CIRCLE K SOUTHWEST PROTOTYPE 4480 – 08/13/2013

GENERAL NOTES

A. PROVIDE ALL HEATING, ITEMS INDICATED ON THE DRAWINGS, DESCRIBED IN THIS SPECIFICATION, OR REQUIRED FOR A COMPLETE AND PROPER INSTALLATION. HVAC WORK INCLUDES THE FOLLOWING:
1. UNIT AND RADIANT HEATERS
2. DUCTS, FILTERS, DAMPERS, GRILLES, REGISTERS, DIFFUSERS;
3. CONTROLS, INCLUDING 24 VOLT CONTROL WIRING AND 120/24 VOLT TRANSFORMERS;
4. CONDUIT FOR LOW VOLTAGE WIRING;

B. FURNISH, WITHOUT EXTRA CHARGE, ANY ADDITIONAL MATERIAL AND LABOR REQUIRED TO COMPLY WITH THE ABOVE CODES AND STANDARDS, EVEN THOUGH THE WORK MAY NOT BE DESCRIBED IN THE CONTRACT DOCUMENTS. WHERE THE REQUIREMENTS OF THE CONTRACT DOCUMENTS EXCEED THE REQUIREMENTS OF THE ABOVE CODES AND STANDARDS, THE CONTRACT DOCUMENTS SHALL TAKE PRECEDENCE.

C. AFTER AWARD OF CONTRACT AND BEFORE COMMENCING WORK, IF REQUESTED BY CIRCLE K PROJECT ENGINEER, SUBMIT SIX COPIES OF THE FOLLOWING TO THE ARCHITECT FOR APPROVAL. SUBMITTALS SHALL BE IN BROCHURE FORM WITH INDEX AND SELECTED ITEMS CLEARLY DESIGNATED AND REFERENCED TO THE APPROPRIATE EQUIPMENT TAG NUMBER:
1. COMPLETE MATERIALS LIST OF ALL ITEMS PROPOSED TO BE FURNISHED AND INSTALLED UNDER THIS SECTION;
2. CATALOG CUTS AND OTHER DATA REQUIRED TO DEMONSTRATE COMPLIANCE WITH THE CONTRACT DOCUMENTS.

D. COOPERATE WITH OTHER TRADES IN ORDER THAT ALL SYSTEMS IN THE WORK MAY BE INSTALLED IN THE BEST ARRANGEMENT.

E. EXAMINE THE AREAS AND CONDITIONS UNDER WHICH WORK OF THIS SECTION WILL BE INSTALLED. CORRECT CONDITIONS DETRIMENTAL TO THE PROPER AND TIMELY COMPLETION OF THE WORK. NOTIFY ARCHITECT OF ANY DISCREPANCIES. DO NOT PROCEED UNTIL UNSATISFACTORY CONDITIONS HAVE BEEN CORRECTED.

F. AVOID INTERFERENCE WITH STRUCTURE, AND WITH WORK OF OTHER TRADES. INSTALL ALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS. INSTALL ACCESSIBLE PARTS, INCLUDING EQUIPMENT, COILS, VALVES, DAMPERS, CONTROLS, AND FILTERS WITH ADEQUATE CLEARANCE FOR INSPECTION,ADJUSTMENTS, REPAIR, AND REPLACEMENT.

G. ALL OTHER MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, SHALL BE AS SELECTED BY THE CONTRACTOR SUBJECT TO ACCEPTANCE BY THE ENGINEER.

H. DO NOT CUT INTO OR REDUCE THE SIZE OF ANY STRUCTURAL MEMBER WITHOUT THE PERMISSION OF THE ARCHITECT.

I. CONTRACTOR SHALL FURNISH ALL NECESSARY STRUCTURES, INSERTS, SLEEVES, AND HANGING DEVICES FOR INSTALLATION OF MECHANICAL AND PLUMBING EQUIPMENT, DUCTWORK AND PIPING, ETC. CONTRACTOR SHALL COORDINATE WITH GENERAL CONTRACTOR AND ALL BUILDING TRADES TO AVOID CONFLICTS AND TO MAINTAIN EQUIPMENT ACCESS AND SERVICEABILITY.

J. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY MISCELLANEOUS ANGLES, CHANNELS, UNISTRUT, ETC., AS MAY BE REQUIRED TO ADEQUATELY SUPPORT THE MECHANICAL PIPING, DUCTWORK, AND EQUIPMENT IN A MANNER APPROVED BY THE ARCHITECT WHICH WILL NOT OVERLOAD THE BUILDING STRUCTURAL SYSTEM.

K. NOTIFY CIRCLE K PROJECT ENGINEER AT LEAST 24 HOURS PRIOR TO COVERING OR ENCLOSING WORK. DO NOT ALLOW OR CAUSE ANY OF THE WORK OF THIS SECTION TO BE COVERED UP OR ENCLOSED UNTIL IT HAS BEEN OBSERVED AND ACCEPTED BY THE CIRCLE K PROJECT ENGINEER AND BY ALL OTHER AUTHORITIES HAVING JURISDICTION.

L. THE ENTIRE SYSTEM SHALL BE WARRANTED FOR A PERIOD OF ONE (1) YEAR BEGINNING WITH OWNER'S ACCEPTANCE OF THE WORK. ALL LABOR AND MATERIALS NECESSARY TO REPAIR OR REPLACE THE SYSTEM, OR PORTIONS THEREOF, DURING THAT TIME SHALL BE WARRANTED FOR A PERIOD OF ONE (1) YEAR FROM THE REPAIR OR REPLACEMENT.

M. INSTRUCT OWNER'S REPRESENTATIVE IN THE OPERATION OF THE SYSTEMS.

N. PROVIDE ONE REPRODUCIBLE AS–BUILT DRAWING AND AN OPERATION AND MAINTENANCE MANUAL. AS A MINIMUM, THE MANUAL SHALL CONTAIN:
1. A COMPLETE LIST OF ALL EQUIPMENT AND APPURTENANCES WITH EQUIPMENT DESIGNATIONS (PER DRAWINGS), MANUFACTURERS, AND CATALOG NUMBERS.
2. COPIES OF MANUFACTURERS' BROCHURES AND INSTRUCTIONS FOR OPERATION AND MAINTENANCE OF ALL MECHANICAL EQUIPMENT, INCLUDING REPLACEMENT PARTS LISTS.
3. TYPED SYSTEM OPERATION AND MAINTENANCE INSTRUCTIONS, INCLUDING INSPECTION, LUBRICATION, AND SERVICE INSTRUCTIONS AND SCHEDULES.
4. LIST OF NAMES, ADDRESSES AND PHONE NUMBERS OF DISTRIBUTORS OF ALL EQUIPMENT AND APPURTENANCES.
5. MANUFACTURERS' WARRANTIES.

CODE INFORMATION

A. 2009 IBC, 2009 IMC, AND, 2009 IECC, 2009 IFGC.

ALL SYSTEMS SHALL BE IN COMPLIANCE WITH THE ABOVE CODES AS ADOPTED BY THE CITY OF COLORADO SPRINGS.

B. EQUIPMENT AND APPLIANCES SHALL BE INSTALLED AS REQUIRED BY THE TERMS OF THEIR APPROVAL, IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING, THE MANUFACTURERS INSTALLATION INSTRUCTIONS AND THIS CODE. MANUFACTURERS INSTALLATION INSTRUCTIONS SHALL BE AVAILABLE ON THE JOB SITE AT THE TIME OF INSPECTION PER IMC SECTION 304.1.

