LIST OF ABBREVIATIONS

A	AMMETER, AMPERE(S)
AC	ALTERNATING CURRENT
AF	AMPERE FRAME
A.F.F.	ABOVE FINISHED FLOOR
APPD	APPROVED
ASD	ADJUSTABLE SPEED DRIVE
ASU	AIR SUPPLY UNIT
ATS	AUTOMATIC TRANSFER SWITCH
AT	AMPERE TRIP
AUX	AUXILIARY
BC	BARE COPPER
BKR	BREAKER
BLDG	BUILDING
C	CONDUIT/CONTROL
CAB	CABINET
CB	CIRCUIT BREAKER
CC	CONTROL CABINET
CKT	CIRCUIT
CL2	CHLORINE
CLG	CEILING
CO	CONDUIT ONLY
COMM	COMMUNICATIONS
COND	CONDUCTOR
CONT	CONTINUED
CPNL	CONTROL PANEL
CPT	CONTROL POWER TRANSFORMER
CR	CONTROL RELAY
CS	CONTROL STATION
CT	CURRENT TRANSFORMER
CORP	CORPORATION
CPLG	COUPLING
CU	COPPER
DC	DIRECT CURRENT
D/I	DATA INPUT
DISC	DISCONNECT
DIV	DIVISION
E	EMPTY/EXISTING
EF	EXHAUST FAN
ELEC	ELECTRICAL
ELEV	ELEVATION
EMER	EMERGENCY
ETM	ELAPSED TIME METER
FCP	FIRE CONTROL PANEL
FDR	FEEDER
F, FU	FUSE
FLA	FULL LOAD AMPERES
FLR	FLOOR
FLUOR	FLUORESCENT
FREQ	FREQUENCY
FVNR	FULL VOLTAGE NON-REVERSING
G	GREEN, GROUND
GALV	GALVANIZED
GFI	GROUND FAULT INTERRUPTER
GFR	GROUND FAULT RELAY
GRS	GALVANIZED RIGID STEEL CONDUIT
H	HIGH SPEED
HH	HANDHOLE
HID	HIGH INTENSITY DISCHARGE
HP	HORSEPOWER
HT	HEAT TAPE WITH INSULATION
HTR	HEATER
HPS	HIGH PRESSURE SODIUM
HV	HIGH VOLTAGE
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
IC	INTERRUPTING CAPACITY
I & C	INSTRUMENTATION & CONTROL
INCAND	INCANDESCENT
INST	INSTANTANEOUS/INSTRUMENT
INSTR	INSTRUMENTATION
ISOL	ISOLATION
J, J-BOX	JUNCTION BOX
KV	KILO VOLTS
KVA	KILO VOLT-AMPERES
KWH	KILOWATT HOUR
L	LINE
LA	LIGHTNING ARRESTER
LC	LOAD CENTER
LOC	LOCATION
LS	LIMIT SWITCH
LSC	LIMIT SWITCH-CLOSED
LSO	LIMIT SWITCH-OPEN
LT FLEX	LIQUID TIGHT FLEX CONDUIT
LTG	LIGHTING
LV	LOW VOLTAGE
M	MAGNETIC CONTACTOR COIL/ MAIN CONTACT
mA	MILLIAMPERES
MCB	MAIN CIRCUIT BREAKER
MCC	MOTOR CONTROL CENTER
MCP	MOTOR CIRCUIT PROTECTOR
MD	MOTORIZED DAMPER
MECH	MECHANICAL
MFR	MANUFACTURER
MOV	MOTOR OPERATED VALVE
MS	MOTOR STARTER
MT	MOUNT
MTD	MOUNTED
MTG	MOUNTING
MTR	MOTOR
N	NEUTRAL
NA	NON-AUTOMATIC
NC	NORMALLY CLOSED
N.E.C.	NATIONAL ELECTRICAL CODE
N.E.M.A.	NATIONAL ELECTRIC MANUFACTURERS ASSOCIATION
NO	NORMALLY OPEN
NPC	NEVADA POWER COMPANY
OL	OVERLOAD RELAY
PP	POWER POLE
PB	PULL BOX
PC	PHOTOCELL
PLC	PROGRAMMABLE LOGIC CONTROLLER
PS	POWER SWITCH
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE CONDUIT
PW	PART WINDING
PWR RECEPT	POWER RECEPTACLE
REQ'D.	REQUIRED
RL	RELAY
RM	REMOTE MULTIPLEXER
RTD	RESISTANCE TEMPERATURE DETECTOR
RTU	REMOTE TERMINAL UNIT
S	SWITCH
SC	SPEED CONTROL
SCH	SCHEDULE
SEC	SECOND/SECONDARY
SECT	SECTION
SEQ	SEQUENCE
SHT	SHEET
SHTR	SPACE HEATER
S/N	SOLID NEUTRAL
SPD	SPEED
SPEC	SPECIFICATIONS
SSTL	STAINLESS STEEL
STD	STANDARD
STLT	STREET LIGHT
STR	STARTER
SV	SOLENOID VALVE
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
SYM	SYMMETRICAL
T	THERMOSTAT
TB	TERMINAL BOARD
TC	TIME CLOSE
TD	TIME DELAY
TDR	TIME DELAY RELAY
TEMP	TEMPERATURE
TJB	TERMINAL JUNCTION BOX
TO	TIME OPEN
TPPM	THREE PHASE POWER MONITOR
TR	TIMING RELAY
TS	TEMPERATURE SWITCH
TSC	TORQUE SWITCH CLOSED
TSO	TORQUE SWITCH OPEN
TSP	TWISTED SHIELDED PAIR
TYP	TYPICAL
UFC	UNIFORM FIRE CODE
UH	UNIT HEATER
UMC	UNIFORM MECHANICAL CODE
UVR	UNDER VOLTAGE RELAY
V	VOLT(S), VOLTMETER
VAC	VOLT ALTERNATING CURRENT
VDC	VOLT DIRECT CURRENT
W	WATT(S)
W/	WITH
WHD	WATTHOUR DEMAND METER
WP	WEATHERPROOF
WWF	WELDED WIRE FABRIC
XFMR	TRANSFORMER
XFR	TRANSFER
XMTR	TRANSMITTER
XP	EXPLOSION PROOF
XTDR	TRANSDUCER
YD	YARD

