SECTION 13 12 00

INDOOR WATER FEATURES

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\*\* NOTE TO SPECIFIER \*\* Harmonic Environments; Custom indoor waterwall and waterfall products.  
.  
This section is based on the products of Harmonic Environments, which is located at:1075 Hialeah Dr.Hialeah, FL 33010Toll Free Tel: 800-497-3529Tel: 305-883-2173Fax: 772-382-6431Email: [request info (waterfall@hewater.com)](https://arcat.com/rfi?action=email&company=Harmonic%252BEnvironments&message=RE%253A%2520Spec%2520Question%2520(13168har)%253A%2520&coid=45070&spec=13168har&rep=&fax=772-382-6431)  
Web: <https://harmonicwinedisplays.com> | <https://harmonicenvironments.com>   
 [ [Click Here](https://arcat.com/company/harmonic-environments-45070) ] for additional information.  
Harmonic Environments originated the concept of high-quality, custom indoor waterfalls in 1987 and continues to evolve the natural design, beauty, and functionality of these statement art installations.  
Today, we continuously strive to influence the way people interact with their surroundings, create beautiful, environmentally friendly installations, and inspire designers around the world with an essential element, water. Our innovative design solutions have long attracted the attention of the world's premier architects and interior designers, but it is our commitment to excellence, guaranteed workmanship, and exceptional service that have kept Harmonic Environments at the forefront of the industry it created.  
Each Harmonic Environments waterfall is custom crafted from the finest materials and fabricated to the exact specifications of the client. The result is a blend of beauty and precision that truly does transform and enhance any environment  
As Harmonic Environments has grown over the years we have remained dedicated to providing a personal level of attention and care that only an exclusive boutique can. We would love to talk with you about how we may be able help to you with your upcoming project.

1. GENERAL
   1. SECTION INCLUDES

\*\* NOTE TO SPECIFIER \*\* Delete items below not required for project.

* + 1. Suspended Waterfall.
    2. Freestanding Waterfalls.
    3. Translucent Framed Glass Waterfall.
    4. Translucent Suspended Glass Waterfall.
    5. Built-in Waterfall.
    6. Built-in or Free Standing Water Feature (Closed System).
    7. Reverse osmosis water purification system.
    8. LED color lighting.
  1. RELATED SECTIONS

\*\* NOTE TO SPECIFIER \*\* Delete any sections below not relevant to this project; add others as required.

* + 1. Section 03 30 00 - Cast-in-Place Concrete..
    2. Section 04 40 00 - Stone Assemblies
    3. Section 05 12 13 - Architecturally-Exposed Structural Steel Framing.
    4. Section 05 40 00 - Cold-Formed Metal Framing.
    5. Section 05 50 00 - Metal Fabrications.
    6. Section 06 11 16 - Mechanically Graded Lumber.
    7. Section 07 10 00 - Dampproofing and Waterproofing.
    8. Section 09 70 00 - Wall Finishes.
    9. Section 09 90 00 - Painting and Coating.
    10. Section 23 05 00 - Common Work Results for HVAC.
    11. Section 26 05 00 - Common Work Results for Electrical.
  1. REFERENCES

\*\* NOTE TO SPECIFIER \*\* Delete references from the list below that are not actually required by the text of the edited section.

