



National BIM Standard - United States™ Version 2

2 REFERENCE STANDARD

Chapter 2.5 OmniClass™ Table 21 – Elements – February 2011

Introduction

OmniClass™ Table 21 – Elements is an existing industry standard developed, managed, published and copyrighted by the Construction Specifications Institute, approved through the NBIMS-US V2 consensus process. *OmniClass™ Table 21 – Elements* is incorporated in NBIMS-US V2 by reference so that it can be easily referenced in BIM Information Exchanges. Document follows.



A Strategy for Classifying the Built Environment

Table 21 - Elements

Table 21 - Elements

Definitions

An *Element* is a major component, assembly, or “*construction entity part which, in itself or in combination with other parts, fulfills a predominating function of the construction entity*” (ISO 12006-2). Predominating functions include, but are not limited to, supporting, enclosing, servicing, and equipping a facility. Functional descriptions can also include a process or an activity.

A *Designed Element* is an “*Element for which the work result(s) have been defined.*” (ISO 12006-2).

Discussion

An *Element* fulfills a characteristic predominant function, either by itself, or in combination with other elements; Table 21 is organized by elements’ implied functions. Major elements may be composed of several sub-elements. For example, a shell enclosure might be composed of superstructure, exterior closure, and roofing. Currently, elements are most often used during early project phases for identifying a project’s physical, operational, or aesthetic characteristics. Elements are considered without regard to a material or technical solution of the function. For each element, there may be several technical solutions capable of accomplishing the elemental function, and more than one may be selected for a project. These solutions are the designed elements.

The content of the OmniClass *Elements* Table extends well beyond the content of the 1998 version of the CSC/CSI *UniFormat*™ document. *UniFormat* is currently undergoing revision by CSI and CSC. When the new version becomes available, the OCCS Development Committee intends to use its applicable contents as the source for Table 21, similar to the current relationship between Table 22 and *MasterFormat*.

Many applications exist for elemental classification. OmniClass Table 21 – Elements can provide a useful way to organize and classify elements at the early stages of a project, before particular or specific materials and methods (designed elements) have been determined, and help to conceptualize the project without restrictions imposed by any particular design solution. The Elements table can be used to organize information so that it can help stimulate project decisions, record those decisions (and subsequent changes), and used as a basis for organizing documents to form a contractual commitment between two or more parties on a project. These usually occur at an early design development stage, but may occur at any project stage or phase.

Examples

Structural Floors, Exterior Walls, Storm Sewer Utility, Stairs, Roof Framing, Furniture and Fittings, HVAC Distribution

Table Uses

Identifying owner criteria for project, designer aesthetic and functional criteria, and applicable code and regulatory requirements, classifying facility design data, organizing pre-design and early design descriptions, design/build proposals, preliminary project reports, preliminary specifications of facility functions, cost analysis reports, scheduling intentions, performance requirements or criteria, and preliminary drawings, relating drawings and preliminary project descriptions, electronic filing of project documents and their schematic details, and coordinating all project information with facility management and maintenance information.

Table Users

Owners, designers, planners, project information programmers, specifiers, budget and cost estimators, schedulers, constructors, construction managers, design-builders, facility owners, facility managers, and draftspersons.

Table Relationships

Table 22 - Work Results

Table 22 organizes “work results” most commonly used in outline, short form, or full-form specifications and related documents, usually produced after subjects are briefly defined and addressed in documents organized according to Table 21 - Elements. These more complete specification work result sections may individually include a variety of products or materials (classified in Table 23 - Products) used to achieve a specific work result. Work result specifications, in conjunction with working drawings and other associated documents, are usually used for bidding and contracting the complete project. Table 22 is based in part on CSC/CSI MasterFormat™, 2004 edition.

Table 23 – Products

Table 23 classifies products intended for potential or actual use in any construction project. This table provides a location for materials, assemblies, and systems, as products without regard for their application, which is addressed in Tables 21 and 22. A single product will have a single location in this Table, whereas Table 22 - Work Results may have numerous headings that reference the same product in a number of locations, depending on its use within the facility.

Legacy Sources

- ASTM: A variety of ASTM “format” documents addressing specific classification of subjects associated with these element tables are included.
- ISO 12006-2 – Table 4.7 Elements (by characteristic predominating function of the construction entity)
- ISO 12006-2 – Table 4.8 Designed Elements (element by type of work)
- Uniclass Table G - Elements for Buildings.
- Uniclass Table H - Elements for Civil Engineering Works.
- UniFormat™ (CSC/CSI publication 1992, 1998)
- UNIFORMAT II (ASTM E1557)

