

DATE/TIME

FILE No.

JOB No.

ABAN	ABANDON
AB	ANCHOR BOLT
ABBR	ABBREVIATION
AC	ACTIVATED CARBON OR ASPHALT CONCRETE
A/C	AIR CONDITIONING
ACFM	ACTUAL CUBIC FEET PER MINUTE
ACOUS	ACOUSTIC OR ACOUSTICAL
ACP	ASPHALTIC CONCRETE PAVEMENT
AER	AERATION
AL	ALUM
ALUM	ALUMINUM
AMB	AMBIENT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE (A.S.A.)
API	AMERICAN PETROLEUM INSTITUTE
APPD	APPROVED
APPROX	APPROXIMATE
ARCH	ARCHITECTURAL
ASA	AMERICAN STANDARDS ASSOCIATION (NOW ANSI)
ASME	AMERICAN SOCIETY OF MECHANICAL ENGINEERS
ASTM	AMERICAN SOCIETY FOR TESTING AND MATERIAL
ASSY	ASSEMBLY
ATM	ATMOSPHERE
AVAR	AIR VACUUM AND AIR RELEASE VALVE
AWWA	AMERICAN WATER WORKS ASSOCIATION
BC	BEGIN CURVE OR BOLT CIRCLE
BCR	BEGIN CURB RETURN
BD	BOARD
BF	BLIND FLANGE
BFP	BACK FLOW PREVENTER
BHP	BRAKE HORSEPOWER
BLDG	BUILDING
BLD FLG	BLIND FLANGE
BLK	BLACK OR BLOCK
BLKG	BLOCKING
BM	BEAM OR BENCH MARK
BO	BLOW-OFF ASSEMBLY
BOD	BIOCHEMICAL OXYGEN DEMAND
BOT	BOTTOM
BPV	BACK PRESSURE VALVE
B & S	BELL AND SPIGOT
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
BTUH	BRITISH THERMAL UNIT PER HOUR
BTWN	BETWEEN
BTWN CTR	BETWEEN CENTERS
BY	BUTTERFLY VALVE
BVC	BEGIN VERTICAL CURVE
BWV	BACK WATER VALVE
C	CELSIUS OR COPPER
CAP	CAPACITY
CB	CATCH BASIN OR CHALK BOARD
CC	CENTER TO CENTER
CD	CEILING DIFFUSER
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CFS	CUBIC FEET PER SECOND
CHEM	CHEMICAL
CHK V	CHECK VALVE
CHKD PL	CHECKERED PLATE
CHLR	CAST IRON
CI	CHLORINATOR
CL	CHLORINE GAS, CHAIN LINK OR CENTERLINE
CLR	CLEAR OR CLEARANCE
CLG	CEILING
CM	CENTIMETER
CML & C	CEMENT MORTAR LINED AND COATED
CMP	CORRUGATED METAL PIPE
CMU	CONCRETE MASONRY UNITS
CO	CLEANOUT
COL	COLUMN
CONC	CONCRETE OR CONCENTRIC
CONN	CONNECTION
CONSTR	CONSTRUCTION OR CONSTRUCT
CONT	CONTINUED OR CONTINUOUS
CONTR	CONTRACTOR
COMP	COMPRESSOR
COTG	CLEAN-OUT TO GRADE
CPLG	COUPLING
CS	CAUSTIC SODA
CT	CERAMIC TILE
CT STL	CAST STEEL
CTSK	COUNTERSINK
CTR	CENTER
CU	COPPER OR CUBIC
CYL	CYLINDER
CWO	CHAIN WHEEL OPERATOR

