SOUTHERN NEVADA WATER AUTHORITY™
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"This waiver request was submitted to the EPA by the state of Nevada and applies only to the project in the subject line. All supporting correspondence and/or documentation from contractors, suppliers or manufacturers included as a part of this waiver request was done so by the recipient to provide an appropriate level of detail and context for the submission. There may be documents with project diagrams, schedules, and supplier correspondence in formats that do not meet the Federal accessibility requirements for publication on the Agency's website. Hence, these exhibits have been omitted from this waiver publication. They are available upon request by emailing DWSRFWaiver@epa.gov."

August 7, 2025

Mr. Matthew Livingston
Staff Associate Engineer
Office of Financial Assistance, Bureau of Administrative Services
Nevada Division of Environmental Protection
9805 Double R Blvd., Suite 200
Reno, NV 89521

RE: AIS Project Waiver Request for RMWTF Ozone Project

Dear Mr. Livingston,

SNWA is formally requesting an availability-based AIS Project Waiver for the space frame structure required for the RMWTF Ozone Replacement project currently funded under agreement DW2504. Details and support for this request are provided below.

- Description of construction materials: Project specs call for manufactured steel space frame structures consisting of steel tubes, steel nodes, bolts, and aluminum sunshade panels to be installed on the roof of the River Mountain Water Treatment Facility. These structures will protect the Ozone Control Valves and Flow Meters from the extreme heat and sun of the Las Vegas desert in order to prevent equipment degradation. Specs also require these new shade structures match the existing roof shades to ensure aesthetic continuity.

- Unit of measure: Canopy
- Quantity: 3
- Price: $[redacted]
- Time of delivery: 01/29/2026
- Location of the construction project: 1350 Richard Bunker Ave, Henderson, NV 89015
- [redacted]
- Justification: SNWA's prime contractor, MWH Constructors, Inc. conducted a request for bids process for the space frame shade structures in November of 2024. Acting as a CMAR, this bidding process occurred during the design phase and concurrent with the finalization of CWSRF funding approval. Per the specs, the shade structure is required to match existing space frame structures installed at RMWTF. MWH invited a total of 16 suppliers to bid on the [redacted]. SNWA and MWH have attempted to find a supplier that can provide a structure that meets AIS requirements - including requesting help from EPA – and have been unable to find a conforming product.

- **Due Diligence:** MWH invited the following 16 companies to bid on the space frame structure component. [redacted]. Additionally, SNWA and NDEP reached out to EPA requesting help identifying a potential supplier. EPA identified two potential suppliers, [redacted] is unable to build a space frame to the required matching specs, and [redacted] has been selected through the bid process but is unable to meet AIS requirements due to the structure's size requirements.

Please find support for our availability-based waiver request attached, including:

- Letter from prime contractor MWH Constructors, Inc. confirming process for identifying suppliers and the determination of non-availability of the domestic construction materials*
- Request for Bid result summary
- [redacted]
- Communication with potential suppliers
- Communication with EPA on potential suppliers
- AIS requirement excerpts from prime contractor construction contract
- Project Schedule
- Space frame specs/drawings

**Sent under separate cover*

Thank you for your consideration of this request and please let us know if we can provide additional information.

Sincerely,

Rich Easter
DW2504 Authorized Official

SECTION 05 16 00 - STRUCTURAL METAL SPACE FRAME

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Provide space frame canopies on roof of ozone contactor as indicated on Drawings.

B. Provide a permanent, low maintenance bird control system to prevent birds from landing on specified surfaces.

C. Delegated Design services.

1.3 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Aluminum Association Standards:

1. ADM-2015: Aluminum Design Manual, 2015 Edition.

B. American Institute of Steel Construction Standards:

1. AISC 360-16: Specification for Structural Steel Buildings, 2016 Edition.

C. American Iron and Steel Institute Standards:

1. AISI S100 -16: North American Specification for the Design of Cold-Formed Steel Structural Members, 2016 Edition.

D. ASTM International Standards:

E. American Welding Society Standards:

F. International Code Council Standards:

1. International Building Code, 2018 Edition.

1.4 SUBMITTALS

A. Furnish the following submittals in accordance with Section 01 33 00.

B. Product Data: Manufacturer's detailed technical product data and installation instructions for each principal component of product, ad include certified test reports on required testing. Submittal shall include a complete listing and description of all features and interface requirements of the space frame.