* + 1. ASTM A 240 - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications
    2. ASTM B 117 - Standard Practice for Operating Salt Spray (Fog) Apparatus
    3. ASTM D 523 - Standard Test Method for Specular Gloss
    4. ASTM D 2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets.
    5. ASTM D 3363 - Standard Test Method for Film Hardness by Pencil Test
    6. ASTM 3359 - Standard Test Methods for Rating Adhesion by Tape Test
    7. AWS D1.1 - Structural Welding Code, Steel
    8. AWS D1.6 - Structural Welding Code, Stainless Steel
    9. NEMA MG 1 - Motors and Generators; National Electrical Manufacturers Association.
    10. NFPA 70 - National Electrical Code; National Fire Protection Association.
    11. NSF 61 - Drinking Water System Components - Health Effects.
    12. NSF Std. 2 - - Food Equipment
  1. DESIGN / PERFORMANCE REQUIREMENTS
     1. Perform welding using AWS certified welders in accordance with AWS D1.1 and D1.6.
     2. Piping joints shall be in accordance with ASTM D 2855.
     3. Electric motors shall be in accordance with NEMA MG 1
     4. Electrical components shall be in accordance with NFPA 70.
     5. Provide as specified under Section 23 05 00 - Common Work Results for HVAC Plumbing:
        1. Plumbing: 2 to 3 inch piping from the pump up or behind adjacent or back wall and connect to the upper distribution system (header).
        2. Standard 1/2 inch water supply line to the ZonePure Water Purification System, with shut-off valve, and a floor drain/sink or hard pipe to waste line below the water feature basin.
     6. Provide as specified under Section 26 05 00 - Common Work Results for Electrical Electrical:
        1. GFI duplex outlets and wall switch in proximity to water feature as indicated on the shop drawings.
        2. Separately fused power supply for main pump, water treatment system and LED lighting if applicable.
        3. Power supply for optional LED color lighting with DMX controls and power supply.
  2. SUBMITTALS
     1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
     2. Product Data: Manufacturer's data sheets on each product to be used, including:
        1. Preparation instructions and recommendations. Dead loads
        2. Storage and handling requirements and recommendations.
        3. Installation methods.
        4. Operation and Maintenance Data
     3. Shop Drawings: Include detailed fabrication drawings including plans, elevations, sections, component details, water treatment system and attachments to other work. Indicate materials, profiles, finishes, and locations for all water feature components/accessory items.

\*\* NOTE TO SPECIFIER \*\* Delete selection samples if colors have already been selected.

* + 1. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors and patterns.
    2. Verification Samples: For each finish product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.
    3. Manufacturer's Certificates: Certify products meet or exceed specified requirements.
    4. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic checking and adjustment and periodic cleaning and maintenance of all components.
  1. QUALITY ASSURANCE
     1. Manufacturer Qualifications: Manufacture and installation shall be the responsibility of a single fabricator, who shall own and operate their own plant, and is regularly engaged in work of similar magnitude and scope for a minimum of five years.
     2. Installer Qualifications: Company specializing in installation of products specified with minimum five years documented experience.

\*\* NOTE TO SPECIFIER \*\* The following paragraph is optional delete if not required.

* + 1. Manufacturer's Field Service: Water feature manufacturer shall provide the services of a competent field representative on-site to provide the following inspections:
       1. Participate in Pre-Installation Conference.
       2. Site field verification and measurement prior to installation.
       3. Job start inspection to review special detailing conditions and substrate preparation.
       4. Final punch-list inspection at the completion of installation and start-up including demonstration of operation and maintenance procedures.
    2. Source Limitations: Obtain all principal components of water feature system from a single manufacturer. Secondary products that are required shall be as recommended and approved in writing by the water feature system manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the manufacturer.
  1. DELIVERY, STORAGE, AND HANDLING
     1. Do not deliver product until building is fully enclosed and ready for water feature installation.
     2. All products shall be appropriately and substantially packed for shipment. All equipment containers shall be clearly marked "fragile", shall indicate the project name, site address, and include complete packing and shipping lists for each container.
     3. Store products in manufacturer's unopened packaging until ready for installation. Store under cover in a clean and dry location, off the ground and away from uncured concrete and masonry.
  2. SEQUENCING
     1. Ensure that locating templates and other information required for installation of products of this section are furnished to affected trades in time to prevent interruption of construction progress.
     2. Ensure that products of this section are supplied to affected trades in time to prevent interruption of construction progress.
  3. PROJECT CONDITIONS
     1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.
     2. Field measurements shall be taken prior to fabrication to ensure proper fitting of work.
     3. Coordinate location of required electrical power supply(s), drain/floor sink location, and water supply lines.
     4. Coordinate fabrication schedule with construction progress to avoid delaying the work.