MATERIALS SPECIFICATIONS

1. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS.
2. PROVIDE WEATHER–PROOF FLASHINGS AT ALL PIPE PENETRATIONS THROUGH THE BUILDING WALLS AND ROOF. AS A MINIMUM, FLASHINGS SHALL BE DESIGNED AND INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS. FLASHINGS SHALL BE GUARANTEED WEATHERPROOF FOR THE DURATION OF THE GUARANTEE.
3. SUPPORT ALL HVAC UNITS, PIPING AND OTHER APPURTENANCES. DO NOT SCREW OR DRIVE FASTENERS INTO NON–STRUCTURAL COMPONENTS SUCH AS ROOF DECKS OR WALLS.
4. THOROUGHLY CLEAN ALL COMPONENTS AND REMOVE ALL DIRT, SCALE, OIL, AND OTHER FOREIGN SUBSTANCES. PROVIDE CLEAN AIR FILTERS FOR ALL EQUIPMENT.
5. FURNISH ACCESS DOORS AND PANELS AT WALLS, AND CEILINGS FOR ACCESS TO HARDWARE, CONTROLS, OPERATOR, DRIVE MECHANISMS AND VOLUME DAMPERS.

SYMBOLS LIST NOTES

1. SYMBOLS LISTS, NOTES, ABBREVIATIONS, ETC. ARE FOR GENERAL REFERENCE ONLY. THE PRESENCE OF SYMBOLS, NOTES, ABBREVIATIONS, ETC. DOES NOT IMPLY ITS USE ON THIS PROJECT. REFER TO DRAWINGS FOR SPECIFIC SYMBOLS, NOTES, ABBREVIATIONS, ETC. USED.

INSTALLATION NOTES

ALL MECHANICAL EQUIPMENT SHALL BE ANCHORED TO RESIST SEISMIC FORCES. THE SEISMIC BRACING / ANCHORAGE OF DUCTWORK AND EQUIPMENT SHALL BE IN ACCORDANCE WITH, "GUIDELINES FOR SEISMIC RESTRAINTS OF MECHANICAL AND PLUMBING SYSTEMS", PUBLISHED BY S.M.A.C.N.A. AND P.P.I.C., APPROVED BY O.S.A., AND ALL LOCAL AND I.B.C. CODES AND STANDARDS.

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
AC	AIR CONDITIONING UNIT
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
AL	ACOUSTICAL LINING
AMP	AMPERE (AMPS)
AP	ACCESS PANEL
BF	BELOW FLOOR
BHP	BRAKE HORSE POWER
BOD	BOTTOM OF DUCT
BOP	BOTTOM OF PIPE
BTU	BRITISH THERMAL UNIT
BTUH	BTU PER HOUR
BD	BACKDRAFT DAMPER
C	CELSIUS
CI	CAST IRON
CFM	CUBIC FEET PER MINUTE
CO	CLEANOUT
CONT.	CONTINUATION
D	DRAIN
Db	DECIBEL
DB	DRY BULB
DBT	DRY BULB TEMPERATURE
DIA.	DIAMETER
DX	DIRECT EXPANSION
EFF	EFFICIENCY
ENT	ENTERING
EXH	EXHAUST
EMCS	ENERGY MANAGEMENT CONTROL SYSTEM
°F	DEGREES FAHRENHEIT
FB	FLAT BOTTOM
FCO	FLOOR CLEANOUT
FCU	FAN COIL UNIT
FD	FLOOR DRAIN
FD	FIRE DAMPER
F.G.	FILTER GAUGE
FLEX	FLEXIBLE
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FS	FLOOR SINK
FT	FLAT TOP
FT.	FEET
FSD	FIRE/SMOKE DAMPER
GA	GAUGE
GAL	GALLONS
GPM	GALLONS PER MINUTE
GPH	GALLONS PER HOUR
HB	HOSE BIBB
HD	HAND DAMPER (VOLUME DAMPER)
HORZ	HORIZONTAL
HP	HORSEPOWER
HR	HOUR(S)
IN	INCHES