GENERAL NOTES

1. PRIOR TO BEGINNING EXCAVATION, VERIFY LOCATIONS OF EXISTING AND NEW UNDERGROUND UTILITIES, PIPING, ETC. PROVIDE EXCAVATION, BACKFILL, SUPPORT, SAWCUTTING, PATCHING, PAVING, ETC. AS REQUIRED. BACKFILL EXCAVATIONS TO 90 PERCENT COMPACTION AND PATCH TO MATCH EXISTING CONDITIONS.
2. ALL DIRT AND DEBRIS SHALL BE REMOVED FROM ALL MANHOLES AND PULLBOXES. DISPOSE OF AS DIRECTED BY THE LAS VEGAS VALLEY WATER DISTRICT.
3. DO NOT SCALE DRAWINGS. VERIFY DIMENSIONS IN FIELD PRIOR TO BEGINNING WORK.
4. FINAL CONNECTIONS TO EQUIPMENT SHALL BE PER MANUFACTURER'S APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
5. CONTRACTOR SHALL VISIT JOB SITE PRIOR TO BID AND VERIFY THAT CONDITIONS ARE AS INDICATED. CONTRACTOR SHALL INCLUDE IN HIS BID COSTS, THE REQUIREMENTS TO MAKE HIS WORK MEET THE EXISTING CONDITIONS.
6. THIS IS A STANDARD LEGEND SHEET. SOME SYMBOLS OR ABBREVIATIONS MAY APPEAR ON THIS SHEET AND NOT ON THE PLANS.