OmniClass Number	Level 1 Title	Level 2 Title	Level 3 Title	Level 4 Title	Table 22 Reference
21-01 00 00	Substructure				
21-01 10		Foundations			
21-01 10 10			Standard Foundations		
21-01 10 10 10				Wall Foundations	
21-01 10 10 30				Column Foundations	
21-01 10 10 90				Standard Foundation Supplementary Components	
21-01 10 20			Special Foundations		22-31 60 00
21-01 10 20 10				Driven Piles	22-31 62 00
21-01 10 20 15				Bored Piles	22-31 63 00
21-01 10 20 20				Caissons	22-31 64 00
21-01 10 20 30				Special Foundation Walls	22-31 66 16
21-01 10 20 40				Foundation Anchors	22-31 68 00
21-01 10 20 50				Underpinning	22-31 48 00
21-01 10 20 60				Raft Foundations	22-03 71 00
21-01 10 20 70				Pile Caps	
21-01 10 20 80				Grade Beams	
21-01 20		Subgrade Enclosures			
21-01 20 10			Walls for Subgrade Enclosures		
21-01 20 10 10				Subgrade Enclosure Wall Construction	
21-01 20 10 20				Subgrade Enclosure Wall Interior Skin	
21-01 20 10 90				Subgrade Enclosure Wall Supplementary Components	
21-01 40		Slabs-On-Grade			
21-01 40 10			Standard Slabs-on-Grade		
21-01 40 20			Structural Slabs-on-Grade		
21-01 40 30			Slab Trenches		
21-01 40 40			Pits and Bases		
21-01 40 90			Slab-On-Grade Supplementary Components		
21-01 40 90 10				Perimeter Insulation	22-07 21 00
21-01 40 90 20				Vapor Retarder	22-07 26 00
21-01 40 90 30				Waterproofing	22-07 10 00
21-01 40 90 50				Mud Slab	22-03 30 00
21-01 40 90 60				Subbase Layer	22-31 23 23
21-01 60		Water and Gas Mitigation			
21-01 60 10			Building Subdrainage		22-33 46 00
21-01 60 10 10				Foundation Drainage	22-33 46 13
21-01 60 10 20				Underslab Drainage	22-33 46 19
21-01 60 20			Off-Gassing Mitigation		22-31 21 00
21-01 60 20 10				Radon Mitigation	22-31 21 13
21-01 60 20 50				Methane Mitigation	22-31 21 16
21-01 90		Substructure Related Activities			
21-01 90 10			Substructure Excavation		22-31 23 16
21-01 90 10 10				Backfill and Compaction	22-31 23 23
21-01 90 20			Construction Dewatering		22-31 23 19
21-01 90 30			Excavation Support		22-31 50 00
21-01 90 30 10				Anchor Tiebacks	22-31 51 00
21-01 90 30 20				Cofferdams	22-31 52 00
21-01 90 30 40				Cribbing and Walers	22-31 53 00
21-01 90 30 60				Ground Freezing	22-31 54 00
21-01 90 30 70				Slurry Walls	22-31 56 00
21-01 90 40			Soil Treatment		22-31 31 00
21-02 00 00	Shell				
21-02 10		Superstructure			
21-02 10 10			Floor Construction		
21-02 10 10 10				Floor Structural Frame	
21-02 10 10 20				Floor Decks, Slabs, and Toppings	
21-02 10 10 30				Balcony Floor Construction	
21-02 10 10 40				Mezzanine Floor Construction	
21-02 10 10 50				Ramps	

21-02 10 10 90		Floor Construction Supplementary Components	
21-02 10 20	Roof Construction		
21-02 10 20 10		Roof Structural Frame	
21-02 10 20 20		Roof Decks, Slabs, and Sheathing	
21-02 10 20 30		Canopy Construction	
21-02 10 20 90		Roof Construction Supplementary Components	
21-02 10 80	Stairs		
21-02 10 80 10		Stair Construction	
21-02 10 80 30		Stair Soffits	
21-02 10 80 50		Stair Railings	
21-02 10 80 60		Fire Escapes	22-05 51 23
21-02 10 80 70		Metal Walkways	22-05 51 36
21-02 10 80 80		Ladders	22-05 51 23
21-02 20	Exterior Vertical Enclosures		
21-02 20 10	Exterior Walls		
21-02 20 10 10		Exterior Wall Veneer	
21-02 20 10 20		Exterior Wall Construction	
21-02 20 10 30		Exterior Wall Interior Skin	
21-02 20 10 40		Fabricated Exterior Wall Assemblies	
21-02 20 10 50		Parapets	
21-02 20 10 60		Equipment Screens	
21-02 20 10 80		Exterior Wall Supplementary Components	
21-02 20 10 90		Exterior Wall Opening Supplementary Components	
21-02 20 20	Exterior Windows		22-08 50 00
21-02 20 20 10		Exterior Operating Windows	22-08 50 00
21-02 20 20 20		Exterior Fixed Windows	22-08 50 00
21-02 20 20 30		Exterior Window Wall	
21-02 20 20 50		Exterior Special Function Windows	22-08 56 00
21-02 20 50	Exterior Doors and Grilles		
21-02 20 50 10		Exterior Entrance Doors	22-08 42 00
21-02 20 50 20		Exterior Utility Doors	22-08 10 00
21-02 20 50 30		Exterior Oversize Doors	
21-02 20 50 40		Exterior Special Function Doors	22-08 30 00
21-02 20 50 60		Exterior Grilles	
21-02 20 50 70		Exterior Gates	
21-02 20 50 90		Exterior Door Supplementary Components	
21-02 20 70	Exterior Louvers and Vents		22-08 90 00
21-02 20 70 10		Exterior Louvers	22-08 91 00
21-02 20 70 50		Exterior Vents	22-08 95 00
21-02 20 80	Exterior Wall Appurtenances		
21-02 20 80 10		Exterior Fixed Grilles and Screens	22-10 82 13
21-02 20 80 30		Exterior Opening Protection Devices	
21-02 20 80 50		Exterior Balcony Walls and Railings	22-05 52 00
21-02 20 80 70		Exterior Fabrications	
21-02 20 80 80		Bird Control Devices	22-10 81 13
21-02 20 90	Exterior Wall Specialties		22-10 74 00
21-02 30	Exterior Horizontal Enclosures		
21-02 30 10	Roofing		
21-02 30 10 10		Steep Slope Roofing	22-07 30 00
21-02 30 10 50		Low-Slope Roofing	
21-02 30 10 70		Canopy Roofing	
21-02 30 10 90		Roofing Supplementary Components	
21-02 30 20	Roof Appurtenances		

