Part 1   **General**

1.1   **REFERENCE**

.1   Read and be governed by Section 26 05 00.

1.2   **RELATED WORK**

.1   Comply with relevant Sections of this and other Divisions of this Specification.

1.3   **SYSTEM DESCRIPTION**

.1   The complete and separate telephone and data raceway systems, consist of outlet boxes, cover plates, plywood backboards, terminal cabinets, conduits, cabletroughs, pull boxes, J-hooks, sleeves and caps, pulling cables, and concrete encased ducts.

Part 2   **Products**

2.1   **MATERIALS**

.1   All outlet boxes, wiring devices, cover plates, terminal cabinets, conduits, cabletroughs, plywood backboards, pull boxes, sleeves and caps, pulling cables, and concrete encased ducts are described elsewhere in this Specification.

.2   J-hooks:

    .1   J-hooks to be B-line #BCH64X or equivalent c/w support bracket and threaded rod to ceiling.

Part 3   **Execution**

3.1   **INSTALLATION**

.1   Install separate telephone and data raceway systems, including cabletrough, J-hooks, terminal cabinets, outlet boxes, wiring devices, pull boxes, cover plates, conduit, sleeves and caps, pulling cables, concrete encased ducts, miscellaneous and positioning material to constitute a complete system.

.2   Cap and/or seal all unused sleeves and slots.

.3   Caulk all unused sleeves, fire and smoke tight.

.4   Conduits for tel/data wiring to be based on the following table with a 40% fill ratio:

WIRE TYPE AND QUANTITY BASED ON CAT. 6		MINIMUM CONDUIT SIZE FOR EACH OUTLET TYPE
Non-Plenum Rated Tele/Data Outlet	Plenum Rated Tele/Data Outlet	
4	4	21mm

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(Cont'd)

7	8	27mm
10	12	35mm
15	17	41mm
27	30	53mm
60	68	78mm
110	121	103mm

3.2   EXPANSION FITTINGS

.1   Conduit expansion fittings to be provided on all conduits crossing expansion joints, and at maximum of 60 m spacing.

.2   Install expansion fittings perpendicular to expansion joint.

END OF SECTION

Part 1   **General**

1.1   **REFERENCES**

.1   UL6500 – Standard for Audio/Video and Musical Instrument Apparatus for Household, Commercial and Similar General Use.

.2   UL 2043 – Standard for Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; 1996.

.3   ASTM E 1374-02 – Standard Guide for Open Office Acoustics and Applicable ASTM Standards.

.4   ASTM E 1573-02 – Standard Test Method for Evaluating Masking Sound in Open Office Using A-Weighted and One-Third Octave Band Sound Pressure Levels.

.5   ASTM E 1130-02e1 – Standard Test Method for Objective Measurement of Speech Privacy in Open Offices Using Articulation Index.

.6   FCC – EN 55103-1&2 – Audio, Video and Entertainment Lighting Control.

1.2   **SHOP DRAWINGS**

.1   Submit shop drawings in accordance with Section 26 05 00.

1.3   **QUALITY ASSURANCE**

.1   Manufacturer Qualifications: Minimum of 10 years manufacturing sound masking systems.

.2   Installer Qualifications – Approved by manufacturer representative and are trained with the specified products or have demonstrated experience with the installation of similar products to those specified.

.3   System Adjustment – Done by an approved manufacturer representative or trained contractor to satisfaction of end user.

.4   Single Source Responsibility – All components by one (1) manufacturer.

1.4   **DELIVERY, STORAGE AND HANDLING**

.1   Protect from moisture during shipping, storage and handling.

.2   Deliver in manufacturer's original unopened and undamaged packages with manufacturer's labels legible and intact.

.3   Inspect manufacturer's packages upon receipt.

.4   Handle packages carefully.

1.5   **WARRANTY AND MAINTENANCE**

.1   Provide a written warranty that products installed shall be free from defects in parts or assembly for a 5-year period from date of completion of installation.

Part 2   **Products**

2.1   **SYSTEM COMPONENTS**

.1   General System Overview: The sound masking system shall be comprised of a selection of 1) Sound Masking Generator Kit; 2) Amplifier; 3) Sound Masking Loud Speakers; 4) Sound Volume Control; and 5) Sound Equalizer. System to be supplied with all necessary components and hardware. Equivalent systems by reputable supplier shall be accepted.