DET	DETAIL
DF	DRINKING FOUNTAIN
DG	DOOR GRILLE
DI	DUCTILE IRON
DIA	DIAMETER
DIAPH	DIAPHRAGM
DISCH	DISCHARGE
DISP	DISPENSER
DN	DOWN OR DECANT
DO	DISSOLVED OXYGEN
DR	DOOR OR DRAIN
DS	DRENCH SHOWER AND EYE WASH
DWG	DRAWING
DIFF	DIFFUSER
DIFRTL	DIFFERENTIAL
E	EAST
EA	EACH
EC	END CURVE
ECC	ECCENTRIC
ECR	END CURB RETURN
EF	EACH FACE
EFF	EFFLUENT
EG	EXHAUST GRILLE
ELEV	ELEVATION
ELEC	ELECTRICAL OR ELECTRONIC
ENG	ENGINE
EQ	EQUAL
EQUIP	EQUIPMENT
EVAP	EVAPORATOR
EVC	END VERTICAL CURVE
EW	EACH WAY
EWV	EYE WASH
EXH	EXHAUST
EXHF	EXHAUST FAN
EX-HY	EXTRA HEAVY
EXIST	EXISTING
EXP JT	EXPANSION JOINT
EXT	EXTERIOR OR EXTENSION
F	FAHRENHEIT
FABR	FABRICATION, FABRICATE OR FABRICATED
FAI	FRESH AIR INTAKE
FB	FLAT BAR
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FD BK	FLOOR BOOK
FDR	FEEDER
FE	FINAL EFFLUENT
FEXT	FIRE EXTINGUISHER
FF	FLAT FACE OR FAR FACE
F TO F	FACE TO FACE
FG	FINISHED GRADE
FH	FIRE HYDRANT
FIG	FIGURE
FIN	FINISH OR FINISHED
FL	FLOWLINE
FLEX	FLEXIBLE
FLOCC	FLOCCULATOR OR FLOCCULATION
FLG	FLANGE
FLGD	FLANGED
FLR	FLOOR
FLR BM	FLOOR BEAM
FMH	FLEXIBLE METAL HOSE
FOC	FACE OF CONCRETE
FOM	FACE OF MASONRY
FOS	FACE OF STUDS
FOW	FACE OF WALL
FPC	FLEXIBLE PIPE COUPLING
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FRP	FIBERGLASS REINFORCED PLASTIC
FS	FAR SIDE, FLOOR SINK, FINISHED SURFACE, FORGED STEEL, OR FROTH SPRAY
FT	FEET OR FOOT
FTG	FOOTING
FUT	FUTURE
FW	FACE OF WALL
GA	GAGE OR GAUGE
GAL	GALLON
GALV	GALVANIZED
GB	GRADE BREAK
GEN	GENERAL OR GENERATOR
GFA	GROOVED FLANGE ADAPTER
GI	GALVANIZED IRON
GLV	GLOBE VALVE
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GRD	GRADE OR GROUND
GR BRK	GRADE BREAK OR GRADE CHANGE
GV	GATE VALVE
GYP	GYPNUM




H	HEIGHT
HB	HOSE BIBB
HDR	HEADER
HEX	HEXAGONAL
Hg	MERCURY
HORIZ	HORIZONTAL
HP	HORSEPOWER
HPR	HIGH PRESSURE
HR	HEATING RETURN OR HOUR
HTG	HEATING
HTR	HEATER
H & V	HEATING AND VENTILATING
HVAC	HEATING, VENTILATING AND AIR CONDITIONING
HWO	HANDWHEEL OPERATED
HYD	HYDRAULIC OR HYDRANT
HPG	HIGH PRESSURE GAS
ICFM	INLET CUBIC FEET PER MINUTE
ID	INSIDE DIAMETER
IF	INSIDE FACE
IN	INCH
INFL	INFLUENT
INSL	INSULATION OR INSULATED
INSTR	INSTRUMENT OR INSTRUMENTATION
INV	INVERT ELEVATION
IP	IRON PIPE
IPS	IRON PIPE SIZE
IRRG	IRRIGATION
JAN	JANITOR
JT	JOINT
KG	KILOGRAM
KM	KILOMETER
KV	KILOVOLT
KW	KILOWATT
KWH	KILOWATT HOUR
L	LITER OR LENGTH
LAV	LAVATORY
LB	POUND
LEV	LEVEL
LG	LONG
LO	LEVER OPERATED
LP	LIGHT POLE OR LOW POINT
LPV	LUBRICATED PLUG VALVE
LT	LEFT
LWR	LOWER
LGTH	LENGTH
LDG	LANDING
LIP	EDGE OF GUTTER
M	METER
MAG	MAGNETIC
MAN	MANUAL
MACH	MACHINE
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MECH	MECHANICAL
MFR	MANUFACTURER
MGD	MILLION GALLONS PER DAY
MH	MANHOLE
MISC	MISCELLANEOUS
MIN	MINIMUM OR MINUTE
MOD	MARK OPERATED OR MASONRY OPENING OR MID-ORDINATE MODEL
MS	MOP SINK
MTC	MECHANICAL-TYPE COUPLING
MTD	MOUNTED
MTL	MATERIAL OR METAL
MTR	MOTOR
N	NORTH
NBS	NATIONAL BUREAU OF STANDARDS
NC	NORMALLY CLOSED
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NF	NEAR FACE
NIC	NOT IN CONTRACT
NO	NUMBER OR NORMALLY OPEN
NPS	NOMINAL PIPE SIZE (FORMERLY I.P.S.)
NPT	NATIONAL PIPE THREAD
NPW	NONPOTABLE WATER
NRS	NON-RISING STEM
NS	NEAR SIDE
NTS	NOT TO SCALE
NG	NATURAL GRADE
OC	OVER-CROSSING OR ON CENTER
OD	OUTSIDE DIAMETER
OF	OVERFLOW OR OUTSIDE FACE
OH	OVER HEAD
OPER	OPERATOR OR OPERATING
OPNG	OPENING
OS & Y	OUTSIDE SCREW AND YOKE
OZ	OUNCE