SYMBOL LEGEND

PLANS	POWER DIAGRAM	CONTROL DIAGRAM	DESCRIPTION
(PE)			120V. PHOTOELECTRIC EYE MOUNTED ATOP W.P. J-BOX
			NEW BRANCH CIRCUIT, FEEDER OR DUCT EXPOSED
			BRANCH CIRCUIT, FEEDER OR DUCT CONCEALED OR BELOW GRADE.
			HOMERUN TO PANEL. CIRCUIT NUMBER INDICATED ON DWG. CROSSHATCH INDICATES No. OF CONDUCTORS. FORWARD SLASH INDICATES NEUTRAL. NO MARKS INDICATES TWO CONDUCTORS OR AS INDICATED ON WIRE SCHEDULES. SLASH W/ "G" INDICATES GROUND. No. OF ARROWS INDICATES No. OF HOMERUNS IN CONDUIT.
—GND—			GROUND
—E—			EXISTING WIRING AND TEXT
			EXISTING EQUIPMENT, CONDUIT AND WIRING TO BE REMOVED
	(X)		REFERS TO CONDUIT AND WIRE SCHEDULE. NUMBER INDICATES CIRCUIT NAME.
			CEILING MOUNTED LIGHT FIXTURE
			FLOURESCENT LIGHT FIXTURE
			WALL MOUNTED LIGHT FIXTURE
			FLOOD LIGHTS
			LUMINAIRE AND POLE
			EMERGENCY LIGHT UNIT
			EXIT LIGHTS
			CONVIENCE RECEPTACLE - DUPLEX SUBSCRIPT WP = WEATHERPROOF. GFI = GROUND FAULT CURCUIT INTERRUPTER
$			WALL SWITCH - NUMBER AND LETTER SUBSCRIPT INDICATE FOLLOWING: 2 = DOUBLE POLE, 3 = 3-WAY, 4 = 4-WAY, P = WITH PILOT LIGHT, WP = OUTDOOR WEATHERPROOF, K = KEY OPERATOR. M = MANUAL MOTOR STARTER
(J)			JUNCTION BOX
MCC-A			MOTOR CONTROL CENTER OR MAJOR ELECTRICAL COMPONENT OR DEVICE - NAME OR IDENTIFYING SYMBOL AS SHOWN.
			BRANCH CIRCUIT PANELBOARD, LIGHTING OR POWER PANEL
M	(M)		ELECTRICAL SERVICE METERING EQUIPMENT
T			TRANSFORMER SIZE AND RATING SHOWN ON POWER DIAGRAM. SIZE AND RATING AS REQUIRED BY APPLICATION ON CONTROL DIAGRAM

PLANS	POWER DIAGRAM	CONTROL DIAGRAM	DESCRIPTION
	(SW) (V) 0-600V		METER WITH SWITCH - SCALE RANGE AS SHOWN
CP / CP			PANEL, LETTER INDICATES FOLLOWING CP - CONTROL PANEL
		100/M	CIRCUIT BREAKER, MAGNETIC TRIP ONLY, FRAME SIZE SHOWN, 3 POLE UNLESS INDICATED OTHERWISE.
		400	CIRCUIT BREAKER, THERMAL MAGNETIC TRIP SHOWN, 3 POLE UNLESS INDICATED OTHERWISE.
			DRAWOUT AIR CIRCUIT BREAKER
	15	15	CIRCUIT BREAKER. RATING, NUMBER OF POLES AND AMPERE TRIPS INDICATED WHERE SHOWN. DASHED LINE INDICATES INTERLOCK FEATURE
			SOLID STATE REDUCED VOLTAGE STARTER
	5A		FUSE - AMPERE OR TYPE AS SHOWN
100 F	100	100	DISCONNECT SWITCH, - RATING AS SHOWN LETTER F INDICATES FUSIBLE
			DRAWOUT FUSED SWITCH, MEDIUM VOLTAGE
			THERMAL OVERLOAD HEATER OR MOTOR OVERCURRENT RELAY
			COMBINATION MOTOR CIRCUIT PROTECTOR/MAGNETIC STARTER.
	GFR 25A U. 1		PICK-UP SETTING; TIME CURRENT CHARACTERISTIC } GROUND FAULT RELAY WITH CURRENT TRANSFORMER
	(GF)		GROUND FAULT INTERRUPT PROTECTION FEATURE (CIRCUIT BREAKERS).
	CT 100/5 (3)		CURRENT TRANSFORMER, RATIO AND NUMBER OF CT'S AS INDICATED
			LIGHTNING ARRESTER
	10 KVAR		CAPACITOR - KVAR AS INDICATED
		30 L	LIGHTING CONTACTOR, CURRENT RATING INDICATED, NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM FOR NUMBER OF POLES.
		2	STARTER MAGNETIC NEMA SIZE INDICATED, NEMA 12 ENCLOSURE UNLESS INDICATED OTHERWISE. SEE CONTROL DIAGRAM.
		2	COMBINATION (FUSE OR CIRCUIT BREAKER AS INDICATED) MAGNETIC STARTER, NEMA SIZE INDICATED. NEMA 12 ENCLOSURE UNLESS INDICATED ORHERWISE. SEE CONTROL DIAGRAM.
	(10)		MOTOR, NUMBER INDICATES DESIGN (NOMINAL) HORSEPOWER. LETTER 'N' INDICATES FRACTIONAL HORSEPOWER MOTOR SIZES
(G)			GENERATOR

