SECTION 16010 – BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections apply to this section.

B. All sections of Division 16 apply to this section.

1.2 SUMMARY

A. This Section includes general administrative, material, and procedural requirements for electrical installations. The following administrative and procedural requirements are included in this Section to expand the requirements specified in Division1.

1. Electrical product general requirements and accesses.
2. Substitutions.
3. Submittals.
4. Alternates.
5. Coordination drawings.
6. Record documents.
7. Maintenance manuals.
8. Rough-ins.
9. Electrical installations.
10. Cutting and patching.

1.3 DEFINITIONS

A. Definitions:

1. Listed: Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintain periodic inspection of production of listed equipment or materials, and whose listing states either that the equipment or material meets appropriate designated standards or has been tested and found suitable for use in a specified manner.
2. Labeled: Equipment or materials to which has been attached a label, symbol, or other identifying mark of an organization that is acceptable to the authority having jurisdiction and concerned with product evaluation that maintains periodic inspection of production of labeled equipment or materials and by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.
3. General Explanation: A substantial amount of specification language consists of definitions of terms found in other Contract Documents, including Drawings. (Drawings

are recognized as being diagrammatic in nature and not completely descriptive of the requirements indicated thereon). Certain terms used in Contract Documents are defined in this article. Definitions and explanations contained in this Section are not necessarily either complete or exclusive but are general for the Work to the extent that they are not stated more explicitly in another element of the Contract Documents.

4. General Requirements: The provisions or requirements of other Division-1 Sections apply to entire work of the Contract and where so indicated, to other elements which are included in the project. Where conflicts exist between this section and Division 1 Sections, the Division 1 Sections take precedent over this section.
5. Indicated: The term "indicated" is a cross-reference to graphic representations, notes or schedules on drawings, to other paragraphs or schedules in the specifications, and to similar means of recording requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for purpose of helping the reader locate cross- references, and no limitation of location is intended except as specifically noted.
6. Directed, Requested, etc: Where not otherwise explained, terms such as "directed", "requested", "authorized", "selected", "reviewed", "required", "accepted", and "permitted" mean "directed by Architectural/Engineer", and similar phrases. However, no such implied meaning will be interpreted to extend the Architect/Engineer's responsibility into the Contractor's area of construction supervision.
7. Furnish: Except as otherwise defined in greater detail, the term "furnish" is used to mean supply and deliver to the project site, ready for unloading, unpacking, assembly, installation, and similar operations, as applicable in each instance.
8. Install: Except as otherwise defined in greater detail, the term "install" is used to describe operations at the job site, including unloading, unpacking, assembly, erection, placing, anchoring, mounting, connecting, testing, protecting and cleaning, placing in working condition and similar operations, as applicable in each instance.
9. Provide: Except as otherwise defined in greater detail, the term "provide" means to furnish and install, complete and ready for intended use, as applicable in each instance.
10. Installer: The term "installer" is defined as the entity (person or firm) engaged by the contractor, its subcontractor or sub-subcontractor for performance of a particular unit of work at the project site. It is a general requirement that such entities (installers) be expert in the operation they are engaged to perform.
11. Connect: The term "connect" means to provide power sources, over current devices, raceway, conductors, terminations, insulation and other materials required for the operation and control of the equipment noted by the term.
12. Wiring: The term wiring means all raceways, fittings, conductors, connectors, tape, junction and outlet boxes, connectors, splices, and all other items necessary and/or required in connection with such work.
13. Conduit: The term conduit means the inclusion of all fittings, hangers, supports, sleeves, etc.
14. Concealed: The term concealed means embedded in masonry or other construction, installed behind wall furring or within partitions, or installed within suspended ceilings.
15. Exposed: The term exposed means not installed underground or concealed as defined above.
16. Accessible: The term accessible means being capable of being reached without the use of ladders or without climbing or crawling under, through or over obstacles such as other

mechanical or electrical equipment, building members or structure, piping, ductwork or going through doors.

1.4 SUBMITTALS

A. General: Follow the procedures specified in Division 1 Section "Shop Drawings Product Data and Samples." If submittals include any deviations from specified equipment/materials, these deviations must be clearly identified. The reason for the deviation must also be indicated.