C. Samples: All components, connectors, and panels; 8-inch squares of materials and 12-inch lengths of running tube and component members, for selection and approval.

1. Fabricator shall submit one sample full size "node" with connecting member having indicated finish.
2. A sample of the bird wire system, 48-inches minimum in length, shall be submitted for approval. Product data shall be submitted showing compliance with all quality and fabrication requirements.
3. All samples shall be submitted with the indicated coating system for confirmation of color and performance characteristics.
4. Product data shall be submitted showing compliance with galvanizing of components and other quality and fabrication requirements.

D. Complete details of the bird control system as it attaches to the space frame system shall be supplied. Drawings shall be complete with details of all variations of mounting conditions to the space frame.

E. Documentation of Acceptance of Installer by Manufacturer: Documentation certifying that the space frame system manufacturer recognizes and accepts the installer as either an employee of the manufacturer or a licensee of the manufacturer, and fully qualified to successfully accomplish all aspects of the installation.

F. Documentation shall be submitted certifying that the bird control system manufacturer recognizes and accepts the installer as either and employee of the manufacturer or a workman or company fully qualified to successfully accomplish all aspects of the installation.

G. Manufacturer's detailed technical product data and installation instructions for each principal component of bird control system.

1.5 DELEGATED DESIGN SUBMITTALS

A. Structural Calculations: Design calculations prepared in accordance with the applicable code. Calculations and drawings shall be prepared by a Registered Professional Engineer, licensed to practice in the State of Nevada, with all drawings and calculations bearing their seal. Complete analyses shall be included for all pertinent load cases including roof live, dead, wind, thermal, and seismic.

1. Submit reactions and maximum frame deflections.
2. Calculations shall be furnished for frame and anchorage, including anchorage reinforcement, if required.
3. Existing test reports shall not be accepted in lieu of calculations.

B. Shop Drawings: Complete plans, elevations, tube layouts, and details of the space frame systems. Drawings shall include dimensioned layouts of space frames in relation

to adjacent Work, such as supporting columns, walls, beams, slabs, anchorage, and anchor reinforcing, if required. Drawings shall be complete with details of all points of support, as well as clearly indicating all interface requirements necessary from other trades. Details shall clearly define all connections involving transfers of loading to the supporting columns from the structural space frame, including templates, if necessary.

1. Include details of all supports and data as necessary to document provisions for vertical and horizontal expansion/contraction of the space frame.
2. All materials and all attachments devices and accessories shall be identified.

C. Erection Drawings: After Acceptance of shop drawings, submit a detailed set of field erection drawings.

1. Each part shall be identified by size and number, with a unique code for easy identification. Individual part coding shall be cross referenced to shop and erection drawings, to shipping list, and through the entirety of the erection process.
2. Method for erecting the space frame, including the specific sequencing of the installation shall be completely documented.

D. Submit Manufacturer's certification prepared, and signed by a Registered Professional Engineer licensed to practice in the State of Nevada, attesting that the structural space frame design meets all system performance design criteria and the requirements of applicable codes and authorities having jurisdiction at the Site.

1.6 QUALITY ASSURANCE

A. Space Frame Subcontractor's Qualifications:

1. The space frame subcontractor shall have not less 10-years continuous experience in manufacturing forged solid spherical node space frame structures for projects in the United States of equivalent size and complexity to those required by these Contract Documents.
2. The space frame subcontractor shall offer in-house service for the structure as a single entity. Outsourcing, subcontracting or joint ventures to achieve a single source shall not be acceptable, except for the structural engineering.
3. Space frame subcontractor shall supply quality control compliance information, that is acceptable to all applicable codes, prior to bid without exception.
4. The space frame systems shall be contracted directly by the CMAR with the space frame manufacturer as a subcontractor. Tenders of project management by a sales agent, intermediary, agent or distributor of the manufacturer will not be acceptable.

