



**SPECIAL PROVISIONS
FOR
TREE GRATE SPEAKER/RECEPTACLE**

**Scott County
STP-U-4252(604)--70-82**

**Effective Date
February 18, 2025**

THE STANDARD SPECIFICATIONS, SERIES 2023, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE SPECIAL PROVISIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

236034.01 DESCRIPTION.

A. Scope.

This Specification governs the furnishing of all material, equipment, and labor for the installation and testing of a complete, operational tree grate audio speaker system, including power and communication to equipment noted and integration into existing audio network. All material and equipment supplied, and all work performed, shall be in accordance with these Specifications, and as shown on the plans.

B. Definitions.

1. **Speaker:** Complete audio speaker unit consisting of housing, power supply, driver, mounting hardware and all parts as required to terminate communication cable.
2. **AV Communication Cables:** Cables with connectors which join speakers together into a system.

C. Operating Instructions.

1. Fully and carefully instruct the City representatives, regarding the proper operation, care and maintenance of each system and its equipment.

D. Coordination of Work.

Plan all work so that it proceeds with minimum interference with other trades. Cooperate with all other contractors in furnishing material and information, in proper sequence, for the correct location of all tree grates, inserts, foundations, wiring, etc. Extra cutting and patching made necessary by failure to properly direct such work at the correct time shall be the responsibility of the Contractor.

E. Submittals.

1. Product Data.

For each speaker, and support component, arranged in order of designation. Include data on features, accessories, ratings, finishes, and all electrical and mechanical parts required for a fully installed and functioning audio system.

2. Shop Drawings.

Include complete scaled, technical drawings showing all existing and proposed speakers, materials, support bracket, fasteners, wiring, connections, and other parts as indicated in the contract documents.

- a. Audio Speaker
- b. Installation Instructions
- c. Audio Performance Ratings
- d. Housing Environmental Ratings
- e. Manufacturer supplied cables
- f. Duplex GFI Receptacle
- g. Conduit Box

236034.02 MATERIALS.

A. General.

- 1. The Contractor shall be solely responsible to verify quantities, installation locations and wiring requirements for this work. It is the responsibility of the contractor to verify all control and interface devices with the manufacturer to provide a complete functioning system.
- 2. Unless otherwise specified, all materials and equipment shall be new, unused and undamaged. Materials and equipment shall be the current and standard designs of manufacturers regularly engaged in their production.
- 3. Where materials and equipment are indicated as furnished by others and installed or connected under this contract, it shall be the Contractor's responsibility to verify installation details.

B. Audio Speaker.

1. Enclosure.

- a. Black, IP65 weather-resistant housing, constructed of durable ABS plastic. Rated for outdoor installation in locations susceptible to moisture and splashing water.
- b. Enclosure shall be UV protected with protective metal grill.
- c. Furnished with 180 degree Surface-mount steel bracket.

2. Audio Performance.

- a. RMS Average Power Rating: 40 Watts
- b. Frequency Response: 90-20k Hz
- c. SPL (1W/1M): 86dB
- d. Impedance: 8 Ohm
- e. Transformer:
 - 1) 2.5W, 5W, 10W, 20W, 40W @ 70V
 - 2) 5W, 10W, 20W, 40W @ 100V
 - 3) 8 Ohm Bypass
- f. Woofer: 4.5 inch Polypropylene
- g. Tweeter: 0.75 inch Silk Membrane

- 3. **Manufacturer:** Pure Resonance Audio, Model: S5, Atlas Model: AS-4T-B, or equivalent.

C. Audio Communication Cable.

1. Non-plenum rated, 2-conductor speaker cable, No. 14 AWG, stranded bare copper, polypropylene insulated, flexible PVC jacket. Jacket is sequentially marked at 2 foot intervals.
2. Direct bury rated, UV protected.
3. Supports reliable long distance signal transmission. Ideal for exterior AV applications.
4. UL tested for use with high speed audio systems.
5. Cable shall be 14/2 CL2 by Belden, Allied Cable, or equal.

D. Underground Pull Box.

1. Precast polymer concrete suitable for below-grade installation.
2. Box shall be furnished with load rating as indicated:
 - a. Covers shall be traffic type, ANSI Tier 15 loading, except as indicated otherwise. covers shall be identified as "Electric" by raised letters cast into the covers.
 - b. Size: 12 inches by 12 inches minimum; 24 inches deep; open bottom.
3. Manufacturer: Quazite or equal.

E. General Purpose Electrical.

1. Ground-fault circuit interrupting receptacles (GFCI's) shall be installed at outdoor locations as required by the NEC. GFCI's shall be duplex, specification grade, tripping at 5 mA. Ratings shall be 125 V, 20 amperes, NEMA WD-1, Configuration 5-20R, capable of interrupting 5000 amperes without damage. Feed-through type GFCI's serving standard receptacles will not be permitted. GFCI's shall be as manufactured by Hubbell, Bryant, Leviton, or equal.
2. Receptacle shall be installed in surface-mount type FS or FD weatherproof conduit box.
3. Receptacles in wet locations shall be with a hinged metallic cover/enclosure marked "Suitable for Wet Locations when in use" and "UL Listed." There shall be a gasket between the enclosure and the mounting surface and between the hinged cover and mounting plate/base. The cover shall be TayMac Specification Grade, or equal.

236034.03 CONSTRUCTION.

A. General.

The Contractor is responsible for verifying the correct line and grade of all tree grate foundations and conduits prior to installation.

B. Audio Speaker Installation.

Comply with the manufacturer's recommendations for installation procedures.

C. Grounding.

Comply with the NEC and the manufacturer's recommendations for grounding the audio system equipment.

D. Training.

After the audio system is functioning properly, schedule a training session for City personnel. The training session shall be taught by a factory-trained representative to review equipment operation. The training shall be planned to include a half day, as desired by the City.

E. Warranty.

The manufacturer shall warrant the performance and construction of the speakers to meet the requirements of this special provision, and shall warrant all parts, components and appurtenances against defects due to design, workmanship or material developing within a period of 2 years after the date of manufacture as indicated on the speaker. This will be interpreted particularly to mean compatible performance of speaker, failure of any component, and discolorations or water damage of the speaker, impairing the transmission of audio. Any speaker or part thereof, not performing as required, or developing defects within this period shall be replaced by the manufacturer without expense to the City.

236034.04 METHOD OF MEASUREMENT.

Method of measurement for Tree Grate Speaker/Receptacle shall be Each.

236034.05 BASIS OF PAYMENT.

Payment for the Tree Grate Speaker/Receptacle will be at the contract unit price per each. Payment shall be full compensation for all items required for the system including the speaker units, underground pull box, cables, connectors, GFCI receptacle, installation and all associated hardware and incidentals, labor, equipment and materials for installation.