21-02 30 20 10		Roof Accessories	22-07 72 00
21-02 30 20 30		Roof Specialties	22-10 74 00
21-02 30 20 70		Rainwater Management	
21-02 30 40		Traffic Bearing Horizontal Enclosures	
21-02 30 40 10		Traffic Bearing Coatings	22-07 18 00
21-02 30 40 30		Horizontal Waterproofing Membrane	22-07 10 00
21-02 30 40 50		Wear Surfaces	
21-02 30 40 90		Horizontal Enclosure Supplementary Components	
21-02 30 60		Horizontal Openings	
21-02 30 60 10		Roof Windows and Skylights	22-08 60 00
21-02 30 60 50		Vents and Hatches	
21-02 30 60 90		Horizontal Opening Supplementary Components	
21-02 30 80		Overhead Exterior Enclosures	
21-02 30 80 10		Exterior Ceilings	
21-02 30 80 20		Exterior Soffits	
21-02 30 80 30		Exterior Bulkheads	
21-03 00 00	Interiors		
21-03 10	Interior Construction		
21-03 10 10		Interior Partitions	22-10 22 00
21-03 10 10 10		Interior Fixed Partitions	
21-03 10 10 20		Interior Glazed Partitions	
21-03 10 10 40		Interior Demountable Partitions	22-10 22 19
21-03 10 10 50		Interior Operable Partitions	
21-03 10 10 70		Interior Screens	
21-03 10 10 90		Interior Partition Supplementary Components	
21-03 10 20		Interior Windows	22-08 50 00
21-03 10 20 10		Interior Operating Windows	22-08 50 00
21-03 10 20 20		Interior Fixed Windows	22-08 50 00
21-03 10 20 50		Interior Special Function Windows	22-08 56 00
21-03 10 20 90		Interior Window Supplementary Components	
21-03 10 30		Interior Doors	22-08 10 00
21-03 10 30 10		Interior Swinging Doors	22-08 10 00
21-03 10 30 20		Interior Entrance Doors	22-08 42 00
21-03 10 30 25		Interior Sliding Doors	22-08 11 73
21-03 10 30 30		Interior Folding Doors	22-08 35 13
21-03 10 30 40		Interior Coiling Doors	22-08 33 00
21-03 10 30 50		Interior Panel Doors	22-08 36 00
21-03 10 30 70		Interior Special Function Doors	22-08 30 00
21-03 10 30 80		Interior Access Doors and Panels	22-08 31 00
21-03 10 30 90		Interior Door Supplementary Components	
21-03 10 40		Interior Grilles and Gates	
21-03 10 40 10		Interior Grilles	
21-03 10 40 50		Interior Gates	
21-03 10 60		Raised Floor Construction	
21-03 10 60 10		Access Flooring	22-09 69 00
21-03 10 60 30		Platform/Stage Floors	
21-03 10 70		Suspended Ceiling Construction	
21-03 10 70 10		Acoustical Suspended Ceilings	22-09 51 00
21-03 10 70 20		Suspended Plaster and Gypsum Board Ceilings	
21-03 10 70 50		Specialty Suspended Ceilings	22-09 54 00

21-03 10 70 70		Special Function Suspended Ceilings	22-09 57 00
21-03 10 70 90		Ceiling Suspension Components	
21-03 10 90	Interior Specialties		
21-03 10 90 10		Interior Railings and Handrails	
21-03 10 90 15		Interior Louvers	22-08 91 00
21-03 10 90 20		Information Specialties	22-10 10 00
21-03 10 90 25		Compartments and Cubicles	22-10 21 00
21-03 10 90 30		Service Walls	22-10 25 00
21-03 10 90 35		Wall and Door Protection	22-10 26 00
21-03 10 90 40		Toilet, Bath, and Laundry Accessories	22-10 28 00
21-03 10 90 45		Interior Gas Lighting	22-10 84 16
21-03 10 90 50		Fireplaces and Stoves	22-10 30 00
21-03 10 90 60		Safety Specialties	22-10 40 00
21-03 10 90 70		Storage Specialties	22-10 50 00
21-03 10 90 90		Other Interior Specialties	22-10 80 00
21-03 20	Interior Finishes		
21-03 20 10	Wall Finishes		22-09 70 00
21-03 20 10 10		Tile Wall Finish	22-09 30 00
21-03 20 10 20		Wall Paneling	
21-03 20 10 30		Wall Coverings	22-09 72 00
21-03 20 10 35		Wall Carpeting	22-09 73 00
21-03 20 10 50		Stone Facing	22-09 75 00
21-03 20 10 60		Special Wall Surfacing	22-09 77 00
21-03 20 10 70		Wall Painting and Coating	22-09 90 00
21-03 20 10 80		Acoustical Wall Treatment	
21-03 20 10 90		Wall Finish Supplementary Components	
21-03 20 20	Interior Fabrications		
21-03 20 30	Flooring		22-09 60 00
21-03 20 30 10		Flooring Treatment	22-09 61 00
21-03 20 30 20		Tile Flooring	22-09 30 00
21-03 20 30 30		Specialty Flooring	22-09 62 00
21-03 20 30 40		Masonry Flooring	22-09 63 00
21-03 20 30 45		Wood Flooring	22-09 64 00
21-03 20 30 50		Resilient Flooring	22-09 65 00
21-03 20 30 60		Terrazzo Flooring	22-09 66 00
21-03 20 30 70		Fluid-Applied Flooring	22-09 67 00
21-03 20 30 75		Carpeting	22-09 68 00
21-03 20 30 80		Athletic Flooring	
21-03 20 30 85		Entrance Flooring	
21-03 20 30 90		Flooring Supplementary Components	
21-03 20 40	Stair Finishes		
21-03 20 40 20		Tile Stair Finish	22-09 30 00
21-03 20 40 40		Masonry Stair Finish	22-09 63 00
21-03 20 40 45		Wood Stair Finish	22-09 64 00
21-03 20 40 50		Resilient Stair Finish	22-09 65 00
21-03 20 40 60		Terrazzo Stair Finish	22-09 66 00
21-03 20 40 75		Carpeted Stair Finish	22-09 68 00
21-03 20 50	Ceiling Finishes		22-09 50 00
21-03 20 50 10		Plaster and Gypsum Board Finish	22-09 20 00
21-03 20 50 20		Ceiling Paneling	
21-03 20 50 70		Ceiling Painting and Coating	22-09 90 00
21-03 20 50 80		Acoustical Ceiling Treatment	
21-03 20 50 90		Ceiling Finish Supplementary Components	
21-04 00 00	Services		
21-04 10	Conveying		22-14 00 00
21-04 10 10	Vertical Conveying Systems		