ABBREVIATIONS

ABBREVIATION	DESCRIPTION
KVA	KILOVOLT–AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LBS	POUNDS
MAX	MAXIMUM
MA	MAIN AIR (CONTROLS)
MCC	MOTOR CONTROL CENTER
MIN	MINIMUM
N/A	NOT APPLICABLE
NC.	NOISE CRITERIA
NIC	NOT IN CONTRACT
#,NO.	NUMBER (QUANTITY)
NO	NORMALLY OPEN
NC	NORMALLY CLOSED
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OBD	OPPOSED BLADE DAMPER
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PD	PRESSURE DROP
QTY	QUANTITY
QUAD	QUADRANT
RA	RETURN AIR
REQ	REQUIRED
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SCD	SMOKE CONTROL DAMPER
S.DPR.	SMOKE DAMPER
SP	STATIC PRESSURE (INCHES OF WATER)
SPEC	SPECIFICATION
SQ	SQUARE
SDVV	SINGLE DUCT VARIABLE VOLUME
ST	SOUND TRAP
TEMP	TEMPERATURE
TSTAT	THERMOSTAT
TP	TOTAL PRESSURE (INCHES OF WATER)
TYP	TYPICAL
UC	UNDERCUT
V	VOLTS
VAC	VOLTS, ALTERNATING CURRENT
VAV	VARIABLE AIR VOLUME
VEL	VELOCITY
VERT	VERTICAL
VTR	VENT THRU ROOF
WB	WET BULB
WCO	WALL CLEANOUT
WH	WALL HYDRANT
Z	ZONE

ANNOTATION SYMBOLS

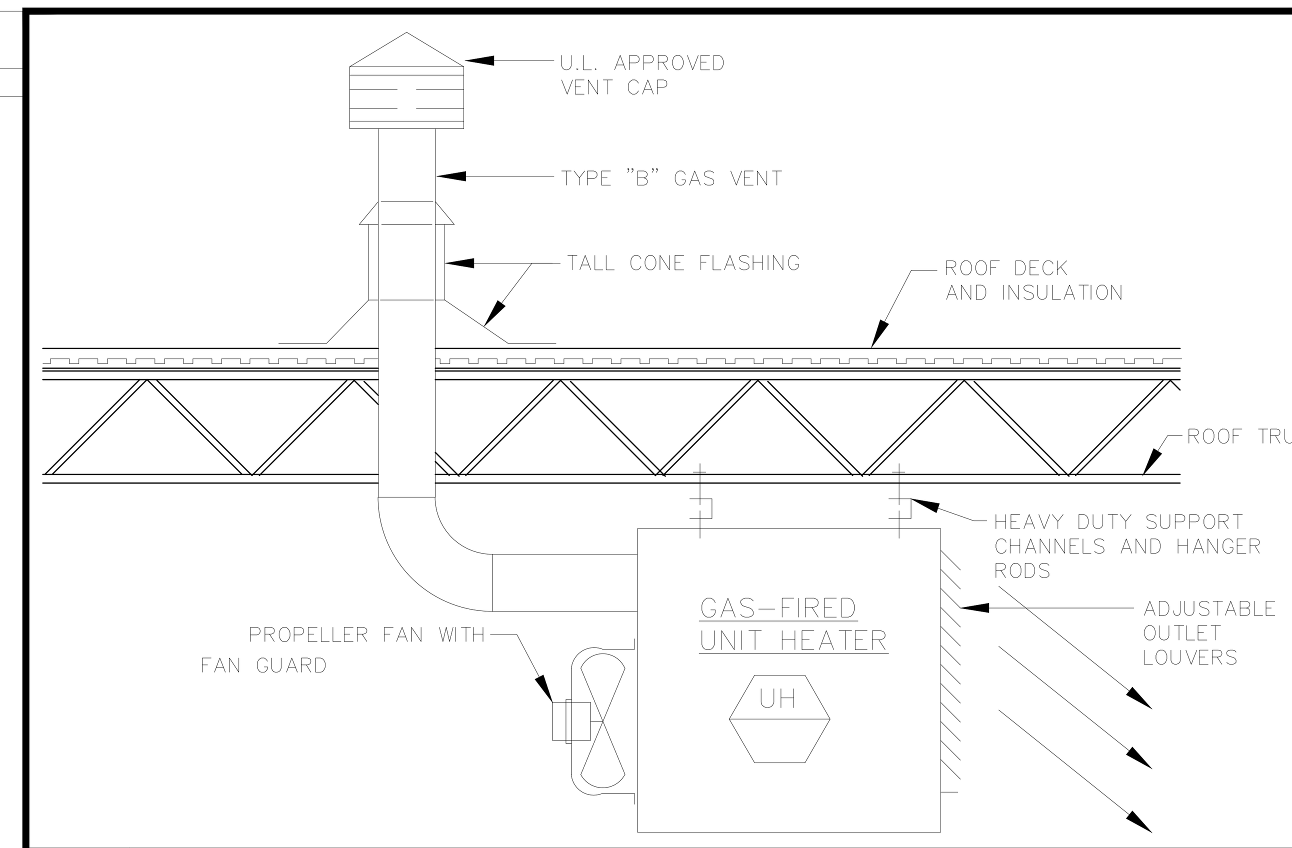
SYMBOL	DESCRIPTION
(X)	KEYED NOTE
XXX	ROOM NUMBER
* * *	SYMBOL INDICATES NEW EQUIPMENT NUMBER REFERS TO SPECIFIC EQUIPMENT OUTSIDE AIR CFM REQUIRED
XX XX	HEX SYMBOL INDICATES NEW EQUIPMENT NUMBER REFERS TO SPECIFIC EQUIPMENT IDENTIFIED IN EQUIPMENT SCHEDULE
X	REVISION TRIANGLE REVISION NUMBER
XXX XXX	DETAIL NUMBER DETAIL SYMBOL DRAWING WHERE DETAIL APPEARS
X	SECTION LETTER SECTION CUT SYMBOL
X XXX	SECTION LETTER SECTION CUT SYMBOL DRAWING WHERE SECTION APPEARS