\*\* NOTE TO SPECIFIER \*\* Include the following optional paragraph if required. Delete if not required.

* 1. MAINTENANCE SERVICES
     1. Provide with manufacturer's PureCare full-service maintenance program for a period of one year from date of substantial completion. Maintenance program shall be renewable by the Owner after the first year.

1. PRODUCTS
   1. MANUFACTURERS
      1. Acceptable Manufacturer: Harmonic Environments, which is located at:1075 Hialeah Dr.Hialeah, FL 33010Toll Free Tel: 800-497-3529Tel: 305-883-2173Fax: 772-382-6431Email: [request info (waterfall@hewater.com)](https://arcat.com/rfi?action=email&company=Harmonic%252BEnvironments&message=RE%253A%2520Spec%2520Question%2520(13168har)%253A%2520&coid=45070&spec=13168har&rep=&fax=772-382-6431);Web: <https://harmonicwinedisplays.com> | <https://harmonicenvironments.com>

\*\* NOTE TO SPECIFIER \*\* Delete one of the following two paragraphs; coordinate with requirements of Division 1 section on product options and substitutions.

* + 1. Substitutions: Not permitted.
    2. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
  1. MATERIALS - GENERAL
     1. Stainless Steel: ASTM A 240, 316L stainless steel sheet of minimum gauges specified, cold rolled and stretcher leveled, free from buckle, scale, scratches, and surface imperfections, with all exposed surfaces polished to a No. 4 brushed satin finish.
        1. Lower water storage basin and removable lid - 14 gauge
        2. Leveling mechanism components - 7 gauge
        3. Tower side posts and upper valance - 16 gauge
        4. Upper water spill reservoir - 14 gauge
        5. Perforated baffles - 16 gauge

\*\* NOTE TO SPECIFIER \*\* Coordinate the location of the Water Feature water purification and pumping systems. Water treatment system may require water testing prior to bidding to identify the space required. Verify that space is available to assure clear access is provided as follows: Access to the upper water distribution system in the soffit (header) for installation and maintenance. Allow a minimum of 4 inches between the front of the upper reservoir and the adjacent soffit/ceiling, and 3 inches minimum clearance between the top of the upper reservoir and the bottom of the soffit/ceiling. Provide clear access to install the basin. Provide access to the top of the basin, pump area, and upper reservoir.

* + 1. Water Feature Components:
       1. Harmonic Environments ZonePure Water Purification System:
          1. Pumps: Manufacturers standard, in size and quantity required to provide complete surface coverage of water feature face. Coordinate with water feature manufacturer's electrical requirements.
          2. Flow Control Valves: Schedule 80 PVC gate valves in accessible location within lower water storage basin for small water features. For medium and large features refer to water feature manufacturer's plumbing diagrams.
          3. 1-1/2 inch stainless steel drain coupling with Schedule 80 PVC stand pipe.
          4. Automatic fill system.
          5. Reverse osmosis water purification system water feature manufacturer's plumbing diagrams.
  1. PRODUCTS

\*\* NOTE TO SPECIFIER \*\* Each Harmonic Environments waterfall is custom crafted from the finest materials and fabricated to the exact specifications of the client. The result is a blend of beauty and precision that truly does transform and enhance any environment. Select the water feature Product Series and Design required from the following paragraphs and delete those not required. Indicate the product, support system, water and drainage piping and electric services required on the Drawings as required. Coordinate the location of the water treatments system. Contact the manufacturer for additional information.

