

MECHANICAL AND ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1.1. CODES AND STANDARDS

- A. Obtain all permits, inspections and approvals required by authorities having jurisdiction. All fees and costs incidental thereto shall be assumed and paid for.
- B. All work shall be executed in accordance with all local, state and national codes, ordinances and regulations governing the particular class of work involved.
- C. All work shall be executed according to current best practices.

1.2 SCOPE

- A. This specification includes the furnishing of all labor, materials, tools, equipment, drayage, rigging, fees, permits, etc. (unless specifically indicated to be furnished by others) necessary or reasonably required for the completion of installation of all work shown on the drawings and herein specified. Verify all utility requirements prior to purchasing and installing equipment. The entire work shall be delivered complete in perfect working order and to the complete satisfaction of the Owner's representative.

1.3 WARRANTY

- A. Warrant that all labor and materials provided in execution of work under this contract to be free from defects for a period of one year from date of final acceptance of the work. Any malfunction, breakdown or failure of the installation herein described which may be due to defects in the work or the materials employed shall be replaced promptly without further cost to the Owner and to the full satisfaction of the Owner's representative.

1.4 RELATED WORK SPECIFIED ELSEWHERE

- A. Division 1 through 14 and General Conditions Including Addenda and Supplementary Instructions.

1.5 BACKFILLING AND TRENCHING

- A. Minimum cover to top of lines to be per N.E.C. and utility companies' requirements, unless noted otherwise.
- B. Backfill may be material obtained from trenching, less rocks and hard objects.
- C. Maintain required clearances from other utility systems' buried lines.

1.6 UTILITIES

- A. Contractor shall coordinate all required utilities and shall provide all necessary materials, labor and equipment in a timely manner to facilitate reception of utilities services at the convenience of the involved utilities.
- B. Contractor shall verify all utility requirements prior to purchasing and installing equipment.
- C. Existing service facilities are illustrated in a general manner. Contractor shall visit the site and determine the exact conditions pertaining to existing service facilities prior to submitting his bid as Contractor is responsible for all work involved with existing service facilities.
- D. Extend site utilities to building to make complete systems regardless of plan dimensions, indications, etc.
- E. Provide written confirmation of coordination to Owner's representative prior to commencing work.
- F. Coordinate installation of utility companies work to maintain construction schedules.

1.7 SUBMITTALS

- A. Provide shop drawings and product data for the following, as applicable:
 1. Light fixtures and poles
 2. Lamps
 3. Wiring devices and coverplates
 4. Pull, outlet and junction boxes
 5. Disconnect switches
 6. Panelboards
 7. Fuses
 8. Breakers
 9. Time clocks
 10. Lighting contactors
 11. Cabinets
 12. Conduit and fittings
 13. Wires and cables
 14. Supports
 15. Identifying materials
- B. Provide samples upon written request.

1.8 SUBSTITUTIONS

- A. Substitutions will be considered after a contract is awarded. Prior approval of proposed substitutions is specifically excluded from this work.
- B. Proposed substitutions data submitted shall include all data necessary to prove substitute equal to specified products and shall include a unit cost change to the contract amount.

1.9 IDENTIFICATION

- A. Contractor shall identify all electrical equipment as follows:
 1. For wire: Brady, Ideal or equal self-laminating adhesive wrap-on markers at each accessible point.
 2. For buried conduits: Brady indent-o-line or equal inert tape in trench 12" above top of conduit.
 3. For switchgear and cabinets: Embossed brass tags secured to item with non-corroding screws.
 4. For panelboards' circuits: Typewritten circuit directories in plastic envelope secured inside panelboard door.

1.10 DISCREPANCIES

- A. Contractor shall refer all discrepancies to Owner's representative for resolution in writing prior to bid or Contractor assumes responsibility for resolving discrepancies in a manner designated by Owner's representative at no extra cost to Owner.

PART 2 - PRODUCTS AND INSTALLATION

2.1 MATERIALS

- A. New, free from defects.
- B. Standard products of manufacturers.
- C. Like materials of same manufacturer.
- D. Specification grade for commercial construction.