DUCTWORK SYMBOLS

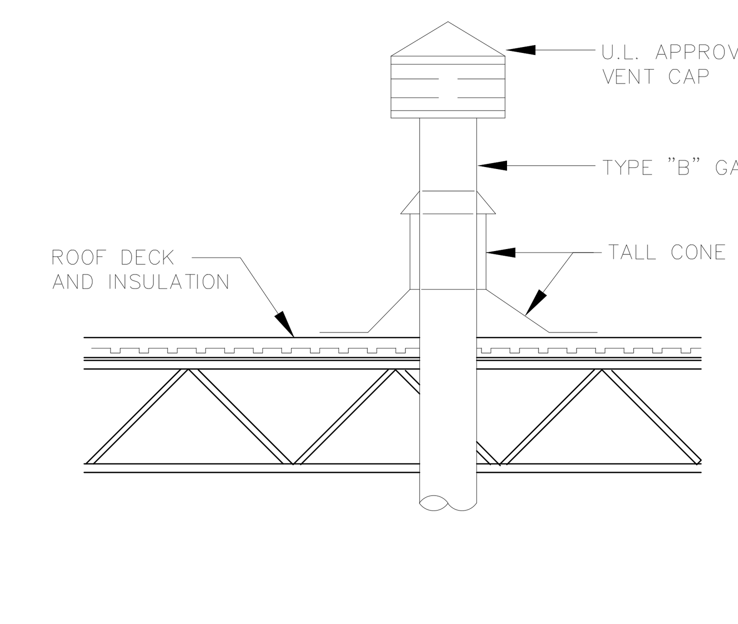
SYMBOL	DESCRIPTION
(T)	ROOM THERMOSTAT

GAS PIPE SYMBOLS

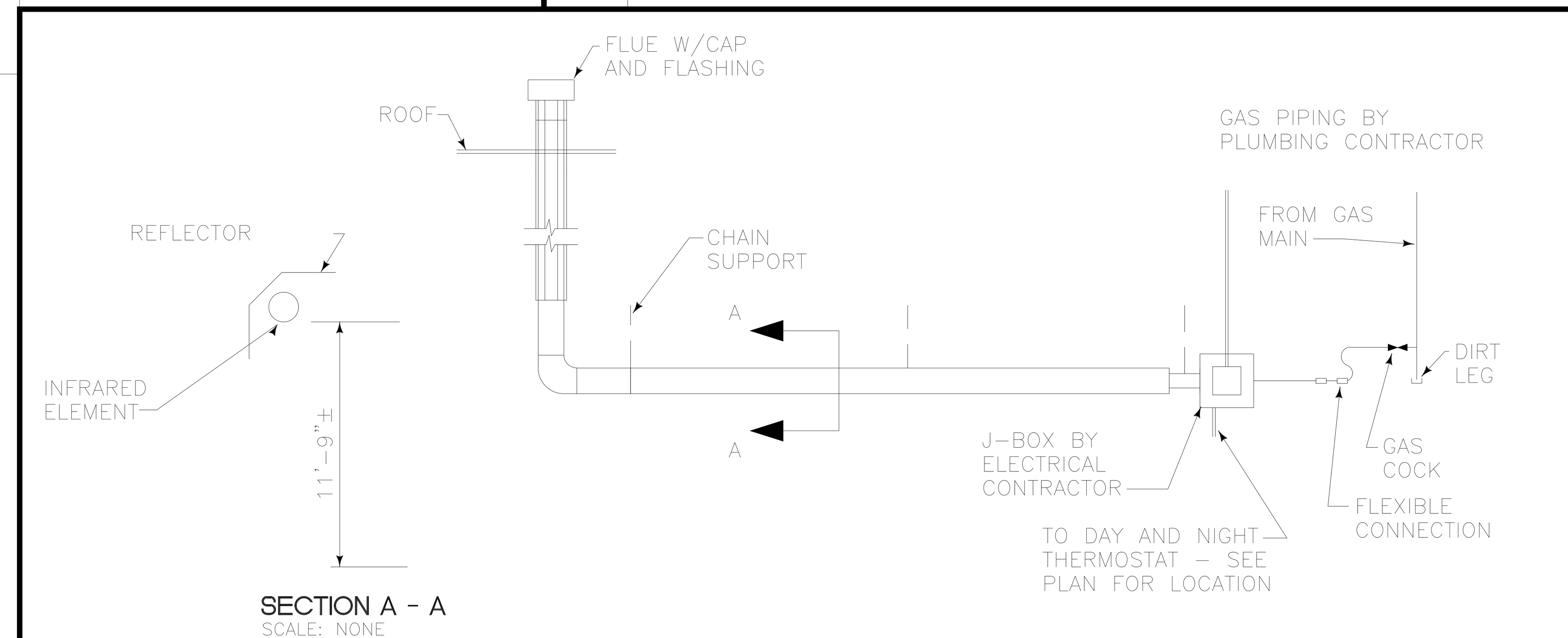
SYMBOL	DESCRIPTION
— G —	GAS LINE
	LUBRICATED PLUG VALVE



A1 GAS UNIT HEATER DETAIL



A2 GAS VENT THROUGH FLAT ROOF DETAIL



A3 TUBULAR RADIANT HEATER DETAIL

GAS PIPING

1. GAS PIPING SHALL BE SCHEDULE 40 GALVANIZED STEEL FOR PIPE SET OUTSIDE SPACE OR ON ROOF WITH MALLEABLE IRON SCREWED FITTINGS FOR ALL GAS PIPING 1–1/2" AND SMALLER. GAS LINES 2" AND LARGER AND ALL BURIED PIPING USE WELDED FITTINGS. USE FLANGES ON PIPING 2" AND LARGER AND UNIONS ON PIPING 1–1/2" OR SMALLER.
2. GAS PIPING SHALL BE SCHEDULE 40 BLACK STEEL FOR PIPE SET INSIDE THE SPACE OR IN CEILING SPACE WITH MALLEABLE IRON SCREWED FITTINGS FOR ALL GAS PIPING 1–1/2" AND SMALLER. GAS LINES 2" AND LARGER AND ALL BURIED PIPING USE WELDED FITTINGS. USE FLANGES ON PIPING 2" AND LARGER AND UNIONS ON PIPING 1–1/2" OR SMALLER.
3. GAS PIPING BELOW GRADE SHALL BE POLYETHYLENE BURIED 18" BELOW GRADE WITH 18 GAUGE COPPER TRACER WIRE, RISE TO 9" ABOVE GRADE SHALL BE MADE WITH AN APPROVED ANODELESS STEEL RISER AND TERMINATED AT EACH END OF PIPE.