* + 1. Harmonic Environments - Harmonic Cascade Suspended Waterfall.
       1. Design: Provide Cascade Suspended Waterfall as indicated on the Drawings. Water shall circulate continuously from the lower storage basin up and flow over the top and down both sides of Stainless steel meshl panels, suspended from the upper distribution system.
       2. System Includes:
          1. Pump.
          2. Header (upper distribution system).
          3. Stainless steel basin.
          4. Internal plumbing.
          5. Stainless steel 316 grade woven coil mesh panel.
          6. ZonePure Water Purification System.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Delete if not applicable. Stainless steel mesh can be provide up to 50 feet wide.

* + - 1. Tower Size: Approx. \_\_\_ Width x \_\_\_ height.
      2. Basin Size: Approx. 1 foot more that the mesh horizontal width by 18 inches wide by 18 inches deep.
      3. Stainless Steel Mesh: Approx. \_\_\_ Length x \_\_\_ width x 1/8 inch depth.
      4. Tower Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel upper water distribution system (header), anchored to ceiling structure as indicated.
         2. Water recirculation piping as specified in Section 23 05 00 - Common Work Results for HVAC shall run outboard of the Stainless Steel basin, concealed up to the Header.
         3. Stainless steel 316 grade woven coil mesh panels shall be captured between the basin and the header.
      5. Basin Materials: T-316 grade, # 4 brushed satin finish Stainless Steel.
      6. Removable Lids:
         1. Stainless Steel lids to cover all equipment and provide access without the use of tools to the inside of the basin.
         2. Any solid surface above the lid required by design to be provided as specified in the Section of this Specification for the finish required. All solid surface finishes shall be removable to permit access without the use of tools to the inside of the basin.
      7. Pumps and Valves: Provide as recommended by the water feature manufacturer for flow rate and head pressure of water. Provide variable flow control (VFD), water level control system for automatic filling capability, drain overflow, and all accessories required for a complete installation.
      8. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC
      9. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance and sanitize the system.
      10. Harmonic Cascade Patterning: Design upper distributor and adjust water flow rate for smooth, even flow with edge-to-edge coverage over the coil mesh panels.
    1. Harmonic Environments - Harmonic Panels: Freestanding Stainless Steel / Copper / Granite Waterfalls.
       1. Design: Provide Cascade Freestanding Waterfall as indicated on the Drawings. Water shall circulate continuously from the lower storage basin up and flow over the top and down one side of water-face surface, mounted upright in a stainless steel basin.
       2. System Includes:
          1. Pump,
          2. Header (upper distribution system).
          3. Stainless steel basin.
          4. Internal plumbing.

\*\* NOTE TO SPECIFIER \*\* Include the one of following three paragraphs as required. Delete if not applicable.

* + - * 1. Water-face Stainless Steel panel(s).
        2. Water-face Copper panel(s).
        3. Water-face Granite panel(s).
        4. ZonePure Water Purification System.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Delete if not applicable.

* + - 1. Tower Size: Approx. \_\_\_ Width x \_\_\_ height.
      2. Basin Size: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      3. Stainless Steel Panels: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      4. Tower Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel upper water distribution system (header) as indicated.
         2. Water recirculation piping as specified in Section 23 05 00 - Common Work Results for HVAC shall run outboard of the Stainless Steel basin, concealed up to the Header.
         3. Water-face panels shall be captured between the basin and the header.
      5. Basin Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel.
      6. Removable Lids:
         1. Stainless Steel lids to cover all equipment and provide access without the use of tools to the inside of the basin.
         2. Any solid surface above the lid required by design to be provided as specified in the Section of this Specification for the finish required. All solid surface finishes shall be removable to permit access without the use of tools to the inside of the basin.
      7. Pumps and Valves: Provide as recommended by the water feature manufacturer for flow rate and head pressure of water. Provide variable flow control, water level control system for automatic filling capability, drain overflow, and all accessories required for a complete installation.
      8. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC
      9. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance and sanitize the system, without harsh chemicals.
      10. Harmonic Panels Water Patterning: Design upper distributor and adjust water flow rate for smooth, even flow with edge-to-edge coverage over the Coil mesh panels.
    1. Harmonic Environments - Translucence Series Framed Glass Waterfall.
       1. Design: Provide Translucence Series Framed Glass Waterfall as indicated on the Drawings. Water shall circulate continuously from the lower storage basin up and flow over the top and down one side of framed tempered glass panels, mounted upright in a stainless steel basin.
       2. System Includes:
          1. Pump.
          2. Header (upper distribution system).
          3. Stainless steel basin.
          4. Internal plumbing.

