1. Section 095100   
   Acoustical Ceilings - USG
   1. PART 1  GENERAL
      1. SECTION INCLUDES
2. *The paragraph below is optional text*
   * + 1. Suspended metal grid ceiling systems.
       2. Acoustical[and nonacoustical] [None - N/A] units.
3. *The paragraph below is optional text*
   * + 1. Supplementary acoustical insulation above ceiling.
       2. Wall angles and shadow moldings.
4. *The paragraph below is optional text*
   * + 1. Special trims and accessories.
     1. RELATED REQUIREMENTS
        1. Section 016116 - Volatile Organic Compound (VOC) Content Restrictions.
        2. Section 031000 - Concrete Forming and Accessories:  Placement of special anchors or inserts for suspension system.
        3. Section 033000 - Cast-in-Place Concrete:  Placement of special anchors or inserts for suspension system.
        4. Section 053100 - Steel Decking:  Placement of special anchors or inserts for suspension system.
        5. Section 072100 - Thermal Insulation.
        6. Section 083100 - Access Doors and Panels.
        7. Section 092116 - Gypsum Board Assemblies:  Gypsum board and metal framing products.
        8. Section 092116 - Gypsum Board Assemblies:  Acoustical insulation.
        9. Section 095153 - Direct-Applied Acoustical Ceilings.
        10. Section 211300 - Fire-Suppression Sprinkler Systems:  Sprinkler heads.
        11. Section 233700 - Air Outlets and Inlets:  Air diffusion devices.
        12. Section 265100 - Interior Lighting:  Light fixtures.
        13. Section 275116 - Public Address Systems:  Speakers.
        14. Section 284600 - Fire Detection and Alarm:  Fire alarm components.
     2. 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 A492 - Standard Specification for Stainless Steel Rope Wire 1995 (Reapproved 2019).
        3. ASTM A580/A580M - Standard Specification for Stainless Steel Wire 2018.
        4. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
        5. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
        6. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
        7. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021a.
        8. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 2022.
        9. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
        10. ASTM C635/C635M - Standard Specification for Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2022.
        11. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2019.
        12. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
        13. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
        14. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
        15. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2022.
        16. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
5. *The paragraph below is optional text*
   * + 1. ASTM E413 - Classification for Rating Sound Insulation 2022.
       2. 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.
       3. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2022.
       4. ASTM E1414/E1414M - Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum 2021a.
       5. CHPS (HPPD) - High Performance Products Database Current Edition.
       6. FBC TAS 202 - Criteria for Testing Impact and Non-Impact Resistant Building Envelope Components Using Uniform Static Air Pressure; Testing Application Standard 1994.
       7. FBC TAS 203 - Criteria for Testing Products Subject To Cyclic Wind Pressure Loading; Testing Application Standard 1994.
       8. FM (AG) - FM Approval Guide current edition.
       9. GA-216 - Application and Finishing of Gypsum Panel Products 2021.
       10. ISO 14644-1 - Cleanrooms and Associated Controlled Environments - Part 1: Classification of Air Cleanliness by Particle Concentration 2015.
       11. ITS (DIR) - Directory of Listed Products Current Edition.
       12. UL (FRD) - Fire Resistance Directory Current Edition.
       13. UL (GGG) - GREENGUARD Gold Certified Products Current Edition.
       14. UL 580 - Standard for Tests for Uplift Resistance of Roof Assemblies Current Edition, Including All Revisions.
       15. UL 1897 - Uplift Tests for Roof-Covering Systems; Underwriters Laboratories Inc. Current Edition, Including All Revisions.
     1. 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.
           1. Review with affected installers those locations of facility services lines and equipment within ceiling plenum that prevent installation of hangers at spacings compliant with limitations established in referenced standards.  Arrange for each affected mechanical or electrical installer to provide necessary number of additional structural support points for ceiling installer.
        2. Preinstallation Meeting:  Convene  [one] week before starting work of this section.
        3. Sequencing:  Schedule work of affected trades to minimize or eliminate installation conflicts and rework.
           1. Supply hanger clips during steel deck erection.  Supply additional hangers and inserts as required.
           2. Ensure that acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.  Do not install acoustical units until after interior wet work is dry.
     2. SUBMITTALS
        1. See Section 013000 - Administrative Requirements for submittal procedures.
        2. Shop Drawings:  Indicate [grid layout and related dimensioning] [mechanical and electrical items installed in the ceiling] [junctions with other ceiling finishes] .
        3. Product Data:  Provide data on [suspension system components] [acoustical units] and [suspension system components] [acoustical units] .
        4. Evaluation Service Reports:  Show compliance with specified requirements.
        5. Samples:   [Two] samples [\_\_\_\_\_] by [\_\_\_\_\_] inches ([\_\_\_\_\_] by [\_\_\_\_\_] mm) in size indicating material and finish of acoustical units.
        6. Samples:   [Two] full size samples indicating material and finish of acoustical units.
        7. Samples:   [Two] samples each, [\_\_\_\_] inches ([\_\_\_\_] mm) long of suspension system main runner, cross runner, and perimeter molding.
6. *The paragraph below is optional text*
   * + 1. Manufacturer's Installation Instructions:  Indicate [perimeter conditions requiring special attention] [special procedures] and [perimeter conditions requiring special attention] [special procedures] .
7. *The paragraph below is optional text*
   * + 1. Designer's qualification statement.
       2. Manufacturer's qualification statement.
       3. Installer's qualification statement.
       4. Maintenance Materials:  Furnish the following for Owner's use in maintenance of project.
8. *The paragraph below is optional text*
   * + - 1. See Section 016000 - Product Requirements for additional provisions.
9. *The paragraph below is optional text*
   * + - 1. Extra Acoustical Units:  [\_\_\_\_] sq ft ([\_\_\_\_] sq m) of each type and size.
10. *The paragraph below is optional text*
    * + - 1. Extra Acoustical Units:  [Quantity equal to 5 percent of total installed] [Quantity equal topercent of total installed] .
      1. QUALITY ASSURANCE
11. *The paragraph below is optional text*
    * + 1. Designer Qualifications for Seismic Design:  Perform under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
        2. Suspension System Manufacturer Qualifications:  Company specializing in manufacturing the products specified in this section with minimum  [three] years [documented] [None - N/A] experience.
        3. Acoustical Unit Manufacturer Qualifications:  Company specializing in manufacturing the products specified in this section with minimum  [three] years [documented] [None - N/A] experience.
        4. Installer Qualifications:  Company specializing in performing work of the type specified and with at least  [three] years of [documented] [None - N/A] experience[and approved by manufacturer] [None - N/A].
      1. FIELD CONDITIONS
         1. Maintain uniform temperature of minimum [60 degrees F (16 degrees C)]  [[\_\_\_\_] degrees F  ([\_\_\_\_] degrees  C)], and maximum humidity of  [40] percent before, during, and after acoustical unit installation.
    1. PART 2  PRODUCTS
       1. CEILING ASSEMBLIES
          1. Refer to [Reflected Ceiling Plans] [Room Finish Schedule] and [Reflected Ceiling Plans] [Room Finish Schedule] on drawings for additional ceiling assembly information.
          2. Acoustical Ceiling Assembly Type  [APC-1] :
             1. Acoustical Units:  Halcyon Canopies, Item No. [99159],[99140],[99158],[99139],[99157],[99156],[99138],[99137],[99155],[99154],[99136],[99153],[99135],[99134],[99152],[99160],[99133],[99151],[99150],[99132],[99131].

