

SECTION 27 05 23

TELEVISION SERVICES

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes television antennas; television distribution equipment; arrangement with cable utility company for cable television service; payment of cable utility company charges for service installation; and service provisions.
- B. Related Sections:
 - 1. Division 26 - Facility Lightning Protection.
 - 2. Division 27 - Grounding and Bonding for Communications Systems.

1.02 REFERENCES

- A. National Fire Protection Association:
 - 1. NFPA 262 - Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.

1.03 SYSTEM DESCRIPTION

- A. Service entrance from local cable utility.
- B. Premises wiring for broadband distribution of television signal, including individual outlets.
- C. Cable Utility Company: Time Warner Cable

1.04 PERFORMANCE REQUIREMENTS

- A. Television Channels: 8.
- B. Signal at each outlet: 3 dBmV across 75 ohms, minimum, plus 5 dB, minus 0 dB.

1.05 SUBMITTALS

- A. Division 01 - Submittal Procedures: Submittal procedures.
- B. Shop Drawings: Indicate electrical characteristics and connection requirements. Show installation details, cable routing, and system configuration.
- C. Product Data: Submit catalog data showing electrical characteristics and connection requirements for each component.
- D. Test Reports: Indicate procedures and results for specified field testing and inspection.
- E. Manufacturer's Field Reports: Indicate activities on site, adverse findings, and recommendations.

1.06 CLOSEOUT SUBMITTALS

- A. Division 01 - Execution and Closeout Requirements: Closeout procedures.
- B. Project Record Documents: Record actual locations of outlets, devices, and cable routing.

- C. Operation and Maintenance Data: Submit instructions for setting and tuning channels, and for basic troubleshooting procedures.

1.07 QUALITY ASSURANCE

- A. Provide wiring materials located in plenums with peak optical density not greater than 0.5, average optical density not greater than 0.15, and flame spread not greater than 5 feet (1.5 m) when tested in accordance with NFPA 262.
- B. Maintain one copy of each document on site.

1.08 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum three years documented experience, and with service facilities within 100 miles of project.
- B. Supplier: Authorized distributor of specified manufacturer with minimum three years documented experience.
- C. Installer: Authorized installer of specified manufacturer with service facilities within 100 miles of Project.

1.09 PRE-INSTALLATION MEETINGS

- A. Division 01 - Administrative Requirements: Pre-installation meeting.
- B. Convene minimum one week prior to commencing work of this section.

1.10 MAINTENANCE SERVICE

- A. Division 01 - Execution and Closeout Requirements: Maintenance service.
- B. Furnish service and maintenance of television equipment for one year from Date of Substantial Completion.

1.11 COORDINATION

- A. Coordinate with utility company for relocation of overhead or underground lines interfering with construction.
- B. Contact utility company regarding charges related to service installation. Include utility charges in this contract.
- C. Utility charges for service installation paid by County and are not part of this contract.

PART 2 PRODUCTS

2.01 VHF ANTENNA

- A. Product Description: Single channel antenna for each channel required.
- B. Impedance: 75 ohm, gamma match.
- C. Antenna Type: 10 element Yagi type.
- D. Gain: 13 dB over tuned dipole.
- E. Front-to-Back Ratio: 20 dB, minimum.
- F. Beam Width: 52 degrees vertical x 63 degrees horizontal minus 3 dB.

- G. Return Loss: 17 dB, minimum over entire channel.
- H. Construction: Tubular metal elements.
- I. Mounting Hardware: Suitable for stacking; minimum separation, 1/2 wavelength.
- J. Wind Resistance: Withstand 100 mph wind.

2.02 VHF PREAMPLIFIER

- A. Product Description: Single channel pre-amplifier for each required channel.
- B. Impedance: 75 ohm.
- C. Bandpass: 6 MHz, plus or minus 0.25 dB.
- D. Gain: 24 dB, minimum.
- E. Signal-to-Noise Ratio: 3 db maximum.
- F. Power Supply: Remote, impedance matched for 22 dB return loss, 0.2 dB through loss. Furnish 120 volt, single phase input.