\*\* NOTE TO SPECIFIER \*\* Include the one of the following two paragraphs as required and delete the one not required.

* + - * 1. Clear tempered glass panel.
        2. Frosted tempered glass panel.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for Waterplace® built-in Systems only. Delete if not applicable.  
\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Delete if not applicable.

* + - * 1. Programmable LED color lighting with DMX controls and power supply.
      1. Tower Size: Approx. \_\_\_ Width x \_\_\_ height.
      2. Basin Size: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.

\*\* NOTE TO SPECIFIER \*\* Glass panels are available no more than 145 inches high and no more than 84 inches wide and 1/2 inch thick. Insert the size required.

* + - 1. Tempered Glass Panels: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      2. Tower Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel upper water distribution system (header) supported by adjustable Stainless Steel columns.
         2. Water recirculation piping as specified in Section 23 05 00 - Common Work Results for HVAC built into the Stainless Steel Frame.
         3. Clear tempered glass panels 3/8 inch to 3/4 inch thick with polished sides, captured between the basin and the header.
      3. Basin Materials:
         1. T-304 / 316 grade, # 4 brushed satin finish Stainless Steel.
      4. Removable Lids:
         1. Stainless Steel lids to cover all equipment and provide access without the use of tools to the inside of the basin.
         2. Any solid surface above the lid required by design to be provided as specified in the Section of this Specification for the finish required. All solid surface finishes shall be removable to permit access without the use of tools to the inside of the basin.
      5. Pumps and Valves: Provide as recommended by the water feature manufacturer for flow rate and head pressure of water. Provide variable flow control, water level control system for automatic filling capability, drain overflow, and all accessories required for a complete installation.
      6. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC
      7. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance and sanitize the system.
      8. Translucence Series water patterning: Design upper distributor and adjust water flow rate for smooth, even flow with edge-to-edge coverage over the glass panel(s).
    1. Harmonic Environments - Translucence Series Suspended Glass Waterfall.
       1. Design: Provide Translucence Series Suspended Glass Waterfall as indicated on the Drawings. Water shall circulate continuously from the lower storage basin up and flow over the top and down one side of framed, clear tempered glass panels, mounted upright in a stainless steel basin.
       2. System Includes:
          1. Pump,
          2. Header (Upper distribution system),
          3. Stainless steel basin,
          4. Internal plumbing,

\*\* NOTE TO SPECIFIER \*\* Include the one of the following two paragraphs as required and delete the one not required.

* + - * 1. Clear tempered glass panel.
        2. Frosted tempered glass panel.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph for Waterplace® built-in Systems only. Delete if not applicable.  
\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Delete if not applicable.

* + - * 1. Programmable LED color lighting with DMX controls and power supply.
      1. Tower Size: Approx. \_\_\_ Width x \_\_\_ height.
      2. Basin Size: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.

\*\* NOTE TO SPECIFIER \*\* Glass panels are available no more than 145 inches high and no more than 84 inches wide and 1/2 inch thick. Insert the size required.