PLANS	POWER DIAGRAM	CONTROL DIAGRAM	DESCRIPTION
		OR	CONDUCTORS - NOT CONNECTED
			CONDUCTORS - CONNECTED
PB			CIRCUIT CLOSING - (MAKE) SWITCH, PUSHBUTTON, MOMENTARY (SPRING RETURN)
			CIRCUIT OPENING - (BREAK)
			NORMALLY OPEN LIMIT SWITCH
			NORMALLY CLOSED
		TD	TIME DELAY ACTION OF CONTACT, ARROW INDICATES DIRECTION OF DELAY IN SWITCH ACTION - NORMALLY OPEN CONTACT SHOWN.
		TD	TIME DELAY ACTION OF CONTACT, ARROW INDICATES DIRECTION OF DELAY IN SWITCH ACTION - NORMALLY CLOSED CONTACT SHOWN.
		P	CLOSES ON RISING PRESSURE PRESSURE OR VACUUM ACTUATED SWITCH
		P	OPENS ON RISING PRESSURE
		T	OPENS ON RISING TEMPERATURE TEMPERATURE ACTUATED SWITCH
		T	CLOSES ON RISING, TEMPERATURE
		H O A L	HAND - OFF - AUTO SELECTOR SWITCH - MAINTAINED CONTACT
		OFF ON	SWITCH, SELECTOR, POSITION AND FUNCTION SHOWN ON DRAWINGS. (OFF - AS SHOWN HERE)
			CIRCUIT INTERLOCK - REFERENCE NOTES ON DRAWING FOR CIRCUIT SHOWN.
			NORMALLY OPEN CONTACT, NO TIME DELAY ACTION OF CONTACT.
			NORMALLY CLOSED CONTACT. NO TIME DELAY ACTION OF CONTACT.
		CR	CR = CONTROL RELAY, LC = LIGHTING CONTACTOR, TD = TIME DELAY RELAY, M = MOTOR CONTROLLER COIL. NUMBER INDICATES TYPE OF FUNCTION.
		ETM	ELASPED TIME METER, DISPLAYS CUMULATIVE HOURS
		TM	MOTOR DRIVEN TIMER
		R	INDICATING LIGHT R = RED G = GREEN A = AMBER B = BLUE W = WHITE C = CLEAR
	⊞		TERMINAL IN PLC
	□		TERMINAL AT FIELD DEVICE
	☑		TERMINAL IN RELAY PANEL
	◪		TERMINAL IN RTU
	□		TERMINAL IN MOTOR STARTER

REGISTERED PROFESSIONAL ENGINEER-STATE OF NEVADA
D. KEITH BAIRD
No. 8389
EE/P
11-15-94

REV.	DESCRIPTION	BY	DATE	CHK'D

SCALE: HORIZ. NONE VERT. NONE

FILE NAME: C0714E01.DWG DATE: 10/06/94
DRAWN: J.E.S./M.J.D. DATE: 10/06/94
CHECKED: D.K.B. DATE: 10/07/94

RECOMMENDED: JAVIER O. ARCEO 11-15-94 DATE
APPROVED: D. Keith Baird 8389 11-15-94 DATE
D. KEITH BAIRD R.P.E. NO.

LAS VEGAS VALLEY WATER DISTRICT
3700 WEST CHARLESTON BOULEVARD
LAS VEGAS, NEVADA

EQUIP WELL No.s 93 AND 94

SYMBOL LEGEND AND GENERAL NOTES

DRAWING NUMBER 714
REF. SHEET NO. E1
SHEET 27 OF 39

F-3 05 27 129 29 HF

27-154 525-247

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