4. ALL GAS PIPING UNDER ASPHALT OR CONCRETE PAVING ADJOINING BUILDINGS MUST BE SLEEVE IN A GAS–TIGHT VENTED PIPE.
5. GAS PIPING SHALL BE SUPPORTED AS FOLLOWS:
   A. 1/2" PIPE : SUPPORT @ 6 FEET INTERVALS.
   B. 3/4" OR 1" PIPE : SUPPORT @ 8 FEET INTERVALS.
   C. 1–1/4" PIPE : SUPPORT @ 10 FEET INTERVALS.

GAS UNIT HEATER SCHEDULE

MARK	LOCATION	CFM	OUTPUT MOTOR (MBH)	INPUT CAP (MBH)	PIPE SIZE (IN.)	ELECTRIC				MANUFACTURER / MODEL NUMBER
						HP	FLA	MOCP	VOLTAGE	
UH–1	PUMP ROOM	456	24.6	30.0	NOTE 1	1/50	1.9	15	115/1/60	REZNOR / UDAS–30

NOTE:
1. REFER TO GAS PIPING RISER DIAGRAMS FOR PIPE SIZES.
2. PROVIDE WITH REMOTE THERMOSTAT AND SPARK IGNITION.

BAY RADIANT GAS HEATER

MARK	LOCATION	OUTPUT MOTOR (MBH)	INPUT CAP (MBH)	PIPE SIZE (IN.)	ELECTRIC		MANUFACTURER / MODEL
					FLA	VOLTAGE	
BH–1	WASH BAY	100.0	–	NOTE 1	1.2	120/1/60	ULTIMATE PRODUCTS / SGX

NOTE:
1. REFER TO GAS PIPING RISER DIAGRAMS FOR PIPE SIZES.
2. CONTACT MANUFACTURER FOR REQUIRED/RECOMMENDED OPTIONS AND ASSECORIES.

FOR BID ONLY