P	POLE OR PAGE
PAVMT	PAVEMENT
PC	PRIMARY CLARIFIER OR PORTLAND CEMENT
PCOTG	PRESSURE CLEANOUT TO GRADE
PE	POLYELECTROLYTE OR POLYMER
PEF	PLANT EFFLUENT
PG	PRESSURE GAGE
pH	HYDROGEN ION CONCENTRATION
PI	PLANT INFLUENT OR POINT OF INTERSECTION
PL	PLATE, PROPERTY LINE OR PLACE
PLAS	PLASTER OR PLASTIC
PNEU	PNEUMATIC
PP	POWER POLE
PLT	PLANT
PPD	POUNDS PER DAY
PPH	POUNDS PER HOUR
PPM	PARTS PER MILLION
PR	PAIR
PRE	PREVIOUS
PRESS	PRESSURE
PRV	PRESSURE REGULATING, RELIEF OR REDUCING VALVE
PS	PRESSURE SWITCH
PSF	POUNDS PER SQUARE FOOT
PSI	POUNDS PER SQUARE INCH
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PSIG	POUNDS PER SQUARE INCH GAUGE
PTDF	PRESSURE TREATED DOUGLAS FIR
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
POC	POINT OF CONNECTION
R	RADIUS OR RISER
RAG	RETURN AIR GRILLE
RC	REINFORCED CONCRETE
RCP	REINFORCED CONCRETE PIPE
RD	ROOF DRAIN, ROUND, OR ROAD
REDWD	REDWOOD
RED	REDUCER OR REDUCING
REF	REFERENCE OR REFER
REG	REGULATING
REIN	REINFORCE OR REINFORCED
RE-STL	REINFORCING STEEL
REQD	REQUIRED
RET	RETURN
REV	REVISION
RM	ROOM
ROS	RATE OF SLOPE
RPM	REVOLUTIONS PER MINUTE
RR	RAILROAD
RT	RIGHT
R/W	RIGHT OF WAY
RWL	RAINWATER LEADER
S	SOUTH, SCUM, SINK, SECOND OR SLOPE
SA	SAMPLE
SC	SPARE CHEMICAL OR SECONDARY CLAIRIFIER
SCD	SCREWED
SCFM	STANDARD CUBIC FEET PER MINUTE
SCH	SCHEDULE
SCHED	SCHEDULE
SDR	STORM DRAINS
SEC	SECONDARY
SECT	SECTION
SER	SERIES
SER SK	SERVICE SINK
SETTL	SETTLING
SH	SHOWER
SHT	SHEET
SIM	SIMILAR
SL	SLEUDGE OR SLOPE
SP	STATIC PRESSURE
SPECS	SPECIFICATIONS
SO	SQUARE
SS	SANITARY SEWER
SSU	SECONDS SAYBOLT UNIVERSAL
STA	STATION
STC	SLEEVE-TYPE COUPLING
STD	STANDARD
STL	STEEL
STN	STAINLESS
STL STL	STAINLESS STEEL
STR TRD	STAIR TREAD
STRUCT	STRUCTURAL OR STRUCTURE
SUCT	SUCTION
SV	SOLENOID VALVE
SWR	SIDEWALL REGISTER
SYM	SYMMETRICAL OR SYMBOL
SYS	SYSTEM

