ELECTRICAL SPECIFICATIONS:

A. GENERAL REQUIREMENTS:

1. THE WORK TO BE ACCOMPLISHED UNDER THESE SPECIFICATIONS INCLUDES ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR THE COMPLETE INSTALLATION AS DESCRIBED HEREIN AND AS INDICATED ON THE ELECTRICAL DRAWINGS FOR THE PROJECT.

2. ALL BIDDERS SUBMITTING PROPOSALS FOR THE WORK SHALL FIRST EXAMINE THE SITE AND ALL EXISTING CONDITIONS. THE LACK OF SPECIFIC INFORMATION ON THE DRAWINGS SHALL NOT RELIEVE THE BIDDER'S RESPONSIBILITY FOR TAKING INTO ACCOUNT ALL SITE CONDITIONS IN HIS PROPOSAL.

3. ALL WORK SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE LAWS AND CODES, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

   A. NATIONAL ELECTRICAL CODE
   B. OCCUPATIONAL SAFETY AND HEALTH ACT
   C. APPLICABLE STATE CODES
   D. LIFE SAFETY CODES

4. THE MANUFACTURER'S PUBLISHED DIRECTIONS SHALL BE FOLLOWED IN THE DELIVERY, STORAGE, PROTECTION, INSTALLAION, PIPING AND WIRING OF ALL EQUIPMENT AND MATERIAL. THE CONTRACTOR SHALL PROMPTLY NOTIFY THE ARCHITECT IN WRITING OF ANY CONFLICT BETWEEN THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND THE MANUFACTURER'S DIRECTIONS AND SHALL OBTAIN THE ARCHITECT'S INSTRUCTIONS BEFORE PROCEEDING WITH THE WORK. ANY SUCH WORK PERFORMED THAT DOES NOT COMPLY WITH THE MANUFACTURER'S DIRECTIONS OR SUCH INSTRUCTIONS FROM THE ARCHITECT, SHALL HAVE DEFICIENCIES CORRECTED AT NO COST TO THE OWNER.

5. ALL WORK INSTALLED IN CONCRETE OR MASONRY SHALL BE WATERTIGHT, AND ALL OUTLET BOXES AND OPENINGS IN RACEWAYS SHALL BE WELL STUFFED WITH EXCELSIOR, PAPER OR RAGS BEFORE CONCRETE IS POURED TO PREVENT CONCRETE AND EXCESS MOISTURE FROM ENTERING THE RACEWAY SYSTEM. ALL SUCH MATERIAL SHALL BE COMPLETELY REMOVED PRIOR TO INSTALLATION OF CONDUCTORS.

6. ALL CONDUITS SHALL BE SWABBED OUT BEFORE ANY WIRES ARE PULLED AND NO WIRES SHALL BE PULLED INTO RACEWAYS UNTIL CONSTRUCTION HAS PROGRESSED TO A POINT THAT MOISTURE IS UNLIKELY TO ENTER THE RACEWAY.

7. A 1000 LB. TEST BRAIDED NYLON PULL STRING SHALL BE LEFT IN EACH SECTION OF RACEWAY LEFT EMPTY TO FACILITATE FUTURE PULLING OF CONDUCTORS AND CABLES.

8. BENDS IN CONDUITS SHALL BE MADE IN A MANNER THAT RESULTS IN THE CONDUIT BEING FREE OF KINKS AND FLATTENED SURFACES.

9. THE EXACT LOCATION OF OUTLETS SHALL BE APPROVED BY THE ARCHITECT, WHO RESERVES THE RIGHT TO CHANGE THE POSITION OF ANY OUTLETS BY A DISTANCE OF (6') SIX FEET IN ANY DIRECTION FROM THE POSITION SHOWN ON DRAWINGS BEFORE WORK IS ROUGHED-IN, WITHOUT EXTRA COST.

10. THE ELECTRICAL SUBCONTRACTOR SHALL INSTALL ALL MOTORS, STARTERS, PILOT SWITCHES, CONTROL DEVICES, CONTROL WIRING AND MISCELLANEOUS ITEMS OF ELECTRICAL EQUIPMENT FURNISHED UNDER OTHER SECTIONS OF THESE SPECIFICATIONS THAT ARE NOT INTEGRALLY MOUNTED WITH THEIR EQUIPMENT. ALL SUCH EQUIPMENT SHALL BE SECURELY MOUNTED IN A NEAT AND WORKMANLIKE MANNER.