B. Quality Control of Space Frame Components:

1. Quality control of nodes, tubes, and bolts shall be carried out at the factory, with test loading.
2. Submit certificate of compliance with the above factory test procedure.

1.7 ENGINEERING AND DETAIL DESIGN RESPONSIBILITY

A. The drawings and specifications establish the general design concept for Work of this section.

1. Drawings show requirements for “sight-line”, profiles, sizes, units or modules, alignments, and other characteristics.
2. Specifications state other performance requirements including types of materials, fabrication and installation requirements, applicable engineering design criteria and other aspects of application of this work.

B. Preparation of Engineering design and detail within the general design concept indicated shall be the Contractor’s responsibility. Supplement the general design with engineering calculations and submittal data as may be required and as may be applicable for this Work, to demonstrate how the final design fulfills the general design requirements.

1. The Contractor agrees that the general design in Contract Documents adequately establishes the scope, quality, and other performance requirements for this Work, without additional cost as a result of submittal review.
2. If performance requirements are unclear, the Contractor shall obtain further direction from the CMAR in writing, before expenditure of non-recoverable costs including the preparation of submittal data, fabrication or acquisition of products and on-site preparatory Work. When requested, the Contractor shall make subcontractors available for consultation at no additional cost.

C. When engineering design is required, the Contractor shall use the services of an engineer licensed to practice the applicable engineering discipline in the State of Nevada. Engineer’s seal shall be affixed to engineering design drawings and calculations when required as submittal data. Shop drawings shall also be sealed.

1.8 WARRANTY

A. The space frame subcontractor shall furnish the Authority a written guarantee that all Work of this section shall be free of defects in material, workmanship, and corrosion for a period of one year from the date of substantial completion of the project. Warranty shall include all items supplied by the space frame manufacturer. Warranty shall be a “No Dollar Limit” and shall not be pro-rated.

B. The warranty shall not affect other rights the Authority may have under the Contract Documents.

PART 2 - PRODUCTS

2.1 DESIGN REQUIREMENTS

A. Space frame structure with panel infills shall be designed in conformance with the requirements of the American Institute of Steel Construction (AISC) “Specifications for

the Design, Fabrication and Erection of Structural Steel for Buildings" for the spans and overhangs shown on the Drawings and to the following loading requirements and codes:

1. IBC 2018 Edition, as modified and adopted by Clark County.
2. Roof Live Load: Nonconcurrent uniform and point loads as required by the IBC.
3. Superimposed Dead Load: Light fixtures.
4. Wind component and cladding pressures derived from ASCE 7 Chapter 30 for a 105 MPH basic wind speed in exposure category C.
5. Thermal Movements: Provide for thermal movements resulting from annual ambient temperature changes of 80 deg F.
6. Seismic nonstructural component loads derived from ASCE 7 Chapter 13 with a Seismic Design Category of C, an S_{DS} of 0.396, and a component importance factor of 1.0.
7. Other miscellaneous loads shall be provided to space frame supplier prior to design.

2.2 MANUFACTURED STEEL SPACE FRAME

A. General: The construction documents are based on the KK Round Ball and Tube System as manufactured by MERO Structures, Incorporated. The system shall be formed from steel and consist of cylindrical tubes and solid forged spherical nodes.

1. Steel Tubes:

    a. Tube material shall conform to ASTM A 500 – Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes, Gr. B or equivalent minimum.
    b. Assembly shall consist of a hollow tube with forged cone welded on each end. Tube ends shall remain open. Substitution of sealed tubes will not be acceptable.