21-04 10 10 10	Elevators	22-14 20 00
21-04 10 10 20	Lifts	22-14 40 00
21-04 10 10 30	Escalators	22-14 31 00
21-04 10 10 50	Dumbwaiters	22-14 10 00
21-04 10 10 60	Moving Ramps	22-14 33 00
21-04 10 30	Horizontal Conveying	
21-04 10 30 10	Moving Walks	22-14 32 00
21-04 10 30 30	Turntables	22-14 70 00
21-04 10 30 50	Passenger Loading Bridges	22-34 77 13
21-04 10 30 70	People Movers	
21-04 10 50	Material Handling	
21-04 10 50 10	Cranes	22-41 22 13
21-04 10 50 20	Hoists	22-41 22 23
21-04 10 50 30	Derricks	22-41 22 33
21-04 10 50 40	Conveyors	22-41 21 00
21-04 10 50 50	Baggage Handling Equipment	22-34 77 16
21-04 10 50 60	Chutes	22-14 91 00
21-04 10 50 70	Pneumatic Tube Systems	22-14 92 00
21-04 10 80	Operable Access Systems	
21-04 10 80 10	Suspended Scaffolding	22-14 81 00
21-04 10 80 20	Rope Climbers	22-14 82 00
21-04 10 80 30	Elevating Platforms	22-14 83 00
21-04 10 80 40	Powered Scaffolding	22-14 84 00
21-04 10 80 50	Building Envelope Access	
21-04 20	Plumbing	22-22 00 00
21-04 20 10	Domestic Water Distribution	22-22 11 00
21-04 20 10 10	Facility Potable-Water Storage Tanks	22-22 12 00
21-04 20 10 20	Domestic Water Equipment	
21-04 20 10 40	Domestic Water Piping	22-22 11 16
21-04 20 10 60	Plumbing Fixtures	22-22 40 00
21-04 20 10 90	Domestic Water Distribution Supplementary Components	
21-04 20 20	Sanitary Drainage	22-22 13 00
21-04 20 20 10	Sanitary Sewerage Equipment	
21-04 20 20 30	Sanitary Sewerage Piping	
21-04 20 20 90	Sanitary Drainage Supplementary Components	
21-04 20 30	Building Support Plumbing Systems	22-22 14 00
21-04 20 30 10	Stormwater Drainage Equipment	
21-04 20 30 20	Stormwater Drainage Piping	22-22 14 13
21-04 20 30 30	Facility Stormwater Drains	22-22 14 26
21-04 20 30 60	Gray Water Systems	
21-04 20 30 90	Building Support Plumbing System Supplementary Components	
21-04 20 50	General Service Compressed-Air	22-22 15 00
21-04 20 60	Process Support Plumbing Systems	
21-04 20 60 10	Compressed-Air Systems	22-22 61 00
21-04 20 60 20	Vacuum Systems	22-22 62 00
21-04 20 60 30	Gas Systems	22-22 63 00
21-04 20 60 40	Chemical-Waste Systems	22-22 66 00
21-04 20 60 50	Processed Water Systems	22-22 67 00
21-04 20 60 90	Process Support Plumbing System Supplementary Components	

21-04 30	Heating, Ventilation, and Air Conditioning (HVAC)		22-23 00 00
21-04 30 10	Facility Fuel Systems		22-23 10 00
21-04 30 10 10		Fuel Piping	22-23 11 00
21-04 30 10 30		Fuel Pumps	22-23 12 00
21-04 30 10 50		Fuel Storage Tanks	22-23 13 00
21-04 30 20	Heating Systems		
21-04 30 20 10		Heat Generation	
21-04 30 20 30		Thermal Heat Storage	22-23 71 13
21-04 30 20 70		Decentralized Heating Equipment	22-23 80 00
21-04 30 20 90		Heating System Supplementary Components	
21-04 30 30	Cooling Systems		
21-04 30 30 10		Central Cooling	22-23 60 00
21-04 30 30 30		Evaporative Air-Cooling	22-23 76 00
21-04 30 30 50		Thermal Cooling Storage	22-23 71 00
21-04 30 30 70		Decentralized Cooling	22-23 80 00
21-04 30 30 90		Cooling System Supplementary Components	
21-04 30 50	Facility HVAC Distribution Systems		
21-04 30 50 10		Facility Hydronic Distribution	
21-04 30 50 30		Facility Steam Distribution	
21-04 30 50 50		HVAC Air Distribution	
21-04 30 50 90		Facility Distribution Systems Supplementary Components	
21-04 30 60	Ventilation		
21-04 30 60 10		Supply Air	
21-04 30 60 20		Return Air	
21-04 30 60 30		Exhaust Air	
21-04 30 60 40		Outside Air	
21-04 30 60 60		Air-to-Air Energy Recovery	22-23 72 00
21-04 30 60 70		HVAC Air Cleaning	22-23 40 00
21-04 30 60 90		Ventilation Supplementary Components	
21-04 30 70	Special Purpose HVAC Systems		
21-04 30 70 10		Snow Melting	22-23 83 00
21-04 40	Fire Protection		
21-04 40 10	Fire Suppression		22-21 00 00
21-04 40 10 10		Water-Based Fire-Suppression	22-21 10 00
21-04 40 10 50		Fire-Extinguishing	22-21 20 00
21-04 40 10 90		Fire Suppression Supplementary Components	
21-04 40 30	Fire Protection Specialties		22-10 44 00
21-04 40 30 10		Fire Protection Cabinets	22-10 44 13
21-04 40 30 30		Fire Extinguishers	22-10 44 16
21-04 40 30 50		Breathing Air Replenishment Systems	22-10 44 33
21-04 40 30 70		Fire Extinguisher Accessories	22-10 44 43
21-04 50	Electrical		22-26 00 00
21-04 50 10	Facility Power Generation		
21-04 50 10 10		Packaged Generator Assemblies	22-26 32 00
21-04 50 10 20		Battery Equipment	22-26 33 00
21-04 50 10 30		Photovoltaic Collectors	22-26 31 00
21-04 50 10 40		Fuel Cells	22-48 18 00
21-04 50 10 60		Power Filtering and Conditioning	22-26 35 00
21-04 50 10 70		Transfer Switches	22-26 36 00