11. ALL WIRING IN PANELBOARDS, WIREWAYS, GUTTERS AND SWITCHBOARDS SHALL BE NEATLY GROUPED, TRAINED AND TIED WITH ELECTROVERT INC., NYLON CABLE TIES AT 6" INTERVALS (APPROXIMATELY). NONMETALLIC CABLE CLAMPS AND MOUNTING BRACKETS MAY BE USED IN SWITCHBOARDS AND CONTROL CABINETS TO SECURE CABLES TO CABINET AND SWITCHBOARD INTERIORS.

12. THERE SHALL NOT BE ANY RACEWAY PLACED IN THE PROXIMITY OF OTHER SYSTEMS, SUCH AS HOT WATER LINES, WHICH WOULD PROVE DETRIMENTAL TO THE RACEWAY AND WIRING.

13. ALL SYSTEMS AND EQUIPMENT FURNISHED UNDER OTHER DIVISIONS OF THESE SPECIFICATIONS SHALL BE PROVIDED WITH NECESSARY ELECTRICAL CONNECTIONS BY THE ELECTRICAL SUBCONTRACTOR.

14. ALL HANGERS USED FOR SUPPORTING CONDUIT RUNS DIRECTLY ADJACENT TO BUILDING CONSTRUCTION MATERIALS SHALL BE SUITABLE ONE AND TWO HOLE STRAPS AND/OR CLAMP TYPE HANGERS. WHERE CONDUIT RUNS ARE NOT ADJACENT TO BUILDING CONSTRUCTION MATERIALS, THE CONDUITS SHALL BE PROPERLY SUPPORTED BY SUITABLE ADJUSTABLE HANGERS. PERFORATED STRAP TYPE HANGER, WIRE TIES, PLUMBERS STRAP AND/OR SIMILAR ITEMS, SHALL NOT BE USED.

15. SUITABLE ANGLE IRON FRAMES AND SUPPORTS SHALL BE USED AND CONSTRUCTED FOR EACH JUNCTION BOX AND/OR CABINET TO PREVENT ANY STRAIN ON CONDUITS ENTERING. PROPER SUPPORTS FOR EXPOSED CONDUITS SHALL BE USED TO GROUP AND GANG CONDUITS TOGETHER.

16. RACEWAYS SHALL BE SUPPORTED AT INTERVALS NOT OVER 10' AND WITHIN 3' OF EACH OUTLET BOX, JUNCTION BOX, CABINET OR FITTING. PROVIDE ONE SUPPORT NOT OVER 12" FROM EACH CHANGE IN DIRECTION. CLAMPS SHALL BE ONE HOLE MALLEABLE IRON. MULTIPLE RUNS SHALL BE SUPPORTED ON GALVANIZED P-1000 UNISTRUT.

17. ELECTRICAL RACEWAYS, BOXES, FIXTURES AND EQUIPMENT SHALL NOT BE SUPPORTED FROM MECHANICAL SYSTEM SUPPORTS, OR MECHANICAL SYSTEMS.

18. ALL PANELBOARDS, CABINETS AND OTHER SPECIFIED EQUIPMENT SHALL BE LABELED WITH LAMINATED PLASTIC PLATES, 3/4" HIGH WITH 3/8" ENGRAVED LETTERS. PUNCH TAPES WITH MASTIC BACKINGS ARE NOT ACCEPTABLE.

19. ALL STARTERS, DISCONNECT SWITCHES AND OTHER SPECIFIED EQUIPMENT SHALL BE MARKED WITH LAMINATED PLASTIC PLATES, ½" HIGH WITH ¼" ENGRAVED LETTERS. WHERE INDIVIDUAL SWITCHES OR CIRCUIT BREAKERS IN POWER OR DISTRIBUTION PANELBOARDS DO NOT HAVE CARDHOLDERS, THEY SHALL BE MARKED WITH ½" HIGH LABELS.

20. ALL EMPTY CONDUITS SHALL HAVE LABELS TIED TO THE PULL STRING AT EACH END OF EACH EMPTY CONDUIT, MARKED AS TO THE IDENTIFICATION OF EACH END. JUNCTION BOXES WITH CIRCUITS PROVIDED FOR FUTURE USE SHALL BE LABELED WITH APPROPRIATE CIRCUIT DESIGNATION.

