment
44 45 13  Water Biofilters
44 45 16  Water Bubble Membrane Diffusers

44 46 00  Sludge Treatment and Handling Equipment for Water Treatment Systems
44 46 13  Sludge Conveyors
44 46 16  Sludge Dewatering Equipment
44 46 19  Sludge Digesters
44 46 23  Sludge Incinerators
44 46 26  Sludge Thickeners

44 50 00  SOLID WASTE CONTROL
44 51 00  Solid Waste Control Equipment
44 51 13  Solid Waste Compactors
44 51 16  Solid Waste Baling Equipment
44 51 19  Solid Waste Fluffing Equipment
44 51 23  Solid Waste Liquid Extraction Equipment
44 51 26  Solid Waste Containers
44 51 29  Solid Waste Transfer Trailers
44 51 33  Solid Waste Transfer Stations

44 60 00  Unassigned
44 70 00  Unassigned
44 80 00  Unassigned
44 90 00  Unassigned
## DIVISION 45 – INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>45 00 00</td>
<td><strong>INDUSTRY-SPECIFIC MANUFACTURING EQUIPMENT</strong></td>
</tr>
<tr>
<td>45 08 00</td>
<td>Commissioning of Industry-Specific Manufacturing Equipment</td>
</tr>
<tr>
<td>45 11 00</td>
<td>Oil and Gas Extraction Equipment</td>
</tr>
<tr>
<td>45 11 01</td>
<td>Operation and Maintenance of Oil and Gas Extraction Equipment</td>
</tr>
<tr>
<td>45 11 06</td>
<td>Schedules for Oil and Gas Extraction Equipment</td>
</tr>
<tr>
<td>45 11 10 thru 45 12 99</td>
<td>User Defined Oil and Gas Extraction Equipment</td>
</tr>
<tr>
<td>45 13 00</td>
<td>Mining Machinery and Equipment</td>
</tr>
<tr>
<td>45 13 01</td>
<td>Operation and Maintenance of Mining Machinery and Equipment</td>
</tr>
<tr>
<td>45 13 06</td>
<td>Schedules for Mining Machinery and Equipment</td>
</tr>
<tr>
<td>45 13 10 thru 45 14 99</td>
<td>User Defined Mining Machinery and Equipment</td>
</tr>
<tr>
<td>45 15 00</td>
<td>Food Manufacturing Equipment</td>
</tr>
<tr>
<td>45 15 01</td>
<td>Operation and Maintenance of Food Manufacturing Equipment</td>
</tr>
<tr>
<td>45 15 06</td>
<td>Schedules for Food Manufacturing Equipment</td>
</tr>
<tr>
<td>45 15 10 thru 45 16 99</td>
<td>User Defined Food Manufacturing Equipment</td>
</tr>
<tr>
<td>45 17 00</td>
<td>Beverage and Tobacco Manufacturing Equipment</td>
</tr>
<tr>
<td>45 17 01</td>
<td>Operation and Maintenance of Beverage and Tobacco Manufacturing Equipment</td>
</tr>
<tr>
<td>45 17 06</td>
<td>Schedules for Beverage and Tobacco Manufacturing Equipment</td>
</tr>
<tr>
<td>45 17 10 thru 45 18 99</td>
<td>User Defined Beverage and Tobacco Manufacturing Equipment</td>
</tr>
<tr>
<td>45 19 00</td>
<td>Textiles and Apparel Manufacturing Equipment</td>
</tr>
<tr>
<td>45 19 01</td>
<td>Operation and Maintenance of Textiles and Apparel Manufacturing Equipment</td>
</tr>
<tr>
<td>45 19 06</td>
<td>Schedules for Textiles and Apparel Manufacturing Equipment</td>
</tr>
<tr>
<td>45 19 10 thru 45 20 99</td>
<td>User Defined Textiles and Apparel Manufacturing Equipment</td>
</tr>
<tr>
<td>45 21 00</td>
<td>Leather and Allied Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 21 01</td>
<td>Operation and Maintenance of Leather and Allied Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 21 06</td>
<td>Schedules for Leather and Allied Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 21 10 thru 45 22 99</td>
<td>User Defined Leather and Allied Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 23 00</td>
<td>Wood Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 23 01</td>
<td>Operation and Maintenance of Wood Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 23 06</td>
<td>Schedules for Wood Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 23 10 thru 45 24 99</td>
<td>User Defined Wood Product Manufacturing Equipment</td>
</tr>
<tr>
<td>45 25 00</td>
<td>Paper Manufacturing Equipment</td>
</tr>
<tr>
<td>45 25 01</td>
<td>Operation and Maintenance of Paper Manufacturing Equipment</td>
</tr>
<tr>
<td>45 25 06</td>
<td>Schedules for Paper Manufacturing Equipment</td>
</tr>
<tr>
<td>45 25 10 thru 45 26 99</td>
<td>User Defined Paper Manufacturing Equipment</td>
</tr>
<tr>
<td>45 27 00</td>
<td>Printing and Related Manufacturing Equipment</td>
</tr>
<tr>
<td>45 27 01</td>
<td>Operation and Maintenance of Printing and Related Manufacturing Equipment</td>
</tr>
<tr>
<td>45 27 06</td>
<td>Schedules for Printing and Related Manufacturing Equipment</td>
</tr>
</tbody>
</table>
45 27 10 thru
45 28 99  User Defined Printing and Related Manufacturing Equipment

