

**S Y M B O L S**

**PLAN**

**SINGLE LINE DIAGRAM**

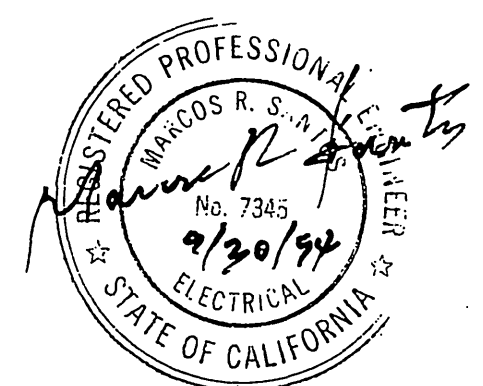
**SCHEMATIC DIAGRAM**

	GROUND BUS
	EXPOSED CONDUIT
	CONDUIT CONCEALED ABOVE FLOOR.
	CONDUIT RUN UNDERGROUND OR IN CONCRETE
	EXPOSED CONDUIT RUN BEHIND OBSTRUCTION
	BARE COPPER GROUND TO GROUND WIRE IN SLAB, OR UNDERGROUND GROUND GRID, SIZE AS NOTED.
	UNDERGROUND TELEMETRY CONDUIT
	HOME RUN TO PANEL "LPI", CIRCUITS #1, 3, 7. CROSS MARKS INDICATE NUMBER OF CONDUCTORS. LONGER MARK INDICATES NEUTRAL CONDUCTORS SHALL BE NO. 12 UNLESS OTHERWISE NOTED. CONDUIT SHALL BE 3/4" UNLESS OTHERWISE NOTED. CONDUIT SIZES NOT IDENTIFIED SHALL BE 3/4" MINIMUM WITH 2#12 & 1#2 GROUND WIRE
	TELEPHONE CONDUIT ONLY, UNLESS OTHERWISE NOTED.
	CONDUIT RUN - CHANGE IN ELEVATION
	CONDUIT BENDS TOWARD OBSERVER
	CONDUIT BENDS AWAY FROM OBSERVER
	CONDUIT CAPPED, OR SEALED
	FLEXIBLE LIQUID - TIGHT CONDUIT CONNECTION
	INDICATES CONDUIT NUMBER FROM MCC "IM" "1" INDICATES FEEDER NO.
	CEILING OR PENDANT INCANDESCENT, MERCURY VAPOR, OR SIMILAR LAMP FIXTURE. "2" INDICATES CIRCUIT NUMBER. "d" INDICATES FIXTURE CONTROLLED BY SWITCH "d".
	WALL BRACKET INCANDESCENT, MERCURY VAPOR, OR SIMILAR LAMP FIXTURE WITH EXPOSED BACK BOX AND CONDUIT.
	WALL BRACKET FLOOD OR SPOTLIGHT WITH CONCEALED BACK BOX AND CONDUIT.
	POLE MOUNTED FIXTURE DISTRIBUTION TYPE AS INDICATED ON PLAN
	FIXTURE TYPE A, 2-40 WATT LAMPS 3 - NUMBER OF TYPE "A" FIXTURES
	FLUORESCENT LIGHTING FIXTURE, UNSWITCHED (SWITCHED AT LIGHTING PANEL ONLY)
	FLUORESCENT LIGHTING FIXTURE ON EMERGENCY CIRCUIT
	FLUORESCENT LIGHTING FIXTURE
	BATTERY EMERGENCY LIGHT FIXTURE
	SINGLE POLE SWITCH. "d" INDICATES CIRCUIT CONTROLLED
	DOUBLE POLE SWITCH
	THREE-WAY SWITCH
	FOUR-WAY SWITCH
	KEY-OPERATED SWITCH
	SWITCH AND PILOT LIGHT
	MANUAL MOTOR STARTER
	WEATHERPROOF SWITCH

	<b>WALL FLOOR</b>
	120V SINGLE RECEPTACLE, NEMA CONFIGURATION 5-20.
	120V DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
	120V DOUBLE DUPLEX RECEPTACLE, NEMA CONFIGURATION 5-20
	240V DUPLEX RECEPTACLE, NEMA CONFIGURATION 6-20
	SINGLE SPECIAL-PURPOSE RECEPTACLE, ASTERISK INDICATES NUMBER, SUCH AS AMPERAGE, TO DIFFERENTIATE BETWEEN TWO OR MORE DIFFERENT TYPES. 120 OR 240 V.A.C.
	WELDING RECEPTACLE
	SINGLE SPECIAL PURPOSE RECEPTACLE 480 V.A.C.
	CLOCK HANGER RECEPTACLE
	LIGHTING PANEL
	POWER PANEL
	MOTOR CONTROL CENTER
	FLOOR TYPE TELEPHONE OUTLET
	SOUND OR PAGING SYSTEM DEVICE. * DENOTES NUMBER TO DIFFERENTIATE BETWEEN DIFFERENT DEVICES.
	PUBLIC TELEPHONE SYSTEM DEVICE
	PRIVATE TELEPHONE (ANY TYPE) SYSTEM DEVICE
	GROUND ROD AND GROUND WELL
	GROUND CONNECTION BOLTED TYPE
	DISCONNECT SWITCH
	MOTOR STARTER
	MOTOR
	PUSHBUTTON STATION OR SELECTOR SWITCH "SS" START-STOP, "LOS" LOCKOUT-STOP, "SLOS" START-LOCKOUT-STOP H-HAND, M-MANUAL, R-REMOTE, L-LOCAL, A-AUTOMATIC, O-OFF
	RACEWAY BOX "JB" JUNCTION BOX "MH" MANHOLE "HH" HANDHOLE "PB" PULLBOX "TB" TERMINAL BOX
	JUNCTION BOX OR FITTING
	FIELD INSTRUMENT I.E. "PSL" PRESSURE SWITCH "LSH" LEVEL SWITCH "SV" SOLENOID VALVE
	SOLENOID VALVE
	THERMOSTAT
	HEATER
	HORN
	DENOTES REFERENCE TO NOTE I I.E. - "SEE NOTE 1"
	GROUND ROD 3/4" x 10' - 0" (UNLESS OTHERWISE NOTED)
	GROUND CONNECTION - EXOTHERMIC TYPE
	MOTOR OPERATED VALVE
	CCTV CAMERA

	<b>BUS</b>
	ACROSS-THE-LINE, NON-REVERSING NEMA SIZE 2 MAGNETIC STARTER
	NEMA SIZE 4 MAGNETIC STARTER: PW - PART WINDING, REV - REVERSING RV - REDUCED VOLTAGE, AUTO-AUTO TRANSFORMER 2SP-2W - TWO SPEED, TWO WINDING
	CONTACTOR, SIZE AS NOTED
	MOLDED CASE CIRCUIT BREAKER, 3 POLE UNLESS OTHERWISE NOTED: 50A-TRIP RATING IN AMPERE NA-NON-AUTOMATIC MCP - MOTOR CIRCUIT PROTECTOR AF-FRAME SIZE (225 AMPS NOTED) AT-TRIP RATING (125 AMPS NOTED)
	WELDING RECEPTACLE
	MEDIUM OR HIGH VOLTAGE DRAWOUT BREAKER
	DRAWOUT BREAKER, SIZE AS NOTED EO - DENOTES ELECTRICALLY OPERATED
	MEDIUM OR HIGH VOLTAGE STARTER
	SURGE ARRESTOR
	MOTOR 10 HP NOTED
	TRANSFORMER WITH GROUNDED SECONDARY, KVA SIZE & VOLTAGE RATIO AS NOTED.
	POTENTIAL TRANSFORMER, RATIO AND NUMBER OF PT'S AS NOTED
	CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS NOTED
	ELECTRICAL INTERLOCK
	ELECTRICAL ENCLOSURE OUTLINE
	ELECTRICAL MOTOR OPERATED VALVE, WITH INTEGRAL REVERSING STARTER
	DISCONNECT SWITCH, SIZE AS NOTED
	FUSED DISCONNECT SWITCH
	CAPACITOR, KVAR AS NOTED
	KILOWATT HOUR METER WITH DEMAND REGISTER
	AMMETER
	VOLTMETER
	POWER FACTOR METER
	VARMETER
	AMMETER SWITCH
	VOLTMETER SWITCH

	<b>CONTROL RELAY OR COIL</b>
	MANUAL MOTOR STARTER WITH OVERLOAD PROTECTION
	FUSE
	RESISTOR (FIXED)
	POTENTIOMETER TYPE RESISTOR (CONTINUOUSLY ADJUSTABLE)
	PUSH-TO-TEST INDICATING LIGHT
	ELAPSED TIME METER
	HEATER
	CROSSING OF CONDUCTORS-NOT CONNECTED
	CONNECTION OF CONDUCTORS, FITTING AS REQUIRED
	DISCONNECT SWITCH
	TERMINATION IN MCC
	FIELD TERMINATION (DEVICES)
	TERMINATION IN CP, OR LCP
	ELECTRODE PROBES
	PANEL MOUNTED DEVICE (SCHEMATIC)
	FIELD OR REMOTE MOUNTED DEVICE (SCHEMATIC)
	EXAMPLE TD2 TIME DELAY RELAY NO. 2 CRI CONTROL RELAY 1M STARTER NO. 1 MAIN COIL
	N.O. CONTACT
	N.C. CONTACT
	TORQUE SWITCH (SPECIFY WHEN OPEN)
	NORMALLY OPEN LIMIT SWITCH
	NORMALLY CLOSED LIMIT SWITCH
	FLOAT TYPE LIQUID LEVEL SWITCH, CLOSING ON RISING LEVEL
	FLOAT TYPE LIQUID LEVEL SWITCH, OPENING ON RISING LEVEL
	VACUUM OR PRESSURE SWITCH, CLOSING ON RISING PRESSURE
	VACUUM OR PRESSURE SWITCH, OPENING ON RISING PRESSURE
	TEMPERATURE ACTUATED SWITCH; CLOSING ON RISING TEMPERATURE
	TEMPERATURE ACTUATED SWITCH; OPENING ON RISING TEMPERATURE
	FLOW SWITCH (AIR, WATER, ETC.); CLOSING ON FLOW INCREASE
	FLOW SWITCH (AIR, WATER, ETC.); OPENING ON FLOW INCREASE
	NORMALLY OPEN PUSHBUTTON, MOMENTARY CLOSE
	NORMALLY CLOSED PUSHBUTTON, MOMENTARY OPEN
	NO/NC MAINTAINED PUSHBUTTON
	TWO-POSITION SELECTOR SWITCH: H-HAND, M-MANUAL, R-REMOTE, L-LOCAL, A-AUTOMATIC, O-OFF
	THREE-POSITION SELECTOR SWITCH. (SAME AS ABOVE)
	THREE-POSITION SPRING RETURN-TO-CENTER MOMENTARY CONTACT SWITCH ("LATCH-UNLATCH," "ON-OFF," ETC.)
	SINGLE POLE TOGGLE SWITCH ("ON-OFF", ETC.)
	GROUND CONNECTION
	OVERLOAD RELAY CONTACTS (MAGNETIC)
	<b>TIMED CONTACTS</b> - CONTACT ACTION DELAYED AFTER COIL IS : <b>ENERGIZED</b> NORMALLY OPEN WITH TIME DELAY CLOSING NORMALLY CLOSED WITH TIME DELAY OPENING <b>DE-ENERGIZED</b> NORMALLY OPEN WITH INSTANT CLOSING AND TIME DELAY OPENING NORMALLY CLOSED WITH INSTANT OPENING AND TIME DELAY CLOSING



JOB NO. 193.0453 FILE NO. 42/PRJ/RIVERS/P/LE/PIERCE/DGN

REV	DATE	BY	DESCRIPTION

SCALE:	NONE
WARNING	0 1/2 1
IF THIS BAR DOES NOT MEASURE THEN DRAWING IS NOT TO SCALE.	

DESIGNED	<i>H. Lopez</i>	SUBMITTED	<i>Partho Nayudhuri</i>	0-49471	5-23-94
DRAWN	<i>R. Chatur</i>	PROJECT ENGINEER	R. C. E. NO.	DATE	
CHECKED	<i>H. Conception Jr.</i>	RECOMMENDED	<i>Surendra Thakral</i>	C-44599	5-23-94
				R. C. E. NO.	DATE

**MONTGOMERY WATSON**  
Pasadena, California

APPROVED		DATE	
APPROVED		DATE	

CITY OF RIVERSIDE	
PIERCE STREET P.S. UPGRADE	
ELECTRICAL SYMBOLS	

JOB NO.	S-1636
SHEET	E-1
OF 44 SHEETS	

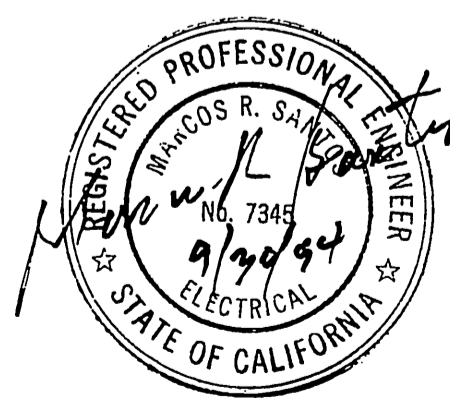
INDEXED 1-31-05 4th

# A B B R E V I A T I O N S

<p><b>A</b> AMPERE, AUTO, AMMETER  <b>AC</b> ALTERNATING CURRENT  <b>ACU</b> AIR CONDITIONING  <b>AF</b> AMPERE FRAME SIZE OF CKT. BRKRS.  <b>AF</b> ABOVE FINISHED FLOOR  <b>AL</b> ALUMINUM  <b>AM</b> AMMETER  <b>ANN</b> ANNUNCIATOR  <b>AMP</b> AMPERES, AMPERAGE  <b>APPR</b> APPROVED  <b>AS</b> AMMETER SWITCH, ADJUSTABLE SPEED  <b>AT</b> AMPERE TRIP  <b>ATS</b> AUTOMATIC TRANSFER SWITCH  <b>AUTO</b> AUTOMATIC  <b>AWG</b> AMERICAN WIRE GAUGE</p> <p><b>BATT</b> BATTERY  <b>BKR</b> BREAKER  <b>BBL</b> BUBBLER  <b>BLDG</b> BUILDING</p> <p><b>C</b> CONDUIT, CLOSED  <b>CAB</b> CABINET  <b>CB</b> CIRCUIT BREAKER  <b>CKT</b> CIRCUIT  <b>CO</b> CONDUIT ONLY  <b>COND</b> CONDUIT  <b>COMPT</b> COMPARTMENT  <b>COMPR</b> COMPRESSOR  <b>CP</b> CONTROL PANEL  <b>CPT</b> CONTROL POWER TRANSFORMER (IN INDIVIDUAL STARTER CUBICLE)  <b>CR</b> CONTROL RELAY (MAGNETICALLY HELD)  <b>CT</b> CURRENT TRANSFORMER  <b>CU</b> COPPER</p> <p><b>DC</b> DIRECT CURRENT  <b>DH</b> DATA HIGHWAY  <b>DISC</b> DISCONNECT  <b>DISTR</b> DISTRIBUTION  <b>DPDT</b> DOUBLE POLE DOUBLE THROW  <b>DWG</b> DRAWING</p> <p><b>E</b> EMPTY, EMERGENCY  <b>ELEV</b> ELEVATION  <b>EMERG</b> EMERGENCY  <b>EMT</b> ELECTRICAL METALLIC TUBING  <b>ENCL</b> ENCLOSURE  <b>EP</b> EXPLOSION PROOF  <b>EQPT</b> EQUIPMENT  <b>ER</b> CONDUCTANCE LEVEL RELAY  <b>ETM</b> ELAPSED TIME METER  <b>EXH</b> EXHAUST  <b>EXIST</b> EXISTING</p> <p><b>F</b> FREQUENCY  <b>FDR</b> FEEDER  <b>FLEX</b> FLEXIBLE  <b>FLUOR</b> FLUORESCENT  <b>FM</b> FREQUENCY METER  <b>FUT</b> FUTURE</p>	<p><b>FVR</b> FULL VOLTAGE REVERSING  <b>FVNR</b> FULL VOLTAGE NON-REVERSING  <b>FWD</b> FORWARD CONTACTOR COIL  <b>GALV</b> GALVANIZED  <b>GEN</b> GENERATOR  <b>GFR</b> GROUND FAULT RELAY  <b>GFS</b> GROUND FAULT SENSOR  <b>GRD</b> GROUND</p> <p><b>HH</b> HAND HOLE  <b>HID</b> HIGH INTENSITY DISCHARGE  <b>HIGH</b> HIGH SPEED CONTACTOR  <b>HOA</b> HAND - OFF - AUTOMATIC  <b>HP</b> HORSE POWER  <b>HPS</b> HIGH PRESSURE SODIUM  <b>HTR</b> HEATER  <b>HVAC</b> HEATING VENTILATION AIR CONDITIONING  <b>HZ</b> HERTZ</p> <p><b>IMC</b> INTERMEDIATE METAL CONDUIT  <b>INCAND</b> INCANDESCENT  <b>IND</b> INDICATION (SYSTEM)  <b>I/O</b> INPUT/OUTPUT  <b>INST</b> INSTANTANEOUS (TD CONTACT)  <b>INSTR</b> INSTRUMENT  <b>Isc</b> SHORT CIRCUIT CURRENT, AMPS  <b>INVT</b> INVERT</p> <p><b>JB</b> JUNCTION BOX  <b>J BOX</b> JUNCTION BOX</p> <p><b>KVA</b> KILO (1000) VOLT AMPS  <b>KW</b> KILOWATTS  <b>KWH</b> KILOWATT HOUR</p> <p><b>LC</b> LIGHTING CONTACTOR  <b>LCB</b> LOCAL CONTROL BOARD  <b>LCP</b> LOCAL CONTROL PANEL  <b>LOC</b> LOCAL  <b>LOS</b> PUSHBUTTON W/ LOCK-OUT-STOP  <b>LS</b> LEVEL SWITCH  <b>LT, LTS</b> LIGHT, LIGHTS  <b>LTG</b> LIGHTING  <b>LOW</b> LOW SPEED CONTACTOR</p> <p><b>M</b> MOTOR CONTACTOR COIL  <b>MA</b> MILLIAMPS  <b>MAN</b> MANUAL  <b>MAG</b> MAGNETIC  <b>MAX</b> MAXIMUM  <b>MCC</b> MOTOR CONTROL CENTER  <b>MCB</b> MAIN CONTROL BOARD  <b>MCM</b> THOUSAND CIRCULAR MILS  <b>MD</b> MOTORIZED DAMPER  <b>MH</b> MANHOLE  <b>MIN</b> MINUTES, MINIMUM  <b>MLO</b> MAIN LUGS ONLY  <b>MOV</b> MOTOR OPERATED VALVE  <b>MS</b> MANUAL MOTOR STARTER  <b>MT, MTD</b> MOUNT, MOUNTED  <b>MTR</b> MOTOR  <b>MUX</b> MULTIPLEXING PANEL</p>	<p><b>N</b> NEUTRAL  <b>NA</b> NON-AUTOMATIC  <b>NC</b> NORMALLY CLOSED  <b>NO, NOS</b> NUMBER, NUMBERS, NORMALLY OPEN  <b>NP</b> NAMEPLATE  <b>NIC</b> NOT IN CONTRACT  <b>NITS</b> NOT IN THIS SECTION  <b>NTS</b> NOT TO SCALE</p> <p><b>O</b> OPEN  <b>OC</b> ON CENTER  <b>CC</b> CENTER TO CENTER  <b>OL</b> OVERLOAD RELAY  <b>OTT</b> TRANSFORMER OVERTEMPERATURE SW.</p> <p><b>P</b> POLE  <b>PB</b> PUSHBUTTON  <b>PCM</b> PROCESS CONTROL MODULE  <b>PCP</b> PROCESS CONTROL PANEL  <b>PF</b> POWER FACTOR  <b>PH, Ø</b> PHASE  <b>PNL</b> PANEL  <b>PNLBD</b> PANELBOARD  <b>POS</b> POSITION  <b>POT</b> POTENTIOMETER  <b>PRI</b> PRIMARY  <b>PS</b> PRESSURE SWITCH  <b>PT</b> POTENTIAL TRANSFORMER  <b>PVC</b> POLYVINYL CHLORIDE  <b>PW</b> PART WINDING  <b>PWR</b> POWER</p> <p><b>REC</b> RECEPTACLE  <b>RECPTS</b> RECEPTACLES  <b>REQ'D</b> REQUIRED  <b>REV</b> REVERSE CONTACTOR COIL  <b>RGS</b> RIGID GALVANIZED STEEL  <b>RUN</b> RUN CONTACTOR COIL  <b>RTU</b> REMOTE TERMINAL UNIT  <b>RVAT</b> REDUCED VOLTAGE AUTO-TRANSFORMER  <b>RVNR</b> REDUCED VOLTAGE NON-REVERSING</p> <p><b>SCH</b> SCHEDULE  <b>SEC</b> SECONDS, SECONDARY  <b>SECT</b> SECTION  <b>SEL SW</b> SELECTOR SWITCH  <b>SEQ</b> SEQUENCE  <b>SHLD</b> SHIELDED  <b>SHT</b> SHEET  <b>SIG</b> SIGNAL  <b>SI, S2</b> START CONTACTOR COILS  <b>SP</b> SPARE  <b>SPDT</b> SINGLE POLE DOUBLE THROW  <b>SPECS</b> SPECIFICATIONS  <b>SP HTR</b> SPACE HEATER  <b>SPST</b> SINGLE POLE SINGLE THROW  <b>ST, SH</b> SHUNT TRIP  <b>STA</b> STATION  <b>STD</b> STANDARD  <b>STL</b> STEEL  <b>STR</b> STARTER</p> <p><b>SV</b> SOLENOID VALVE  <b>SW</b> SWITCH  <b>SYS</b> SYSTEM</p> <p><b>TB</b> TERMINAL BOX  <b>TC</b> TIME CLOCK  <b>TACH</b> TACHOMETER  <b>TEMP</b> TEMPERATURE  <b>TERM</b> TERMINAL  <b>TH</b> THERMOSTAT  <b>TM</b> REPEAT CYCLE TIMER  <b>TD</b> TIME DELAY RELAY  <b>TS</b> TEMPERATURE SWITCH  <b>TYP</b> TYPICAL</p> <p><b>UG</b> UNDERGROUND  <b>UH</b> UNIT HEATER  <b>US</b> UNIT SUBSTATION  <b>UST</b> UNIT SUBSTATION TRANSFORMER</p> <p><b>V</b> VOLTAGE, VOLTS  <b>VAR</b> VAR METER  <b>VFD</b> VARIABLE FREQUENCY DRIVE  <b>VSD</b> VARIABLE SPEED DRIVE (OTHER THAN VFD)  <b>VP</b> VAPORPROOF  <b>VS</b> VARIABLE SPEED, VOLTMETER SWITCH</p> <p><b>W</b> WATTS, WIRE  <b>WHD</b> WATTHOUR DEMAND METER  <b>WHM</b> WATTHOUR METER  <b>WP</b> WEATHERPROOF</p> <p><b>XD</b> TRANSDUCER  <b>XFMR</b> TRANSFORMER  <b>XMTR</b> TRANSMITTER</p>
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## GENERAL NOTES