Panel Size:  [Rectangle 23 by 70 inches 99134],[Rectangle 36 by 70 inches 99135],[Rectangle 94 by 23 inches 99131],[Rectangle 94 by 36 inches 99132],[Rectangle 70 by 46 inches 99136],[Rectangle 46 by 94 inches 99133],[90 Degree Triangle 32 1/2 by 32 1/2 inches 99155],[Concave 46 by 46 inches 99158],[Convex 46 by 46 inches 99159],[Circle 46 by 46 inches 99139],[Equilateral Triangle 46 by 46 inches 99153],[Hexagon 46 by 46 inches 99156],[Octagon 46 by 46 inches 99157],[90 Degree Triangle 46 by 46 inches 99154],[Square with Rounded Corner Cutouts 46 by 46 inches 99151],[square with rounded corners 46 by 46 inches 99150],[square with square corner cutouts 46 by 46 inches 99152],[square 46 by 46 inches 99140],[trapeziod 46 by 46 by 30 inches 99160],[oval 70 by 46 inches 99138],[oval 90 by 46 inches 99137],[As indicated on Drawings],[As Indicated in a Schedule].

Color:  [Flat White 050],[Sea Shell 3678],[Dawn 3679],[Nut Brown 3680],[Atmosphere 3681],[Peat 3682],[Shale 3683],[Ocean Ridge 3684],[Laguna 3685],[Deep Violet 3686],[Deep Cranberry 3687],[Grass 3688],[Tangy Taleia 3689],[Flat Black 205],[Light Brown 3690],[Old Stone 3690],[Deep Blue 3692],[Deep Berry 3693],[Custom Color].

* + 1. Ceiling PERFORMANCE REQUIREMENTS
       1. Design for maximum deflection of  [1/360] of span.
       2. Fire-Resistance Rating:  Determined in accordance with test procedures in ASTM E119 and complying with the following:
          1. UL (FRD) Assembly Design No. [\_\_\_\_].
          2. ICC-ES Evaluation Report No. [\_\_\_\_\_\_\_\_\_\_].

