1. Section 095400
Specialty Ceilings - USG
	1. PART 1  GENERAL
		1. SECTION INCLUDES
			1. Specialty ceiling panels and systems.
			2. Metal suspension system.
		2. RELATED REQUIREMENTS
2. *The paragraph below is optional text*
	* + 1. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.
3. *The paragraph below is optional text*
	* + 1. Section 031000 - Concrete Forming and Accessories:  Placement of special anchors or inserts for suspension system.
4. *The paragraph below is optional text*
	* + 1. Section 033000 - Cast-in-Place Concrete:  Placement of special anchors or inserts for suspension system.
5. *The paragraph below is optional text*
	* + 1. Section 053100 - Steel Decking:  Placement of special anchors or inserts for suspension system.
6. *The paragraph below is optional text*
	* + 1. Section 072100 - Thermal Insulation.
			2. Section 095100 - Acoustical Ceilings - USG:  Metal suspension systems.
		1. REFERENCE STANDARDS
			1. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures; Most Recent Edition Cited by Referring Code or Reference Standard.
			2. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2018.
			3. ASTM A492 - Standard Specification for Stainless Steel Rope Wire; 1995 (Reapproved 2019).
			4. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2022.
			5. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2021a.
			6. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings; 2022.
			7. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels; 2019.
			8. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2023.
			9. ASTM E580/E580M - Standard Practice for Installation of Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels in Areas Subject to Earthquake Ground Motions; 2022.
			10. ASTM E1264 - Standard Classification for Acoustical Ceiling Products; 2022.
		2. ADMINISTRATIVE REQUIREMENTS
			1. Coordination:  Coordinate work of this section with installation of mechanical and electrical components and with other construction activities affected by work of this section.
			2. Preinstallation Meeting:  Convene one week before starting work of this section.
			3. Sequence work to ensure ceilings are not installed until building is enclosed, dust generating activities have terminated, and overhead work is completed.
		3. SUBMITTALS
			1. See Section 013000 - Administrative Requirements for submittal procedures.
			2. Shop Drawings:  Indicate grid layout and related dimensioning, attachment of specialty ceiling panels to grid, accessory attachments, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.
			3. Product Data:  Provide data on specialty ceiling components and suspension system components.
			4. Samples:  Two full size samples illustrating material and finish of specialty ceiling components.
			5. Samples:  Two samples each, [\_\_\_\_] inches ([\_\_\_\_] mm) long, of suspension system main runner, cross runner, and perimeter molding.
			6. Test Reports:  Certified test data from an independent test agency verifying that panels meet specified requirements for fire, acoustical, and seismic performance.
			7. Manufacturer's Installation Instructions:  Indicate special procedures and perimeter conditions requiring special attention.
			8. Designer's qualification statement.
			9. Manufacturer's qualification statement.
			10. Installer's qualification statement.
			11. Maintenance Materials:  Furnish the following for Owner's use in maintenance of project.
				1. See Section 016000 - Product Requirements for additional provisions.
				2. Specialty Ceiling System Components:  Provide a quantity equal to 2 percent of total product installed.
		4. QUALITY ASSURANCE
			1. Designer Qualifications for Seismic Design:  Under direct supervision of a Professional Structural Engineer experienced in design of this Work and licensed at the State in which the Project is located.
			2. Manufacturer Qualifications:  Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
			3. Installer Qualifications:  Company specializing in performing the work of this section.
				1. Minimum [\_\_\_\_\_\_\_\_\_\_] years documented experience.
				2. Approved by ceiling manufacturer.
		5. MOCK-UP
			1. Provide [\_\_\_\_] feet ([\_\_\_\_] m) by [\_\_\_\_] feet ([\_\_\_\_] m) mock-up including ceiling panels, suspension members, trim, and installation accessories.
			2. See Section 014000 - Quality Requirements for additional requirements.
			3. Locate where directed.
			4. Mock-up may remain as part of the work.
		6. DELIVERY, STORAGE, AND HANDLING
			1. Deliver specialty ceiling components to project site in original, unopened packages.
			2. Store in fully enclosed space, flat, level and off the floor.
		7. FIELD CONDITIONS
			1. Do not install specialty ceiling system until wet construction work is complete and permanent heat and air conditioning is installed and operating.
	1. PART 2  PRODUCTS
		1. Specialty CEILING ASSEMBLIES
			1. Refer to [Reflected Ceiling Plans] [Room Finish Schedule] and [Reflected Ceiling Plans] [Room Finish Schedule] on drawings for additional ceiling assemblies information.
			2. Specialty Ceiling Assembly Type [SC-1]:
				1. Panels:  [WireWorks Open Cell Ceiling Panels] , Item No. [\_\_\_\_\_].