GreenbergFarrow
1430 W. Peachtree St., Suite 200
Atlanta, GA 30309
t: 404 601 4000 f: 404 601 3980

COPYRIGHT NOTICE
This drawing is the property of the above referenced Professional and is not to be used for any purpose other than the specific project and site named herein, and cannot be reproduced in any manner without the express written permission from the Professional

ISSUE/REVISION RECORD

DATE	DESCRIPTION
01/19/15	PERMIT SET

PROFESSIONAL SEAL

COLORADO LICENSED PROFESSIONAL ENGINEER — ERIC MICHAEL WOLF — PE 0048635
Signed: 01/19/15

PROFESSIONAL IN CHARGE
ERIC WOLF

PROJECT MANAGER
ALEX ADAIR

QUALITY CONTROL
DARCY HASBERRY

DRAWN BY
ALEX ADAIR

PROJECT NAME
CIRCLE K STORES, INC.

COLORADO SPRINGS COLORADO

E. FOUNTAIN BLVD & ACADEMY PARK LOOP

CIRCLE K STORES INC.

PROJECT NUMBER
20130780

SHEET TITLE
NOTES, DETAILS, SCHEDULES & LEGEND

SHEET NUMBER
M1.0-CW

Drawing Name: P:\2013\20130780\540 Mechanical Construction Documents AT ME\Fountain and Academy Car Wash\Produced\20130780-M1.0-CW.dwg Last Modified: Jan 19, 2015 – 11:41am Plotted on: Jan 19, 2015 – 12:58pm by dadair