45 29 00  Petroleum and Coal Products Manufacturing Equipment
45 29 01  Operation and Maintenance of Petroleum and Coal Products Manufacturing Equipment
45 29 06  Schedules for Petroleum and Coal Products Manufacturing Equipment
45 29 10 thru
45 30 99  User Defined Petroleum and Coal Products Manufacturing Equipment

45 31 00  Chemical Manufacturing Equipment
45 31 01  Operation and Maintenance of Chemical Manufacturing Equipment
45 31 06  Schedules for Chemical Manufacturing Equipment
45 31 10 thru
45 32 99  User Defined Chemical Manufacturing Equipment

45 33 00  Plastics and Rubber Manufacturing Equipment
45 33 01  Operation and Maintenance of Plastics and Rubber Manufacturing Equipment
45 33 06  Schedules for Plastics and Rubber Manufacturing Equipment
45 33 10 thru
45 34 99  User Defined Plastics and Rubber Manufacturing Equipment

45 35 00  Nonmetallic Mineral Product Manufacturing Equipment
45 35 01  Operation and Maintenance of Nonmetallic Mineral Product Manufacturing Equipment
45 35 06  Schedules for Nonmetallic Mineral Product Manufacturing Equipment
45 35 10 thru
45 36 99  User Defined Nonmetallic Mineral Product Manufacturing Equipment

45 37 00  Primary Metal Manufacturing Equipment
45 37 01  Operation and Maintenance of Primary Metal Manufacturing Equipment
45 37 06  Schedules for Primary Metal Manufacturing Equipment
45 37 10 thru
45 38 99  User Defined Primary Metal Manufacturing Equipment

45 39 00  Fabricated Metal Product Manufacturing Equipment
45 39 01  Operation and Maintenance of Fabricated Metal Product Manufacturing Equipment
45 39 06  Schedules for Fabricated Metal Product Manufacturing Equipment
45 39 10 thru
45 40 99  User Defined Fabricated Metal Product Manufacturing Equipment

45 41 00  Machinery Manufacturing Equipment
45 41 01  Operation and Maintenance of Machinery Manufacturing Equipment
45 41 06  Schedules for Machinery Manufacturing Equipment
45 41 10 thru
45 42 99  User Defined Machinery Manufacturing Equipment