21-04 50 10 90		Facility Power Generation Supplementary Components	
21-04 50 20	Electrical Service and Distribution		
21-04 50 20 10		Electrical Service	22-26 21 00
21-04 50 20 30		Power Distribution	22-26 20 00
21-04 50 20 70		Facility Grounding	22-26 05 26
21-04 50 20 90		Electrical Service and Distribution Supplementary Components	
21-04 50 30	General Purpose Electrical Power		
21-04 50 30 10		Branch Wiring System	
21-04 50 30 50		Wiring Devices	22-26 27 26
21-04 50 30 90		General Purpose Electrical Power Supplementary Components	
21-04 50 40	Lighting		
21-04 50 40 10		Lighting Control	22-26 09 23
21-04 50 40 20		Branch Wiring for Lighting	
21-04 50 40 50		Lighting Fixtures	22-26 50 00
21-04 50 40 90		Lighting Supplementary Components	
21-04 50 80	Miscellaneous Electrical Systems		
21-04 50 80 10		Lightning Protection	22-26 41 00
21-04 50 80 40		Cathodic Protection	22-26 42 00
21-04 50 80 70		Transient Voltage Suppression	22-26 43 00
21-04 50 80 90		Miscellaneous Electrical Systems Supplementary Components	
21-04 60	Communications		
21-04 60 10	Data Communications		
21-04 60 10 10		Data Communications Network Equipment	
21-04 60 10 20		Data Communications Hardware	22-27 22 00
21-04 60 10 30		Data Communications Peripheral Data Equipment	
21-04 60 10 50		Data Communications Software	22-27 25 00
21-04 60 10 60		Data Communication Program and Integration Services	22-27 26 00
21-04 60 20	Voice Communications		
21-04 60 20 10		Voice Communications Switching and Routing Equipment	22-27 31 00
21-04 60 20 20		Voice Communications Terminal Equipment	
21-04 60 20 30		Voice Communications Messaging	22-27 33 00
21-04 60 20 40		Call Accounting	22-27 34 00
21-04 60 20 50		Call Management	22-27 35 00
21-04 60 30	Audio-Video Communication		
21-04 60 30 10		Audio-Video Systems	22-27 41 00
21-04 60 30 50		Electronic Digital Systems	22-27 42 00
21-04 60 60	Distributed Communications and Monitoring		
21-04 60 60 10		Distributed Audio-Video Communications Systems	22-27 51 00
21-04 60 60 30		Healthcare Communications and Monitoring	22-27 52 00
21-04 60 60 50		Distributed Systems	22-27 53 00
21-04 60 90	Communications Supplementary Components		
21-04 60 90 10		Supplementary Components	
21-04 70	Electronic Safety and Security		
21-04 70 10	Access Control and Intrusion Detection		
			22-28 10 00

21-04 70 10 10		Access Control	22-28 13 00
21-04 70 10 50		Intrusion Detection	22-28 16 00
21-04 70 30	Electronic Surveillance		22-28 20 00
21-04 70 30 10		Video Surveillance	22-28 23 00
21-04 70 30 50		Electronic Personal Protection	22-28 26 00
21-04 70 50	Detection and Alarm		22-28 30 00
21-04 70 50 10		Fire Detection and Alarm	22-28 31 00
21-04 70 50 20		Radiation Detection and Alarm	22-28 32 00
21-04 70 50 30		Fuel-Gas Detection and Alarm	22-28 33 00
21-04 70 50 40		Fuel-Oil Detection and Alarm	22-28 34 00
21-04 70 50 50		Refrigeration Detection and Alarm	22-28 35 00
21-04 70 50 60		Water Intrusion Detection and Alarm	22-28 36 00
21-04 70 70	Electronic Monitoring and Control		22-28 46 00
21-04 70 70 10		Electronic Detention Monitoring and Control	22-23 46 00
21-04 70 90	Electronic Safety and Security Supplementary Components		
21-04 70 90 10		Supplementary Components	
21-04 80	Integrated Automation		22-25 00 00
21-04 80 10	Integrated Automation Facility Controls		22-25 50 00
21-04 80 10 10		Integrated Automation Control of Equipment	22-25 51 00
21-04 80 10 20		Integrated Automation Control of Conveying Equipment	22-25 52 00
21-04 80 10 30		Integrated Automation Control of Fire-Suppression Systems	22-25 53 00
21-04 80 10 40		Integrated Automation Control of Plumbing Systems	22-25 54 00
21-04 80 10 50		Integrated Automation Control of HVAC Systems	22-25 55 00
21-04 80 10 60		Integrated Automation Control of Electrical Systems	22-25 56 00
21-04 80 10 70		Integrated Automation Control of Communication Systems	22-25 57 00
21-04 80 10 80		Integrated Automation Control of Electronic Safety and Security Systems	22-25 58 00
21-04 80 10 90		Integrated Automation Supplementary Components	
21-05 00 00	Equipment and Furnishir		
21-05 10	Equipment		22-11 00 00
21-05 10 10	Vehicle and Pedestrian Equipment		22-11 10 00
21-05 10 10 10		Vehicle Servicing Equipment	22-11 11 00
21-05 10 10 30		Interior Parking Control Equipment	22-11 12 00
21-05 10 10 50		Loading Dock Equipment	22-11 13 00
21-05 10 10 70		Interior Pedestrian Control Equipment	22-11 14 00
21-05 10 30	Commercial Equipment		22-11 20 00
21-05 10 30 10		Mercantile and Service Equipment	22-11 21 00
21-05 10 30 20		Vault Equipment	22-11 16 00
21-05 10 30 25		Teller and Service Equipment	22-11 17 00
21-05 10 30 30		Refrigerated Display Equipment	22-11 22 00
21-05 10 30 35		Commercial Laundry and Dry Cleaning Equipment	