B. Prepare shop drawings and obtain approvals from inspection authorities for fire alarm and life systems, and other electrical installations requiring specific approval.

C. Submit coordination drawings for areas specified and those areas defined as "problem" coordination areas during construction.

D. Submit ¼" scale drawings drawing of electrical room equipment layouts with distribution equipment submittal. Layout shall be based on equipment being submitted for approval.

E. Electronic drawing files in AutoCad 2004 or velum copies of the electrical drawings for use in preparing submittals may be purchased from the engineer. These drawings will not be provided without charge to the contractor or any of the subcontractors.

F. Documents will not be accepted for review unless:

1. They comply as to number of copies and type of paper indicated in the General Requirements.
2. They include complete information pertaining to appurtenances and accessories.
3. They are submitted as a package where they pertain to related items.
4. Where they consist of standard catalog sheets displaying other items which are not applicable, they are properly marked with the electrical data, product identification and accessories as related to this specific project.
5. They indicate the project and address along with the Contractor's name, address and phone number.
6. Where they consist of standard factory assembly or field installation drawings, they are properly marked with external connection identification as related to this specific project.

G. Any materials, fixtures, apparatus, or equipment that are not in accordance with specification requirements can and will be rejected for use in this installation and construction.

H. Any materials, fixtures, apparatus or equipment installed without stamped or written review will be removed by the Contractor and replaced with specified equipment at the direction of the Architect/Engineer and without recourse for additional compensation.

I. Prepare and submit all shop drawings to governmental agencies and utility companies which are required by these agencies for their approval.

1.5 QUALITY ASSURANCE

A. Carefully examine the contract documents, visit the site, and become thoroughly familiar with the local conditions relating to the work. Failure to do so will not relieve the contractor of the obligations of the Contract.

B. Discovery of any conflicting design information or any design intentions which are not readily interpreted shall be referred to the Architect/Engineers for further description or illustration prior to any product selection or execution of work.

C. Discovery of any materials or equipment which are damaged, unsuitable, incompatible, or non-compliant with any applicable codes, laws, ordinances or other regulations shall be brought to the direct attention of the Architect/Engineer.

D. Should there be any discrepancies or question of intent, refer the matter to the Architect/Engineer for a final decision before ordering any equipment or materials and before starting any relating work.

1. In case of conflict between project specifications and drawings, the Contractor shall assume the more expensive method for purposes of bidding, unless the Architect/Engineer rules otherwise.

E. Manufacturers of equipment shall be firms regularly engaged in manufacturing factory fabricated systems and equipment whose products have been in satisfactory use in similar service for not less than 5 years.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery product to the project properly identified with names, model numbers, types grades, compliance labels, and other information needed for identification.

1.7 RULES AND REGULATIONS

A. Work and materials shall conform to and be execute, inspected and tested in accordance with the latest edition of the City of Chicago Electrical Code and the governing rules and regulations of Federal, State and Local governmental agencies.

B. Other codes which will apply to this installation include the current editions of:

1. ANSI C2 – National Electrical Safety Code.
2. ASME/ANSI A17.1 - Safety Code for Elevators and Escalators.
3. ASTM - American Society for Testing and Materials.
4. ICEA - Standards for Wire and Cable.
5. IEEE Standards.
6. IESNA Standards.
7. NEMA Standards.
8. NFPA 20 - Standards.

9. OSHA Regulations.
10. Underwriters Laboratories.

C. Where governing codes indicate the Drawings and Specifications do not comply with the minimum requirements of applicable codes, the Contractor shall either notify the Architect/Engineer in writing during the bidding period identifying the revisions required to meet code requirements or provide an installation which will comply with the code requirements.

D. Where regulations of electric utility and telephone companies apply, conformance with their regulations is mandatory and any costs involved shall be included in the Contract, with the exception of extra facility and other charges which are directly paid by the Owner.

E. Where any materials, equipment or installation is not in compliance with the more stringent of the applicable codes, laws, ordinances, regulations and contract documents, they shall be entirely removed, replaced, modified or otherwise corrected at no additional cost to the Owner.