1. *The paragraph below is optional text*
   * + 1. 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]  [C] and complying with the following:
2. *The paragraph below is optional text*
   * + - 1. Local authorities having jurisdiction.
3. *The paragraph below is optional text*
   * + - 1. ICC-ES Evaluation Report No. [\_\_\_\_\_\_\_\_\_\_].
     1. Ceiling COMPONENT PRODUCTS
        1. Acoustical Units:
           1. Acoustical Units - General:  ASTM E1264, Fire Class A.
           2. Acoustical Panel Canopies:  Glass fiber panels suspended by hanger wire or rods attached to field-installed anchor hardware on panel backs.

Classification:  ASTM E1264 Type XII.

Form:  2, cloth.

Pattern(s):  Includes the following, as applicable to each product specified.

E - Lightly textured.

G - Smooth.

Size and Configuration:  As indicated on drawings.

Shape:  [\_\_\_\_].

Color:   [White] [As indicated on drawings].

Thickness:  As applicable to each product specified.

Recycled Content:  40%.

Material Ingredients Transparency:  Products included in the USG EcoBlueprint Program.

Low Emissions (VOC):  Greenguard-certified products.

Products:

USG Corporation; Halcyon Canopies:  www.usg.com/ceilings/#sle.

Substitutions:  Not permitted.

* + 1. Suspension Systems:
       1. Fasteners for canopy application: Canopy anchors for installation in the field and attachment to hander wire supported by ceiling suspension system:
          1. Products:

USG Corporation; Halcyon canopy anchor: www.usg.com/#sle.

* + 1. ACCESSORIES
       1. Suspension Wire:  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:  Stainless steel, [18 gauge, 0.0403 (1.02 mm)]  [[\_\_\_] gauge,  [\_\_\_] inch  ([\_\_\_]  mm)] diameter, complying with ASTM A580/A580M.

* + - 1. Impaling Clips: Provide quantity recommended by manufacturer based on individual panel sizes.
    1. Fabrication
       1. Shop fabricate ceiling components to the greatest extent possible.
       2. Fabricate components to allow access to ceiling plenum as required.
  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] [instructed by the manufacturer]  [indicated] .
        4. Start of installation constitutes acceptance of project conditions.
     2. Preparation
        1. Coordinate the location of hangers with other work.
        2. Provide hanger clips during steel deck erection.  Provide for anticipated additional hangers and inserts as required.
        3. Install ceiling system after major above-ceiling work is complete.
        4. Acclimate wood ceiling materials by removing from packaging in installation area a minimum of [72 hours] prior to installation.

1. *The paragraph below is optional text*
   * 1. INSTALLATION - SUSPENSION SYSTEM
2. *The paragraph below is optional text*
   * + 1. Install suspension system in accordance with [manufacturer's instructions] [ASTM E580/E580M] [ASTM C636/C636M] and [manufacturer's instructions] [ASTM E580/E580M] [ASTM C636/C636M] and as supplemented in this section.
3. *The paragraph below is optional text*
   * + 1. Install hangers and inserts coordinated with overhead work.  Provide additional hangers and supports as required.
4. *The paragraph below is optional text*
   * + 1. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
5. *The paragraph below is optional text*
   * + 1. Where ducts, facility services, or equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers[and related carrying channels] [None - N/A] to span the extra distance.
       2. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
       3. Support fixture loads using supplementary hangers located within 6 inches (152 mm) of each corner, or support components independently.
       4. Do not eccentrically load system or induce rotation of runners.
       5. 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. Install in bed of acoustical sealant.
          2. Use longest practical lengths.
          3. Overlap and rivet corners.
6. *The paragraph below is optional text*
   * + 1. Install light fixture boxes constructed of gypsum board above light fixtures in accordance with fire rated assembly requirements and light fixture ventilation requirements.
     1. INSTALLATION - ACOUSTICAL UNITS
        1. Install acoustical units in accordance with manufacturer's instructions.
        2. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
        3. Install acoustical units level or per RCP’s, in uniform plane, and free from twist, warp, and dents.
        4. Cutting Acoustical Units:
           1. Cut to fit irregular grid and perimeter edge trim.
           2. Make field cut edges of same profile as factory edges.
     2. TOLERANCES
        1. Maximum Variation from Flat and Level Surface:  [1/8 inch in 10 feet (3 mm in 3 m)]  [[\_\_\_\_] inch in 10 feet  ([\_\_\_\_] mm in 3  m)].
        2. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads:   [Two] degrees.
     3. Cleaning
        1. Clean and touch up minor finish damage.  Remove and replace components that cannot be successfully cleaned and repaired.
   1. END OF SECTION