Color: [High-Gloss White 1007] [Chrome 066] [Flat White 050] [Flat Black 205] [Silver Satin 002] [High-Gloss Red 2707] [High-Gloss Black 2708] [Custom].

Flat Panel Sizes:  [24 by 24 inches (2 by 2) (600 mm by 600 mm)] [48 by 48 inches (4 by 4) (1219 mm by 1219 mm)] [[\_\_] inches by [\_\_] inches ([\_\_] mm by [\_\_] mm)].

* + - * 1. Standard Suspension System:  [Donn DX] [Donn GWDX] [Donn GWDXW] [Donn DXW] suspension system.
		1. Performance Requirements:
			1. Design for maximum deflection of 1/360 of span.
			2. Design to support imposed loads of indicated elements without eccentric loading of supports. Where supported elements may induce rotation of ceiling system components, provide stabilizing reinforcement.
			3. Seismic Performance:  Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category D, E, or F and complying with the following:
				1. Local authorities having jurisdiction.
				2. ICC-ES Evaluation Report No. [\_\_\_\_\_\_\_\_\_\_].
		2. COMPONENT Products
			1. Panels:
				1. Open-Cell Panels:  Wire grid lay-in panels.

Application(s):  [\_\_\_\_\_\_\_\_\_\_].

Open Cell Ceiling Panels: [1-inch by 1-inch cells] [2-inch by 2-inch cells] [3-inch by 3-inch cells] [4-inch by 4-inch cells] [As indicated on drawings] [To be selected from manufacturer's standards].

Wire Thickness:  [[\_\_\_\_\_] inch ([\_\_\_\_\_] mm)] [1/8 inch (3.2 mm)].

Open Cell Forms:  [Big Wave pattern] [Ripple pattern] [Weave pattern] [As indicated on drawings] [To be selected from manufacturer's standards] [Small Wave pattern]

Wire Thickness:  [3/16 inch (4.8 mm)] [48 by 48 inch (1220 by 1220 mm)] [[\_\_\_\_\_] inch ([\_\_\_\_\_] mm)].

Open Cell Woven: [Double Round] [Double Round Spiral] [Double Flat flat wire] [4-Wire Flat flat wire] [Flat Plain flat wire] [Flat/Round 3/32” Flat and 1/16” dia. Wires].

Wire Thickness:  [[1/8 inch (3.2 mm)] [3/32 inch (2.4 mm)] [1/16 inch (1.6 mm)].

Panel Size:  [24 by 24 inch (610 by 610 mm)] [[\_\_\_] by [\_\_\_] inches ([\_\_\_] by [\_\_\_] mm)].

1. *The paragraph below is optional text*

Recycled Materials Content:  Classified as containing greater than 50 percent total recycled content.

Finish: Powder coat.

Products:

USG Corporation;  WireWorks Open Cell Ceiling Panels:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted.

* + - 1. Standard Suspension Systems:
				1. Suspension Systems:  See Section 095100 - Acoustical Ceilings - USG.
				2. Metal Suspension Systems - General:  Complying with ASTM C635/C635M; die cut and interlocking components, with [stabilizer bars] [hold down clips] [seismic clips] [splices] [perimeter moldings] and [stabilizer bars] [hold down clips] [seismic clips] [splices] [perimeter moldings] as required.

Materials:

Steel Grid:  ASTM A653/A653M [G30] [G60] [G90] coating, unless otherwise indicated.

* + - * 1. Exposed Acoustical Suspension System:  Hot-dipped galvanized steel grid and cap.

Application(s):  [Seismic] .

Structural Classification:  Intermediate-duty, when tested in accordance with ASTM C635/C635M.

1. *The paragraph below is optional text*

Recycled Materials Content:  Classified as containing greater than 50% total recycled content.  Available for specific sizes and lengths.

Profile:  Tee; [15/16 inch (24 mm)] [[\_\_\_\_] inch ([\_\_\_\_] mm)] face width.

Finish:   [Baked enamel].

Color:  [To be selected from manufacturer's standards] [As indicated on drawings] [White].

Products:

USG Corporation;  DX 15/16 Inch Suspension System:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted.

* + - * 1. Exposed Acoustical Suspension System:  Hot-dipped galvanized steel grid and cap.

Application(s):  [Seismic] [or  [\_\_\_\_\_]].