1.8 SUBSTITUTIONS

A. The materials, products and equipment described in the Bidding Documents establish a standard of required functions, dimensions, appearance and quality to be met by any proposed substitutions.

B. No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Architect/Engineer at least ten (10) days prior to the date for receipt of Bids. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance, test data and warranties, and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other work than incorporation of the substitute would require shall be included. The burden of proof of the merit of the proposed substitute is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

C. If the Architect approved any proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. This Addendum shall then be issued to all Bidders.

D. Requests for substitution shall be made only by a Bidder. Request for substitution received by the Architect from Sales representative, vendors, suppliers etc., are not acceptable.

E. Refer to "Division 1" for additional instructions on substitution.

1.9 RELATED WORK SPECIFIED IN OTHER SECTIONS

A. Openings: Wall, floor, ceiling, and roof openings specifically shown and identified on the Architectural and Structural or Electrical Drawing shall be provided.

B. Roof Sleeves: Roof sleeves shown as furnished and installed shall be incorporated into the finished roofing and made watertight.

C. Painting: Painting of all exposed-to-view conduit, pipes, unfinished hangers, supports, and equipment, insulated or not, in finished and unfinished areas, shall be provided. Furnish all manufactured equipment in factory-finished baked enamel, unless otherwise specified.

1.10 WIRING AND CONTROLS

A. Wiring and controls associated with equipment shall be furnished, installed, and wired in accordance with the manufacturer's recommendations and applicable standards and codes. Provide installation instructions, locating dimensions, and wiring diagrams for the other trades. Supervise the installation and start-up and test the equipment unless otherwise specified.

B. Equipment Furnished by Other Divisions: Equipment specified in other divisions and requiring electrical supply shall be erected, aligned, leveled, and prepared for operation. Provided required controls and accessories along with installation instructions, diagrams, dimensions and supervision of installation and start-up. Provide the required electrical rough-ins, and confirm the electrical controls and accessories furnished under the specifications for the other divisions. Install those controls and accessories not located in the mechanical piping and ductwork. Provide additional electrical controls, accessories, fittings, and devices not specified under the equipment but required for a finished, operating job. Make final electrical connections. Participate in the start-up and test services.

1.11 PERMIT AND INSPECTIONS

A. Permits: Obtain and pay for all permits, bonds, licenses, tap-in fees, etc., required by the City, State, or other authority having jurisdiction over the work, as a part of the work of the affected section.

B. Inspections: Arrange and pay for all inspections required by the above when they become due as part of the work of the sections affected. Conceal no work until approved by these governing authorities. Present the Contractor, Architect/Engineer with properly signed certificate of final inspection.

1.12 REVIEW OF MATERIALS

A. Within 21 calendar days after award of this Contract, submit a typewritten list of all items of equipment and material proposed for installation on this Project to the Architect/Engineer for review for design conformance. Set forth the specification page number, manufacturer's name, model number, size, nonstandard accessories specified or required, and any other information required to identify each item.

1.13 PROJECT SITE CONDITIONS

A. Inspect and examine the site before submitting the proposal. Note the location of any existing facilities, existing services or interference with other trades. Immediately contact Architect/Engineer indicating discrepancies. Failure to do so will not relieve the Contractor of the obligations of the Contract.

B. Visit the site or premises in order to become familiar with job conditions. No extras will be allowed for work which could have been foreseen by an examination of the site or premises.

C. Adjust work to meet actual conditions existing at the job.

D. Inspect and examine the site to determine how equipment will be transported to final mounting locations. No extra charges will be allowed for moving, hoisting or otherwise transporting equipment to final mounting location.

1.14 WARRANTY – NOT APPLICABLE

PART 2 - PRODUCTS

2.1 MANUFACTURERS – NOT APPLICABLE

2.2 MATERIALS

A. All materials, unless otherwise specified, shall be new and be the standard products of the manufacturer. Seconds, rejects, or damaged materials will be rejected.

B. The equipment to be provided under these Specifications shall be essentially the standard commercial grade product of the manufacturer. Where two or more units of the same class of equipment are required, these units shall be products of a single manufacturer.