2.03 CONVERTER

- A. Manufacturers:
 - 1. Blonder Tongue
 - 2. Substitutions: Division 01 - Product Requirements.

2.04 VHF AMPLIFIER

- A. Manufacturers:
 - 1. Blonder Tongue
 - 2. Substitutions: Division 01 - Product Requirements.

2.05 BANDPASS FILTER

- A. Manufacturers:
 - 1. Blonder Tongue
 - 2. Substitutions: Division 01 - Product Requirements.

2.06 TRAP

- A. Manufacturers:
 - 1. Blonder Tongue
 - 2. Substitutions: Division 01 - Product Requirements.

2.07 ATTENUATOR PADS

- A. Manufacturers:
 - 1. Blonder Tongue
 - 2. Substitutions: Division 01 - Product Requirements.

2.08 TAP

A. Manufacturers:

1. Blonder Tongue
2. Substitutions: Division 01 - Product Requirements.

2.09 SPLITTER

A. Manufacturers:

1. Blonder Tongue
2. Substitutions: Division 01 - Product Requirements.

2.10 DISTRIBUTION CABLE

A. Manufacturers:

1. Belden
2. Substitutions: Division 01 - Product Requirements.

2.11 TELEVISION LEAD CABLE

A. Manufacturers:

1. Belden
2. Substitutions: Division 01 - Product Requirements.

2.12 EQUIPMENT RACK

A. Manufacturers:

1. Hoffman
2. Substitutions: Division 01 - Product Requirements.

B. Size: As required to accommodate equipment.

C. Cabinet Finish: Selected by equipment manufacturer.

PART 3 EXECUTION

3.01 EXISTING WORK

A. Remove exposed abandoned television cable including abandoned cable above accessible ceiling finishes. Cut cable flush with walls and floors, and patch surfaces.

B. Disconnect and remove abandoned television equipment.

C. Maintain access to existing television equipment and cables and other installations remaining active and requiring access. Modify installation or provide access panel.

D. Extend existing television installations using materials and methods compatible with existing installations, or as specified.

E. Clean and repair existing television equipment to remain or to be reinstalled.

3.02 INSTALLATION

- A. Connect cable television service in accordance with Cable Utility instructions.
- B. Install grounding of television system components and wiring in accordance with Division 27.
- C. Bond outdoor components to lightning protection system in accordance with Division 26.

3.03 FIELD QUALITY CONTROL

- A. Division 01 - Quality Requirements and Execution and Closeout Requirements: Field inspecting, testing, adjusting, and balancing.
- B. Measure signal level at each outlet.

3.04 MANUFACTURER'S FIELD SERVICES

- A. Division 01 - Quality Requirements: Manufacturer's field services.
- B. Supervise final adjustments and tuning of system.

3.05 ADJUSTING

- A. Division 01 - Execution and Closeout Requirements: Testing, adjusting, and balancing.
- B. Adjust each antenna using field strength meter to orient for maximum signal reception.
- C. Adjust amplifier gain and make other system adjustments to achieve specified output levels at each outlet.
- D. Adjust traps to eliminate spurious interference.

3.06 DEMONSTRATION AND TRAINING

- A. Furnish two hours of instruction each for two persons, to be conducted at Project site with manufacturer's representative.

3.07 CONVERTER SCHEDULE

- A. Converter C-1: Convert Channel 48 to Channel 6.
- B. Converter C-2: Convert Channel 63 to Channel 10.
- C. Converter C-4: Convert 72 to Channel F.

3.08 TAP SCHEDULE

- A. Tap TVT-1: 12 dB isolation.
- B. Tap TVT-2: 17 dB isolation.
- C. Tap TVT-3: 16 dB isolation.
- D. Tap TVT-4: 23 db isolation.

END OF SECTION