Structural Classification:  [Intermediate-duty] [Heavy-duty] [or  [\_\_\_\_\_]], when tested in accordance with ASTM C635/C635M.

Recycled Materials Content:  Classified as containing greater than 50% total recycled content.  Available for specific sizes and lengths.

Profile:  Tee; [1-1/2 inch (38 mm)] [or  [\_\_\_\_] inch ([\_\_\_\_] mm)] face width.

Finish:  [Baked enamel] or [[\_\_\_\_\_]].

Color:  [As indicated on drawings] [White] [To be selected from manufacturer's standards] [or  [\_\_\_\_\_]].

Products:

USG Corporation;  DXW 1-1/2 Inch Suspension System:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted

* + - * 1. Exposed Acoustical Suspension System:  Hot-dipped galvanized steel grid and cap.

Application(s):  [Seismic] [or  [\_\_\_\_\_]].

Structural Classification:  [Intermediate-duty] [Heavy-duty] [or  [\_\_\_\_\_]], when tested in accordance with ASTM C635/C635M.

Recycled Materials Content:  Classified as containing greater than 50% total recycled content.  Available for specific sizes and lengths.

Profile:  [Tee] [15/16 inch (24 mm)] [or  [\_\_\_\_] inch ([\_\_\_\_] mm)] face width.

Finish:  [Flat white 050 ] [Silver sating 002][Flat black 205] [or  [\_\_\_\_\_].

Color:  [As indicated on drawings] [White] [To be selected from manufacturer's standards] [or  [\_\_\_\_\_]].

Products:

USG Corporation;  GWDX 15/16 Inch Suspension System:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted

* + - * 1. Exposed Acoustical Suspension System:  Hot-dipped galvanized steel grid and cap.

Application(s):  [Seismic] [or  [\_\_\_\_\_]].

Structural Classification:  [Intermediate-duty] [Heavy-duty] [or  [\_\_\_\_\_]], when tested in accordance with ASTM C635/C635M.

Recycled Materials Content:  Classified as containing greater than 50% total recycled content.  Available for specific sizes and lengths.

Profile:  [Tee] [1-1/2 inch (38 mm)] [or  [\_\_\_\_] inch ([\_\_\_\_] mm)] face width.

Finish:  [Baked enamel] [or  [\_\_\_\_\_]].

Color:  [As indicated on drawings] [White] [To be selected from manufacturer's standards] [or  [\_\_\_\_\_]>>.

Products:

USG Corporation;  GWDXW 1-1/2 Inch Suspension System:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted.

* + - 1. Moldings and Trim:
				1. Edge Trim Molding[, Expansion Joints,] [None - N/A] and Splices:   [Same material, thickness, and finish as metal panels, unless otherwise indicated] [Manufacturer's standard edge trim] [Suspension systems].
				2. Perimeter (Wall) Moldings:   [Same metal and finish as grid] [Aluminum].

Size:  As required for installation conditions[None - N/A] [and [and specified Seismic Design Category].

Angle Moldings:  L-shaped, for mounting at same elevation as face of grid.

* + - * 1. Metal Perimeter Trim for "Cloud" Suspension Systems:  [Steel] [Extruded aluminum] ; provide [attachment clips] [fascia splice plates] [preformed corner pieces] [preformed corner clips] and [attachment clips] [fascia splice plates] [preformed corner pieces] [preformed corner clips] for complete trim system.

Trim Height:  [8 inch (203 mm)] [10 inch (254 mm)] [3 inch (76.2 mm)] [4 inch (102 mm)] [[\_\_\_\_\_] inch ([\_\_\_\_\_] mm)] [2-1/4 inch (57 mm)] [6 inch (152 mm)].

Finish:  [Match panels] [Baked enamel].

Color:  [Match panels] [White].

Products:

USG Corporation; Compasso Suspension Trim - Standard:  www.usg.com/ceilings/#sle.

USG Corporation; Compasso Suspension Trim - Slim:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted.

* + 1. Accessories
			1. Support Channels, Carriers, and Hangers:  [Primed] [Galvanized] steel; size and type to suit application[, seismic requirements,] [None - N/A] and ceiling system flatness requirement specified.
			2. Suspension Wire[and Rope] [None - N/A]:  Size and type as required for application[, seismic requirements,] [None - N/A] and ceiling system flatness requirement specified.
				1. Exposed (To View) Suspension:

Suspension Wire:  Steel, annealed, [galvanized] [plain] finish, [9 gage, 0.1144 inch (2.91 mm)] [12 gage, 0.0808 (2.05 mm)] [[\_\_\_] gage, [\_\_\_] inch ([\_\_\_] mm)] diameter.