C. The listing of a manufacturer for certain equipment and systems does not indicate acceptance of a standard or catalogued item of equipment. All equipment and systems shall conform to the Specifications.

2.3 U.L. LISTING & LABELING

A. All equipment shall bear the Underwriter's Laboratories (U.L.), or other approved agency, listing label.

B. Wherein an item of equipment is specified to be U.L. Listed, the entire assembly shall be listed by Underwriters laboratories, Inc. Any modifications to suit the intent of the Specifications shall be performed in accordance with the City of Chicago Electrical Code.

PART 3 - EXECUTION

3.1 ROUGH-IN

A. Verify final locations for rough-ins with field measurements and with the requirements of the actual equipment to be connected.

B. Refer to equipment specifications in Division 2 through 16 for rough-in requirements.

3.2 ELECTRIAL INSTALLATIONS

A. General: Sequence, coordinate, and integrate the various elements of electrical systems, materials, and equipment. Comply with the following requirements:

1. The Architect shall control the placement of wall and ceiling mounted electrical devices, fixtures, and outlets. The intent is to aesthetically locate fixtures/outlets by providing rough-in hardware, boxes and/or mounting plates, as required, when stud or furring may not be readily available for direct mounting. When drawing details are not available, consult with Architect's representative for actual placement.
2. Coordinate electrical systems, equipment, and materials installation with other building components. Be responsible for any changes in openings and locations necessitated by the equipment installed.
3. Verify all dimensions by field measurements.
4. Arrange for chases, slots, and openings in other building components during progress of construction, to allow for electrical installations.
5. Coordinate the installation of required supporting devices and sleeves to be set in poured-in-concrete and other structural components, as they are constructed.
6. Sequence, coordinate, and integrate installations of electrical materials and equipment for efficient flow of the Work. Give particular attention to large equipment requiring positioning prior to closing in the building.
7. Where mounting heights are not detailed or dimensioned, install systems, materials, and equipment to provide the maximum headroom possible.
8. Install systems, materials, and equipment to conform with approved submittal data, including coordination drawings, to greatest extent possible. Conform to arrangements indicated by the Contract Documents, recognizing that portions of the Work are shown only in diagrammatic form. Where coordination requirements conflict with individual system requirements, refer conflict to the Architect.
9. Switchgear/Switchboard/Motor Control Center Assembly Selection: The drawings indicate sizes, profiles, and dimensional requirements of assembly equipment. Equipment having equal performance characteristics and complying with indicated maximum dimensions and profiles may be considered, provided deviations do not change the design concept, intended performance, or code/future extension provision clearances. The burden of proof of equality is on the proposer a minimum of 10 days prior to bid.
10. Protect all equipment and materials from the elements, dirt and other damage from the time it is removed from the point of storage until final acceptance.

11. Equipment shall include the component parts thereof such as disconnect switches, motor starters, motors, drives, and guards necessary to the satisfactory and safe operation of the equipment.
12. Installation shall include setting equipment to accurate line and grade, leveling equipment, aligning equipment components, providing and installing couplings, bolts, guards and anchor bolts.
13. All tolerances in alignment and leveling, and the quality of workmanship for each class and stage of work shall be subject to manufacturer's installation instructions.
14. All manufacturers' finished equipment surfaces damaged during construction shall be brought to an "as new" condition by touch up or repairing. Any rust shall be completely removed and the surface primed prior to repainting.
15. Workmanship shall conform to the "Standard of Installation" published by the National Electrical Contractors Association.
16. Division 16 shall do all trench and conduit excavation and backfilling required for his work inside and outside the building, including repairing of finished surfaces, all required shoring, bracing, pumping, and all protection for safety of persons and property. In addition, Division 16 shall check he indicated elevations of the utilities entering and leaving the building. If such elevations require excavations lower than the footing levels, the Architect shall be notified of such conditions and a redesign shall be made before excavations are commenced. It is also the responsibility of Division 16 to make the excavations at the minimum required depths in order not to undercut the footings.
17. Provide all scaffolding, rigging, hoisting and services necessary for erection and delivery of equipment and apparatus furnished into the premises. These items shall be removed from the premises when no longer required.
18. No electrical equipment, raceways or other work of any kind shall be covered up or hidden from view before it has been examined and approved. Any unsatisfactory work or materials shall be removed and corrected immediately.
19. Install systems, materials, and equipment level and plumbing, parallel and perpendicular to other building systems and components.
20. Install electrical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. As much as practical, connect equipment for ease of disconnecting, with minimum of interference with other installations.
21. Install access panels or doors where units are concealed behind finished surfaces. Access panels and doors are specified in Division 16 Section Basic Electrical Materials and Methods.
22. Install systems, materials, and equipment giving right-of-way priority to systems required to be installed at a specified slope.