21. CARDHOLDERS FOR PANELBOARDS SHALL BE FILLED OUT WITH TYPEWRITTEN IDENTIFICATION OF EACH CIRCUIT, EXCEPT THAT THE WORD "SPARE" SHALL BE WRITTEN IN SOFT PENCIL TO IDENTIFY ALL CIRCUIT BREAKERS INSTALLED THAT ARE NOT USED.

22. THE ELECTRICAL SUBCONTRACTOR SHALL DO ALL EXCAVATING AND BACKFILLING NECESSARY FOR THE INSTALLATION OF THE WORK. THIS SHALL INCLUDE SHORING AND PUMPING OF DITCHES TO KEEP THEM IN DRY CONDITION UNTIL THE WORK HAS BEEN COMPLETED. ALL SHORING REQUIRED TO PROTECT THE EXCAVATION AND SAFEGUARD EMPLOYEES SHALL BE PROPERLY PERFORMED. THE FOLLOWING REQUIREMENT SHALL ALSO APPLY:

   A. ALL EXCAVATIONS SHALL BE MADE TO THE PROPER DEPTH, WITH ALLOWANCES FOR FLOOR SLABS, FORMS, BEAMS, ETC. GROUND UNDER CONDUITS SHALL BE WELL COMPACTED BEFORE THE CONDUITS ARE INSTALLED.

   B. ALL EXTERIOR CONDUITS SHALL BE INSTALLED WITH A MINIMUM OF 18" OF COVER BELOW THE FINISHED GRADE, UNLESS OTHERWISE INDICATED OR REQUIRED BY CODE.

   C. ALL BACKFILLING SHALL BE MADE WITH SELECTED SOIL, FREE FROM ROCKS AND DEBRIS AND SHALL BE PNEUMATICALLY TAMPED IN 6" LAYERS TO SECURE A FIELD DENSITY RATIO OF 90% AS DEVINED BY ASTM DESIGNATION D698-57T (PROCTOR SOIL COMPACTION TEST.).

   D. ALL EXCAVATED MATERIAL NOT SUITABLE OR NOT USED IN THE BACKFILL SHALL BE REMOVED FROM THE SITE.

23. PROVIDE WIRING, CONNECTIONS AND DEVICES NECESSARY TO COMPLY WITH THE GROUNDING REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION AND THE NATIONAL ELECTRICAL CODE (ART.250). EXPOSED NON-CURRENT CARRYING METALLIC PARTS OF THE ELECTRICAL EQUIPMENT, RACEWAY SYSTEMS, GROUNDING CONDUCTORS AND NEUTRAL CONDUCTOR OF THE WIRING SYSTEM SHALL BE GROUNDED.

24. BEFORE COMPLETION OF THIS PROJECT, THE ELECTRICAL SUBCONTRACTOR SHALL TEST ALL CIRCUITS TO PROVE THEIR CONTINUITY AND FREEDOM FROM GROUND, AND SHALL TEST ALL EQUIPMENT TO PROVE THAT IT IS OPERATING PROPERLY, AS INTENDED BY THESE SPECIFICATIONS, AND TO THE SATISFACTION OF THE OWNER.

B. SYSTEMS OF CONDUIT:

1. UNDERGROUND CONDUIT AND FITTINGS SHALL BE SCHEDULE 40, HEAVY WALL PVC CONDUIT. CONDUIT AND FITTINGS SHALL BE FREE FROM ALL SUBSTANCES THAT INJURIOUSLY AFFECT WIRE OR CABLE INSULATION. THE CONDUIT AND FITTINGS SHALL BE CORROSION-RESISTANT. CONDUITS SHALL BE JOINTED TOGETHER WITH A FITTING BY SOLVENT WELDING OR OTHER METHOD RECOMMENDED BY THE MANUFACTURER. GROUNDING CONDUCTORS SHALL BE RUN IN ALL PVC CONDUITS AND SHALL BE SIZED IN ACCORDANCE WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE.

2. WHERE CONDUIT SIZE IS NOT SHOWN ON THE DRAWINGS, SIZE SHALL BE IN ACCORDANCE WITH NEC FOR THE NUMBER AND SIZE CONDUCTORS INSTALLED THERIN. ALL CONDUCTORS SHALL BE INSTALLED IN CONDUIT, UNLESS SPECIFICATLLY INDICATED OTHERWISE.