45 43 00  Computer and Electronic Product Manufacturing Equipment
45 43 01  Operation and Maintenance of Computer and Electronic Product Manufacturing Equipment
45 43 06  Schedules for Computer and Electronic Product Manufacturing Equipment
45 43 10 thru
45 44 99  User Defined Computer and Electronic Product Manufacturing Equipment

45 45 00  Electrical Equipment, Appliance, and Component Manufacturing Equipment
45 45 01  Operation and Maintenance of Electrical Equipment, Appliance, and Component Manufacturing Equipment
45 45 06  Schedules for Electrical Equipment, Appliance, and Component Manufacturing Equipment
45 45 10 thru
45 46 99  User Defined Electrical Equipment, Appliance, and Component Manufacturing Equipment

45 47 00  Transportation Manufacturing Equipment
45 47 01  Operation and Maintenance of Transportation Manufacturing Equipment
45 47 06 Schedules for Transportation Manufacturing Equipment
45 47 10 thru
45 48 99 *User Defined* Transportation Manufacturing Equipment

**45 49 00 Furniture and Related Product Manufacturing Equipment**
45 49 01 Operation and Maintenance of Furniture and Related Product Manufacturing Equipment
45 49 06 Schedules for Furniture and Related Product Manufacturing Equipment
45 49 10 thru
45 50 99 *User Defined* Furniture and Related Product Manufacturing Equipment

**45 51 00 Other Manufacturing Equipment**
45 51 01 Operation and Maintenance of Other Manufacturing Equipment
45 51 06 Schedules for Other Manufacturing Equipment
45 51 10 thru
45 52 99 *User Defined* Other Manufacturing Equipment

45 60 00 Unassigned
45 70 00 Unassigned
45 80 00 Unassigned
45 90 00 Unassigned
DIVISION 48 – ELECTRICAL POWER GENERATION

48 00 00 ELECTRICAL POWER GENERATION

<table>
<thead>
<tr>
<th>Operation and Maintenance for Electrical Power Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 01 00 Operation and Maintenance of Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 01 10 Operation and Maintenance of Electrical Power Generation Testing</td>
</tr>
<tr>
<td>48 05 00 Common Work Results for Electrical Power Generation</td>
</tr>
<tr>
<td>48 06 00 Schedules for Electrical Power Generation</td>
</tr>
<tr>
<td>48 06 10 Schedules for Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 06 70 Schedules for Electrical Power Generation Testing</td>
</tr>
<tr>
<td>48 08 00 Commissioning of Electrical Power Generation</td>
</tr>
<tr>
<td>48 09 00 Instrumentation and Control for Electrical Power Generation</td>
</tr>
</tbody>
</table>