2.2 CONDUITS

- A. Direct buried Schedule 40 PVC with GRS elbows and GRS where exposed. Provide GRS where required by authorities or utility companies.
- B. Concealed conduits in dry locations; EMT.
- C. Provide bonding bushings as required by City.
- D. Where conduits are installed in landscape area, install conduits as close to curb as practical in order to avoid subsequent installation of landscape items.
- E. Field stake all buried raceways and call Owner's representative for authorization to proceed prior to commencing installation.
- F. Coordinate all openings, holes, slots, etc. with other trades prior to commencing work. Resolve discrepancies in the work to the satisfaction of the Owner's representative without additional costs to the Owner.

2.3 CONDUCTORS

- A. Copper, 98% conductivity, 600 volt, 90°C, #12 minimum.
- B. For feeders and branch circuits in conduit type THHN/THWN.
- C. Color coding:
 - 120/208
 1. Phase A - black
 2. Phase B - red
 3. Phase C - blue
 4. Neutral - white
 5. Ground - green
- D. Connections - mechanical clamp type or compression type. Split bolt connectors not permitted.

2.4 PULL, JUNCTION AND OUTLET BOXES

- A. Materials and Location:
 1. Exterior - malleable cast iron or Ferralloy with gaskets, corrosion resistant screws.
 2. Buried - Brooks Products or equal concrete with concrete locking covers.
- B. Boxes shall be of size and shape to best meet the needs of their particular purpose and location. Specified sizes shall not be altered without express written approval of the Owner's representative.

2.5 SWITCHGEAR

- A. Square D, Siemens, Challenger or approved equal.
- B. Panelboards:
 1. Of ratings, capacities and mounting indicated
 2. Do not use main breakers unless indicated otherwise
 3. Bond neutrals to ground at panels per City inspector requirements.
- C. Circuit breakers:
 1. Thermal magnetic, quick-make, quick-break, trip-free, indicating with ratings indicated and required, ambient compensated.
 2. Multi-pole breakers with common trip and one handle. Handle ties not permitted.
- D. Disconnect switches: NEMA 3R, heavy duty of ratings indicated.
- E. Fuses: Bussmann current limiting type of ratings indicated.
- F. Time clocks and lighting contactors: as indicated on plans.

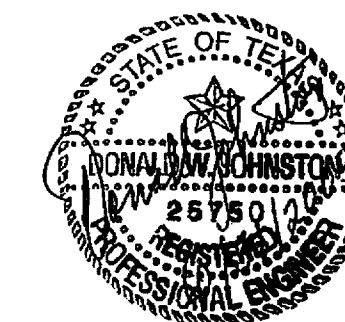
2.6 GROUNDING

- A. Provide grounding (circuit, system and equipment) per Article 250 of NEC, IEEE applicable standards and the requirements of local authorities having jurisdiction.

2.7 DESCRIPTION OF GAS PIPING SYSTEM

- A. Coordinate, verify and provide all work and materials as required by gas company. Provide written confirmation of coordination to Owner's representative prior to commencing work. Coordinate installation of gas company work to maintain construction schedules.
- B. Verify exact location of all gas piping stub-ups and piping prior to gas company installation.

AS BUILT
DATE 3.17.06



ROBINETT & ASSOCIATES
2714 W. KINGSLEY ROAD
SUITE B1
GARLAND, TEXAS 75041
(972) 840-8989

REV	DATE	REMARKS
2	11/01/05	DELETED SITE LIGHTING SPECIFICATIONS, SCHEDULE AND BASE DETAIL.
MEP REQUIREMENTS		
STARBUCKS - ADDISON PLAZA ADDITION		
S.W.C. BELT LINE RD. & MIDWAY RD.		
THE TOWN OF ADDISON, TEXAS		
LAWRENCE A. CATES & ASSOCIATES, L.L.P. CONSULTING ENGINEERS DALLAS, TEXAS (972) 385-2272		
DESIGN	DRAWN	SCALE
DATE	NOTES	FILE
NO.		
RAR	RAR	08/24/05
1"=20'	-	23113 R&A#38-04
		MEP-2