C. CONDUCTORS:

1. CONDUCTORS SHALL BE COPPER, EXCEPT AS NOTED ON THE DRAWINGS, NEW BUILDING WIRE, INSULATED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE FOR THE TYPE SERVICE INVOLVED. UNLESS OTHERWISE INDICATED ON THE ELECTRICAL DRAWINGS, ALL FEEDERS, SUB-FEEDERS AND MOTOR CIRCUITS NO. 8 AWG AND LARGER, SHALL HAVE TYPE THW INSULATION. ALL OTHER CONDUCTORS MAY BE TYPE TW WHERE TEMPERATURES DO NOT EXCEED THAT ALLOWED BY THE NEC. WHERE APPLICABLE, INSULATION TYPE THHN MAY BE SUBSTITUTED FOR TYPE THW WITH ADJUSTMENT IN CONDUIT SIZE PER THE N.E.C.

2. THE COVERING OF WIRES AND CABLES DESIGNED TO MEET THE ABOVE SPECIFICATION SHALL HAVE DISTINCTIVE MARKING AS REQUIRED BY THE LATEST STANDARDS OF U.L. SO THAT THEM MAY BE READILY IDENTIFIED IN THE FIELD. THE COVERING OF INDIVIUAL CONDUCTORS SHALL BE COLOR CODED FOR IDENTIFICATION.

3. NO CONDUCTOR SMALLER THAN #12 AWG SHALL BE USED FOR POWER CIRCUITS. NO CONDUCTOR SMALLER THAN NO. 14 AWG SHALL BE UTILIZED FOR CONTROL CIRCUITS.

4. NO SPLICING OR JOINTS WILL BE PERMITTED IN BRANCH CIRUITS EXCEPT AT OUTLETS OR ACCESSIBLE JUNCTION BOXES. MAINS AND FEEDERS SHALL RUN THEIR ENTIRE LENGTH WITHOUT JOINTS OR SPLICES.

5. CONDUCTORS MAY BE GROUPED WITH MULTIPLE CIRCUITS IN A SINGLE CONDUIT IF THE CONDUIT SIZING AND MULTIPLE CONDUCTOR DERATING REQUIREMENTS OF THE N.E.C. ARE OBSERVED.

D. WIRING DEVICES AND ACCESSORIES:

1. THE ELECTRICAL SUBCONTRACTOR SHALL FURNISH AND INSTALL ALL DEVICES AND ACCESSORIES AS SHOWN ON THE DRAWINGS AND AS SPECIFIED HEREINAFTER.

   A. WALL SWITCHES: LIGHTING CIRCUITS SHALL BE PROVIDED WHERE SHOWN WITH FLUSH TUMBLER SWITCHES RATED 20A,120/277 VOLT. SWITCHES SHALL BE SPST, 3 WAY, 4 WAY, PILOT LIGHT, ETC, AS INDICATED. SWITCHES SHALL BE PASS & SEYMOUR DEVICES AS NOTED BELOW:

TYPE	PASS & SEYMOUR
SPST	20 AC1-I
3 WAY	20 AC3-I
4 WAY	20 AC4-I
KEY TYPE	20 AC 1/3/4/-L
MOMENTARY CONTACT	1250-I
PILOT-120V.	20 AC 1/3-CPL
PILOT-277V.	20 AC 1/3-CPL

   SEE DIMMER SECTION FOR SWITCHES GANGED WITH DIMMERS.

B. STANDARD RECEPTACLES: STANDARD WALL RECEPTACLES SHALL BE PASS & SEYMOUR 5262 - I, 15 AMPERES, 125 VOLTS, DUPLEX, GROUNDING TYPE, MOUNTED VERTICALLY 12" A.F.F. TO CENTERLINE EXCEPT WHERE HEIGHTS ARE INDICATED OTHERWISE ON THE DRAWINGS.

C. DEVICE PLATES: PLATES FOR SWITCHES, RECEPTACLES, AND ALL OTHER OUTLET BOXES SHALL BE FURNISHED AND INSTALLED FOR THE TYPE OF SERVICE INVOLVED. COLOR AND TYPE IN OTHER THAN MECHANICAL OR SERVICE AREAS SHALL BE AS SELECTED BY THE ARCHITECT FROM PASS & SEYMOUR OR EQUAL.