- RACEWAY**
- ALL CONDUIT, CABLE, CABLE TRAY RUNS ARE SHOWN DIAGRAMMATICALLY AND THEY SHALL BE ROUTED TO SUIT FIELD CONDITIONS.
  - THE CONTRACTOR SHALL VERIFY EXACT LOCATION OF TERMINAL BOXES AND CONDUIT ENTRANCES OF ALL EQUIPMENT AGAINST SHOP DRAWINGS BEFORE STUBBING UP CONDUITS.
  - CONNECTION BETWEEN RIGID CONDUIT AND MOTOR TERMINAL BOX SHALL BE LIQUID TIGHT FLEXIBLE CONDUIT.
  - CONDUIT TERMINATING AT SWITCHBOARD, MOTOR CONTROL CENTER, POWER AND LIGHTING PANEL, CONTROL CABINET, ETC SHALL BE EQUIPPED WITH SEALING HUB AND GROUNDING BUSHING, AND SHALL BE GROUNDED WITH NO. 6 GROUND WIRE.
  - INSTALL EXPANSION FITTINGS EVERY 200 FEET OF STRAIGHT RUN OF CONDUITS AND CABLE TRAYS.
  - CONDUIT CROSSING BUILDING OR STRUCTURAL EXPANSION JOINTS SHALL BE PROVIDED WITH SUITABLE EXPANSION FITTINGS. THESE FITTINGS MUST BE CONSTRUCTED IN SUCH A MANNER THAT WILL INSURE THE CONTINUITY OF THE GROUND PATH IN EACH CONDUIT OR RACEWAY.
  - CONDUIT FITTINGS AND SUPPORTS ARE NOT SHOWN ON THE DRAWINGS. THE CONTRACTOR SHALL PROVIDE ALL FITTINGS AND SUPPORT REQUIRED AND TO SUIT THE CONDITIONS.
  - THE CONTRACTOR SHALL LIMIT THE NUMBER OF BENDS BETWEEN PULL POINTS.
  - THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SLEEVES AND OPENINGS REQUIRED FOR THE PASSAGE OF ELECTRICAL RACEWAYS OR CABLES EVEN WHEN THESE OPENINGS OR SLEEVES ARE NOT SPECIFICALLY SHOWN ON THE DRAWINGS.
  - PROVIDE FLEXIBLE CONDUIT WHERE RIGID CONDUIT TERMINATES AT EQUIPMENT OR DEVICES SUBJECT TO MOVEMENT FROM VIBRATION, EXPANSION AND CONTRACTION.
  - ALL UNDERGROUND CONDUIT RUNS SHALL BE WITH LONG RADIUS SWEEP BENDS. THE MINIMUM BENDING RADIUS SHALL BE 12 TIMES NOMINAL DIAMETER OF THE CONDUIT, AND NO FACTORY BENDS SHALL BE PERMITTED.
  - ALL UNDERGROUND CONDUITS NOT ENCASED IN CONCRETE SHALL BE RIGID STEEL, GALVANIZED, PVC COATED.
  - THE MINIMUM SIZE OR CONDUITS INSTALLED BELOW GRADE SHALL BE 1" UNLESS OTHERWISE NOTED.
  - THE MINIMUM SIZE OF CONDUIT INSTALLED ABOVE GRADE SHALL BE 3/4" UNLESS OTHERWISE NOTED.
  - ALL FLEXIBLE CONDUIT SHALL HAVE COPPER GROUNDING CONDUCTOR.
  - FOR LIGHTING AND RECEPTACLE SYSTEMS, ONLY CONDUIT HOMERUNS AND CIRCUIT NUMBERS ARE SHOWN. CONTRACTOR SHALL PROVIDE AND INSTALL ALL NECESSARY CONDUITS, FITTINGS, JUNCTION BOXES AND ALL NECESSARY COMPONENTS SHOWN OR NOT SHOWN ON THE DRAWINGS TO MAKE ELECTRICAL INSTALLATION COMPLETE AND OPERATIONAL. ALL CONDUITS RUNS SHALL BE CONCEALED UNLESS INDICATED OTHERWISE. CIRCUIT LOADING SHALL BE AS SHOWN AND AS STATED IN PANEL SCHEDULE. ALL INSTALLATIONS SHALL BE IN ACCORDANCE WITH ALL CODES AND STANDARDS AS ENUMERATED IN SPEC. SECTION 16050. ALL MATERIALS SHALL BE IN ACCORDANCE WITH SPEC. SECTION 16400 AND 16500 ALL LIGHTING AND RECEPTACLE CIRCUITS SHALL INCLUDE #12 GROUND WIRE.
- GROUNDING**
- ALL METALLIC STRUCTURES, METALLIC ENCLOSURES, AND ELECTRICAL EQUIPMENT, SUCH AS STRUCTURAL STEEL, METALLIC RACEWAY, FENCE, STAIR HANDRAILS, LIGHTING POLE, TANK, VESSELS, SWITCHING EQUIPMENT, PANEL, EQUIPMENT ENCLOSURE AND CABINETS GENERATOR, MOTOR, TRANSFORMERS, SWITCHGEAR, ETC. SHALL BE PERMANENTLY AND EFFECTIVELY GROUNDED AND GROUND CONNECTION SHALL BE MADE TO THE PLANT GROUND GRID. THE GROUND CONDUCTOR SHALL BE SIZED PER N.E.C. UNLESS OTHERWISE SHOWN EXCEPT THE MINIMUM SIZE.
  - GROUNDING CONDUCTOR STUB-UP AND INSERT LOCATION ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE HIS BEST JUDGEMENT FOR CORRECT LOCATIONS IN FIELD.
  - ALL GROUND CONDUCTORS SHALL BE #4/0 SIZE UNLESS OTHERWISE NOTED.
  - ALL GROUND CONDUCTOR SHALL BE BARE, COPPER, STRANDED UNLESS OTHERWISE NOTED.
- EQUIPMENT AND DEVICES**
- LOCATIONS OF EQUIPMENT, CONTROL DEVICES, INSTRUMENTS, BOXES, PANELS, ETC ARE APPROXIMATE ONLY, AND PROPER JUDGEMENT MUST BE EXERCISED IN EXECUTING THE WORK TO INSURE THE BEST POSSIBLE INSTALLATION.
  - PACKAGE EQUIPMENT. SOME CONDUITS AND WIRES ARE SHOWN ON THE DRAWINGS, BUT IT IS EXPECTED THAT SOME ADDITIONAL CONDUITS AND WIRES MAY BE REQUIRED BY EQUIPMENT MANUFACTURERS TO COMPLETE INSTALLATION. IT IS INCUMBENT UPON THE GENERAL CONTRACTOR TO COORDINATE THIS REQUIREMENT WITH HIS SUBCONTRACTORS TO MAKE SURE THAT EQUIPMENT SUPPLIER PROVIDES ALL NECESSARY ELECTRICAL INFORMATION TO HIS ELECTRICAL SUBCONTRACTOR FOR INCLUSION OF COSTS IN BID PACKAGE. ALL NECESSARY MATERIALS AND LABOR TO COMPLETE ELECTRICAL INSTALLATION SHALL BE PROVIDED WHETHER SHOWN OR NOT SHOWN ON THE DRAWINGS. ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH ALL CODES AND STANDARDS PER SPEC. SECTIONS DIVISION 16.
  - ALL EQUIPMENT DIMENSIONS SHOWN ON PLANS AND ELEVATIONS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL USE THE SHOP DRAWINGS FOR PROPER LAYOUT, FOUNDATION AND PAD, ETC. FOR FINAL INSTALLATION. WITHOUT ANY ADDITIONAL COST TO THE OWNER.
  - SWITCHGEAR, SWITCHBOARD, MOTOR CONTROL CENTER AND ALL FREE STANDING PANEL SHALL BE SET ON CONCRETE PAD AND LEVELING CHANNELS EMBEDDED IN THE PAD UNLESS OTHERWISE NOTED.
- SCHEMATIC DIAGRAMS**
- ALL CONTROLS ARE SHOWN DE-ENERGIZED
  - ALL CONTROL DIAGRAMS SHOW CONTROL FUNCTION ONLY. CONTRACTOR SHALL INCORPORATE OTHER NECESSARY FUNCTIONS FOR PROPER OPERATIONS AND PROTECTION ON THE SYSTEM.
  - SLAVE RELAY SHALL BE ADDED WHERE REQUIRED TO PROVIDE ALL NECESSARY CONTACTS FOR THE SCHEMATIC DIAGRAMS SHOWN.
  - ALL DEVICES SHOWN ON MOTOR STARTER SCHEMATIC DIAGRAMS SHALL BE MOUNTED IN THE MOTOR STARTER CUBICLES UNLESS OTHERWISE NOTED.
  - ALL DEVICES SHOWN IN THE CONTROL PANEL OR CABINET SHALL BE MOUNTED IN THE CONTROL PANEL OR CABINET UNLESS OTHERWISE NOTED.
  - ALL MOTOR OPERATED VALVES ARE SHOWN FULLY OPEN.
- MISCELLANEOUS**
- IN CASE OF INTERFERENCE BETWEEN ELECTRICAL EQUIPMENT SHOWN ON THE DRAWINGS AND THE OTHER EQUIPMENT, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AND ENGINEER SHALL REVIEW THE PROPOSED CHANGES BEFORE THEY ARE MADE.
  - ALL RECEPTACLES SHALL BE MOUNTED 12" ABOVE FLOOR SURFACE UNLESS OTHERWISE NOTED.
  - ALL RECEPTACLES IN OUTDOOR AND ANTICIPATED WET AREA SHALL BE GROUND FAULT INTERRUPTER RECEPTACLES.
  - ALL OUTDOOR DEVICES SHALL BE WEATHERPROOF TYPE.
  - LOCATION OF MANHOLES AND PULLBOXES ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF MANHOLES AND PULLBOXES WITH MECHANICAL AND CIVIL WORK.
  - CONTRACTOR SHALL PROVIDE ADDITIONAL MANHOLES OR PULLBOXES TO THOSE SHOWN WHERE THEY ARE REQUIRED TO MAKE A WORKABLE INSTALLATION.
  - CIRCUITS OF DIFFERENT SERVICE VOLTAGE SHALL BE INSTALLED IN SEPARATE RACEWAYS, MANHOLES, HANDHOLES, PULLBOXES AND JUNCTION BOXES. THE VOLTAGE AND SERVICE LEVELS ARE:
    - ① 120V-480VOLT
    - ② INSTRUMENTATION LESS THAN 50VDC
    - ③ TELEPHONE AND COMMUNICATIONS.



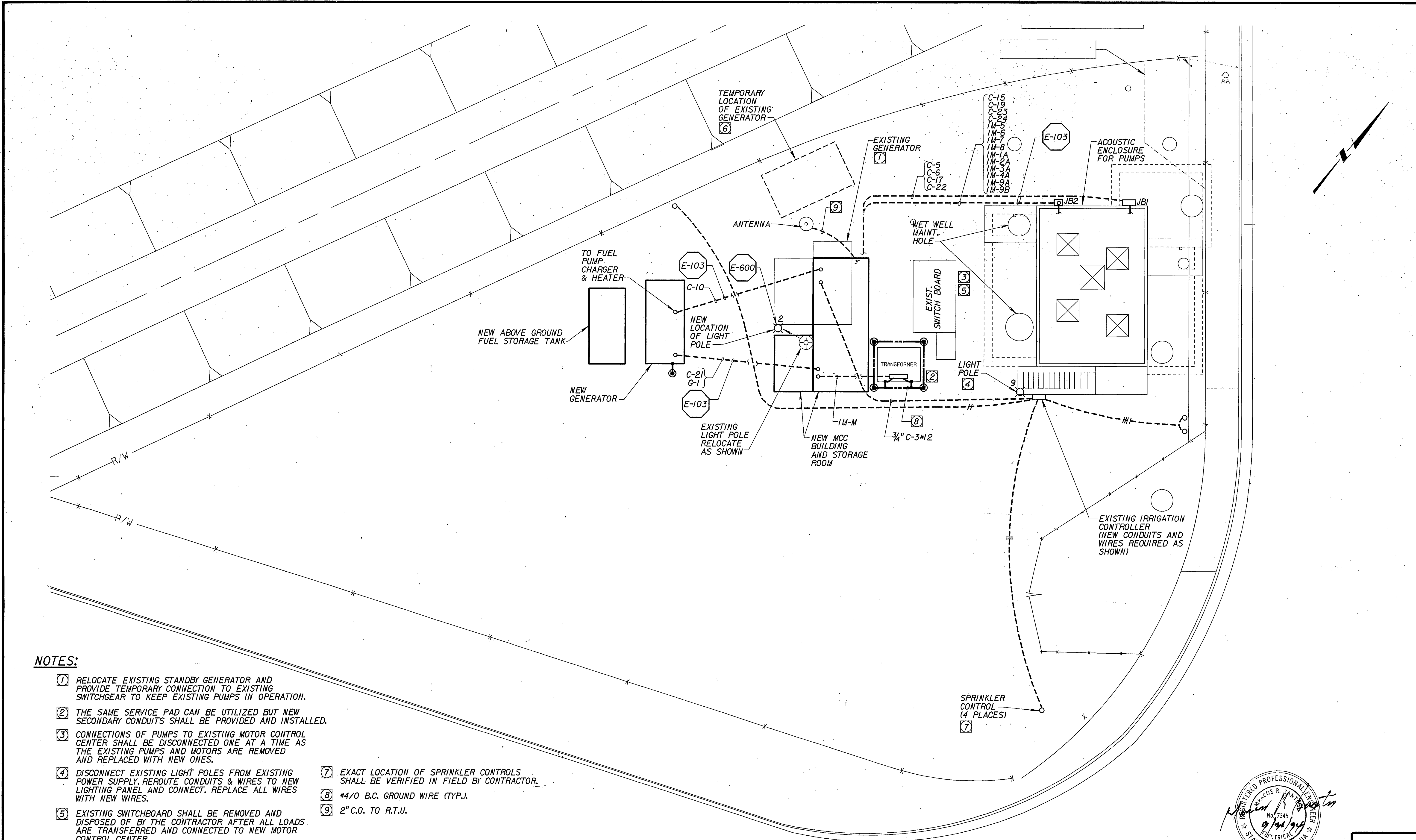
JOB No. 93.0453 FILE No. 14/PRU/RIVERSIDE/ELLE/P1ERCE02.DGN

	SCALE: NONE	WARNING 0 1/2 1 IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.	DESIGNED <i>M. Santos</i> DRAWN <i>W. P. ...</i> CHECKED <i>N. Conception Jr.</i>	SUBMITTED PROJECT ENGINEER RECOMMENDED MONTGOMERY WATSON	C-49471 5-23-94 R. C. E. NO. DATE C-44599 5-23-94 R. C. E. NO. DATE	MONTGOMERY WATSON Pasadena, California	APPROVED _____ DATE _____ APPROVED _____ DATE _____	CITY OF RIVERSIDE PIERCE STREET P.S. UPGRADE	SHEET <b>E-2</b> OF 44 SHEETS
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JOB NO.  
**S-1636**

INDEXED 1-31-05 lft

JOB NO. 133.0453 FILE NO. J4/PRJ/RIVERS/P/EL/P/PIERCE03.DGN

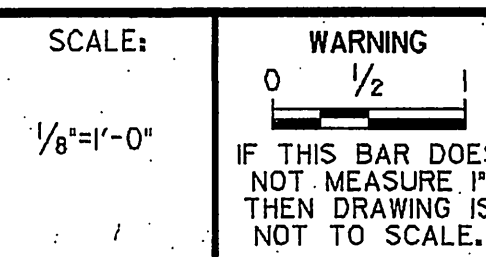


**NOTES:**

- 1 RELOCATE EXISTING STANDBY GENERATOR AND PROVIDE TEMPORARY CONNECTION TO EXISTING SWITCHGEAR TO KEEP EXISTING PUMPS IN OPERATION.
- 2 THE SAME SERVICE PAD CAN BE UTILIZED BUT NEW SECONDARY CONDUITS SHALL BE PROVIDED AND INSTALLED.
- 3 CONNECTIONS OF PUMPS TO EXISTING MOTOR CONTROL CENTER SHALL BE DISCONNECTED ONE AT A TIME AS THE EXISTING PUMPS AND MOTORS ARE REMOVED AND REPLACED WITH NEW ONES.
- 4 DISCONNECT EXISTING LIGHT POLES FROM EXISTING POWER SUPPLY, REROUTE CONDUITS & WIRES TO NEW LIGHTING PANEL AND CONNECT. REPLACE ALL WIRES WITH NEW WIRES.
- 5 EXISTING SWITCHBOARD SHALL BE REMOVED AND DISPOSED OF BY THE CONTRACTOR AFTER ALL LOADS ARE TRANSFERRED AND CONNECTED TO NEW MOTOR CONTROL CENTER.
- 6 AFTER NEW GENERATOR IS INSTALLED AND READY FOR SERVICE, THE EXISTING GENERATOR SHALL BE DISCONNECTED AND DELIVERED TO THE OWNER.
- 7 EXACT LOCATION OF SPRINKLER CONTROLS SHALL BE VERIFIED IN FIELD BY CONTRACTOR.
- 8 #4/0 B.C. GROUND WIRE (TYP.).
- 9 2" C.O. TO R.T.U.



REV	DATE	BY	DESCRIPTION



DESIGNED: *M. Santibañez*  
 DRAWN: *M. Chakravarti*  
 CHECKED: *N. Conception*

SUBMITTED: *Roshan Namuduri* C-49471 5-23-94  
 PROJECT ENGINEER R. C. E. NO. DATE  
 RECOMMENDED: *Surendra Thakral* C-44599 5-23-94  
 R. C. E. NO. DATE



**MONTGOMERY WATSON**  
 Pasadena, California

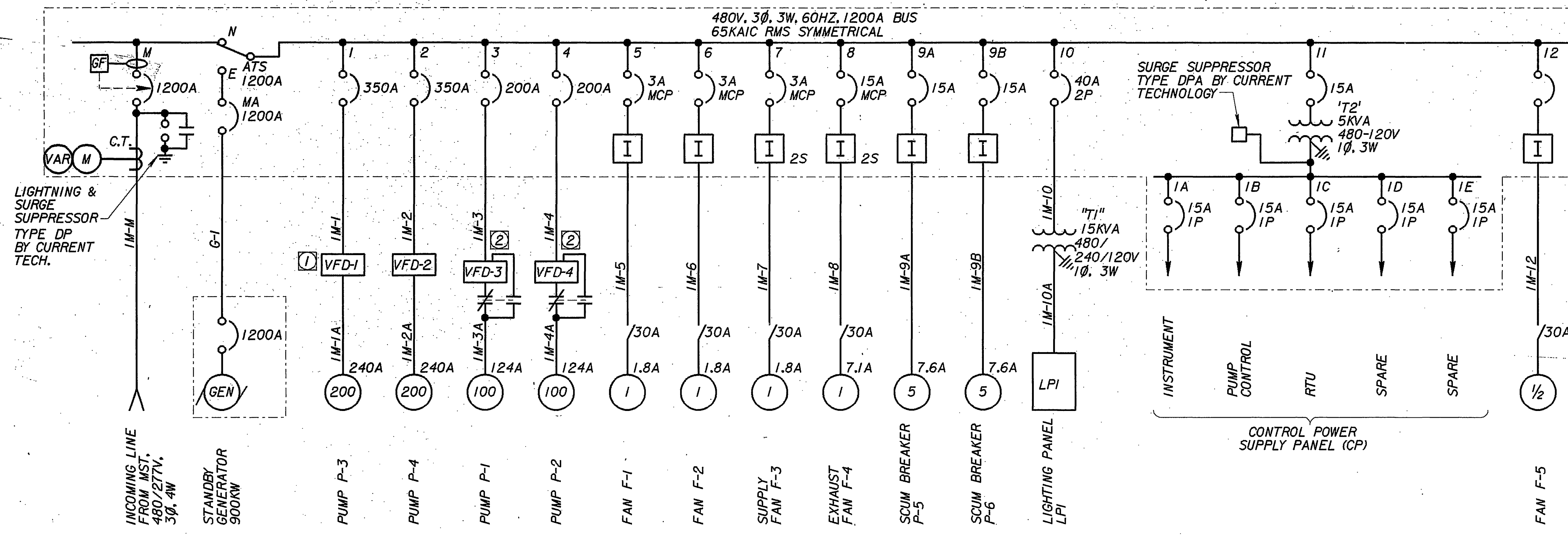
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