21-05 10 30 40		Maintenance Equipment	22-11 24 00
21-05 10 30 50		Hospitality Equipment	22-11 25 00
21-05 10 30 55		Unit Kitchens	22-11 26 00
21-05 10 30 60		Photographic Processing Equipment	22-11 27 00
21-05 10 30 70		Postal, Packaging, and Shipping Equipment	22-11 29 00
21-05 10 30 75		Office Equipment	22-11 28 00
21-05 10 30 80		Foodservice Equipment	22-11 40 00
21-05 10 40	Institutional Equipment		22-11 50 00
21-05 10 40 10		Educational and Scientific Equipment	22-11 50 00
21-05 10 40 20		Healthcare Equipment	22-11 70 00
21-05 10 40 40		Religious Equipment	22-11 91 00
21-05 10 40 60		Security Equipment	22-11 18 00
21-05 10 40 70		Detention Equipment	22-11 19 00
21-05 10 60	Residential Equipment		22-11 30 00
21-05 10 60 10		Residential Appliances	22-11 31 00
21-05 10 60 50		Retractable Stairs	22-11 33 00
21-05 10 60 70		Residential Ceiling Fans	22-11 34 00
21-05 10 70	Entertainment and Recreational Equipment		
21-05 10 70 10		Theater and Stage Equipment	22-11 61 00
21-05 10 70 20		Musical Equipment	22-11 62 00
21-05 10 70 50		Athletic Equipment	22-11 66 00
21-05 10 70 60		Recreational Equipment	22-11 67 00
21-05 10 90	Other Equipment		22-11 90 00
21-05 10 90 10		Solid Waste Handling Equipment	22-11 82 00
21-05 10 90 30		Agricultural Equipment	22-11 92 00
21-05 10 90 40		Horticultural Equipment	22-11 93 00
21-05 10 90 60		Decontamination Equipment	
21-05 20	Furnishings		22-12 00 00
21-05 20 10	Fixed Furnishings		
21-05 20 10 10		Fixed Art	22-12 10 00
21-05 20 10 20		Window Treatments	22-12 20 00
21-05 20 10 30		Casework	22-12 30 00
21-05 20 10 70		Fixed Multiple Seating	22-12 60 00
21-05 20 10 90		Other Fixed Furnishings	22-12 90 00
21-05 20 50	Movable Furnishings		
21-05 20 50 10		Movable Art	22-12 10 00
21-05 20 50 30		Furniture	22-12 50 00
21-05 20 50 40		Accessories	22-12 40 00
21-05 20 50 60		Movable Multiple Seating	22-12 60 00
21-05 20 50 90		Other Movable Furnishings	22-12 90 00
21-06 00 00	Special Construction and Demolition		
21-06 10	Special Construction		
21-06 10 10	Integrated Construction		
21-06 10 10 10		Building Modules	22-13 42 00
21-06 10 10 50		Manufactured/Fabricated Rooms	22-13 20 00
21-06 10 10 70		Modular Mezzanines	22-13 44 00
21-06 10 20	Special Structures		22-13 30 00
21-06 10 20 10		Fabric Structures	22-13 31 00
21-06 10 20 20		Space Frames	22-13 32 00
21-06 10 20 30		Geodesic Structures	22-13 33 00
21-06 10 20 40		Manufacturer-Engineered Structures	22-13 34 00
21-06 10 20 60		Manufactured Canopies	22-10 73 16
21-06 10 20 65		Rammed Earth Construction	22-13 35 00
21-06 10 20 70		Towers	22-13 36 00
21-06 10 30	Special Function Construction		
21-06 10 30 10		Sound and Vibration Control	22-13 48 00
21-06 10 30 30		Seismic Control	22-13 48 00
21-06 10 30 50		Radiation Protection	22-13 49 00
21-06 10 50	Special Facility Components		
21-06 10 50 10		Pools	