3.3 COORDINATION WITH LOCAL ELECTRICAL AND TELECOMMUNICATION UTILITIES AND SERVICES

A. Locations and details required by Division 16 for the utility shall be the responsibility of Division 16 contractor.

3.4 MANUFACTURER'S DIRECTIONS AND SUPERVISION

A. Where supervision by a manufacturer is specified, follow all instructions, recommended manufacturer and specified field tests, and other recommendations of the manufacturer. The manufacturer shall supervise the installation, connection, start-up, testing, and adjustment, instruction of the Owner and final tests of such equipment or system. Where two or more manufacturer's equipment are interrelated, take responsibility to coordinate their work and provide supervision.

B. Have the manufacturer instruct the Owner in the proper operation and maintenance techniques of all equipment, systems, etc., at the time of completion of all work.

C. Prior to final acceptance by the Owner prepare and submit to the Architect for review 3 copies of operation and maintenance (O and M) instructions in printed form for each item of equipment or system installed in the building. Complete instructions for each system shall be assembled and bound in a brochure. Detailed contents of the O and M manuals are as hereinafter specified. Refer to appropriate Division 1 sections for general requirements affecting this work.

3.5 PAINTING

A. Provide the prime painting of all equipment and materials furnished under Division 16 specifications, unless specifically stated otherwise. In general, all equipment except raceways and galvanized boxes that are not provided with a factory-applied final finish shall be delivered to the job site with a shop-applied prime coat of paint.

3.6 TEST AND INSPECTION

A. Upon completion of the work, notify the Architect in writing, that the entire electrical installation has been examined, inspected, tested, calibrated or adjusted as specified and that it is ready for final inspection. Work to be connected prior to final inspection and also to include all of the work specified for "Manufacturers' Directions and Supervision." Include documentation of specified testing and inspection.

B. Prior to each inspection, provide a written certification that each system or piece of equipment to be operated during that test has been tested and does meet design performance criteria of the Contract Documents.

C. On completion of work, obtain Certificates of Compliance, and approval or acceptance from all authorities having jurisdiction over the work, and deliver these certificates to the Architect. The work shall not be deemed to have reached a state of completion until the certificates have been delivered.

3.7 LOOSE EQUIPMENT

A. Provide four keys for every different piece of electrical equipment which is equipped with a lock.

B. Provide all other loose equipment specified/supplied for use with all systems.

3.8 SHOP DRAWINGS

A. Refer to Division 1 for quantities and types of shop drawings.

B. Required shop drawings shall be submitted in groups by systems. For example, all lighting fixtures, lamps, ballasts and accessories shall be submitted simultaneously in one package.

C. Refer to individual Division 16 specification sections for required shop drawings.

D. Shop drawings submitted for other than those specifically required in the appropriate Specification Section will not be reviewed or returned.

3.9 OPERATION AND MAINTENANCE MANUALS

A. Prepare maintenance manuals in accordance with Division 1 Section “Operating and Maintenance Data”. In addition to the requirements specified in Division 1, include specific Division 16 Section requirements, and the following information for equipment items:

1. Description of function, normal operating characteristics and limitations, performance curves, engineering data and tests, and complete nomenclature and commercial numbers of replacement parts.
2. Manufacturer’s printed operating procedures to include start-up, break-in, and routine and normal operating instructions; regulation, control, stopping, shutdown, and emergency instructions; and summer and winter operating instructions.
3. Maintenance procedures for routine preventative maintenance and troubleshooting; disassembly, repair, and reassembly; aligning and adjusting instructions.
4. Servicing instructions and lubrication charts and schedules.