CITY OF RIVERSIDE  
 PIERCE STREET P.S. UPGRADE  
 ELECTRICAL SITE PLAN

JOB NO.  
**S-1636**

SHEET  
**E-3**  
 OF 44 SHEETS

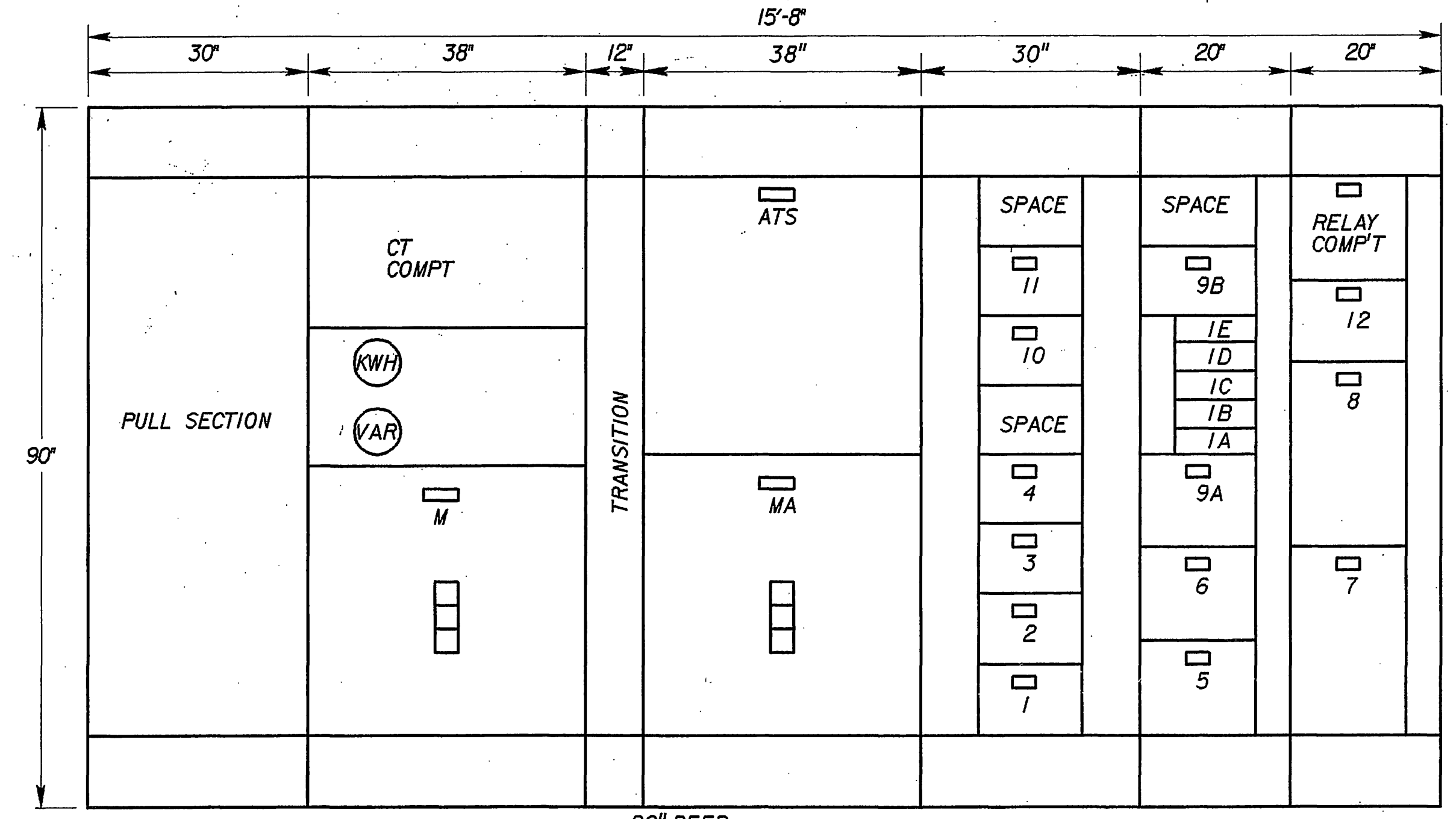
INDEXED 1-31-05 lft



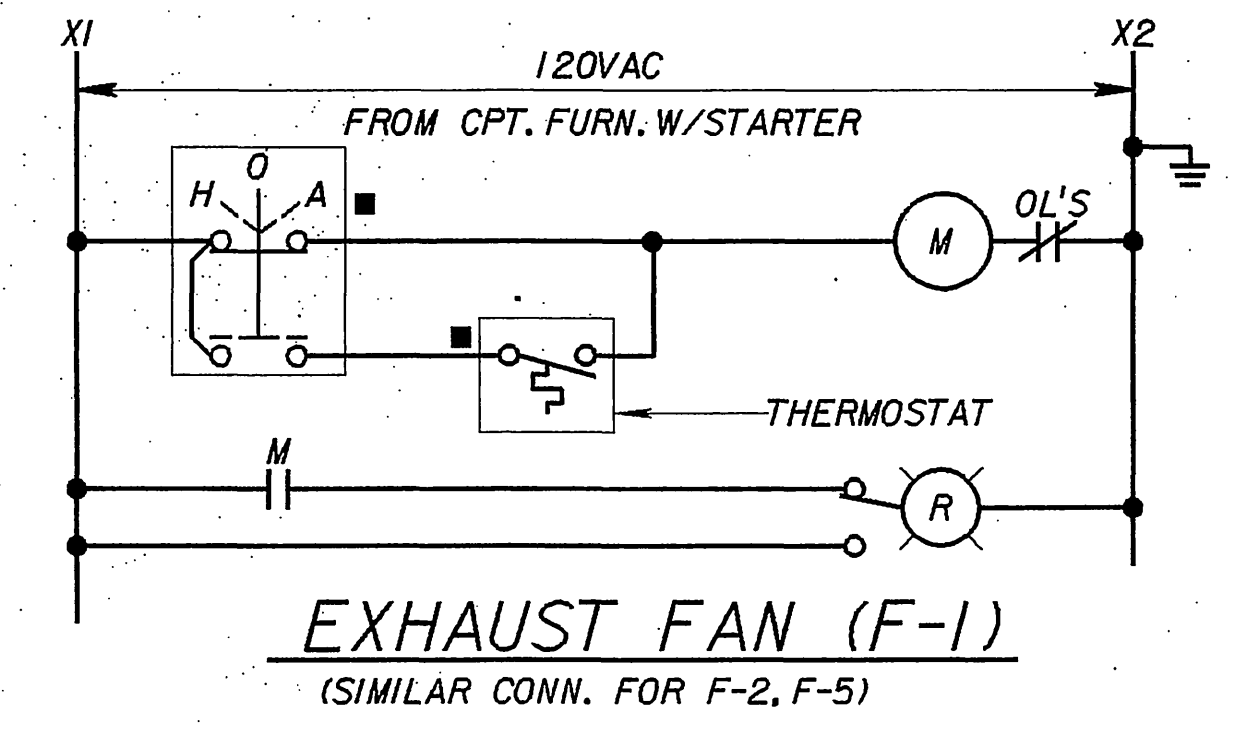
MCC-1M

NOTES:

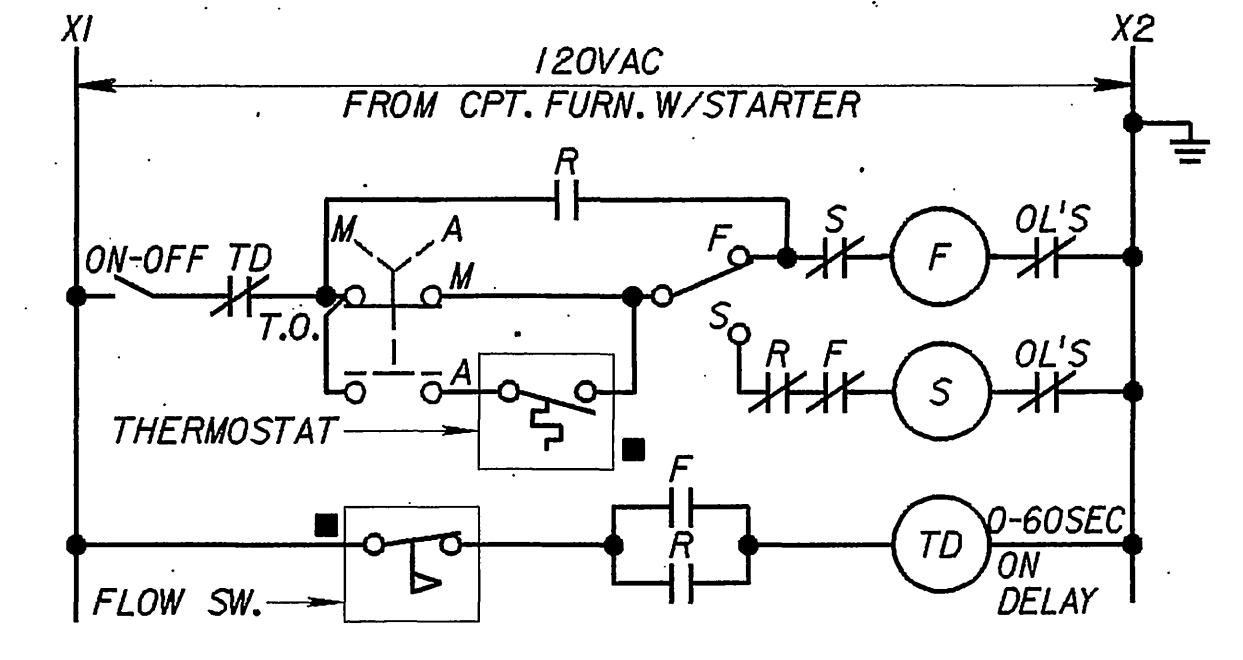
- ① ALL VFD'S ARE FURNISHED BY OWNER, TO BE INSTALLED BY CONTRACTOR. (TYP. OF 4)
- ② BYPASS STARTERS SHALL BE PROVIDED AT VFD'S FOR 100HP PUMPS BY CONTRACTOR AND SHALL BE CONNECTED SIMILAR TO THAT OF 200HP PUMPS. SEE SPEC. SECTION 11037.



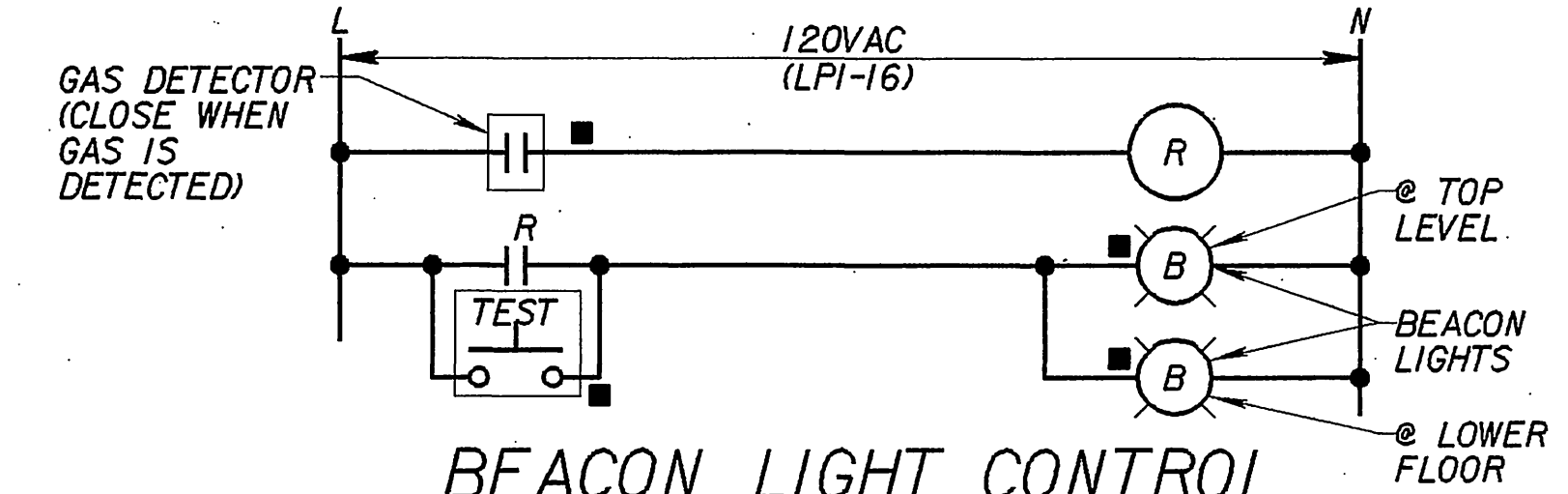
MCC-1M



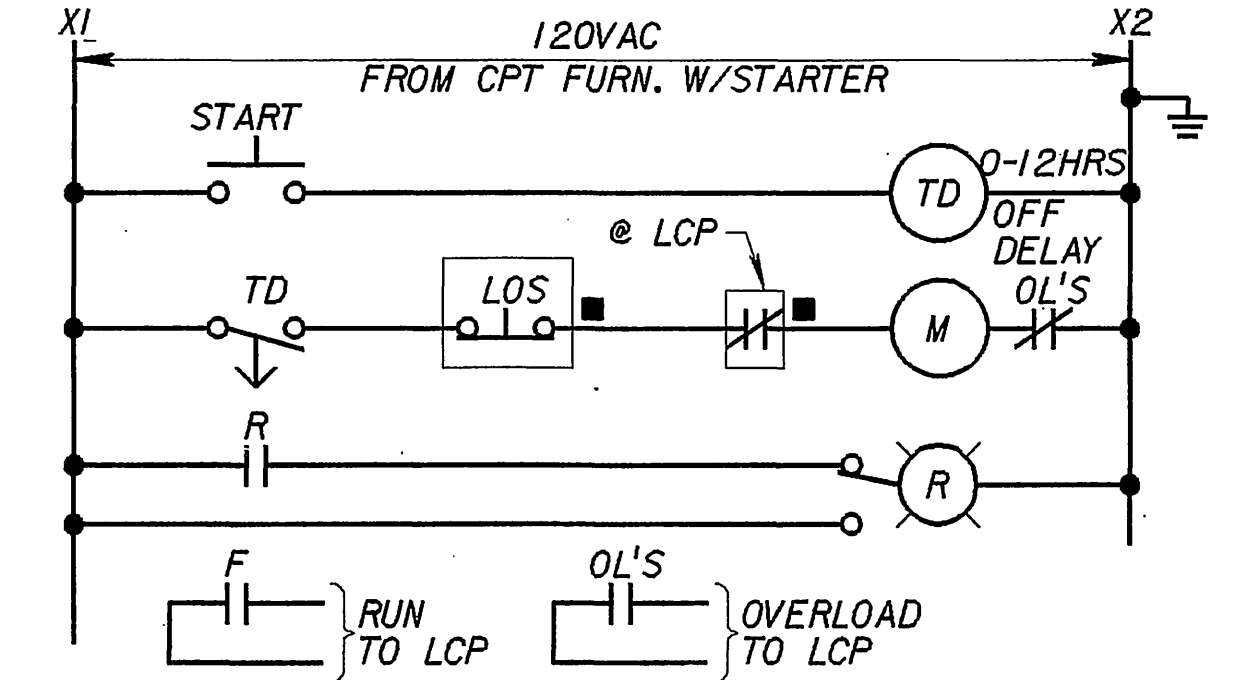
EXHAUST FAN (F-1)  
(SIMILAR CONN. FOR F-2, F-5)



EXHAUST FAN (F-3)  
(SIMILAR CONN. FOR F-4)



BEACON LIGHT CONTROL  
(LOCATED AT MCC-1M RELAY COMPT UNLESS OTHERWISE NOTED)



SCUM BREAKER P-5  
(SIMILAR CONN. FOR P-6)



JOB No. 193,0453 FILE No. J:\PRJ\RIVERSIDE\ELE\PIERCE04.DGN

SCALE:	WARNING	DESIGNED:	SUBMITTED:	APPROVED:
NONE	0 1/2	<i>[Signature]</i>	<i>[Signature]</i> C-44671 5-23-94	
	IF THIS BAR DOES NOT MEASURE THEN DRAWING IS NOT TO SCALE.	DRAWN:	PROJECT ENGINEER	DATE
REV	DATE	BY	DESCRIPTION	

**MONTGOMERY WATSON**  
Pasadena, California

APPROVED:	CITY OF RIVERSIDE
	PIERCE STREET P.S. UPGRADE
APPROVED:	SHEET
	E-4

SINGLE LINE DIAGRAM AND ELEVATION	JOB NO. S-1636
	OF 44 SHEETS

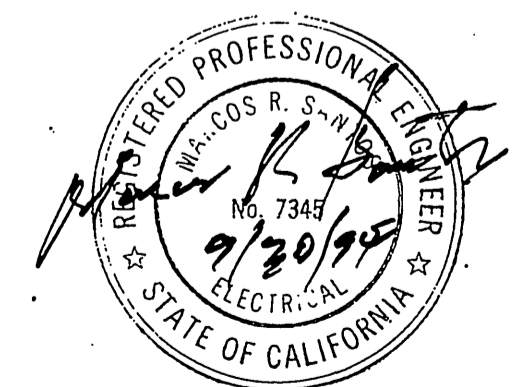
INDEXED 1-31-05 LFT

JOB No. 193.0453 FILE No. 14/PRJ/RIVERSIDE/PIERCE05.DGN

CABLE NO.	CONDUITS		CONDUCTORS			FROM	TO	ROUTE	REMARKS
	NO.	SIZE	POWER	CONTROL	SIGNAL/STATUS				
	IM-M	4-4"				SERVICE TRANSF.	MCC-1M		CONDUIT ONLY
GI	GI	3-4"	3SETS-4#600KCMIL			GEN. PNL	MCC-1M		
IM-1	IM-1	3/2"	3#400KCMIL #3GRD			MCC-1M	VFD-1		
IM-1A	IM-1A	3/2"	3#400KCMIL #3GRD			VFD-1	PUMP P-3		
IM-2	IM-2	3/2"	3#400KCMIL #3GRD			MCC-1M	VFD-2		
IM-2A	IM-2A	3/2"	3#400KCMIL #3GRD			VFD-2	PUMP P-4		
IM-3	IM-3	2 1/2"	3#2/0 & 1#6GRD			MCC-1M	VFD-3		
IM-3A	IM-3A	2 1/2"	3#2/0 & 1#6GRD			VFD-3	PUMP P-1		
IM-4	IM-4	2 1/2"	3#2/0 & 1#6GRD			MCC-1M	VFD-4		
IM-4A	IM-4A	2 1/2"	3#2/0 & 1#6GRD			VFD-4	PUMP P-2		
IM-5	IM-5	1"	3#12 & 1#12GRD	3#14		MCC-1M	FAN F-1		
IM-6	IM-6	1"	3#12 & 1#12GRD	3#14		MCC-1M	FAN F-2		
IM-7	IM-7	1"	6#12 & 1#12GRD	4#14		MCC-1M	FAN F-3		
IM-8	IM-8	1"	6#12 & 1#12GRD	4#14		MCC-1M	FAN F-4		
IM-9A	IM-9A	1"	3#12 & 1#12GRD	2#14		MCC-1M	SCUM BREAKER P-5		
IM-9B	IM-9B	1"	3#12 & 1#12GRD	2#14		MCC-1M	SCUM BREAKER P-6		
IM-10	IM-10	1"	2#8 & 1#8GRD			MCC-1M	TRANS. T1		
IM-10A	IM-10A	1 1/4"	3#2 & 1#2GRD			TRANS. T1	LPI		
IM-12	IM-12	3/4"	3#2 & 1#2GRD			MCC-1M	FAN F-5		
C-1	C-1	1"		18#14		VFD-1	PUMP P-4		
C-2	C-2					VFD-2	PUMP P-3		
C-3	C-3					VFD-3	PUMP P-1		
C-4	C-4					VFD-4	PUMP P-2		
C-5	C-5	2"		80#14		VFD-1	JB-1		C-1 THRU C-4
C-6	C-6	1 1/2"		8-2/C#16SHLD		LCP	JB-1		C-11, C-14
C-7	C-7	2"		50#14		VFD-1	PUMP CONTROL PNL		
C-8	C-8	2"		8-2/C#16SHLD		VFD-1	PUMP CONTROL PNL		
C-9	C-9	2"		80#14		LCP	RTU		
C-10	C-10	1"	5#10 & 1#10GRD			LP-1	FUEL PUMP, CHARGER & HEATER		CKT. #8, 10 & 12
C-11	C-11	1"		2-2/C#16SHLD		M-1, M-2	LCP		
C-12	C-12	3/4"		8#14		GAS DETECTOR @ LOWER FLR	LCP		
C-12A	C-12A	3/4"		8#14		GAS DETECTOR @ FIRST FLR	LCP		
C-13	C-13	3/4"		10#14		LEVEL FLOAT	LCP		
C-14	C-14	3/4"		1-2/C#16SHLD		LEVEL SENSOR	LCP		
C-15	C-15	1"	12#10 & 1#10GRD			LP-1	JB-2		
C-16	C-16	1 1/4"	12#10 & 1#10GRD			LP-1	ACU'S		(VFD1 THRU VFD4)
C-17	C-17	2"				JB1	LCP		CONDUIT ONLY
C-18	C-18	2"		60#14		MCC-1M	LCP		
C-19	C-19	1"	2#10 & 1#10GRD			MCC-1M	JB-2		INSTRUMENT POWER
C-20	C-20	1"		12#14		LP-1	MCC-1M		
C-21	C-21	1"		8#14		MCC-1M	GENERATOR		
C-22	C-22	1"			8#14	JB1	RTU		
C-23	C-23	1"		4#14		MCC-1M	BEACON LTS & TEST BUTTON		
C-24	C-24	1 1/2"		40#14		LCP	JB-1		C-12, C-12A, C-13
CP-1C	CP-1C	3/4"	2#12 & 1#12GRD			MCC-1M	RTU		
CP-1B	CP-1B	3/4"	2#12 & 1#12GRD			MCC-1M	LCP		

120/240 VOLTS 1 Ø 3 W		PANELBOARD LPI										FEED TOP					
100A-2P MAIN C.B.		LOCATION MCC BUILDING										MTG SURFACE					
LOAD DESCRIPTION	VOLT AMPERE		LTG	REC	MIS	CIR	BKR	A	B	BKR	CIR	MIS	RECL	LTG	VOLT AMPERE		LOAD DESCRIPTION
	Ø A	Ø B													Ø A	Ø B	
LTG - MCC & STORAGE ROOM	600	8				1	20				20	2	3	600		RECEPT - MCC & STORAGE RM	
LTG - TOP LEVEL	1000	10				3					20	4	4	800		RECEPT - TOP LEVEL	
LTG - FIRST ROOM	600	6				5					20	6	4	800		MOTOR HEATERS	
LTG - LOWER FLOOR	800	8				7					15	8	1	600		FUEL PUMP	
LTG - OUTDOOR	400	2				9					20	10	1	500		GEN. CHARGER	
LCP	500					11					20	12	1	500		GEN. BLOCK HEATER	
SPARE	500					13					20	14		500			
ACU-1 (VFD1)	1000					15	30				20	16	2	500		BEACON LIGHTS	
ACU-2 (VFD2)	1000					17	30					18	3	500		EMERGENCY LIGHTS	
ACU-3 (VFD3)	1000					19	30					20	2	400		EXISTING S. PUMP	
ACU-4 (VFD4)	1000					21	30					22	3	100		SPRINKLER	
SPARE						23	20					24				SPARE	
						25						26					
						27						28					
						29						30					
						31						32					
SPACE						33						34				SPACE	
						35						36					
						37						38					
						39						40					
						41						42					
	4100	4300				TOTAL					TOTAL			3000	2800		
	PHASE TOTAL		TOTAL LOAD														
	7100	7100	14.2 KVA (59.1 AMP)														

TYPE	WATTS	VOLTS	MOUNTING	DESCRIPTION
F1	2-40W	120	PENDANT/CEILING	4' INDUSTRIAL FLUORESCENT LIGHT FIXTURE, HOUSING OF DIE-FORMED, HEAVY GAUGE STEEL, FINISH OF HIGH-REFLECTANCE WHITE BAKED ENAMEL, PRUDENTIAL CAT # P-202-48RS OR EQUAL.
HP	100	120	CEILING	HIGH PRESSURE SODIUM (HPS), CEILING MOUNTING TYPE, INTEGRAL BALLAST, PRISMATIC CLOSED GLASS REFRACTOR, SUITABLE FOR CLASS I, DIV. II, HOLOPHANE CAT. #PETL-100HP-12-545C-CE-F1 OR EQUAL.
E1	2-18	120	WALL	AUTOMATIC INDUSTRIAL EMERGENCY FIXTURE, STEEL HOUSING, SEALED BEAM LAMP, SOLID STATE CHARGER, SEALED LEAD ACID BATTERY, HOLOPHANE CAT. #ELI22A OR EQUAL.
E2	2-8W	120	WALL	AUTOMATIC INDUSTRIAL EMERGENCY FIXTURE SUITABLE FOR CLASS I DIV. 2 AREA, COMPACT WITH SEALED BEAM HALOGEN LAMP, NON-METALLIC HOUSING, SOLID STATE BATTERY CHARGER, SEALED LEAD CALCIUM BATTERY, CROUSE-HINDS CAT. #N2LPS6222 OR EQUAL.