D. TOGGLE SWITCHES W/THERMAL OVERLOADS: TOGGLE SWITCHES WITH THERMAL OVERLOADS SHOWN AS DISCONNECTS FOR SMALL SINGLE PHASE MOTORS SHALL BE ALLEN BRADLEY 600-TAX4 OR EQUAL FOR 120 VOLT MOTORS OR 600-TAX5 OR EQUAL FOR 208 VOLT MOTORS. APPROPRIATELY SIZED THERMAL OVERLOAD HEATER ELEMENTS SHALL BE FURNISHED WITH THE SWITCHES.

E. ELECTRICAL EQUIPMENT:

1. ELECTRICAL EQUIPMENT SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, CUTLET HAMMER, S & C, I.T.E. OR WESTINGHOUS, ONLY. EQUIPMENT SCHEDULED AND SPECIFIED IS BASED ON SQUARE D. FUSES SHALL BE MANUFACTURED BY BUSSMAN, LITTLEFUSE, OR SHAWMUT ONLY.

2. FUSES RATED 600 AMPERES OR LESS FOR ALL GENERAL POWER CIRCUITS SHALL BE EUSSMAN LPN-RK OR LPS-RK, AS REQUIRED BY THE SYSTEM, DUAL ELEMENT, UL CLASS RK1 TIME-DELY TYPE.

3. A FUSE IDENTIFICATION LABEL, SHOWING TYPE AND SIZE, SHALL BE PLACED INSIDE THE DOOR OF EACH SWITCH.

4. ELECTRICAL SUBCONTRACTOR SHALL FURNISH SNA INSTALL CIRCUIT BREAKER LIGHTING PANELBOARDS AS INDICATED IN THE PANELBOARD SCHEDULE AND WHERE SHOWN ON THE PLANS FOR 120/203 VOLT, 3 PHASE, 4 WIRE OR 120/240 VOLT, 1 PHASE 3 WIRE AS SCHEDULED. PANELBOARDS SHALL BE OF DEAD-FRONT SAFETY TYPE, EQUIPPED WITH THERMAL-HAGNETIC MOLDED CASE CIRCUIT BREAKERS WITH TRIP RATINGS AS SHOWN ON THE SECHDULE. PAUEL BOARDS SHALL BE SQUARE D TYPE NQOD BLOT-ON. CIRCUIT BREAKERS SHALL BE SQUARE D QOB.

(CONTINUED)

(NOTES CONTINUED):

5. THE ELECTRICAL SUBCONTRACTOR SHALL FURNISH AND INSTALL SAFETY SWITCHES AS INDICATED ON THE PLANS AND/OR REQUIRED BY CODE. ALL SAFETY SWITCHES SHALL BE NEMA HEAVY DUTY TYPE HD AND UNDERWRITERS' LABORATORIES LISTED.

PANEL "L"

10,000 AMPS RMS. SYM. I.C. INTEGRATED EQUIPMENT RATING

120/240 VOLTS, 1 PHASE, 3 WIRE 100 AMPS, MAIN LUGS ONLY

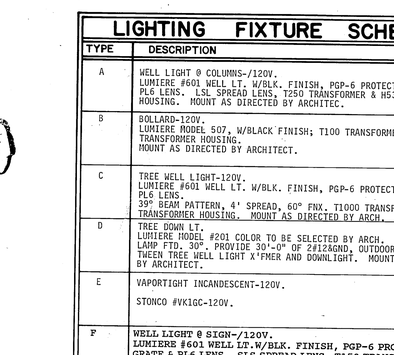
SERVES	TRIP		A Φ		C Φ		TRIP	SERVES
TYPE "A" LTS.	20	1	1700	1200			20	TYPE "B" LTS.
		3			1900	1600		
		5	1000	1600				
		7			1550	1200		
TYPE "C&D"LTS.		9	1550	1000				
		11			1000	1400		VAULT LTS.
SPARE		13	1000					RECEPTACLES
SPACE		15						SPACE
		17						SPACE
		19						
		21						
		23						
		25						
		27						
		29						
		31						
		33						
		35						
		37						
		39						
		41						