21-06 10 50 20		Interior Fountains	22-13 12 23
21-06 10 50 30		Interior Water Features	
21-06 10 50 40		Aquariums	22-13 13 00
21-06 10 50 50		Amusement Park Structures and Equipment	22-13 14 00
21-06 10 50 60		Ice Rinks	22-13 18 00
21-06 10 50 70		Animal Containment	22-13 19 00
21-06 10 60	Athletic and Recreational	Special Construction	22-13 28 00
21-06 10 60 10		Indoor Soccer Boards	22-13 28 13
21-06 10 60 20		Safety Netting	22-13 28 16
21-06 10 60 30		Arena Football Boards	22-13 28 19
21-06 10 60 40		Floor Sockets	22-13 28 26
21-06 10 60 50		Athletic and Recreational Court Walls	22-13 28 33
21-06 10 60 60		Demountable Athletic Surfaces	22-13 28 66
21-06 10 80	Special Instrumentation		22-13 50 00
21-06 10 80 10		Stress Instrumentation	22-13 51 00
21-06 10 80 20		Seismic Instrumentation	22-13 51 00
21-06 10 80 40		Meteorological Instrumentation	22-13 51 00
21-06 10 80 60		Earth Movement Monitoring	
21-06 20	Facility Remediation		
21-06 20 10	Hazardous Materials Remediation		22-02 80 00
21-06 20 10 10		Transportation and Disposal of Hazardous Materials	
21-06 20 10 20		Asbestos Remediation	22-02 82 00
21-06 20 10 30		Lead Remediation	22-02 83 00
21-06 20 10 40		Polychlorinate Biphenyl Remediation	22-02 84 00
21-06 20 10 50		Mold Remediation	22-02 85 00
21-06 30	Demolition		
21-06 30 10	Structure Demolition		22-02 41 16
21-06 30 10 10		Building Demolition	22-02 41 16.13
21-06 30 10 30		Tower Demolition	22-02 41 16.23
21-06 30 10 50		Bridge Demolition	22-02 41 16.33
21-06 30 10 70		Dam Demolition	22-02 41 16.43
21-06 30 30	Selective Demolition		22-02 41 19
21-06 30 30 10		Selective Building Demolition	22-02 41 19.13
21-06 30 30 30		Selective Interior Demolition	22-02 41 19.16
21-06 30 30 50		Selective Bridge Demolition	22-02 41 19.33
21-06 30 30 70		Selective Historic Demolition	22-02 41 91
21-06 30 50	Structure Moving		22-02 43 00
21-06 30 50 10		Structure Relocation	22-02 43 13
21-06 30 50 30		Structure Raising	22-02 43 16
21-07 00 00	Sitework		
21-07 10	Site Preparation		
21-07 10 10	Site Clearing		22-31 10 00
21-07 10 10 10		Clearing and Grubbing	22-31 11 00
21-07 10 10 30		Tree and Shrub Removal and Trimming	22-31 13 00
21-07 10 10 50		Earth Stripping and Stockpiling	22-31 14 00
21-07 10 20	Site Elements Demolition		
21-07 10 20 10		Utility Demolition	
21-07 10 20 30		Infrastructure Demolition	
21-07 10 20 50		Selective Site Demolition	22-02 41 13
21-07 10 30	Site Element Relocations		
21-07 10 30 10		Utility Relocation	
21-07 10 50	Site Remediation		22-02 50 00
21-07 10 50 10		Physical Decontamination	22-02 51 00
21-07 10 50 15		Chemical Decontamination	22-02 52 00

21-07 10 50 20		Thermal Decontamination	22-02 53 00
21-07 10 50 25		Biological Decontamination	22-02 54 00
21-07 10 50 30		Remediation Soil Stabilization	22-02 55 00
21-07 10 50 40		Site Containment	22-02 56 00
21-07 10 50 45		Sinkhole Remediation	22-02 57 00
21-07 10 50 50		Hazardous Waste Drum Handling	22-02 86 00
21-07 10 50 60		Contaminated Site Material Removal	22-02 60 00
21-07 10 50 80		Water Remediation	22-02 70 00
21-07 10 70	Site Earthwork		22-31 20 00
21-07 10 70 10		Grading	22-31 22 00
21-07 10 70 20		Excavation and Fill	22-31 23 00
21-07 10 70 30		Embankments	22-31 24 00
21-07 10 70 35		Erosion and Sedimentation Controls	22-31 25 00
21-07 10 70 40		Soil Stabilization	22-31 32 00
21-07 10 70 45		Rock Stabilization	22-31 33 00
21-07 10 70 50		Soil Reinforcement	22-31 34 00
21-07 10 70 55		Slope Protection	22-31 35 00
21-07 10 70 60		Gabions	22-31 36 00
21-07 10 70 65		Riprap	22-31 37 00
21-07 10 70 70		Wetlands	22-32 70 00
21-07 10 70 80		Earth Dams	22-35 73 13
21-07 10 70 90		Site Soil Treatment	22-31 31 00
21-07 20	Site Improvements		
21-07 20 10	Roadways		
21-07 20 10 10		Roadway Pavement	22-32 10 00
21-07 20 10 20		Roadway Curbs and Gutters	22-32 16 13
21-07 20 10 40		Roadway Appurtenances	22-32 17 00
21-07 20 10 70		Roadway Lighting	22-26 56 19
21-07 20 10 80		Vehicle Fare Collection	22-34 52 00
21-07 20 20	Parking Lots		
21-07 20 20 10		Parking Lot Pavement	22-32 10 00
21-07 20 20 20		Parking Lot Curbs and Gutters	22-32 16 13
21-07 20 20 40		Parking Lot Appurtenances	22-32 17 00
21-07 20 20 70		Parking Lot Lighting	22-26 56 16
21-07 20 20 80		Exterior Parking Control Equipment	22-11 12 00
21-07 20 30	Pedestrian Plazas and Walkways		
21-07 20 30 10		Pedestrian Pavement	22-32 10 00
21-07 20 30 20		Pedestrian Pavement Curbs and Gutters	22-32 16 13
21-07 20 30 30		Exterior Steps and Ramps	
21-07 20 30 40		Pedestrian Pavement Appurtenances	22-32 17 00
21-07 20 30 70		Plaza and Walkway Lighting	22-26 56 33
21-07 20 30 80		Exterior Pedestrian Control Equipment	22-11 14 00
21-07 20 40	Airfields		
21-07 20 40 10		Aviation Pavement	22-32 10 00
21-07 20 40 20		Aviation Pavement Curbs and Gutters	22-32 16 13
21-07 20 40 40		Aviation Pavement Appurtenances	22-32 17 00
21-07 20 40 70		Airfield Lighting	22-26 56 00
21-07 20 40 80		Airfield Signaling and Control Equipment	22-34 43 00
21-07 20 50	Athletic, Recreational, and Playfield Areas		
21-07 20 50 10		Athletic Areas	
21-07 20 50 30		Recreational Areas	
21-07 20 50 50		Playfield Areas	
21-07 20 60	Site Development		
21-07 20 60 10		Exterior Fountains	22-13 12 13
21-07 20 60 20		Fences and Gates	22-32 31 00