JOB NO. S-1636

SCALE: NONE	WARNING: IF THIS BAR DOES NOT MEASURE 1/2 THEN DRAWING IS NOT TO SCALE.	DESIGNED: <i>M. Santos</i>	SUBMITTED: <i>Parulje Namuduri</i> C-49471 5-23-94 R. C. E. NO. DATE
		DRAWN: <i>N. Conupin</i>	RECOMMENDED: <i>Suresh Shakti</i> C-44599 5-23-94 R. C. E. NO. DATE
		CHECKED: <i>N. Conupin</i>	MONTGOMERY WATSON



APPROVED _____	DATE _____
APPROVED _____	DATE _____

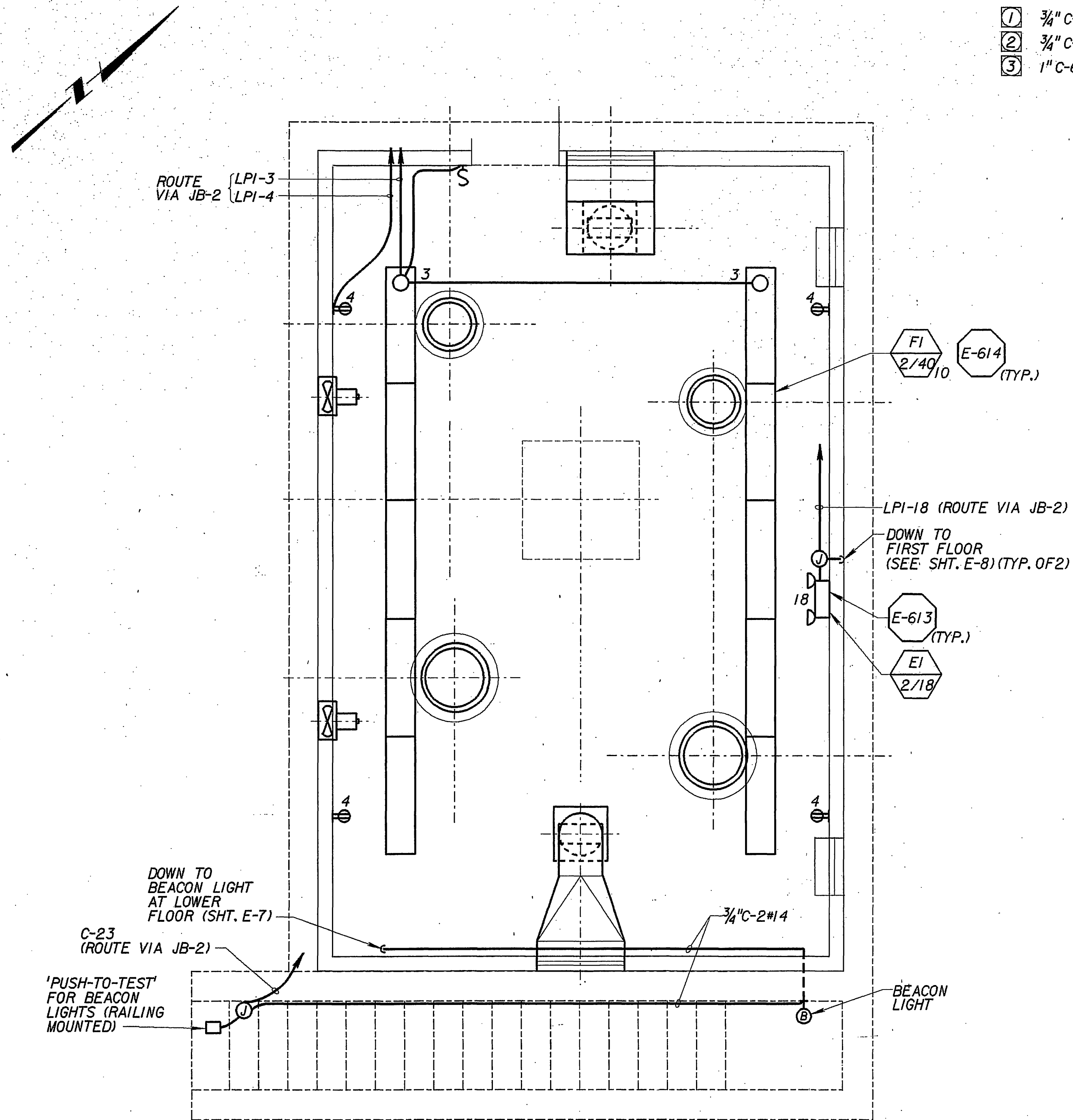
CITY OF RIVERSIDE	
PIERCE STREET P.S. UPGRADE	
CONDUIT, PANEL & FIXTURE SCHEDULES	

SHEET E-5 OF 44 SHEETS

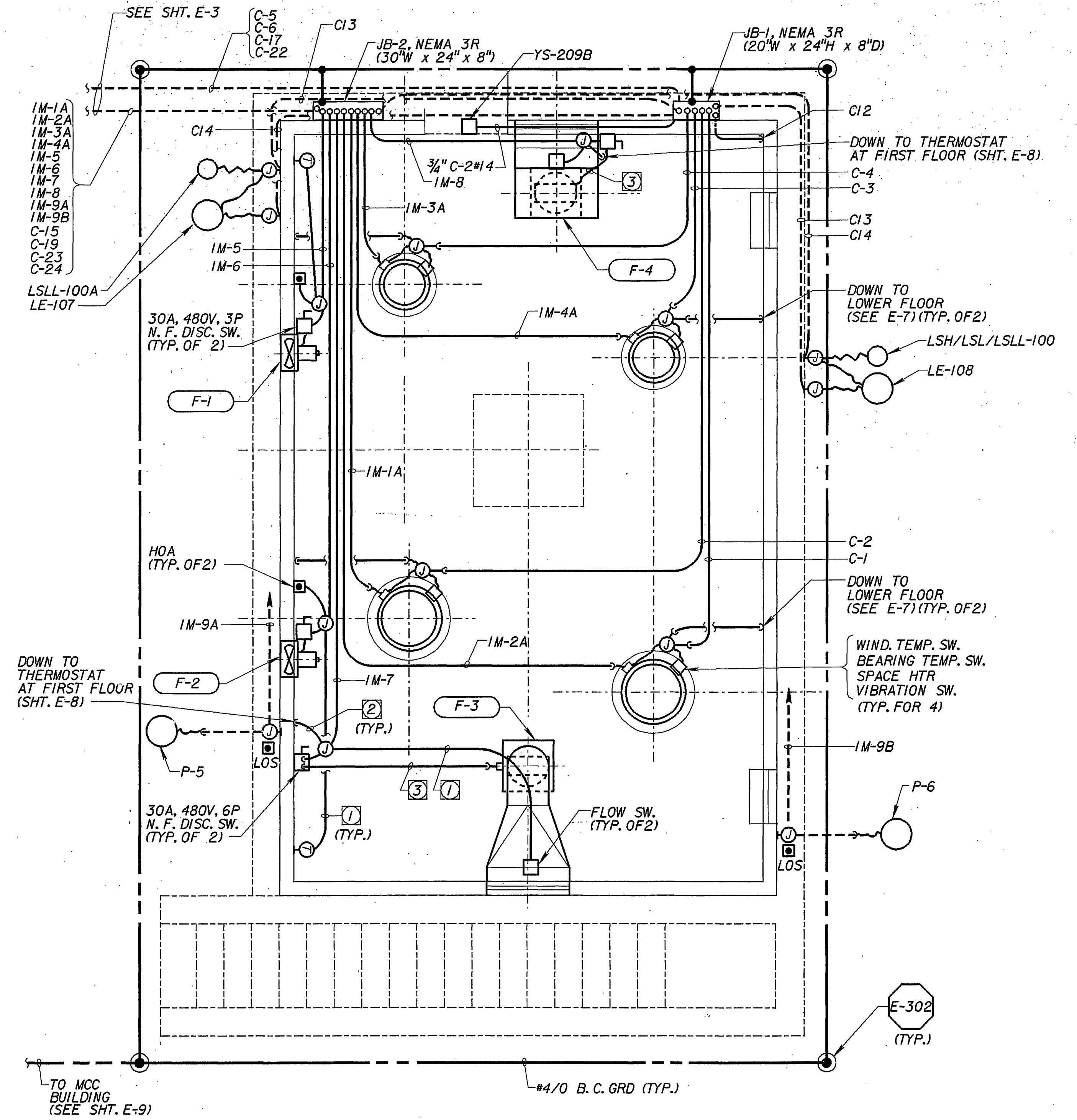
INDEXED 1-31-05 lfh

**NOTES:**

- ① 3/4" C-2#14.
- ② 3/4" C-3#14.
- ③ 1" C-6#12 & 1#12 GRD.



**LIGHTING PLAN - TOP LEVEL**



**POWER PLAN - TOP LEVEL**

JOB No. 193.0453 FILE No. JH/FRJ/RIVERS/ELE/PIERCE06.DGN

REV	DATE	BY	DESCRIPTION

SCALE: 3/8"=1'-0"

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED: <i>M. Santos</i>	SUBMITTED: <i>Dario Samudani</i>	C-49471	5-23-94
DRAWN: <i>M. Santos</i>	PROJECT ENGINEER: <i>R. C. E. NO.</i>		DATE
CHECKED: <i>H. Concepcion</i>	RECOMMENDED: <i>Suzanne Thekri</i>	C-44599	5-23-94
	MONTGOMERY WATSON	R. C. E. NO.	DATE

**MONTGOMERY WATSON**  
Pasadena, California

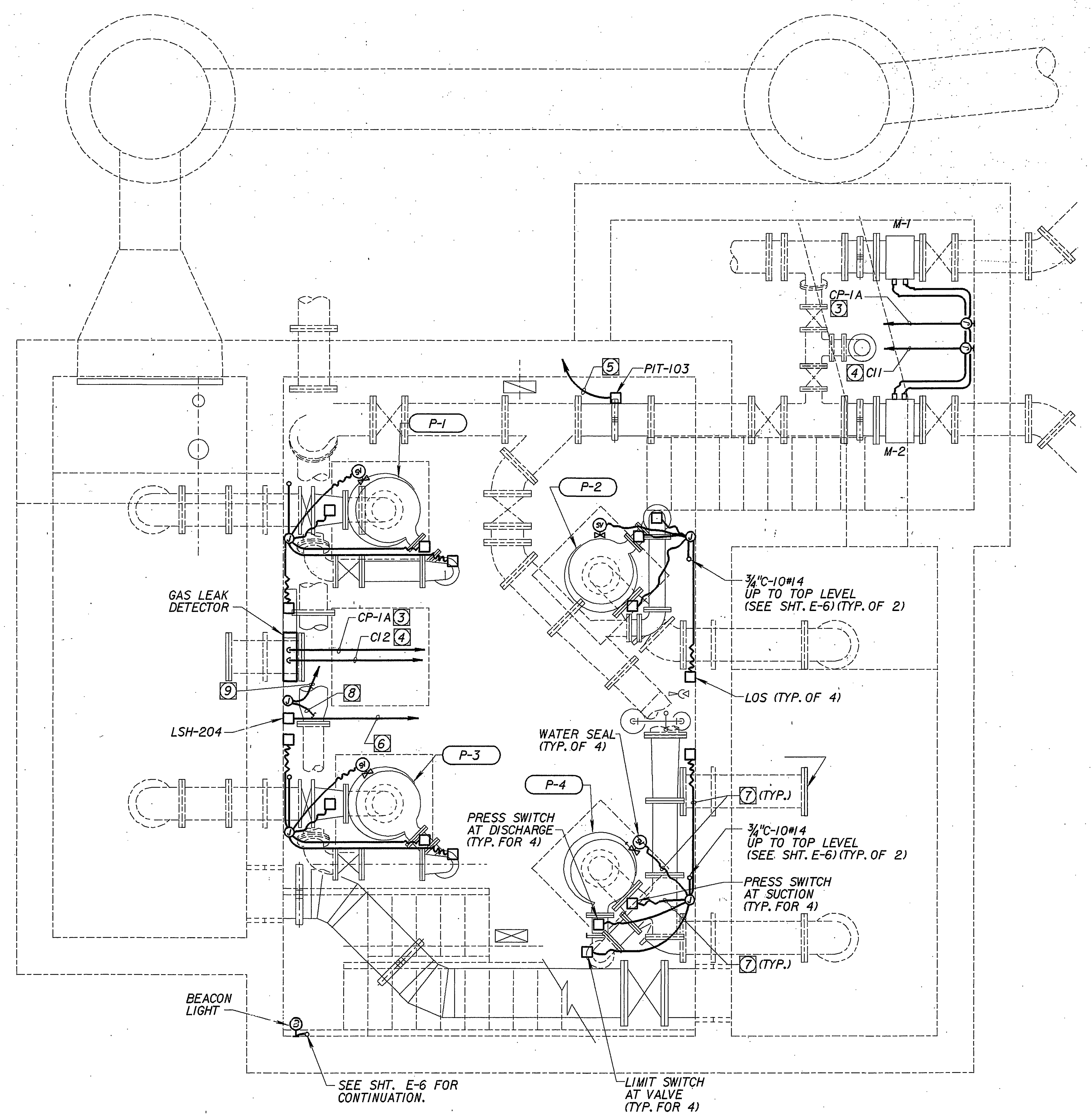
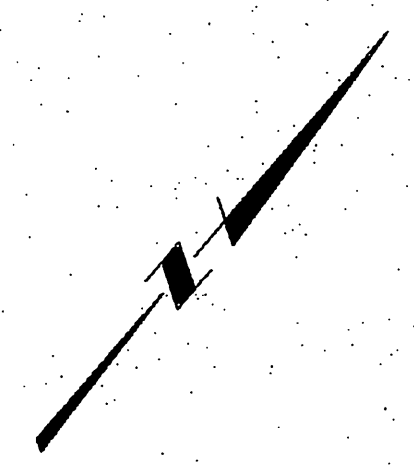
APPROVED	DATE
APPROVED	DATE

CITY OF RIVERSIDE  
PIERCE STREET P.S. UPGRADE  
LIGHTING AND POWER PLAN  
TOP LEVEL

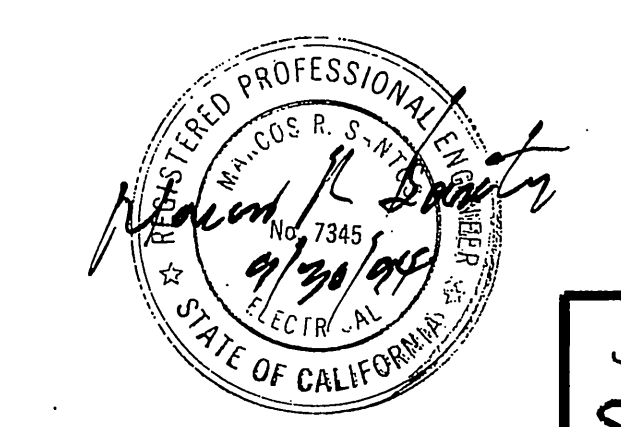


JOB NO. S-1636  
SHEET E-6  
OF 44 SHEETS

INDEXED 1-31-05 lft



- NOTES:**
- ALL DEVICES SUCH AS PRESSURE SWITCHES, SOLENOIDS AND LIMIT SWITCHES SHALL BE OF EXPLOSION-PROOF SUBMERSIBLE TYPE.
  - CONDUITS SHALL BE PROVIDED WITH CONDUIT SEALS AS REQUIRED FOR CLASS I, DIV. II CLASSIFICATION.
  - 3/4" C-2#12 & 1#12 GRD. ROUTE VIA JB-2.
  - ROUTE VIA JB-1.
  - 3/4" C-2/C #16SHLD TO JB-1.
  - 3/4" C-2#14 TO JB-2.
  - 3/4" C-2#14.
  - TO EXIST. SUMP PUMP.
  - LPI-20, ROUTE VIA JB-2.



JOB NO.  
**S-1636**

JOB No. 193.0463 FILE No. J:\PRJ\RIVERSIDE\ELE\PIERCE07.DGN

REV	DATE	BY	DESCRIPTION

SCALE: 3/8"=1'-0"

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED: *[Signature]* SUBMITTED: *[Signature]* C-49471 5-23-96  
 PROJECT ENGINEER R. C. E. NO. DATE

DRAWN: *[Signature]* RECOMMENDED: *[Signature]* C-44599 5/26/94  
 CHECKED: *[Signature]* MONTGOMERY WATSON R. C. E. NO. DATE

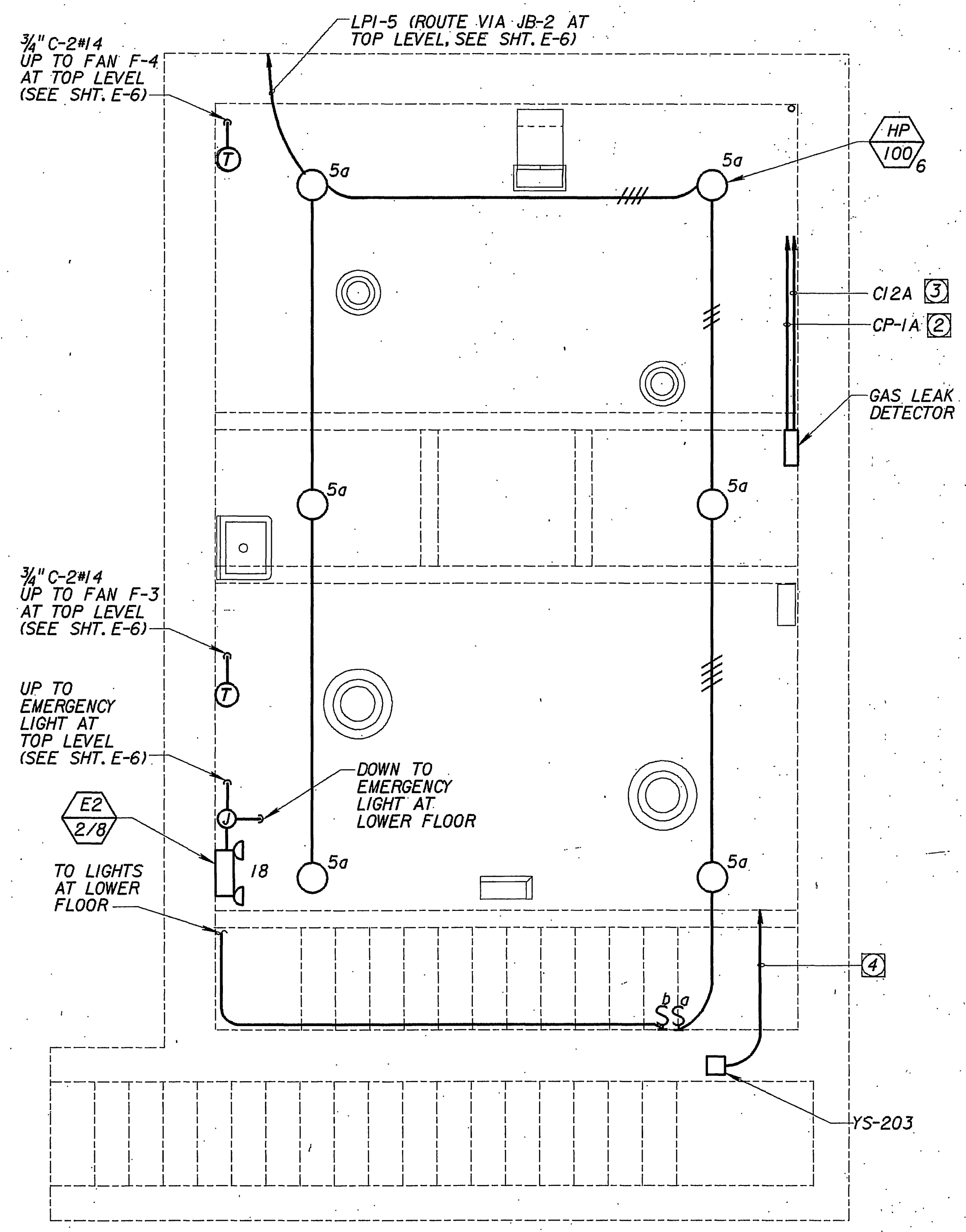
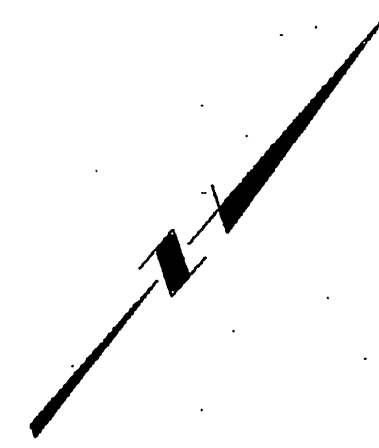


APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
 APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

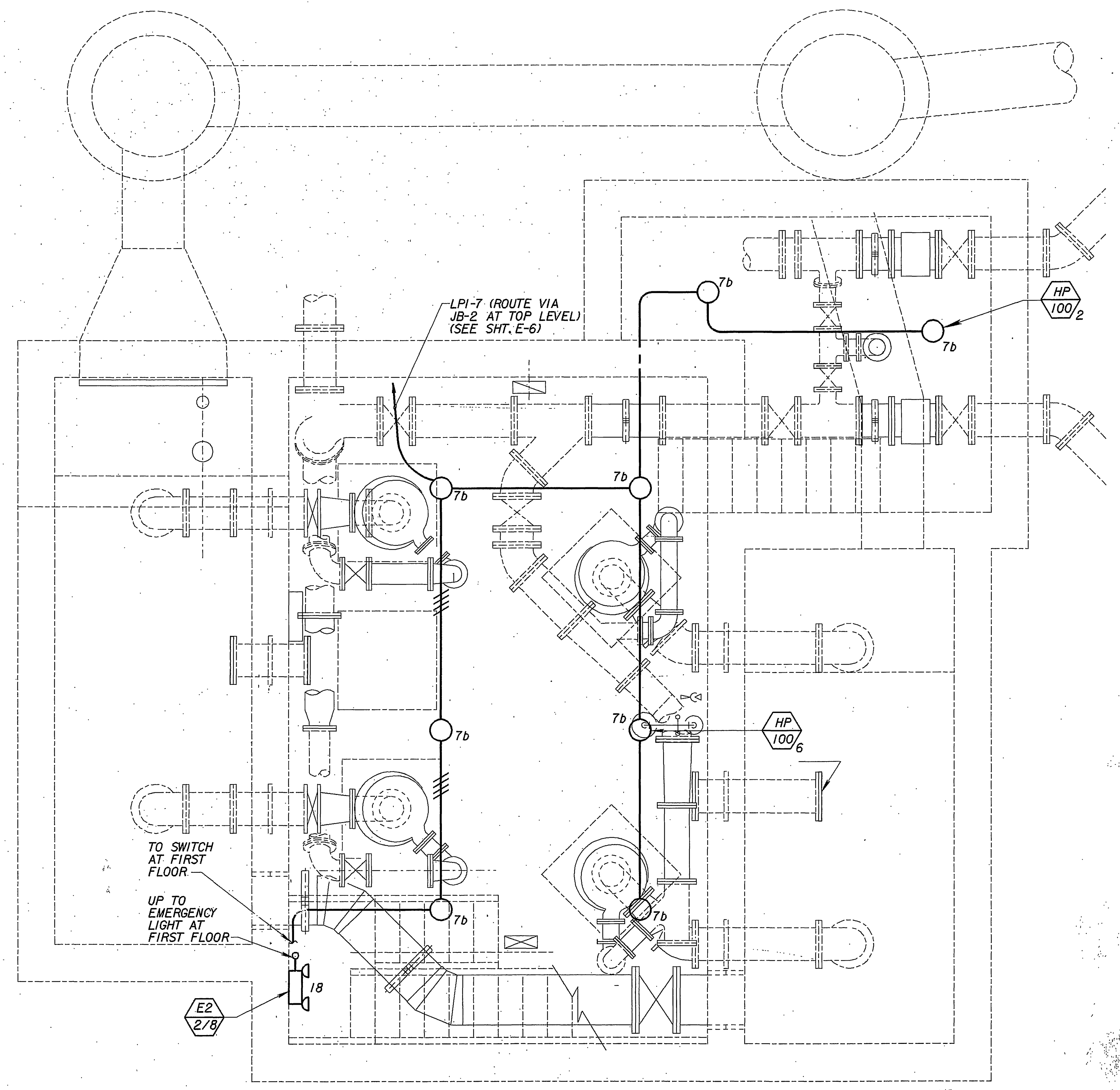
CITY OF RIVERSIDE  
 PIERCE STREET P.S. UPGRADE  
 CONTROL PLAN  
 LOWER FLOOR

SHEET  
**E-7**  
OF 44 SHEETS

INDEXED 1-31-05 Lft



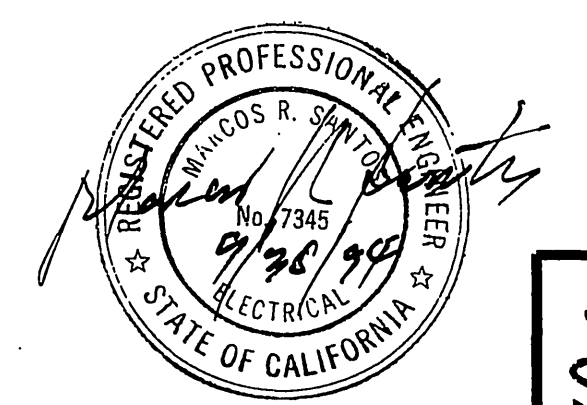
LIGHTING PLAN - FIRST FLOOR



LIGHTING PLAN - LOWER FLOOR

NOTES:

1. CONTRACTOR SHALL REMOVE AND DISPOSE OF EXISTING LIGHTING AND NEW LIGHTING SHALL BE PROVIDED AND INSTALLED AS SHOWN.
2. 3/4" C-2#12 & 1#12 GRD. ROUTE VIA JB-2.
3. ROUTE VIA JB-1.
4. 3/4" C-2#12 TO JB-1.



JOB NO.  
S-1636

JOB NO. 93-0463 FILE NO. J:\FRJ\RIVERPS\ELE\PIERC08.DGN

REV	DATE	BY	DESCRIPTION

SCALE: 3/8" = 1'-0"

WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED: *M. Santos*  
 DRAWN: *N. Chabun*  
 CHECKED: *N. Concepcion*

SUBMITTED: *Rafaelo Namuduri* C-49471 S-23-94  
 PROJECT ENGINEER  
 RECOMMENDED: *Surendra Thakral* C-44599 S-23-94  
 MONTGOMERY WATSON R. C. E. NO. DATE



**MONTGOMERY WATSON**  
Pasadena, California

APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_  
 APPROVED: \_\_\_\_\_ DATE: \_\_\_\_\_

CITY OF RIVERSIDE  
 PIERCE STREET P.S. UPGRADE  
 LIGHTING PLAN  
 FIRST AND LOWER FLOOR

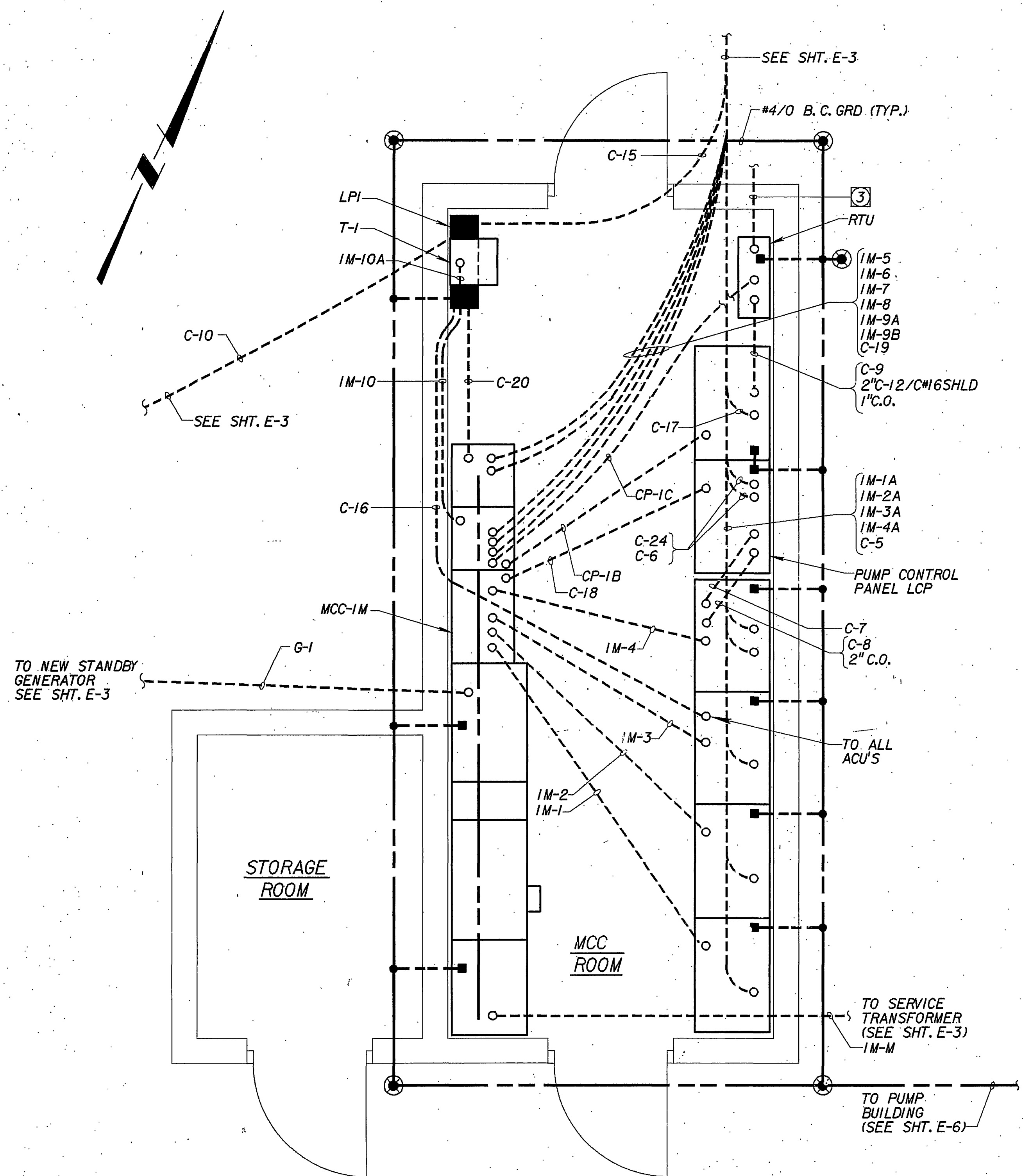
SHEET  
E-8  
OF 44 SHEETS

INDEXED 1-31-05 LFH

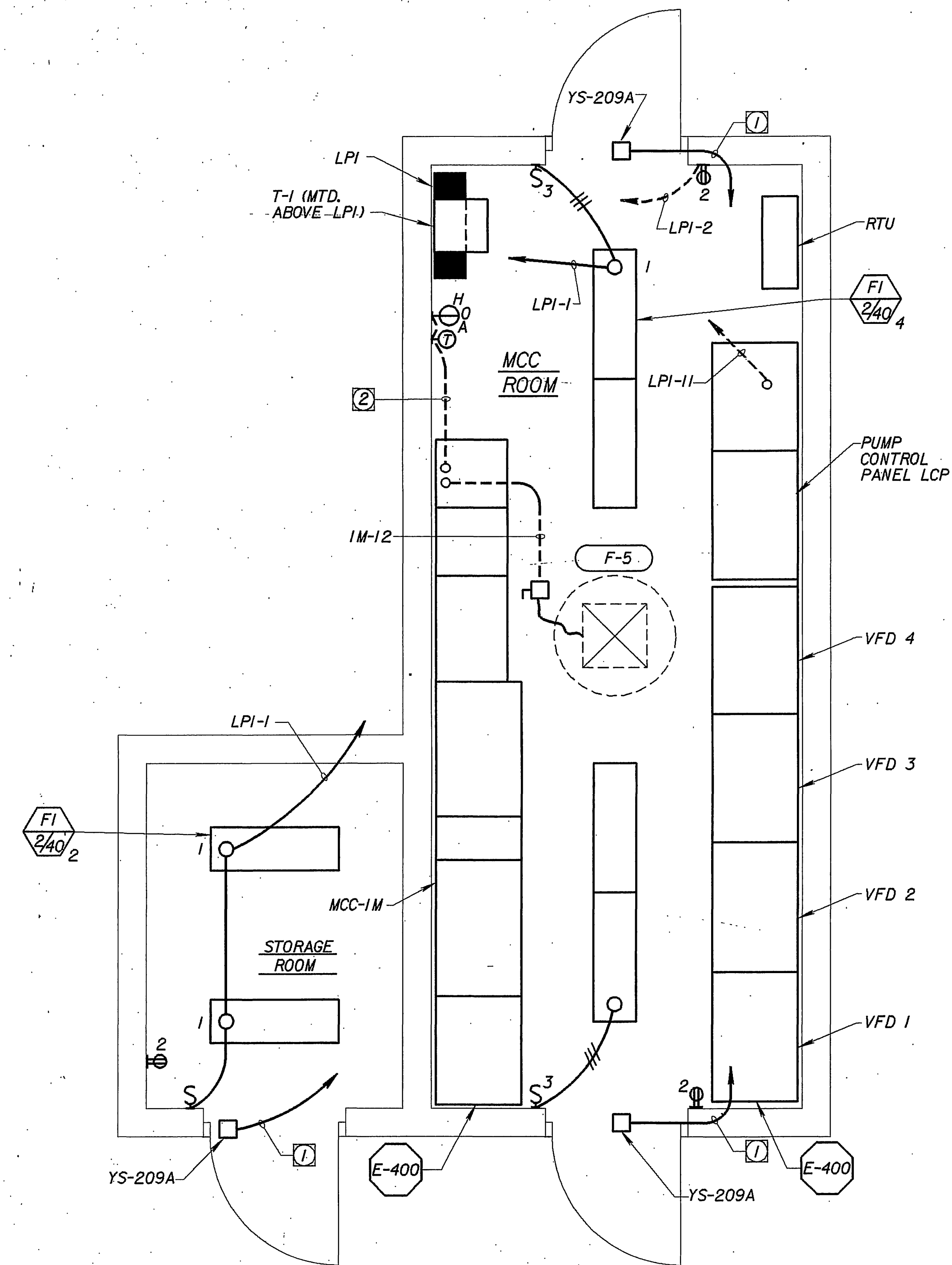


NOTES:

- ① 3/4" C-2#14 TO LCP.
- ② 3/4" C-3#14 TO MCC-1M (FOR CONTIN SEE F-5 CONTROL).
- ③ 2" C.O. TO ANTENNA (SEE SHT. E-3).



POWER PLAN



LIGHTING PLAN



JOB NO. S-1636

JOB NO. 1933.0453 FILE NO. J:/PRJ/RIVERPS/ELE/PIERCE09.DGN

DESIGNED: <i>M. Chaturvedi</i>	SUBMITTED: <i>C-49671 5-23-94</i>
DRAWN: <i>N. Chaturvedi</i>	PROJECT ENGINEER: <i>R. C. E. NO. DATE</i>
CHECKED: <i>N. Concepcion Jr.</i>	RECOMMENDED: <i>Surandra Thakral C-44599 5-23-94</i>
	MONTGOMERY WATSON R. C. E. NO. DATE