48 10 00 ELECTRICAL POWER GENERATION EQUIPMENT

<table>
<thead>
<tr>
<th>Fossil Fuel Plant Electrical Power Generation Equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>48 11 00 Fossil Fuel Plant Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 11 13 Fossil Fuel Electrical Power Plant Boilers</td>
</tr>
<tr>
<td>48 11 16 Fossil Fuel Electrical Power Plant Condensers</td>
</tr>
<tr>
<td>48 11 19 Fossil Fuel Electrical Power Plant Steam Turbines</td>
</tr>
<tr>
<td>48 11 23 Fossil Fuel Electrical Power Plant Gas Turbines</td>
</tr>
<tr>
<td>48 11 26 Fossil Fuel Electrical Power Plant Generators</td>
</tr>
<tr>
<td>48 12 00 Nuclear Fuel Plant Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 12 13 Nuclear Fuel Reactors</td>
</tr>
<tr>
<td>48 12 13.13 Nuclear Fuel Fission Reactors</td>
</tr>
<tr>
<td>48 12 13.16 Nuclear Fuel Fusion Reactors</td>
</tr>
<tr>
<td>48 12 23 Nuclear Fuel Electrical Power Plant Steam Generators</td>
</tr>
<tr>
<td>48 12 26 Nuclear Fuel Electrical Power Plant Condensers</td>
</tr>
<tr>
<td>48 12 29 Nuclear Fuel Electrical Power Plant Turbines</td>
</tr>
<tr>
<td>48 12 33 Nuclear Fuel Electrical Power Generators</td>
</tr>
<tr>
<td>48 13 00 Hydroelectric Plant Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 13 13 Hydroelectric Power Plant Water Turbines</td>
</tr>
<tr>
<td>48 13 16 Hydroelectric Power Plant Electrical Power Generators</td>
</tr>
<tr>
<td>48 14 00 Solar Energy Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 14 13 Solar Energy Collectors</td>
</tr>
<tr>
<td>48 14 13.13 Amorphous Solar Energy Collectors</td>
</tr>
<tr>
<td>48 14 13.16 Plate Cell Solar Energy Collectors</td>
</tr>
<tr>
<td>48 14 13.19 Vacuum Tube Solar Energy Collectors</td>
</tr>
<tr>
<td>48 15 00 Wind Energy Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 15 13 Windmills</td>
</tr>
<tr>
<td>48 15 16 Wind Energy Electrical Power Generators</td>
</tr>
<tr>
<td>48 16 00 Geothermal Energy Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 16 13 Geothermal Energy Heat Pumps</td>
</tr>
<tr>
<td>48 16 16 Geothermal Energy Condensers</td>
</tr>
<tr>
<td>48 16 19 Geothermal Energy Steam Turbines</td>
</tr>
<tr>
<td>48 16 23 Geothermal Energy Electrical Power Generators</td>
</tr>
<tr>
<td>48 17 00 Electrochemical Energy Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>48 17 13 Electrical Power Generation Batteries</td>
</tr>
<tr>
<td>48 18 00 Fuel Cell Electrical Power Generation Equipment</td>
</tr>
<tr>
<td>MasterFormat™ 2004 Edition – Numbers &amp; Titles</td>
</tr>
<tr>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Div. 48 – Electrical Power Generation</td>
</tr>
<tr>
<td>November 2004</td>
</tr>
<tr>
<td>48 18 13 Electrical Power Generation Fuel Cells</td>
</tr>
<tr>
<td>48 18 16 Hydrogen Control Equipment</td>
</tr>
<tr>
<td><strong>48 19 00 Electrical Power Control Equipment</strong></td>
</tr>
<tr>
<td>48 19 13 Electrical Power Generation Battery Charging Equipment</td>
</tr>
<tr>
<td>48 19 16 Electrical Power Generation Inverters</td>
</tr>
<tr>
<td>48 19 19 Electrical Power Generation Solar Tracking Equipment</td>
</tr>
<tr>
<td>48 19 23 Electrical Power Generation Transformers</td>
</tr>
<tr>
<td>48 19 26 Electrical Power Generation Voltage Regulators</td>
</tr>
<tr>
<td>48 20 00 Unassigned</td>
</tr>
<tr>
<td>48 30 00 Unassigned</td>
</tr>
<tr>
<td>48 40 00 Unassigned</td>
</tr>
<tr>
<td>48 50 00 Unassigned</td>
</tr>
<tr>
<td>48 60 00 Unassigned</td>
</tr>
<tr>
<td><strong>48 70 00 Electrical Power Generation Testing</strong></td>
</tr>
<tr>
<td>48 71 00 Electrical Power Generation Test Equipment</td>
</tr>
<tr>
<td>48 71 13 Electrical Power Generation Corona Test Equipment</td>
</tr>
<tr>
<td>48 71 16 Electrical Power Generation Current Test Equipment</td>
</tr>
<tr>
<td>48 71 19 Electrical Power Generation Power Test Equipment</td>
</tr>
<tr>
<td>48 71 23 Electrical Power Generation Resistance Test Equipment</td>
</tr>
<tr>
<td>48 71 26 Electrical Power Generation Voltage Test Equipment</td>
</tr>
<tr>
<td>48 80 00 Unassigned</td>
</tr>
<tr>
<td>48 90 00 Unassigned</td>
</tr>
</tbody>
</table>