2. Steel Nodes:

    a. Shall consist of hot forged solid steel spheres conforming to AISI C1045 material – normalized. They shall be drilled and tapped as necessary. Extra holes other than those shown in approved submittal drawings will not be permitted.
    b. Joints using gusset plates, two-piece assemblies or friction fit shall not be used.

3. Bolts: Shall conform to ASTM A 307 – Carbon Steel Bolts and Studs, 6000 psi Tensile, A325 – High-Strength Bolts for Structural Steel Joints, or A 490 – Heat-Treated, Steel Structural Bolts, 150 ksi Tensile Strength, or equivalent standard.

2.3 METAL SUNSHADE PANELS

A. Panels shall consist of foam sandwich construction, with aluminum skins. Gage of skins and thickness of panel shall be no less than 2" thick, and as determined by the

Space Frame Subcontractor's structural engineer such that panel conforms to structural performance and exposure criteria described herein above. Panel shall be attached to space frame tubes with continuous extruded aluminum intermediate members as detailed.

1. Attachments to space frame tubes shall be accomplished with stainless steel fasteners and washers applied into drilled and tapped holes in tubes.
2. Attachments to sunshade panels shall be accomplished with stainless steel fasteners and washers specifically designed for the application and adequate to develop the necessary torque to secure the panel against the design conditions established above for wind, temperature and seismic effect.
3. Spacing of all fasteners shall be equal and symmetrical.

2.4 SPACE FRAME FINISH

A. Galvanizing:

1. All space frame tubes shall be hot dip galvanized on both exterior and interior surfaces to a minimum zinc film thickness of 55 microns as per ASTM A123 – Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products (Table 1) for hot dip galvanizing cylindrical tubes both interior and exterior, 55 microns. All threaded or tapped parts shall be electro-galvanized according to ASTM B 633 – Electro-deposited Coatings of Zinc on Iron and Steel.
2. Welding of conical ends onto tubes shall be accomplished in such a manner as not to damage the galvanized finish. Width of weld in the direction of tube length shall be a maximum of 1/8-inch. Thickness of weld to tube length on outside surface of tube shall be less than 1/32-inch. Open holes in sides of tubes shall not be permitted except where necessary to attach sunshade panels or bird control system.

B. Color Coating:

1. Tubes, connectors, purlins and bases shall be finished with a thermoset polyester powder applied by electrostatic spray process, minimum thickness two mils, oven dried and cured. Nodes shall be coated with a wet applied polyurethane finish in color to match.
2. Sunshade panels and extruded aluminum intermediate members shall be coated on both sides and all other exterior surfaces with a custom polyester, 70% PVDF "Kynar", or "Hylar" finish with a minimum dry film thickness of 2.0 mils including primer and finish coat. Color shall be to match the existing Space Frame System.
3. Color for all structural space frame components shall be to match the existing Space Frame System.

2.5 BIRD CONTROL SYSTEM

A. Bird control system components shall be 302 stainless steel. Base strip of bird control system shall be no less than ¼" wide. Needle pattern density shall be no less than 120 per lineal foot and equally spaced.

1. Finish of bird control system and attachments shall be natural stainless steel.

B. Attachments to space frame tubes shall be accomplished with manufacturer's recommended adhesive and stainless steel machine bolts and washers applied into drilled and tapped holes in tubes and securing stainless steel mounting clips.

1. Spacing of attachments shall be no less than 12-inches on center.

C. All mounting hardware shall be stainless steel. All mounting clips and hardware shall be supplied by the bird control system manufacturer.

2.6 MANUFACTURES OR EQUAL

A. Space Frame Structure:

1. Catalog names and numbers of components and assemblies are products of [redacted]. Such reference is not intended to limit competition, but rather to establish minimum standards for kind, quality, and function.
2. Alternative products of competing manufacturers will be considered as substitutions, when submitted by the CONTRACTOR, in conformance with Section 016000 – Products, Equipment, Materials and Substitutions.

    a. To be approved and acceptable substitution, the submittal must demonstrate to the satisfaction of the CONSTRUCTION MANAGER, equivalent or superior project experience, and equal or superior project experience, and equal or superior in material, fabrication, finish, assembly and structural performance. The appearance of the alternate product must match the existing structural metal space frame.