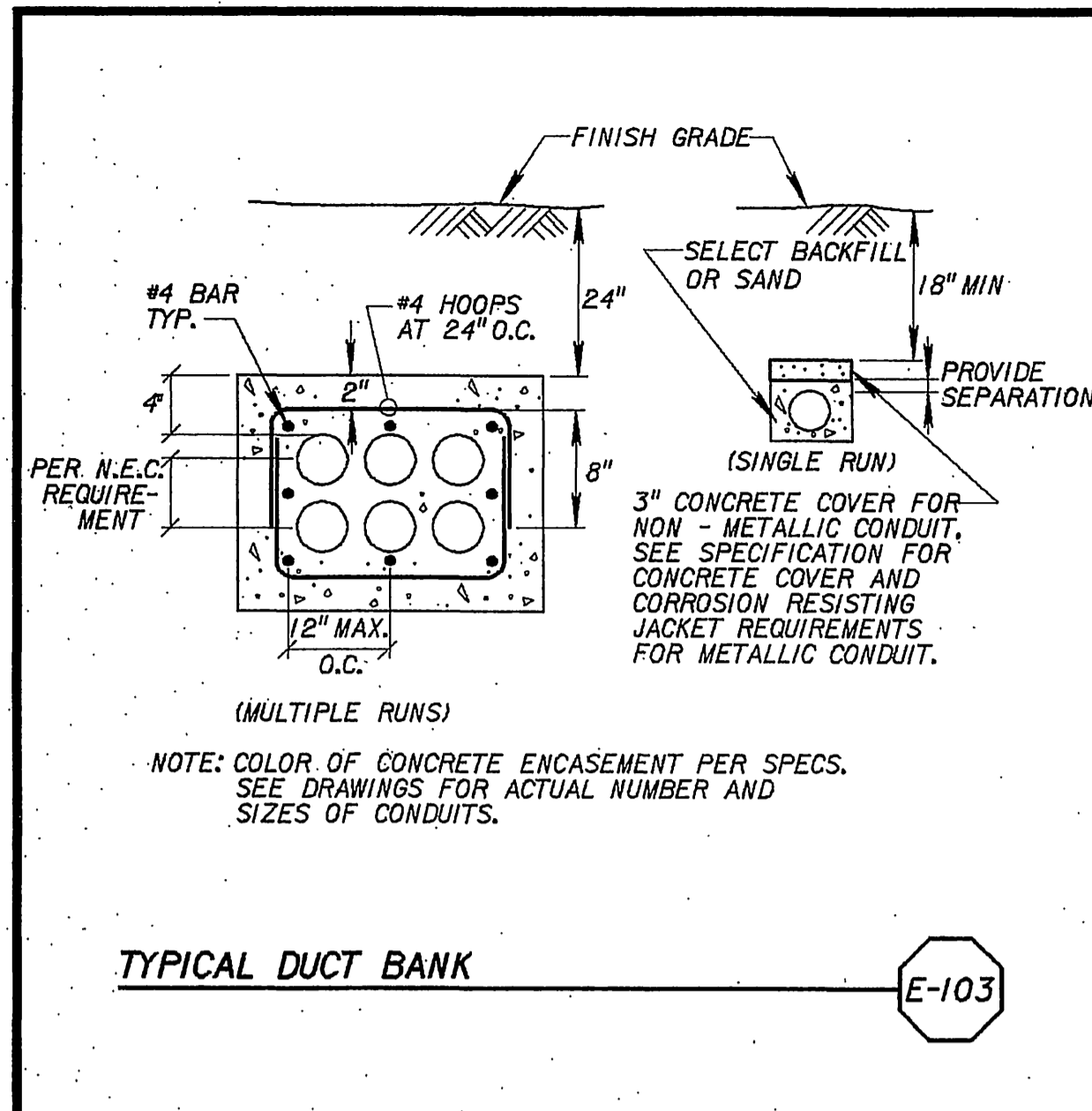


APPROVED: _____	DATE: _____
APPROVED: _____	DATE: _____

CITY OF RIVERSIDE
PIERCE STREET P.S. UPGRADE
MCC BUILDING

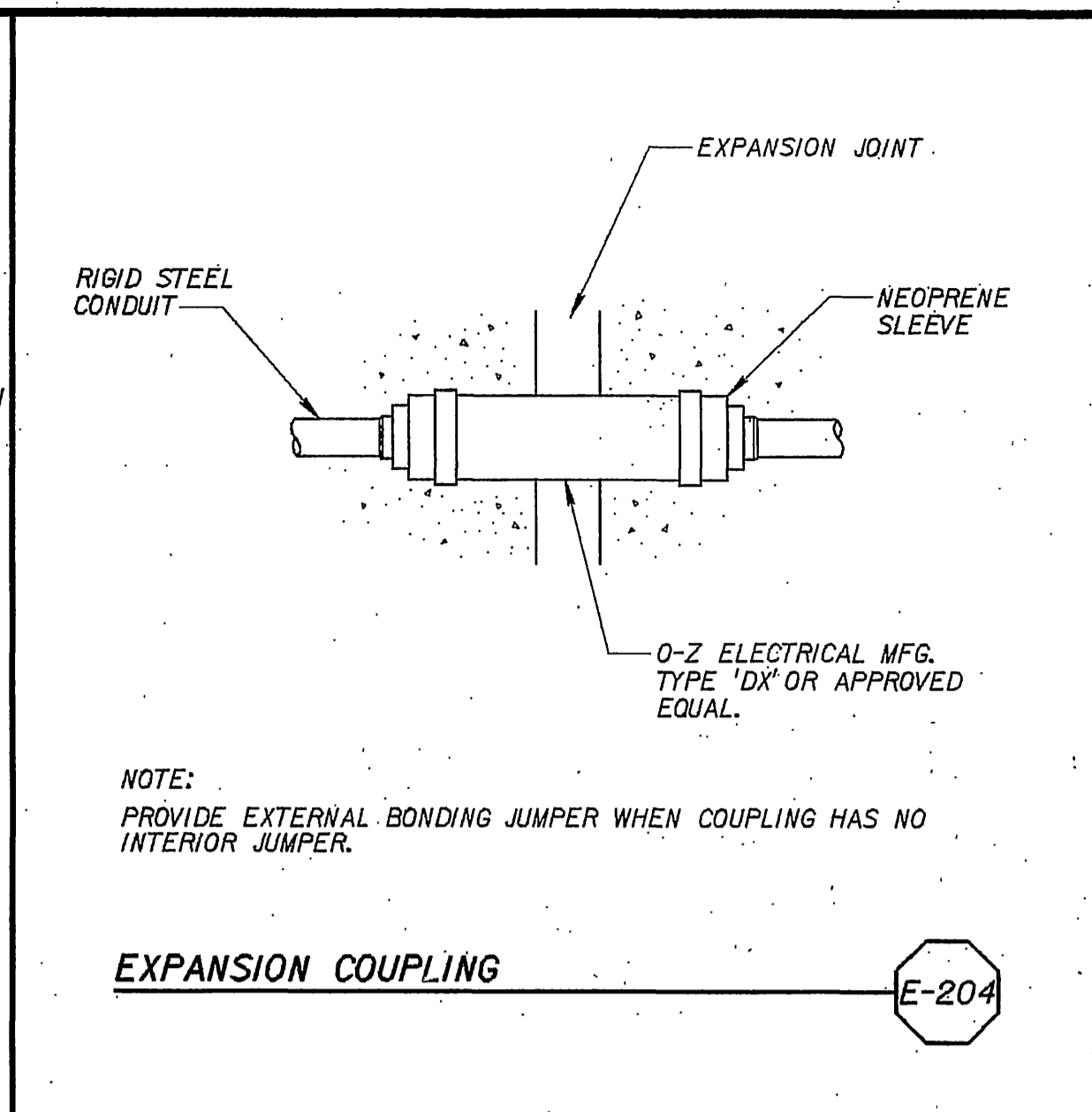
SHEET E-9 OF 44 SHEETS

INDEXED 1-31-05 LFT



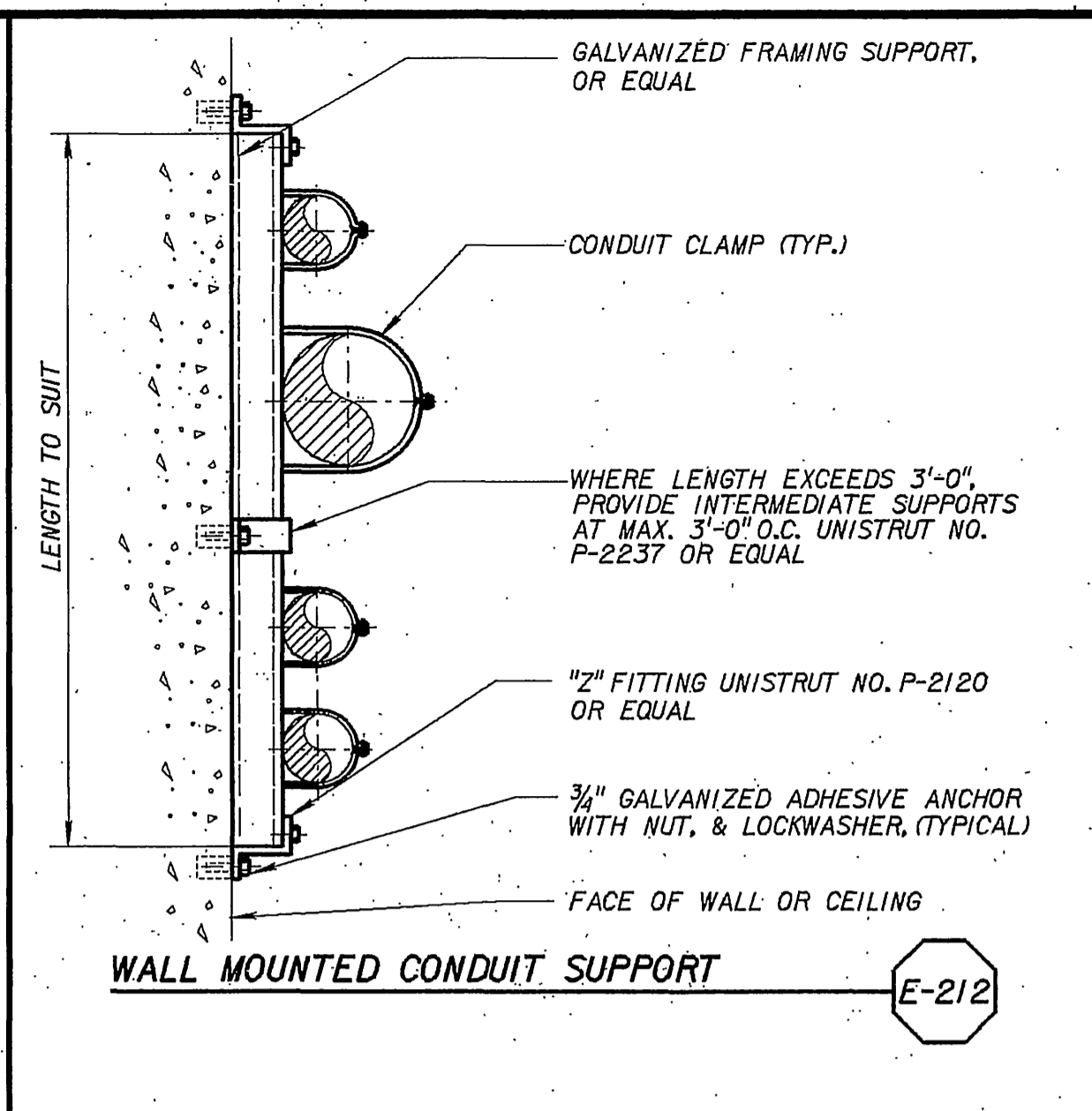
TYPICAL DUCT BANK

E-103



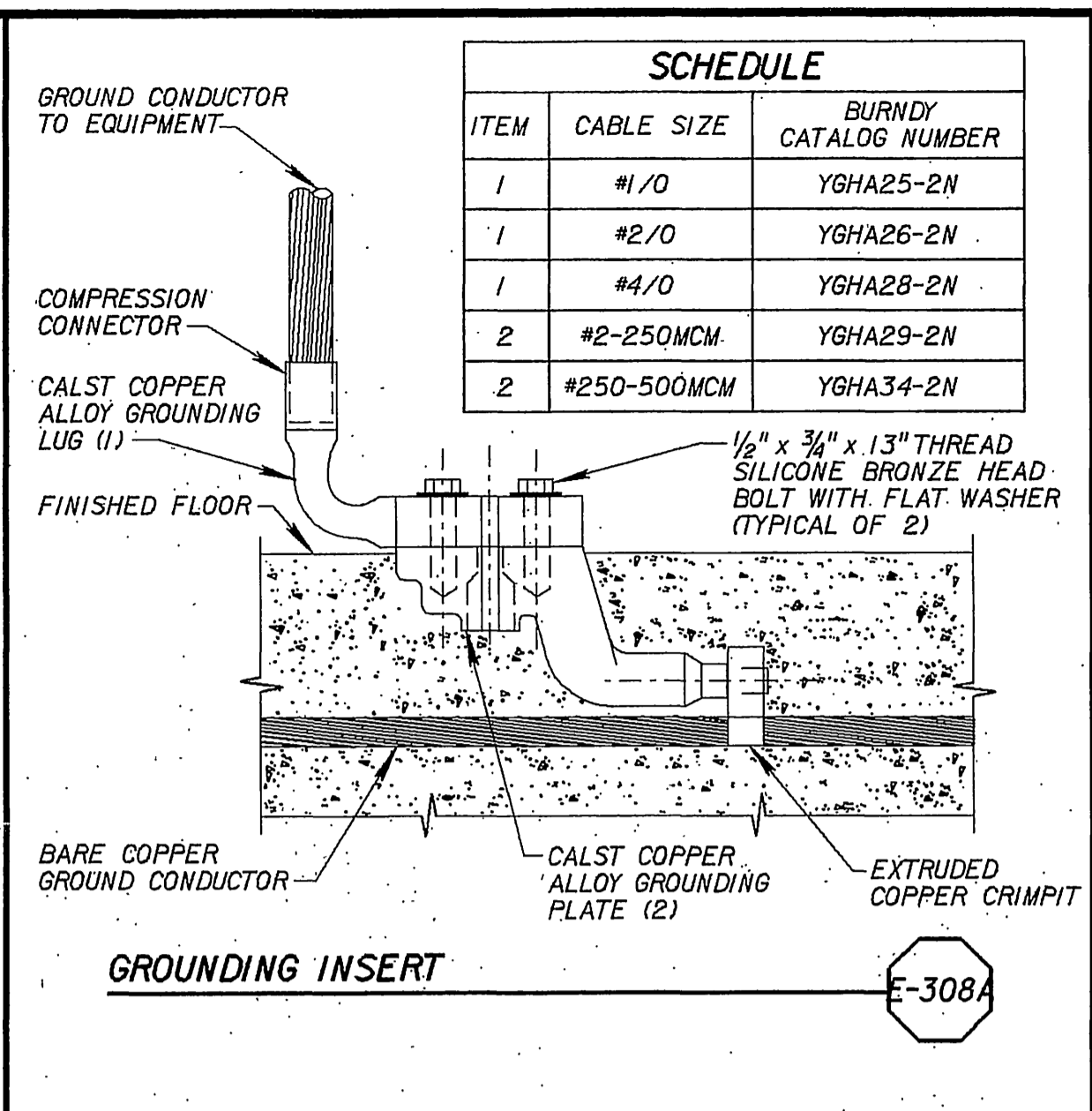
EXPANSION COUPLING

E-204



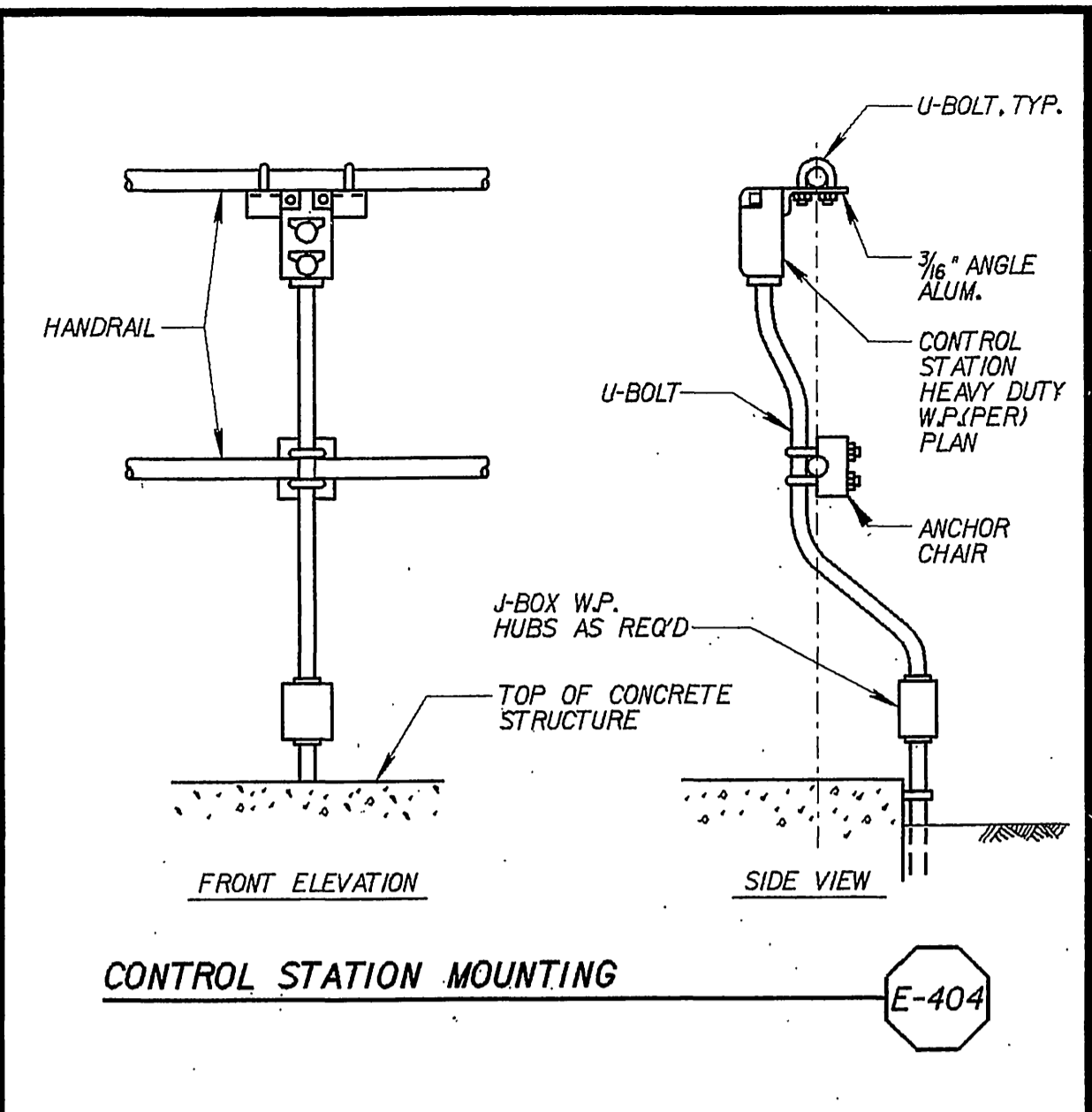
WALL MOUNTED CONDUIT SUPPORT

E-212



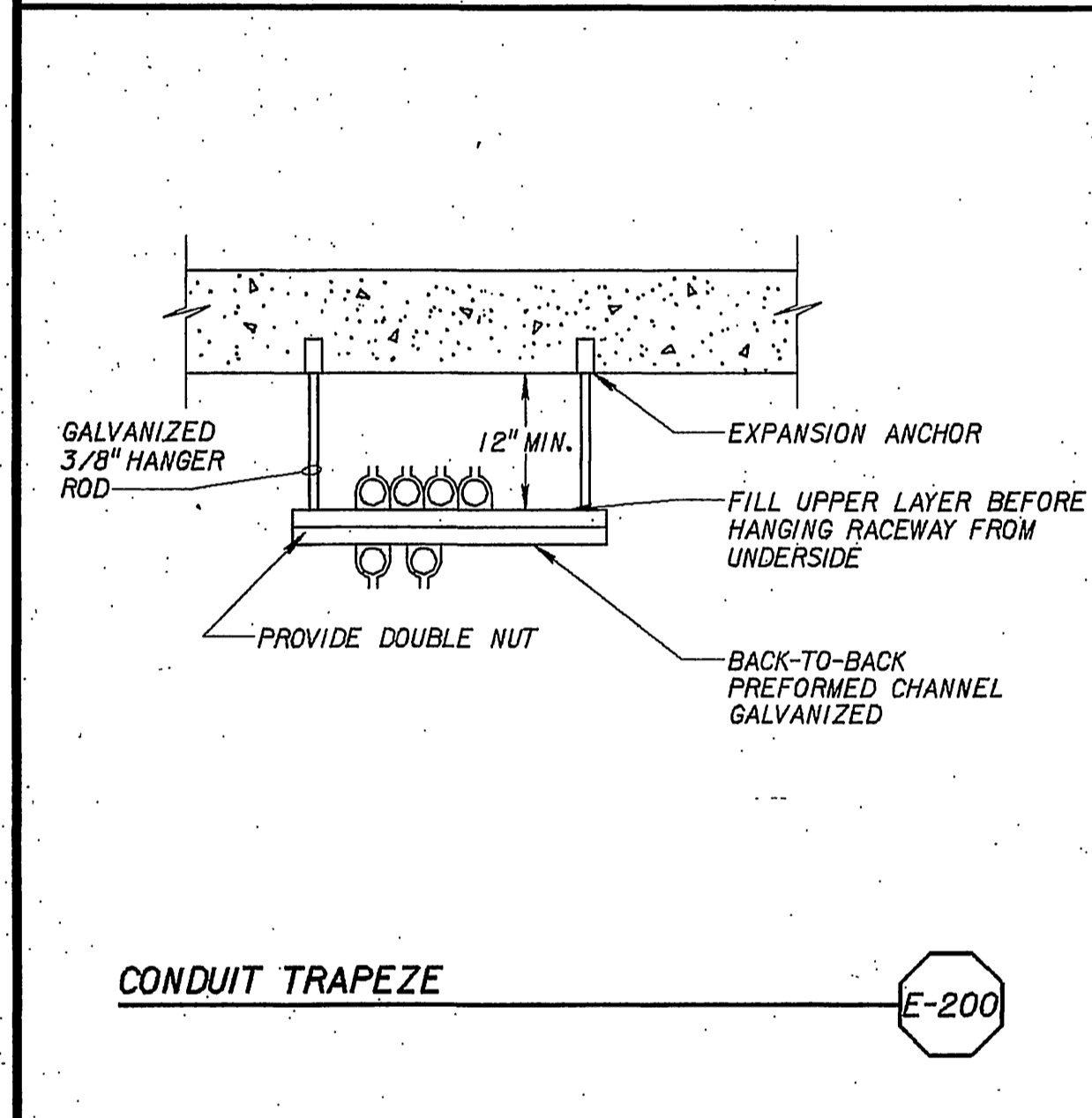
GROUNDING INSERT

E-308



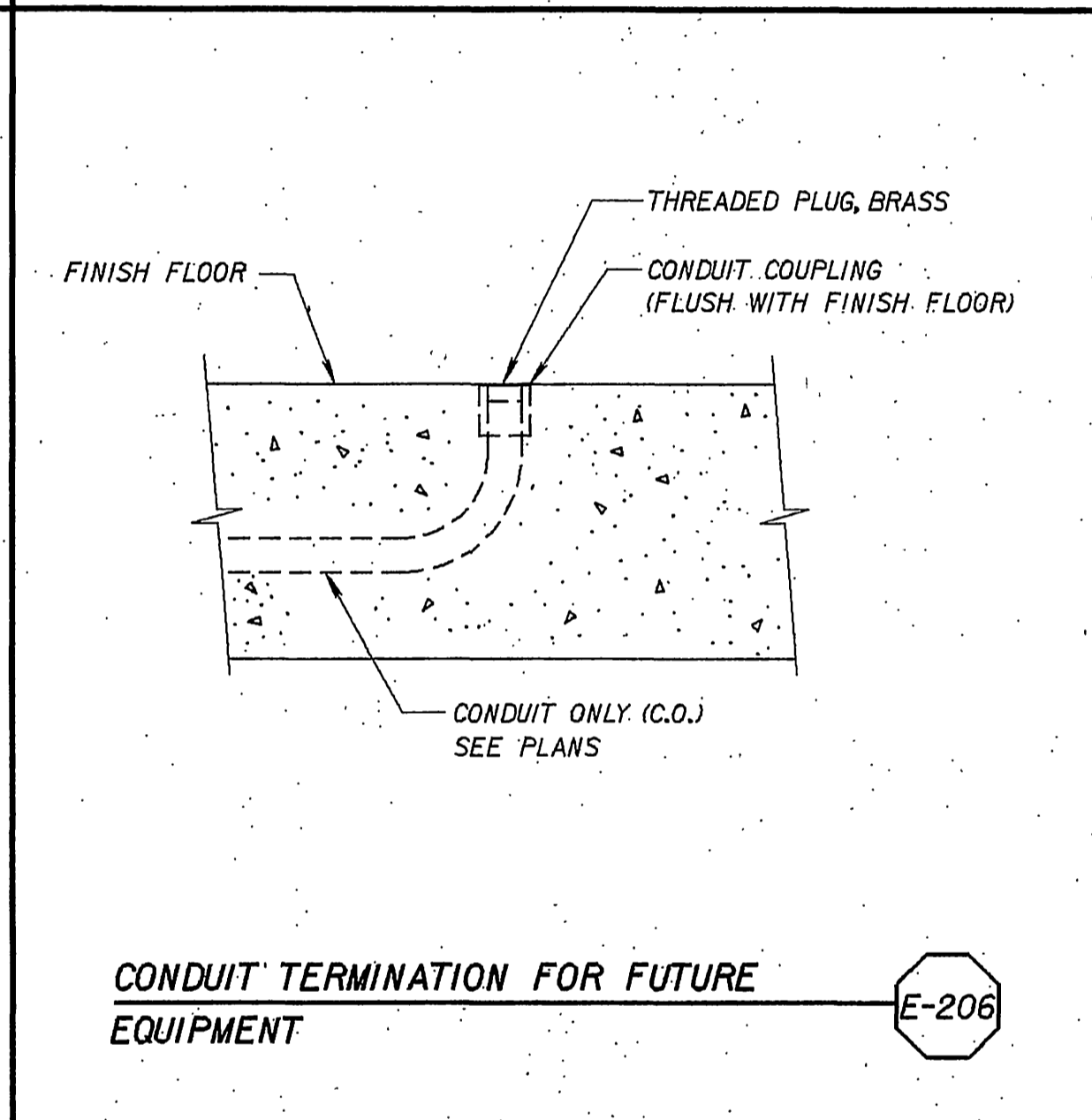
CONTROL STATION MOUNTING

E-404



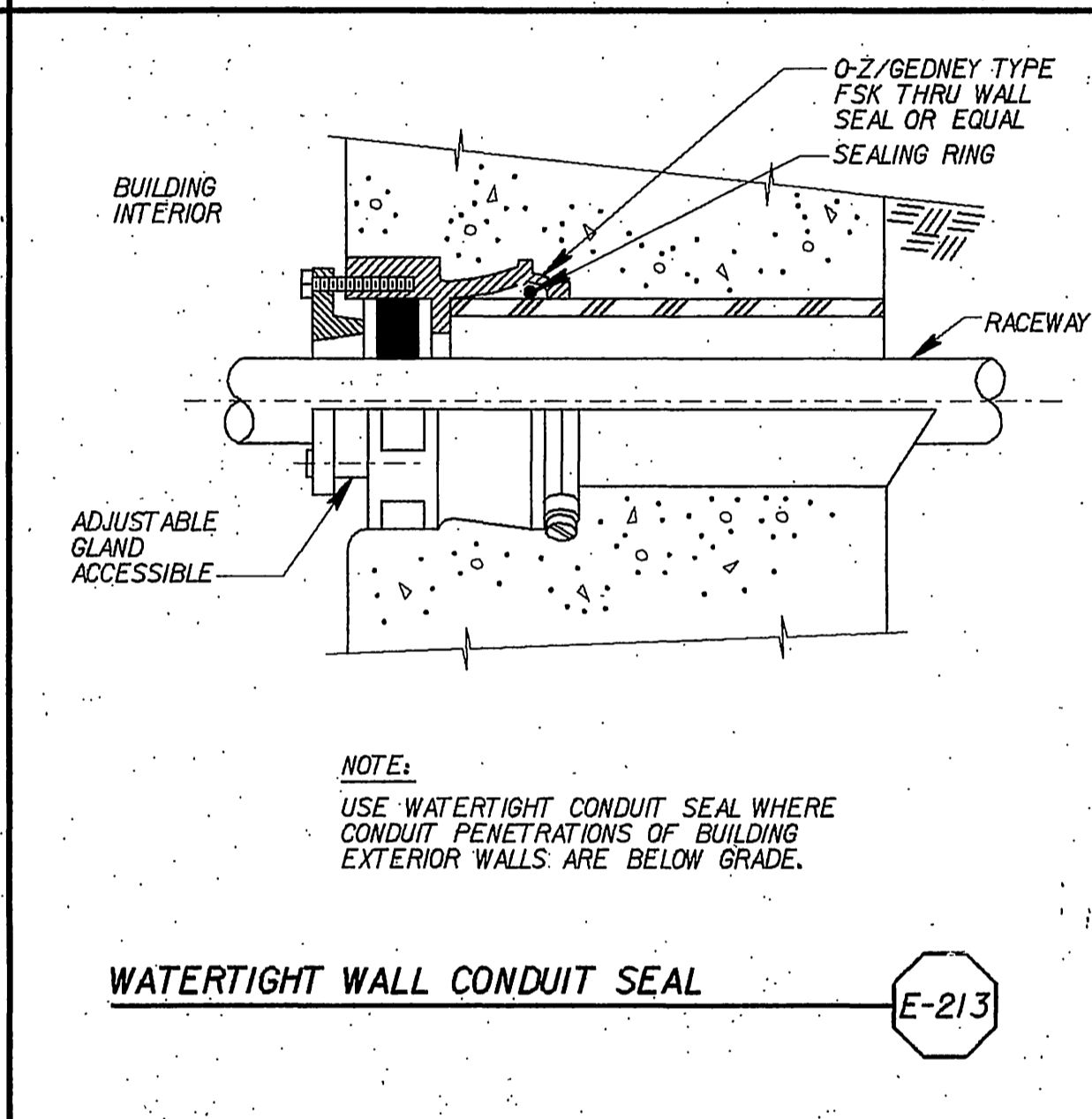
CONDUIT TRAPEZE

E-200



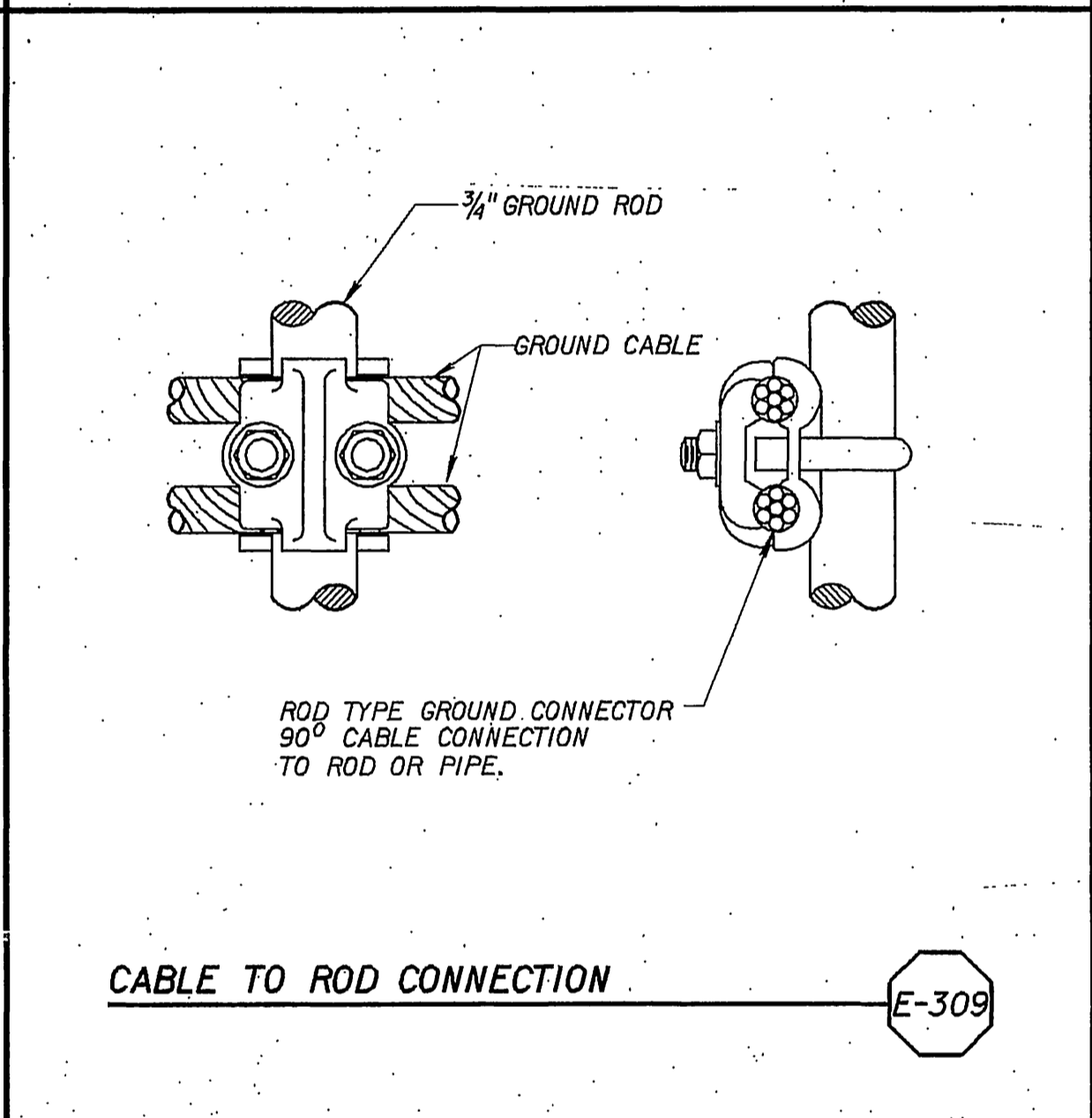
CONDUIT TERMINATION FOR FUTURE EQUIPMENT

E-206



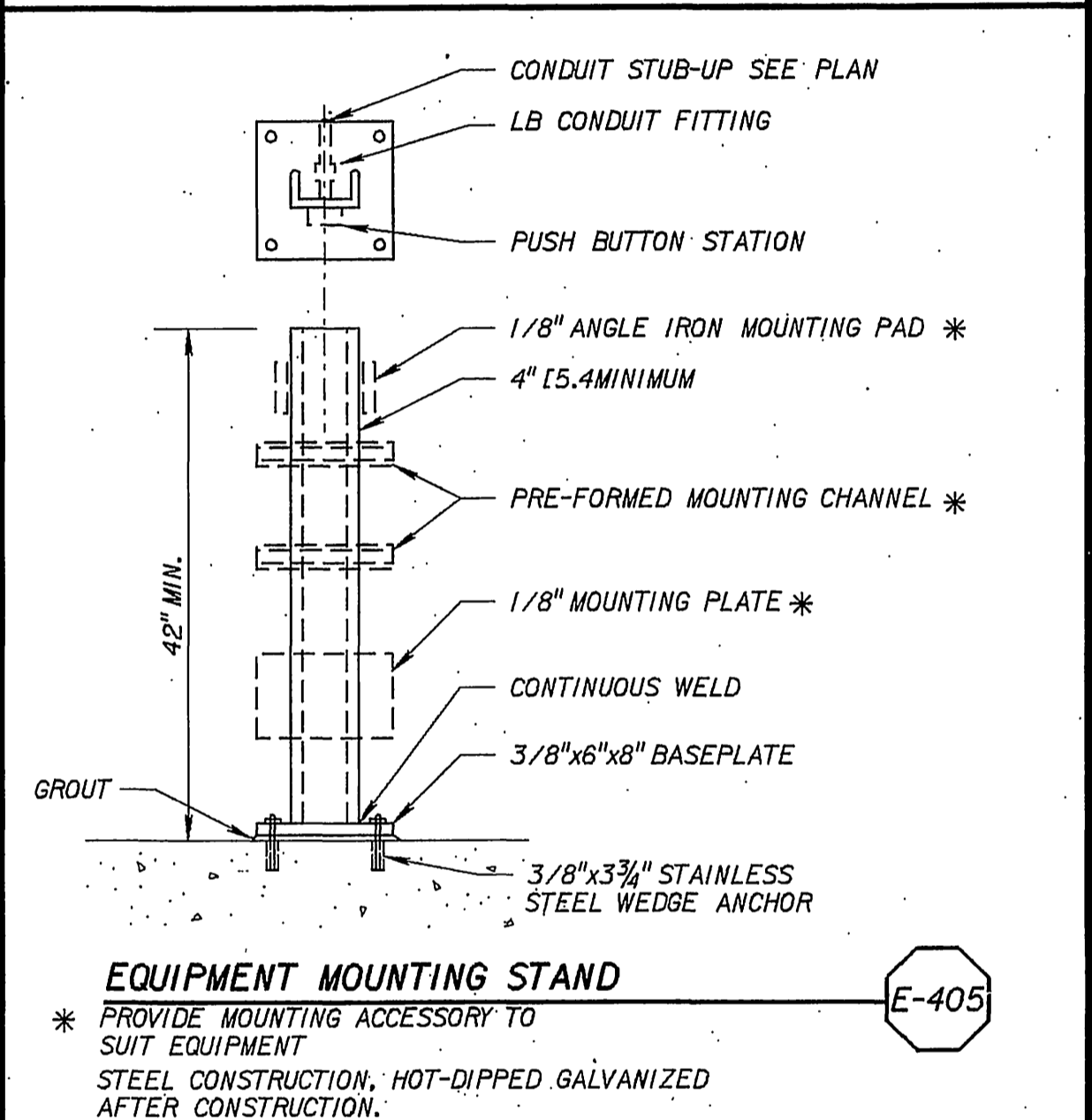
WATERTIGHT WALL CONDUIT SEAL

E-213



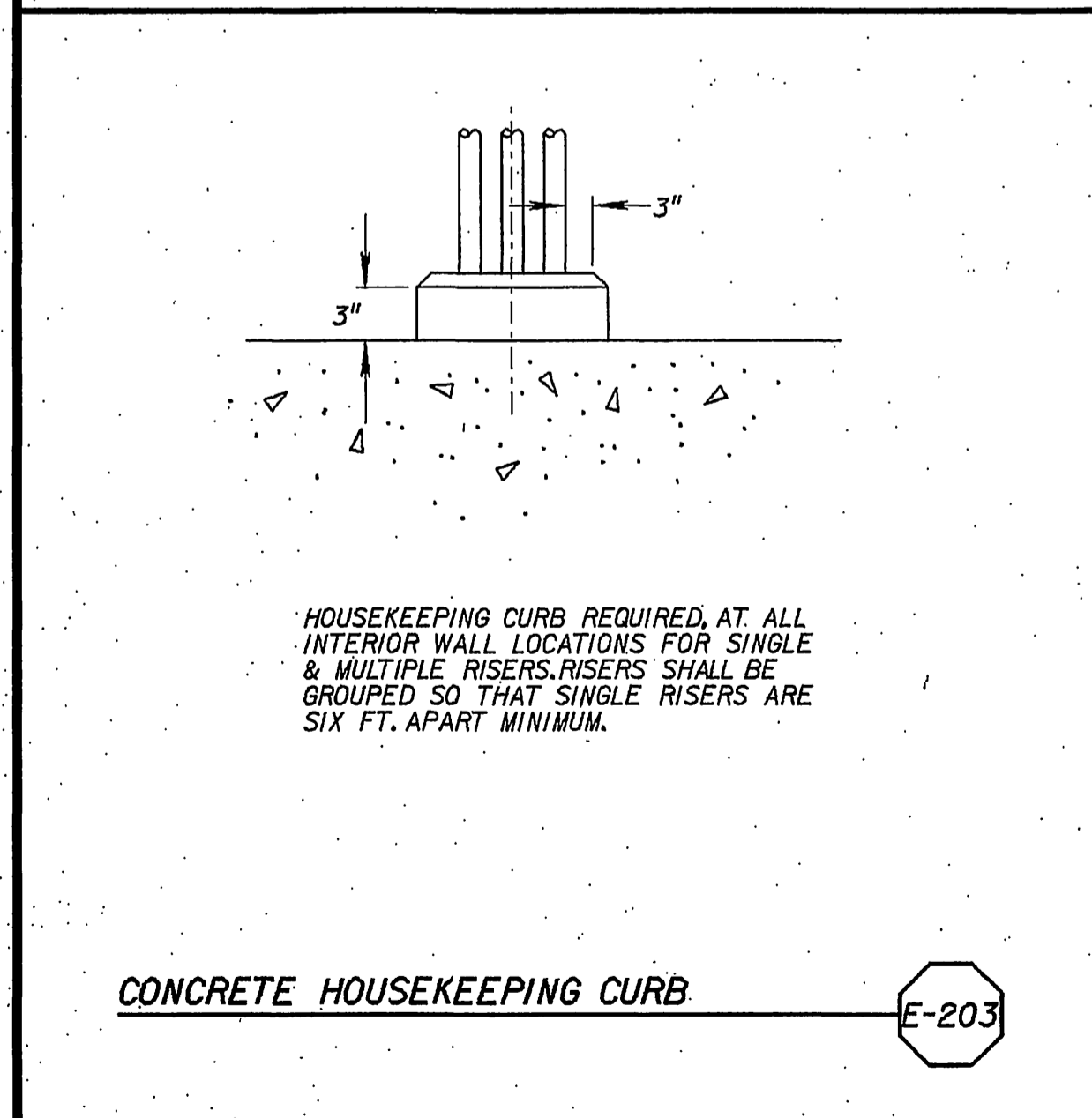
CABLE TO ROD CONNECTION

E-309



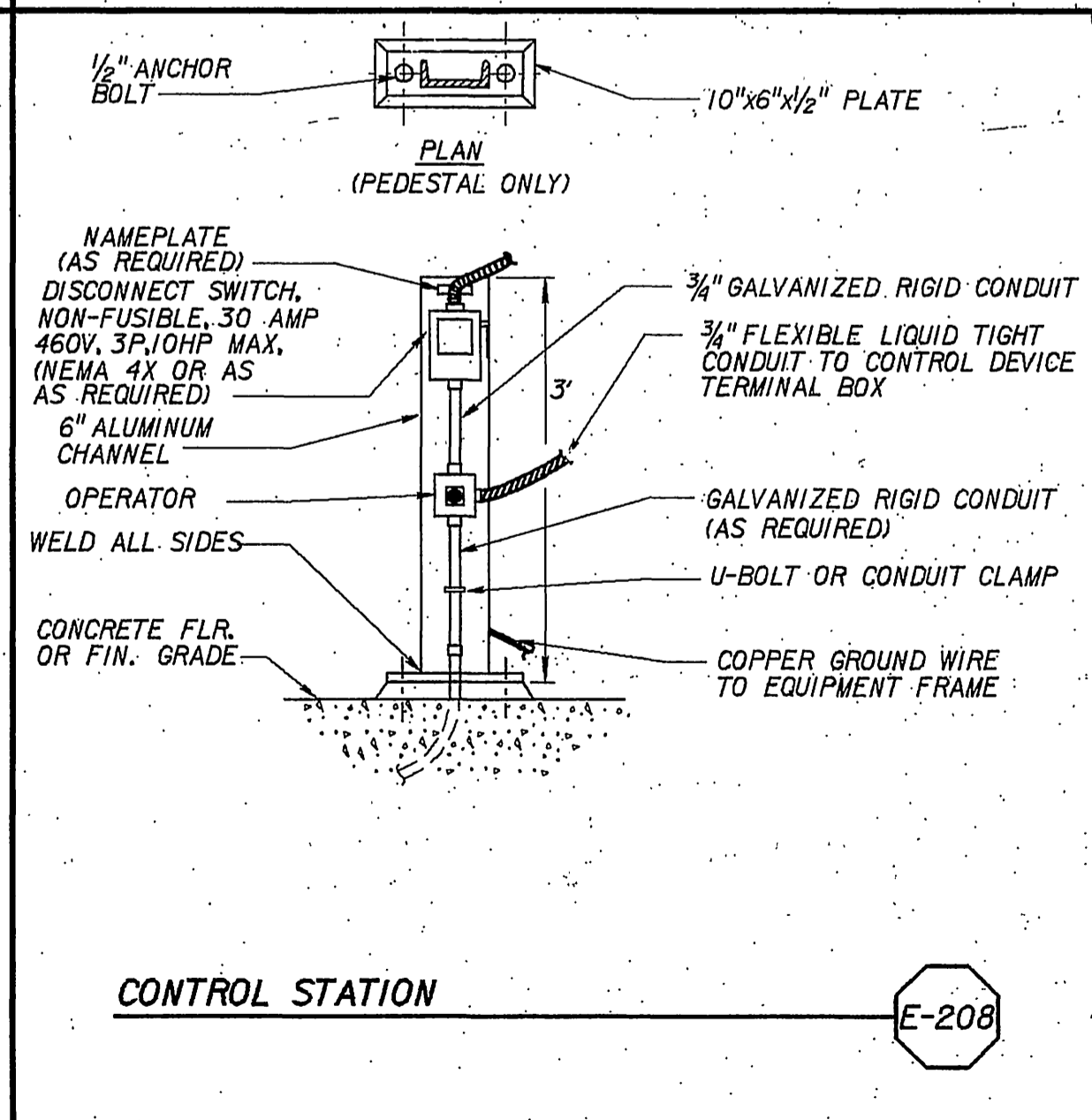
EQUIPMENT MOUNTING STAND

E-405



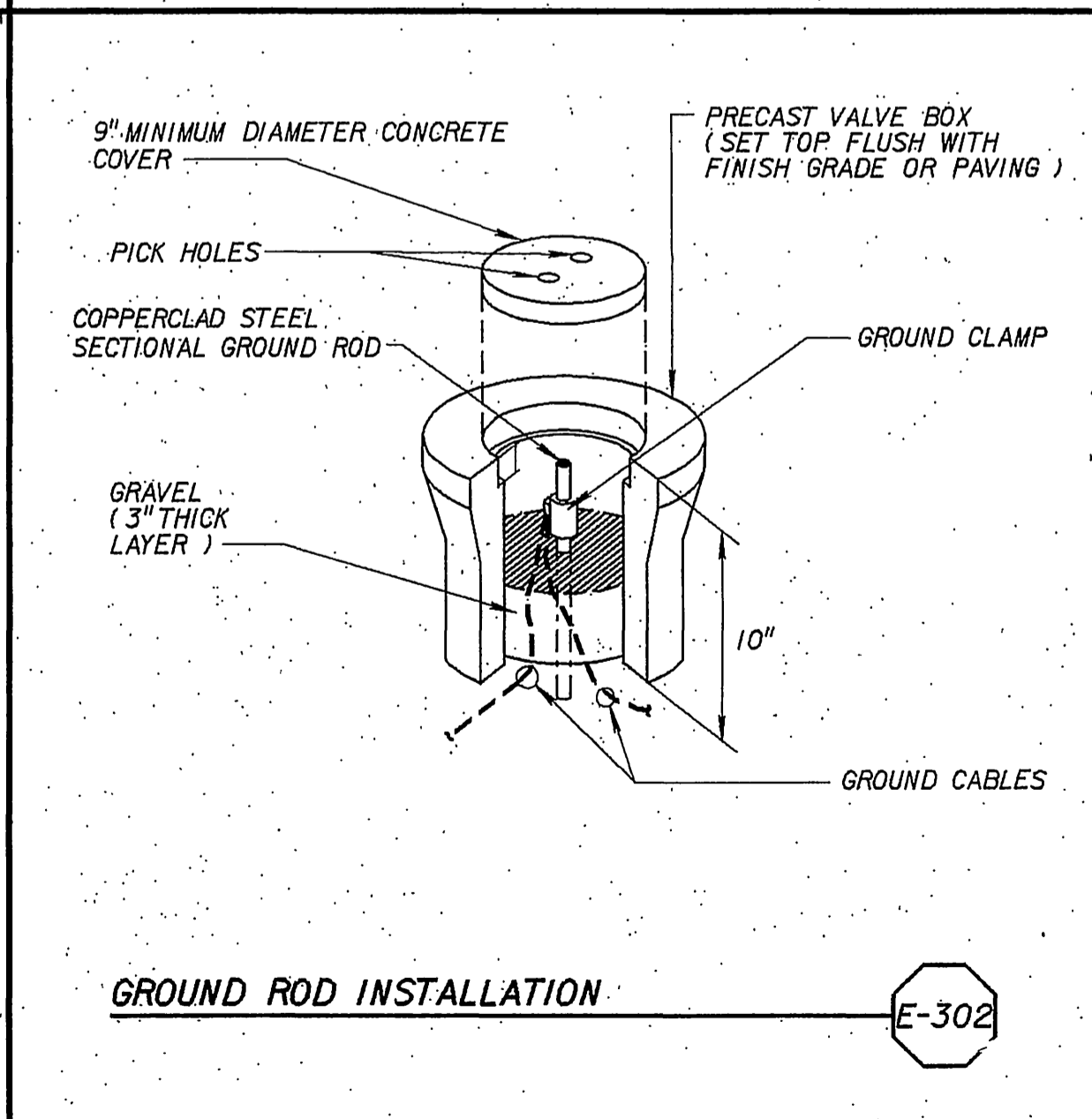
CONCRETE HOUSEKEEPING CURB