2.2   **SOUND MASKING GENERATOR KIT**

.1   Pre-assembled unit for general purpose sound masking with the following built-in features:

.1   Selectable between pink and white noise.

.2   Rack mounted in 10RU rack.

.3   Random analog topology.

.4   4W, 70.7V and line level outputs.

.2   Acceptable manufacturer or approved equal:

.1   Atlas Sound #GPN 1200K c/w rack #WMA10-23 and all accessories.

2.3   **AMPLIFIER**

.1   Power output: 100W @ 70.7V

.2   Power input: 120V

.3   One channel 1RU rack mounted or on rack mounted shelf.

.4   Front panel signal LED's and master adjustment controls.

.5   Audio sense turn-on from standby mode.

.6   Acceptable manufacturer or approved equal:

.1   Atlas Sound #PA1001G

2.4   **SPEAKERS**

.1   8" dual cone.

.2   Pre-assembled unit for general purpose with the following built-in features:

.1   Loudspeaker.

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         .2   Transformer.

         .3   Enclosure.

         .4   Baffle.

         .5   Mounting hardware.

.3   Suitable for use above suspended ceiling space.

.4   Acceptable manufacturers or approved equal:

         .1   Atlas Sound #M1000

2.5   VOLUME CONTROL (ATTENUATOR)

.1   Power rating: 100W.

.2   Attenuation step: 1.5dB.

.3   Total attenuation: 15dB.

.4   Acceptable manufacturer or approved equal:

         .1   Atlas Sound #E408-100-RM

2.6   EQUALIZER

.1   Front panel mounted LPF/HPF.

.2   Thirty-one (31) frequency adjustments.

.3   20mm slide controls.

.4   1RU rack mounted.

.5   Output of generator to be split between equalizer inputs.

.6   Acceptable manufacturer or approved equal:

         .1   Atlas Sound #EQM-131

2.7   MANUFACTURERS

.1   Acceptable manufacturer:

         .1   Atlas Sound

         .2   LogiSon

         .3   Substitutions: Engineer approved equal

Part 3   **Execution**

3.1   **EXAMINATION**

    .1   Ensure that facility build out is at a stage suitable for the system installation.

    .2   Ensure that facility is constructed according to plans including wall locations, ceiling types and plenum barriers.

    .3   Ensure that the plenum height is appropriate as per manufacturer's recommendations and as per plan.

    .4   Ensure power requirements have been provided as per plan.

    .5   Ensure sufficient space for centrally located components is available as per plan and manufacturer's specifications.

    .6   Ensure any third-party components required to be interfaced with the system have been provided.

3.2   **PERMITS**

    .1   Obtain necessary permits for installation work.

3.3   **INSTALLATION**

    .1   Follow all applicable codes for the area.

    .2   Follow manufacturer's recommendations regarding installation.

    .3   Follow the system design for location of loudspeakers and wiring.

    .4   Record any necessary changes to the system design on the plan.

    .5   Ensure that supplementary materials used meet applicable safety standards.

3.4   **FIELD QUALITY CONTROL**

    .1   Ensure that plenum heights meet the minimum recommended by the manufacturer for the loudspeakers.

    .2   Ensure that distance between the top of the loudspeaker and the deck meets manufacturer's minimum specifications.

    .3   Ensure that loudspeakers are suspended in a level manner.

    .4   Ensure that loudspeakers are not obstructed as much as possible.

    .5   Ensure cables are properly supported in the ceiling.

    .6   Ensure cables are securely terminated.

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3.5   **SYSTEM ADJUSTMENT**

    .1   Follow manufacturer's recommendations for system settings.

3.6   **CLEANING**

    .1   Ensure that empty packaging is removed.

    .2   Ensure that any material waste is removed.

    .3   Ensure the product is clean and presentable where required.

3.7   **DEMONSTRATION AND TRAINING**

    .1   Demonstrate operational system to customer by walking the space.

    .2   Demonstrate functionality of the system to the customer or customer's representative.

    .3   Train customer employee to maintain system as required.

3.8   **TESTING AND REPORTING**

    .1   Test area for consistency of masking volume and quality.

    .2   Verify that paging zoning and levels are appropriate and as per plan.

    .3   Test masking volumes with mechanicals off and with space unoccupied.

    .4   Provide a printed report detailing system settings.

END OF SECTION