B. Bird Control System:

1. All components of the bird control system shall [redacted] for the application indicated. Where necessary to achieve proper deterrent, other configurations may be provided as recommended by the manufacturer.
2. Alternative products of competing manufacturers will be considered as substitutions, when submitted by the CONTRACTOR, in conformance with Section 016000 – Products, Equipment, Materials and Substitutions.

    a. To be approved and acceptable substitution, the submittal must demonstrate to the satisfaction of the CONSTRUCTION MANAGER, equivalent or superior project experience, and equal or superior project

experience, and equal or superior in material, fabrication, finish, assembly and bird deterrent performance.

PART 3 - EXECUTION

3.1 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Factory finished components shall be stored, handled, and shipped in a manner that will prevent scratched and damaged units from being delivered to the site.

B. Delivery of Materials: Manufactured components and assemblies shall be delivered in original, unbroken packages or containers bearing the manufacturer's label. Packages or containers shall be delivered to the site with seals unbroken.

C. Storage: All components and assemblies shall be carefully stored in an area that is protected from deleterious elements, in a manner recommended by the product manufacturer. Storage shall be in a manner that will prevent damage to components and assemblies or marring of finish surfaces.

3.2 INSPECTION

A. Prior to commencing space frame installation, installer shall inspect space frame support locations and the areas and conditions under which the space frame Work is to be installed, and all other interfaces with Work of this Section, as constructed. All critical dimensions and clearances shall be verified. Supporting structure and all other conditions under which space frame Work is to undertaken shall be confirmed as satisfactory.

B. Any conditions detrimental to the proper installation of performance of space frame Work shall be reported in writing and resolved satisfactorily before any installation Work begins. Installation shall not proceed until unsatisfactory conditions have been corrected in a manner acceptable to the Contractor and the installer. If appropriate to the circumstances, and approved by the CONSTRUCTION MANAGER, ground assembly may proceed.

3.3 PROJECT CONDITIONS

A. The installer shall follow all safety regulations as required by Nevada – OSHA and any other applicable authorities having jurisdiction.

B. All waste material resulting from the erection shall be regularly removed from the site by the installer and properly transported to a legal dumping area authorized to receive such material, in a legal manner. Site cleanup of areas, which have been affected by construction of the space frame system, shall be completed to the CONSTRUCTION MANAGER'S satisfaction.

3.4 INSTALLATION

A. Erect space frame and accessory items in strict accordance with the manufacturer's approved shop and erection drawings and installation procedures.

1. Members shall not be positioned using force.
2. Members shall be installed such that condensation drain holes are pointing downwards.
3. Temporary bracing and support shall be provided as required to ensure stability during the erection process.
4. Where necessary, paint Work may be touched up with matching air dry paint.

B. Bird control system shall be installed in accordance with manufacturer's instructions and as described below.

1. Bird control system shall be applied to the top surface of all upper horizontal surfaces of the space frame system.
2. Bird control system shall be applied to the top surface of all lower horizontal surfaces of the space frame system.
3. A medallion of bird control media shall be applied to the upper surface of each lower node connection of the space frame.
4. Bird control system shall be applied to all horizontal surfaces at tops of columns supporting the space frame system.
5. Bird control system strips may be cut to follow all contours and angles closely. Strips must be uniform in appearance and have no end-to-end gaps.

3.5 TOLERANCES

A. All framing members shall be erected plumb, level and aligned not to exceed a deviation of 1:300.

3.6 PROTECTION

A. CONTRCTOR shall provide protection measures for completed space frames and accessories to prevent damage or deterioration from subsequent Work.

END OF SECTION