B. The minimum information that shall be furnished in the maintenance manual shall include the following:

1. Individual Characteristics for trouble shooting sequences for each item of:
   a. Branch circuit panel.
   b. Distribution panel.
   c. Fire alarm system.
   d. Individual motor starter.
   e. Switchboard.
   f. Transformer.
   g. UPS.

h. Battery Inverter System.
i. Lighting Inverter.
j. Generator.

2. Catalog cut sheets for every item for which a shop drawing is required.
3. Schedule of loads served for each:
   a. Branch circuit panel.
   b. Distribution panel.
   c. Switchboard.

4. On-hand spare parts list and complete parts list for each:
   a. Distribution panel.
   b. Individual motor starter.
   c. Switchboard.

5. Tap setting schedule for each:
   a. Transformer.

6. Overload element schedule for each motor starter whether individual or in a motor control center.
7. Bolt tightening torques and inspection intervals on each:
   a. Bolted bus connection.
   b. Cable connection.
   c. Miscellaneous bolted electrical connections.

8. Manufacturers' recommended cleaning intervals and special procedures for each:
   a. Cooling fins.
   b. Dry-type transformer coil assembly.
   c. Electrical equipment interior.
   d. Electrical equipment ventilation opening.
   e. Lighting fixture lenses, louvers and reflectors.

9. Main and arcing contact adjustment and replacement for each:
   a. Contactor.
   b. Circuit breaker.
   c. Fused switch.
   d. Interrupter switch.
   e. Motor starter.

10. Calibration and exercise procedures and intervals for each:
    a. Control system.
    b. Emergency battery.
    c. Molded case breaker.
    d. Relay.

11. "As designed" and "as left" relay settings.
12. Testing interval and target values for ground fault protection circuit relays.

13. Testing and trouble shooting procedures unique to special systems.
14. Approved special construction details that differ from the details shown on Drawings.

3.10 COORDINATION DRAWINGS

A. Prepare coordination drawings to a scale of ¼" = 1'-0" or larger; detailing major elements, components, and systems of electrical equipment and materials in relationship with other systems, installations, and building components. Indicate locations where space is limited to installation and access and where sequencing and coordination of installations are of importance to the efficient flow of the Work, including (but not necessarily limited to) the following:

1. Indicate the proposed locations of major raceway systems, equipment, and materials. Include the following:
   a. Clearances for servicing equipment, including space for equipment disassembly required for periodic maintenance.
   b. Exterior wall and foundation penetrations.
   c. Fire-rated wall and floor penetrations.
   d. Equipment connections and support details.
   e. Sizes and location of required concrete pads and bases.

2. Coordination drawings shall be provided by Division 16 for the following:
   a. Access door locations.
   b. Communication rooms.
   c. Electrical equipment rooms.
   d. Mechanical equipment rooms.
   e. Power factor correction capacitor locations.

3. Indicate scheduling, sequencing, movement, and positioning of large equipment into the building during construction.

4. Prepare floor plans, elevations, and details to indicate penetrations in floors, walls, and ceilings and their relationship to other penetrations and installations.

3.11 RECORD DOCUMENTS

A. Prepare record documents in accordance with the requirements in Division 1 Section "PROJECT CLOSEOUT." In addition to the requirements specified in Division 1, indicate installed conditions for:

1. Major raceway systems, size and location, for both exterior and interior, locations of control devices; distribution and branch electrical circuitry; and fuse and circuit breaker size and arrangements.
2. Major equipment locations (exposed and concealed), dimensioned from prominent building lines.
3. Contract Modifications and actual equipment and materials installed.

B. Engage the services of a Land Surveyor or Professional Engineer registered in the State of Illinois as specified in Division 1 Section “FIELD ENGINEERING” to record the locations and invert elevations of underground installations.

3.12 CLEANING – NOT APPLICABLE

3.13 CONTRACTOR STARTUP AND REPORTING – NOT APPLICABLE

3.14 COMMISSIONING AND DEMONSTRATION – NOT APPLICABLE

END OF SECTION 16010