9050 8650

TOTAL CONN. LOAD 17,700

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	LAMPS
A	WELL LIGHT @ COLUMNS-/120V. LUMIERE #601 WELL LT. W/BLK. FINISH, PGP-6 PROTECTIVE GRATE & PL6 LENS. LSL SPREAD LENS, T250 TRANSFORMER & H53K TRANSFORMER HOUSING. MOUNT AS DIRECTED BY ARCHITEC.	1-50W MR-16 EXT.
B	BOLLARD-120V. LUMIERE MODEL 507, W/BLACK FINISH; T100 TRANSFORMER & H53K TRANSFORMER HOUSING. MOUNT AS DIRECTED BY ARCHITECT.	1-20 W MR-11 HALOGEN
C	TREE WELL LIGHT-120V. LUMIERE #601 WELL LT. W/BLK. FINISH, PGP-6 PROTECTIVE GRATE & PL6 LENS. 39° BEAM PATTERN, 4' SPREAD, 60° FNX. T100D TRANSFORMER & H53K TRANSFORMER HOUSING. MOUNT AS DIRECTED BY ARCH.	1-50W MR-16 EXT.
D	TREE DOWN LT. LUMIERE MODEL #201 COLOR TO BE SELECTED BY ARCH. LAMP FTD. 30°. PROVIDE 30'-0" OF 2#12&GND, OUTDOOR CABLE BE-TWEEN TREE WELL LIGHT X'FMER AND DOWNLIGHT. MOUNT AS DIRECTED BY ARCHITECT.	1-20W MR-11
E	VAPORTIGHT INCANDESCENT-120V. STONCO #VK1GC-120V.	1-100W A- LAMP
F	WELL LIGHT @ SIGN-/120V. LUMIERE #601 WELL LT.W/BLK. FINISH, PGP-6 PROTECTIVE GRATE & PL6 LENS. SLS SPREAD LENS, T150 TRANSFORMER & H53K TRANSFORMER HOUSING. MOUNT AS DIRECTED BY ARCHITECT.	150W MR-16 EXT.
G	ROBERTS STEP LTG.-120V. FURNISH LENGTH, QUANTITIES & ALL ACCESSORIES REQUIRED FOR A COMPLETE AND WORKING SYSTEM. ROBERTS STEP LIGHT SYSTEMS SERIES TYPE "A" STANDARD.	2.4 WATTS PER FOOT INCLUDED.

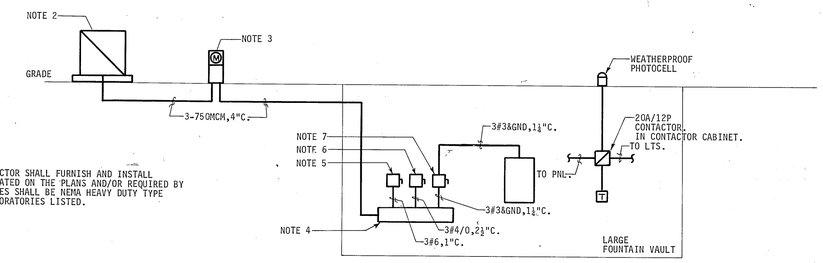


LARGE FOUNTAIN VAULT DETAIL – ELECTRICAL

NO SCALE

NOTES:

1. ELECTRICAL DEVICES IN VAULT SHALL NOT BE MOUNTED UNDER OPENINGS IN TOP OF VAULT.
2. POWER CO. X'FMER. VERIFY LOCATION & MOUNTING. VERIFY ALL RQ'MTS. W/POWER. CO.
3. WEATHERPROOF C.T. CABINET AND METER. VERIFY LOCATION WITH ARCHITECT. VERIFY MOUNTING AND ALL RQ'MTS. WITH PWR. CO.
4. 8"x8"x4'-0" WIREWAY. SQUARE D OR EQUAL.
5. 60/60/2 DISCONNECT FOR SMALL FOUNTAIN, SQUARE D OR EQUAL.
6. 400/225/2 DISCONNECT FOR LARGE FOUNTAIN. SQUARE D OR EQUAL.
7. 100/100/2 DISCONNECT FOR PANEL L. SQUARE D OR EQUAL.
8. ALL EXTERIOR LIGHTS SHALL RUN THROUGH CONTACTOR



ELECTRICAL RISER DIAGRAM

NO SCALE

MESA DESIGN GROUP
LAND PLANNING
LANDSCAPE ARCHITECTURE
INTERIORS

ARJO ENGINEERS INC.
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Suite 680
Dallas, Texas 75219
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ELECTRICAL SCHEDULE & DETAILS

QUORUM PARK
ADDISON, TEXAS

TOWN OF ADDISON

PRELIMINARY
ISSUE DATE 29 JAN 1990
REVISIONS

PROJECT NO.	88019
DRAWN BY	
CHECKED BY	
SCALE	NO SCALE
SHEET NO.	E-2