* + - 1. Tempered Glass Panels with polished edges: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      2. Tower Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel upper water distribution system (header).
         2. Water recirculation piping as specified in Section 23 05 00 - Common Work Results for HVAC to run outboard of the Stainless Steel basin, concealed up to the Header.
         3. Tempered glass panels 1/2 inch to 5/8 inch thick with polished sides, captured between the basin and the header.
      3. Basin Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel.
      4. Removable Lids:
         1. Stainless Steel lids to cover all equipment and provide access without the use of tools to the inside of the basin.
         2. Any solid surface above the lid required by design to be provided as specified in the Section of this Specification for the finish required. All solid surface finishes shall be removable to permit access without the use of tools to the inside of the basin.
      5. Pumps and Valves: Provide as recommended by the water feature manufacturer for flow rate and head pressure of water. Provide variable flow control, water level control system for automatic filling capability, drain overflow, and all accessories required for a complete installation.
      6. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC
      7. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance and sanitize the system.
      8. Translucence Series water patterning: Design upper distributor and adjust water flow rate for smooth, even flow with edge-to-edge coverage over the glass panel(s).
    1. Harmonic Environments - Waterplace Built-in Stainless Steel / Copper / Granite Waterfalls.
       1. Design: Provide Waterplace built-in Waterfall as indicated on the Drawings. Water shall circulate continuously from the lower storage basin up and flow over the top and down one side of waterface, mounted upright in a stainless steel basin.
       2. System Includes:
          1. Pump,
          2. Header (upper distribution system),
          3. Stainless steel basin,
          4. Internal plumbing,
          5. Stainless Steel Framing with rear wall / ceiling anchors

\*\* NOTE TO SPECIFIER \*\* Include the one of following three paragraphs as required. Delete if not applicable.

* + - * 1. Water-face Stainless Steel panel(s).
        2. Water-face Copper panel(s).
        3. Water-face Granite panel(s).
        4. ZonePure Water Purification System.

\*\* NOTE TO SPECIFIER \*\* Include the following paragraph if required. Delete if not applicable.

* + - * 1. Programmable LED color lighting with DMX controls and power supply.
      1. Tower Size: Approx. \_\_\_ Width x \_\_\_ height.
      2. Basin Size: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      3. Stainless Steel Panels: Approx. \_\_\_ Length x \_\_\_ width x \_\_\_ depth.
      4. Tower Materials:
         1. T-316 grade, # 4 brushed satin finish Stainless Steel upper water distribution system (header), anchored to ceiling structure as indicated.
         2. Water recirculation piping as specified in Section 23 05 00 - Common Work Results for HVAC shall run outboard of the Stainless Steel basin, concealed up to the Header.
         3. Water-face panels shall be captured between the basin and the header.
      5. Basin Materials: T-316 grade, # 4 brushed satin finish Stainless Steel.
      6. Removable Lids:
         1. Stainless Steel lids to cover all equipment and provide access without the use of tools to the inside of the basin.
         2. Any solid surface above the lid required by design to be provided as specified in the Section of this Specification for the finish required. All solid surface finishes shall be removable to permit access without the use of tools to the inside of the basin.
      7. Pumps and Valves: Provide as recommended by the water feature manufacturer for flow rate and head pressure of water. Provide variable flow control, water level control system for automatic filling capability, drain overflow, and all accessories required for a complete installation.
      8. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC
      9. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance and sanitize the system.
      10. Waterplace water patterning: Design upper distributor and adjust water flow rate for smooth, even flow with edge-to-edge coverage over the water-face panels..
    1. Harmonic Environments - Aeropanel Built-in or Free Standing Water Feature (Closed System)
       1. Design: Provide Aeropanel built-in Waterfall as indicated on the Drawings. Water shall be added to sealed tank and air pumped into tank to create bubble pattern.
       2. System Includes:
          1. Air pump,
          2. Aluminum Framing with rear/side wall anchors,
          3. Sealed water tank,
          4. Internal plumbing,
          5. ZonePure Water Purification System.
          6. Programmable LED color strip lighting with DMX controls and power supply (if applicable).