21-07 20 60 25		Site Furnishings	22-12 93 00
21-07 20 60 30		Exterior Signage	22-10 14 00
21-07 20 60 35		Flagpoles	22-10 75 00
21-07 20 60 40		Covers and Shelters	22-10 73 00
21-07 20 60 45		Exterior Gas Lighting	22-10 84 13
21-07 20 60 50		Site Equipment	
21-07 20 60 60		Retaining Walls	22-32 32 00
21-07 20 60 70		Site Bridges	22-32 34 00
21-07 20 60 80		Site Screening Devices	22-32 35 00
21-07 20 60 85		Site Specialties	22-32 39 00
21-07 20 80		Landscaping	
21-07 20 80 10		Planting Irrigation	22-32 84 00
21-07 20 80 20		Turf and Grasses	22-32 92 00
21-07 20 80 30		Plants	22-32 93 00
21-07 20 80 50		Planting Accessories	22-32 94 00
21-07 20 80 70		Landscape Lighting	22-26 56 26
21-07 20 80 80		Landscaping Activities	
21-07 30		Liquid and Gas Site Utilities	
21-07 30 10		Water Utilities	22-33 10 00
21-07 30 10 10		Site Domestic Water Distribution	
21-07 30 10 30		Site Fire Protection Water Distribution	
21-07 30 10 50		Site Irrigation Water Distribution	
21-07 30 20		Sanitary Sewerage Utilities	22-33 30 00
21-07 30 20 10		Sanitary Sewerage Utility Connection	
21-07 30 20 20		Sanitary Sewerage Piping	22-33 31 00
21-07 30 20 40		Utility Septic Tanks	22-33 36 00
21-07 30 20 50		Sanitary Sewerage Structures	22-33 39 00
21-07 30 20 60		Sanitary Sewerage Lagoons	22-33 47 23
21-07 30 30		Storm Drainage Utilities	22-33 40 00
21-07 30 30 10		Storm Drainage Utility Connection	
21-07 30 30 20		Storm Drainage Piping	22-33 41 00
21-07 30 30 30		Culverts	22-33 42 00
21-07 30 30 40		Site Storm Water Drains	22-33 44 00
21-07 30 30 50		Storm Drainage Pumps	22-33 45 00
21-07 30 30 60		Site Subdrainage	22-33 46 00
21-07 30 30 70		Storm Drainage Ponds and Reservoirs	22-33 47 26
21-07 30 50		Site Energy Distribution	
21-07 30 50 10		Site Hydronic Heating Distribution	22-33 61 00
21-07 30 50 20		Site Steam Energy Distribution	22-33 63 00
21-07 30 50 40		Site Hydronic Cooling Distribution	22-33 61 00
21-07 30 60		Site Fuel Distribution	
21-07 30 60 10		Site Gas Distribution	22-33 41 00
21-07 30 60 20		Site Fuel-Oil Distribution	22-33 52 13
21-07 30 60 30		Site Gasoline Distribution	22-33 52 16
21-07 30 60 40		Site Diesel Fuel Distribution	22-33 52 19
21-07 30 60 60		Site Aviation Fuel Distribution	22-33 52 43
21-07 30 90		Liquid and Gas Site Utilities Supplementary Components	
21-07 30 90 10		Supplementary Components	
21-07 40		Electrical Site Improvements	
21-07 40 10		Site Electric Distribution Systems	
21-07 40 10 10		Electrical Utility Services	22-33 71 73
21-07 40 10 20		Electric Transmission and Distribution	22-33 71 00
21-07 40 10 30		Electrical Substations	22-33 72 00
21-07 40 10 40		Electrical Transformers	22-33 73 00

21-07 40 10 50		Electrical Switchgear and Protection Devices	22-33 75 00
21-07 40 10 70		Site Grounding	22-33 79 00
21-07 40 10 90		Electrical Distribution System Instrumentation and Controls	22-33 09 70
21-07 40 50	Site Lighting		22-26 56 29
21-07 40 50 10		Area Lighting	22-26 56 23
21-07 40 50 20		Flood Lighting	22-26 56 36
21-07 40 50 50		Building Illumination	
21-07 40 50 90		Exterior Lighting Supplementary Components	
21-07 50	Site Communications		
21-07 50 10		Site Communications Systems	22-33 80 00
21-07 50 10 10		Site Communications Structures	22-33 81 00
21-07 50 10 30		Site Communications Distribution	22-33 82 00
21-07 50 10 50		Wireless Communications Distribution	22-33 83 00
21-07 90	Miscellaneous Site Construction		
21-07 90 10		Tunnels	22-31 70 00
21-07 90 10 10		Vehicular Tunnels	
21-07 90 10 20		Pedestrian Tunnels	
21-07 90 10 40		Service Tunnels	
21-07 90 10 90		Tunnel Construction Related Activities	