E-203



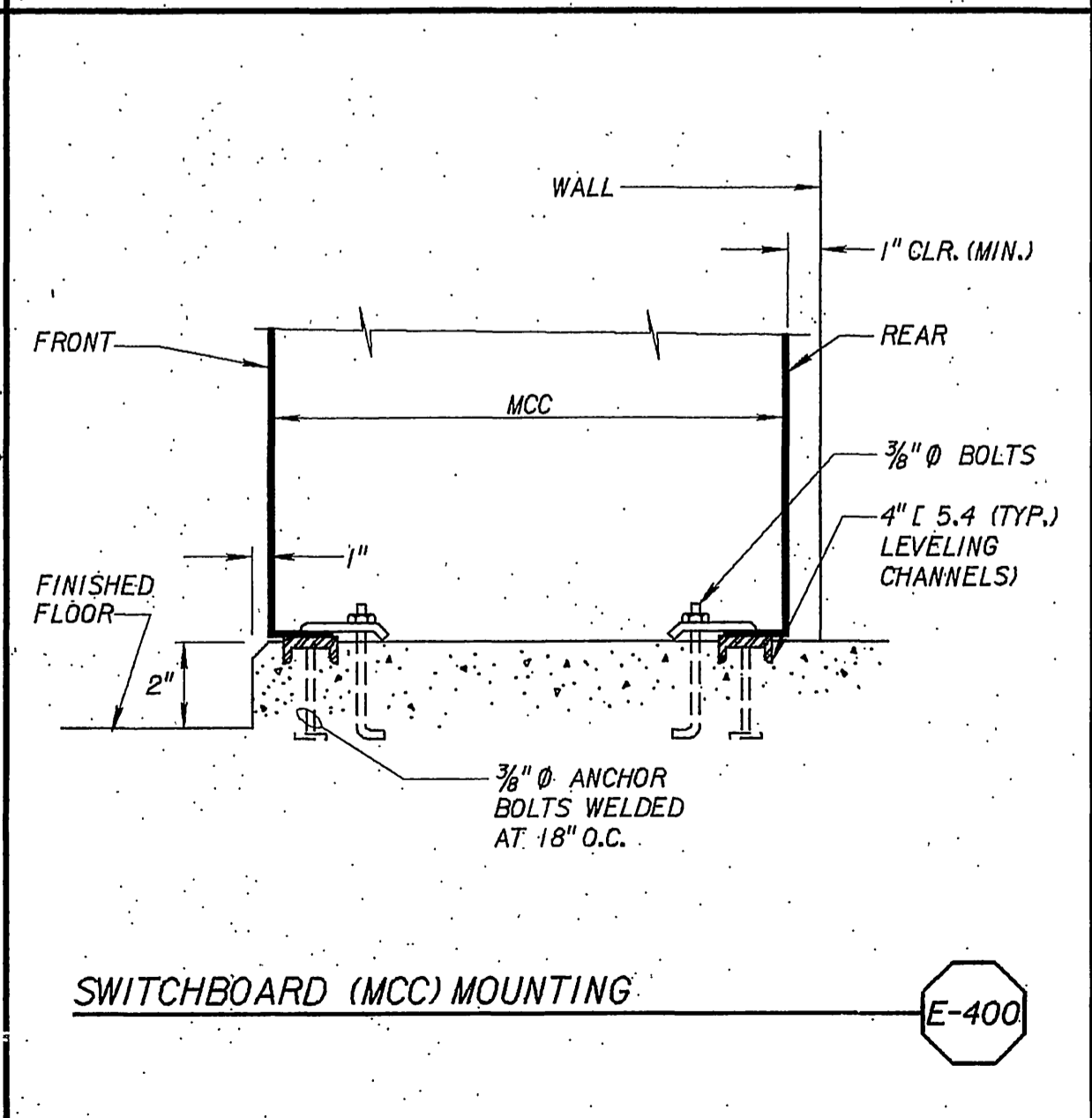
CONTROL STATION

E-208



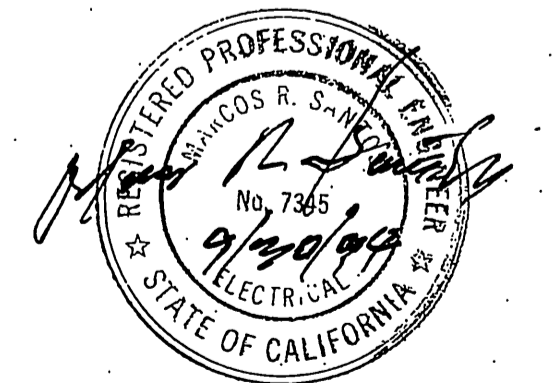
GROUND ROD INSTALLATION

E-302



SWITCHBOARD (MCC) MOUNTING

E-400



JOB NO. 193.0453 FILE NO. J:\PPR\RWERS\ELE\PIERCIO.DGN

REV	DATE	BY	DESCRIPTION

SCALE:	WARNING	DESIGNED	SUBMITTED
NONE	0 1/2	<i>[Signature]</i>	<i>[Signature]</i>
	IF THIS BAR DOES NOT MEASURE 1\"/>		
	THEN DRAWING IS NOT TO SCALE.	DRAWN	CHECKED
		<i>[Signature]</i>	<i>[Signature]</i>

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

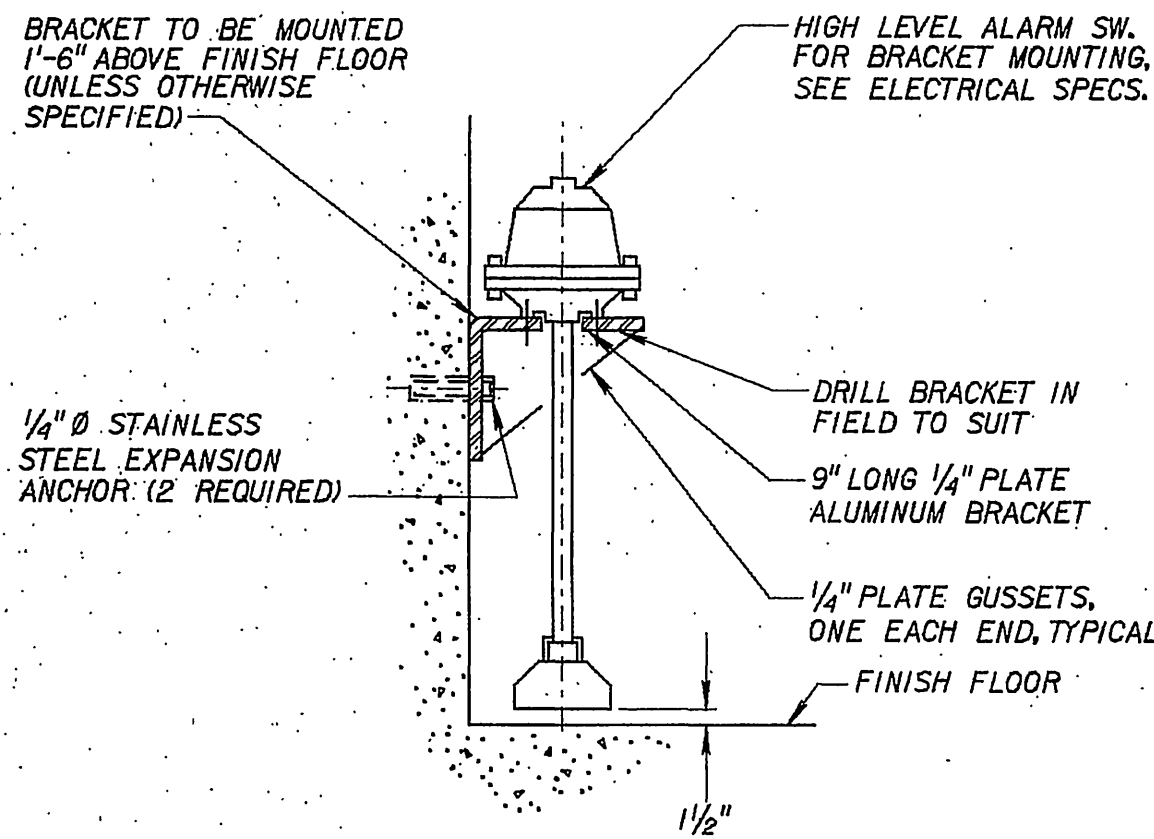
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

**MONTGOMERY WATSON**  
Pasadena, California

CITY OF RIVERSIDE	SHEET
PIERCE STREET P.S. UPGRADE	E-10
STANDARD DETAILS-I	OF 44 SHEETS

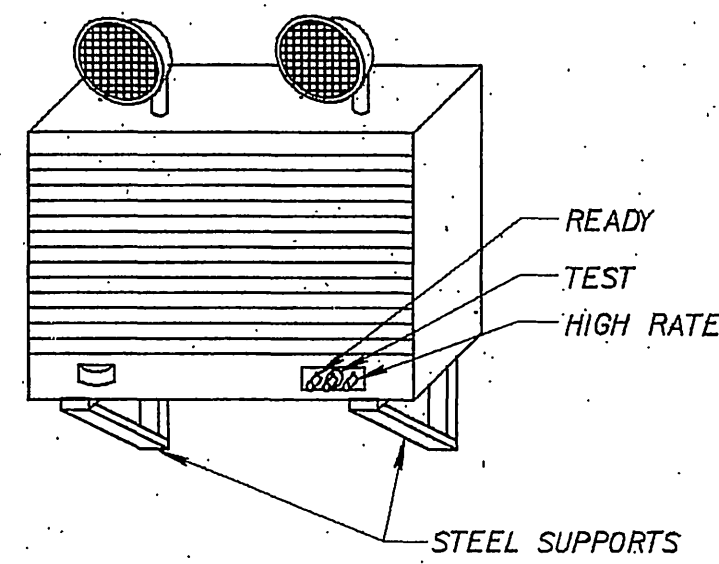
JOB NO. S-1636

INDEXED 1-31-05 LH



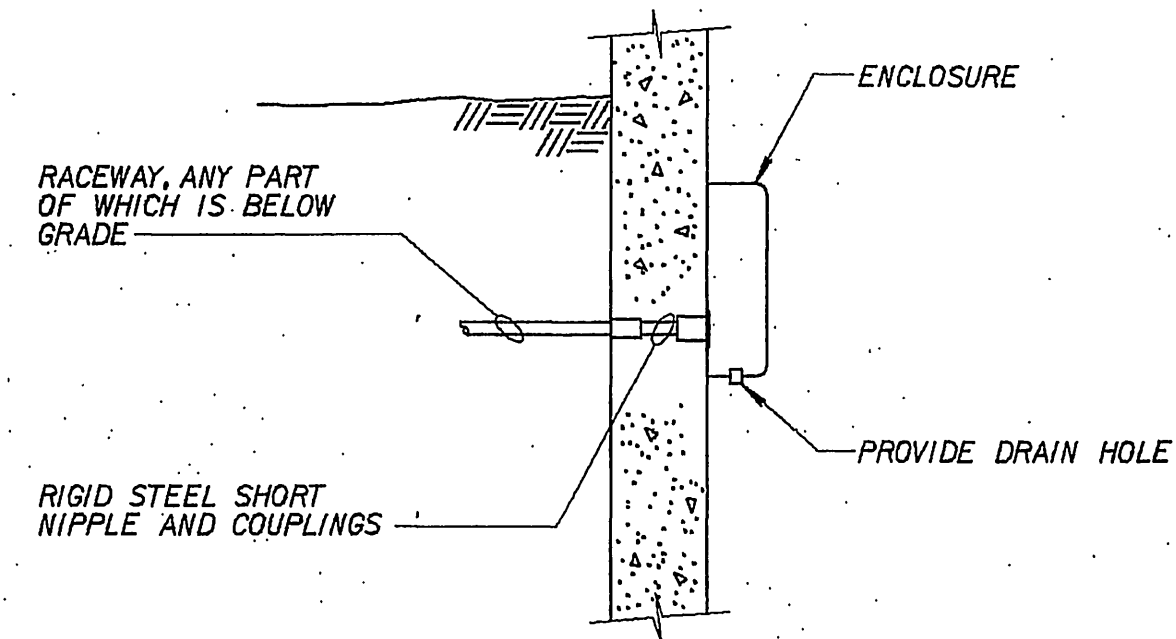
FLOOD ALARM SWITCH

E-408



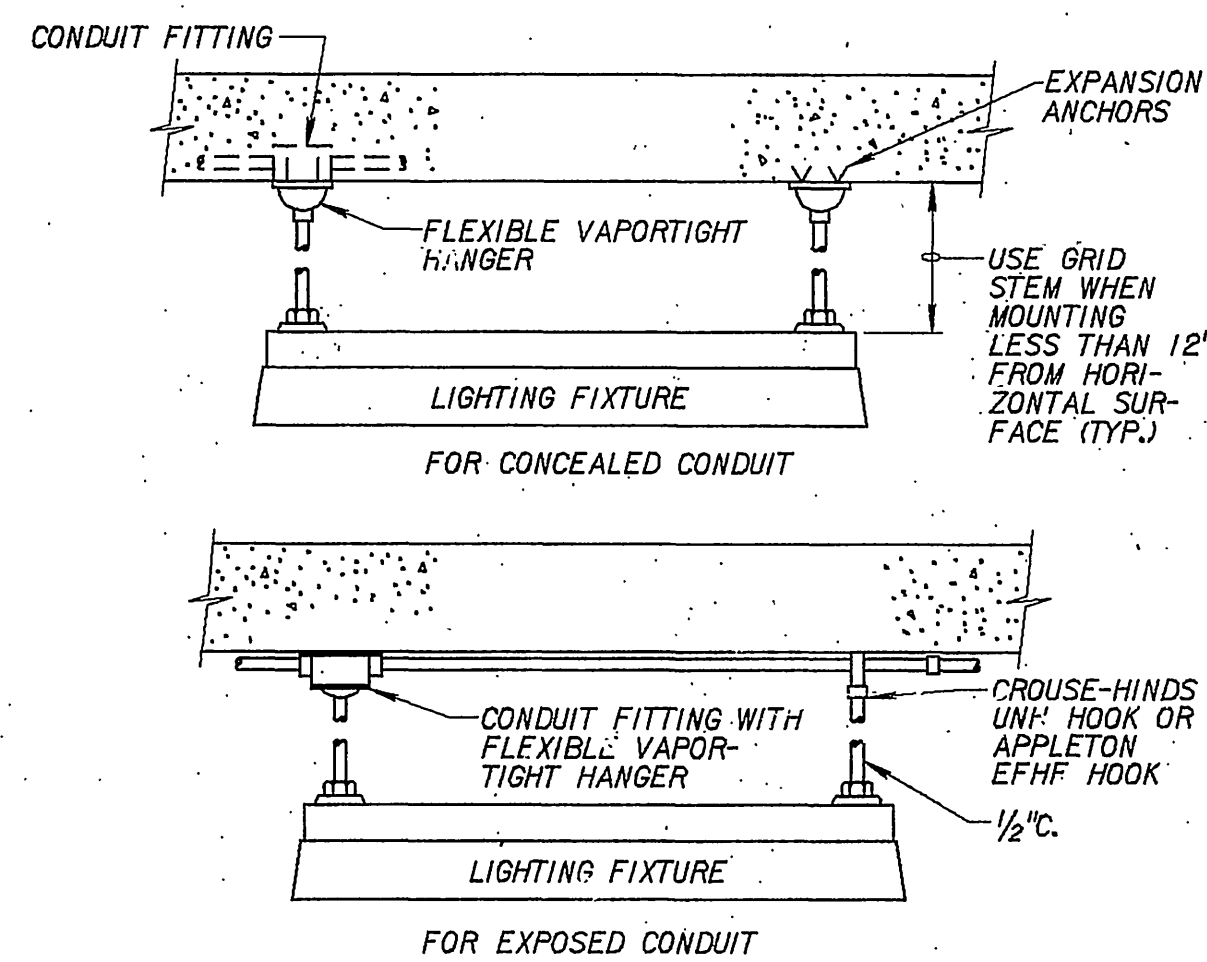
EMERGENCY LIGHTING FIXTURE

E-613



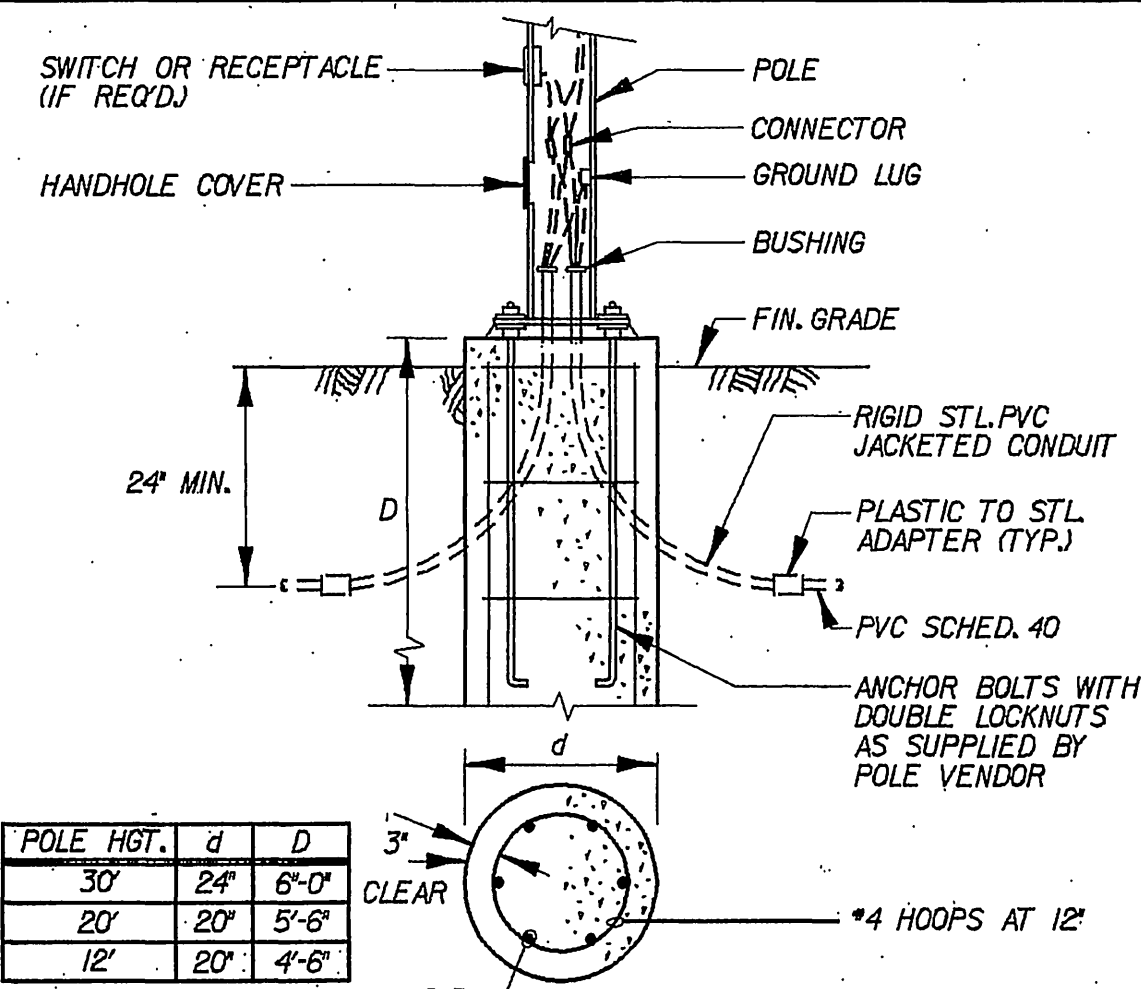
CONDUIT MOISTURE DRAIN

E-416