T	THERMOSTAT OR TANGENT
TB	TACK BOARD
T & B	TOP AND BOTTOM
TBC	TOP BACK OF CURB
TBE	THREAD BOTH ENDS
TBM	TEMPORARY BENCH MARK
TC	TOP OF CURB
TDH	TOTAL DYNAMIC HEAD
T & G	TONGUE AND GROOVE
THK	THICK OR THICKNESS
THR'D	THREADED
THRHL	THRESHOLD
TK	TANK
TOE	THREAD ONE END
TOG	TOP OF GRATING
TOS	TOP OF STEEL
TOW	TOP OF WALL
TP	TELEPHONE POLE OR TELEGRAPH POLE
TRANS	TRANSITION OR TRANSMITTER
TV	THERMOSTATIC VALVE
TW	THERMOMETER WELL
TYP	TYPICAL
TOF	TOP OF FOOTING
UBC	UNIFORM BUILDING CODE
UC	UNDER-CROSSING
UG	UNDERGROUND
UGC	UNDERGROUND CONDUIT
UH	UNIT HEATER
UL	UNDERWRITERS LABORATORIES
UNO	UNLESS NOTED OTHERWISE
UP	UTILITY POLE
UR	URINAL
V	VACUUM, VALVE VERTICAL, VENT, OR VOLT
VAR	VARIABLE OR VARIABLE
VC	VERTICAL CURVE
VCP	VITRIFIED CLAY PIPE
VERT	VERTICAL
VOL	VOLUME
VTC	VENT TO CEILING
VTR	VENT THROUGH ROOF
VPI	VERTICAL POINT OF INTERSECTION
W	WEST, WIDTH, WATER, OR WASTE
W/	WITH
WC	WATER COLUMN OR WATER CLOSET
WCO	WALL CLEANOUT
WD	WOOD
W/O	WATER, OIL, GAS
W/	WITHOUT
WS	WATER SURFACE
WSCOT	WAINSCOT
WSTP	WATER STOP
WT	WEIGHT
WWM	WELDED WIRE MESH
XS	EXTRA STRONG
YD	YARD

NOTES:  
 ADDITIONAL PIPING ABBREVIATIONS SHOWN ON PIPE SCHEDULE SHEET  
 ELECTRICAL ABBREVIATIONS SHOWN ON ELECTRICAL SHEETS  
 ADDITIONAL HEATING, VENTILATING AND AIR CONDITIONING ABBREVIATIONS SHOWN ON MECHANICAL SHEETS  
 ADDITIONAL ABBREVIATIONS CONFORM TO ANSI STANDARD ABBREVIATIONS Z 32. 13

THE ORIGINAL CONTRACT DOCUMENT WAS SEALED AND SIGNED BY BEN EMERSON

**AS BUILT DATE**  
  
 9 APR 99  


REV	DATE	BY	DESCRIPTION

SCALE: 0 1/2 1  
 WARNING: IF THIS BAR DOES NOT MEASURE 1" THEN DRAWING IS NOT TO SCALE.

DESIGNED	SUBMITTED THE ORIGINAL CONTRACT DOCUMENT WAS SIGNED BY BEN EMERSON
DRAWN	PROJECT ENGINEER R. C. E. NO. DATE
CHECKED	RECOMMENDED THE ORIGINAL CONTRACT DOCUMENT WAS SIGNED BY VICKY J. SCARNHORST
	MONTGOMERY WATSON R. C. E. NO. DATE

  
**MONTGOMERY WATSON**  
 Las Vegas, Nevada

MONTGOMERY WATSON  
 3014 WEST CHARLESTON BLVD  
 LAS VEGAS, NV. 89102-1944  
 (702) 878-8010

CITY OF LAS VEGAS  
 BONANZA/MOJAVE WATER RESOURCE CENTER

COPYRIGHT © 1997 BY MONTGOMERY WATSON  
 ALL RIGHTS RESERVED

DWG.	G-7
	7
	513-64