Suspension Wire:  Stainless steel, [18 gage, 0.0403 (1.02 mm)] [[\_\_\_] gage, [\_\_\_] inch ([\_\_\_] mm)] diameter, complying with ASTM A580/A580M.

Suspension Rope:  1/32 inch (0.8 mm) stainless steel rope wire complying with ASTM A492, with [wire crimp] [turnbuckle] [attachment plate] [loop and crimp-end], [wire crimp] [turnbuckle] [attachment plate] [loop and crimp-end], or [wire crimp] [turnbuckle] [attachment plate] [loop and crimp-end] connection.

1. *The paragraph below is optional text*
	* + 1. Seismic Clips:  Manufacturer's standard clips designed to provide a rigid connection between suspension grid tees and wall moldings.
			2. Unopposed Tee Attachment Clip:  Manufacturer's standard clip designed to create code-compliant cross tee connections when a cross tee is installed in a main tee without another cross tee directly opposite.
			3. Compasso Standard clip.
			4. Compasso Celebration clip.
			5. Touch-Up Paint for Exposed Surfaces:  Type and color to match acoustical units and suspension system grid and trim elements.
		1. Fabrication
			1. Shop fabricate ceiling components to the greatest extent possible.
	1. PART 3  EXECUTION
		1. EXAMINATION
			1. Verify existing conditions before starting work.
			2. Verify that layout of hangers will not interfere with other work.
			3. Verify that field measurements are as indicated on shop drawings.
			4. Do not begin installation until after interior wet work is dry.
			5. Start of installation constitutes acceptance of project conditions.
		2. Preparation
			1. Coordinate the location of hangers with other work.
2. *The paragraph below is optional text*
	* + 1. Provide hanger clips during steel deck erection.  Provide additional hangers and inserts as required.
			2. Install after major above-ceiling work is complete.
			3. Layout ceiling components in pattern according to reflected ceiling plan and as shown on shop drawings.
		1. INSTALLATION - Suspension System
			1. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
			2. Install hangers and inserts coordinated with overhead work.  Provide additional hangers and supports as required.
			3. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
			4. Locate system on room axis according to reflected ceiling plan.
			5. Suspension System, Non-Seismic:  Hang suspension system independent of walls, columns, ducts, pipes and conduit.  Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
3. *The paragraph below is optional text*
	* + 1. Seismic Suspension System, Seismic Design Category C:  Hang suspension system independent of walls, columns, ducts, pipes and conduit.  Maintain a 3/8 inch (9 mm) clearance between grid ends and wall.
4. *The paragraph below is optional text*
	* + 1. Seismic Suspension System, Seismic Design Categories D, E, F:  Hang suspension system with grid ends attached to the perimeter molding on two adjacent walls; on opposite walls, maintain a 3/4 inch (19 mm) clearance between grid ends and wall.
			2. Where ducts. facility services, or equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
			3. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
			4. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.
			5. Do not eccentrically load system or induce rotation of runners.
			6. Edge Moldings:  Install at intersection of ceiling and vertical surfaces and penetrations, using components of maximum length, set level. Provide edge moldings at junction with other ceiling finishes. Miter corners. Provide preformed edge closures to match bullnosed cornered partitions.
				1. Use longest practical lengths.
				2. Assemble corners according to manufacturer's instructions corners to backer angles according to manufacturer's instructions.
		1. INSTALLATION - SPECIALTY CEILING Units
			1. Install in accordance with manufacturer's instructions.
			2. Fit components in place, free from damaged edges or other defects detrimental to appearance and function.
			3. Cut to fit irregular grid and perimeter moldings.
				1. Shape and finish field-cut edges as recommended by manufacturer to match profile of factory edges and finish.
			4. Fit edge trim neatly against abutting surfaces.
			5. Install specialty units level, in uniform curvilinear plane, and free from twist, warp, and dents.
			6. Hang specialty units from suspension grid by engaging torsion springs into main tees.
			7. Where round obstructions occur, provide preformed closures to match perimeter molding.
			8. Bend hold-down tabs onto each panel to retain panels tight to grid system; comply with fire rating requirements, and where required by manufacturer.
		2. TOLERANCES
			1. Maximum Variation from Indicated Planes:  1/8 inch in 10 feet (3 mm in 3 m).
			2. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads:  2 degrees.
		3. Cleaning
			1. Clean and touch up minor finish damage.  Remove and replace components that cannot be successfully cleaned and repaired.
5. END OF SECTION