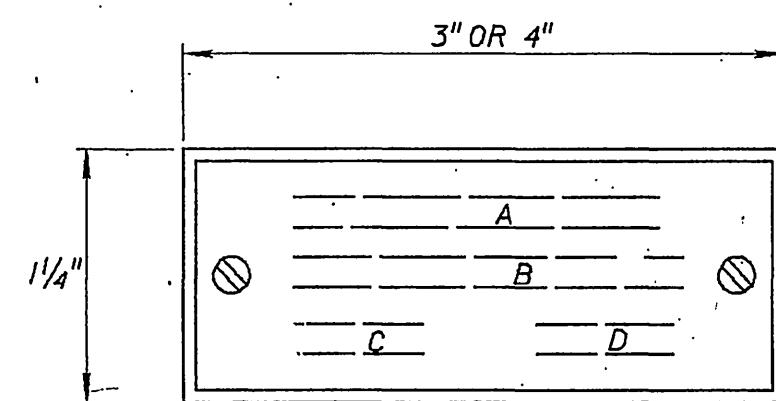
FIXTURE MOUNTING DETAIL

E-614



LIGHTING POLE FOUNDATION

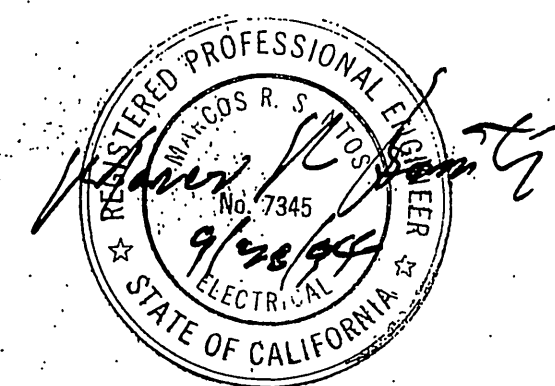
E-600



NAMEPLATE

E-708

1. ALL LETTERS ARE 1/4" IF NOT NOTED OTHERWISE.
2. ALL NAMEPLATES TO BE MOUNTED ON VERTICAL CENTER LINE OF THEIR CUBICLE OR DEVICE.
3. ATTACH ALL NAMEPLATES WITH BRASS SCREWS.
4. PROVIDE BLANK NAMEPLATES FOR ALL SPARE AND FUTURE CIRCUITS.



JOB NO.  
S-1636

SHEET  
E-II  
OF 44 SHEETS

FILE No. 31/PRJ/RIVERS/P.S./ELE./PIERCEDDGN

REV	DATE	BY	DESCRIPTION

SCALE:  
NONE

WARNING  
1/2  
IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED: *U. N. Nambuduri*  
DRAWN: *U. N. Nambuduri*  
CHECKED: *N. Concepcion Jr.*

SUBMITTED: *U. N. Nambuduri* C-49471 5.23.94  
PROJECT ENGINEER R. C. E. NO. DATE  
RECOMMENDED: *Surendra Inamra* C-44599 5.23.94  
MONTGOMERY WATSON R. C. E. NO. DATE



**MONTGOMERY WATSON**  
Pasadena, California

APPROVED \_\_\_\_\_ DATE \_\_\_\_\_  
APPROVED \_\_\_\_\_ DATE \_\_\_\_\_

CITY OF RIVERSIDE  
PIERCE STREET P.S. UPGRADE  
STANDARD DETAILS - II

INDEXED 1-31-05 lft