\*\* NOTE TO SPECIFIER \*\* Frame size is available up to a maximum of 4 feet wide by 10 feet high by 4-1/2 inches deep. Include the size required in the following paragraph as required.

* + - 1. Frame Size: Approx. \_\_\_feet wide by \_\_\_ feet high x 4-1/2 inches deep, Outside Dimensions
      2. Removable Panels:
         1. Aluminum frame to cover, equipment, and provide access without the use of tools to the inside of the water feature.
         2. Any solid surface above or around the water feature required by design to be provided as specified in the Section of this Specification for the finish required. Top and bottom frames are removable to permit access without the use of tools to the inside of the system.
      3. Pumps and Valves: Provide as recommended by the water feature manufacturer. Provide all accessories required for a complete installation.
      4. Drainage piping shall be provided as specified in Section 23 05 00 - Common Work Results for HVAC.
      5. Water Purification System: Provide Harmonic Environments ZonePure Water Purification System as recommended by the water feature manufacturer to minimize maintenance.
      6. Aeropanel bubble pattern: Design manifold for unique, even flow with edge-to-edge bubble pattern.
  1. FABRICATION
     1. Fabricate in accordance with approved Waterfall drawings. Coordinate the fabrication schedule with construction progress to avoid delaying the work.
     2. Form metal to required shapes and sizes, with true lines and angles. Provide components in gauges indicated, but not less than that needed for secure structural support.
     3. Provided necessary lugs and brackets to assemble units and to attach to other work. Use concealed fasteners.
     4. Fully seal weld lower water storage basin and upper spill reservoir.
     5. Fully assemble and test units in factory prior to delivery to project site.

1. EXECUTION
   1. EXAMINATION
      1. Do not begin installation until substrates have been properly prepared.
      2. Verify openings are in accordance with approved shop drawings.
      3. Verify that all supports have been installed in accordance with the Drawings.
      4. Verify that utility services are of correct type and in correct locations.
      5. Verify that construction activities affecting work of this section are correct and complete.
      6. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
   2. PREPARATION
      1. Clean surfaces thoroughly prior to installation.
      2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
   3. INSTALLATION
      1. Install equipment and system in accordance with manufacturer's instructions and approved Shop Drawings..
      2. Install all shop fabricated components straight, plumb, and level in accordance with the details indicated and the manufacturer's recommendations.
      3. Do not cut or abrade finishes that cannot be completely restored in the field. Return items with such finishes to the factory for required repairs/replacement.
      4. Adjust water flow rate for smooth, even flow with edge-to-edge coverage across all panels, and achieve proper water patterning
   4. SYSTEM STARTUP
      1. Prepare and start equipment and systems in accordance with manufacturers' instructions and recommendations.
      2. Adjust for proper operation within manufacturer's published tolerances.
   5. CLOSEOUT ACTIVITIES
      1. Training: Train Owner's personnel on operation and maintenance of system.
         1. Provide and use operation and maintenance manual as training reference, supplemented with additional training materials as required.
         2. Instruct owners designated operation and maintenance personnel in the operation, adjustment, and maintenance of water features and accessory components.
         3. Provide contact name and phone number for service and parts.
   6. PROTECTION
      1. Protect installed products until completion of project.
      2. Touch-up, repair or replace damaged products before Substantial Completion.
   7. CLEANING
      1. Remove protective covering.
      2. Clean exposed and semi-exposed surfaces. Clean inside of basin of construction debris.
      3. Touch up exposed finishes and restore damaged or soiled areas.
      4. Follow manufacturer's instructions for cleaning and maintenance of ZonePure system components.
   8. SCHEDULES

\*\* NOTE TO SPECIFIER \*\* Retain Paragraph below if required to suit project requirements. Identify products by name on the Drawings or use this paragraph to define the location of each type of material to be used. The following are some examples of schedule references. Edit as required to suit project or delete and identify products on the Drawings.

* + 1. :
    2. :

END OF SECTION