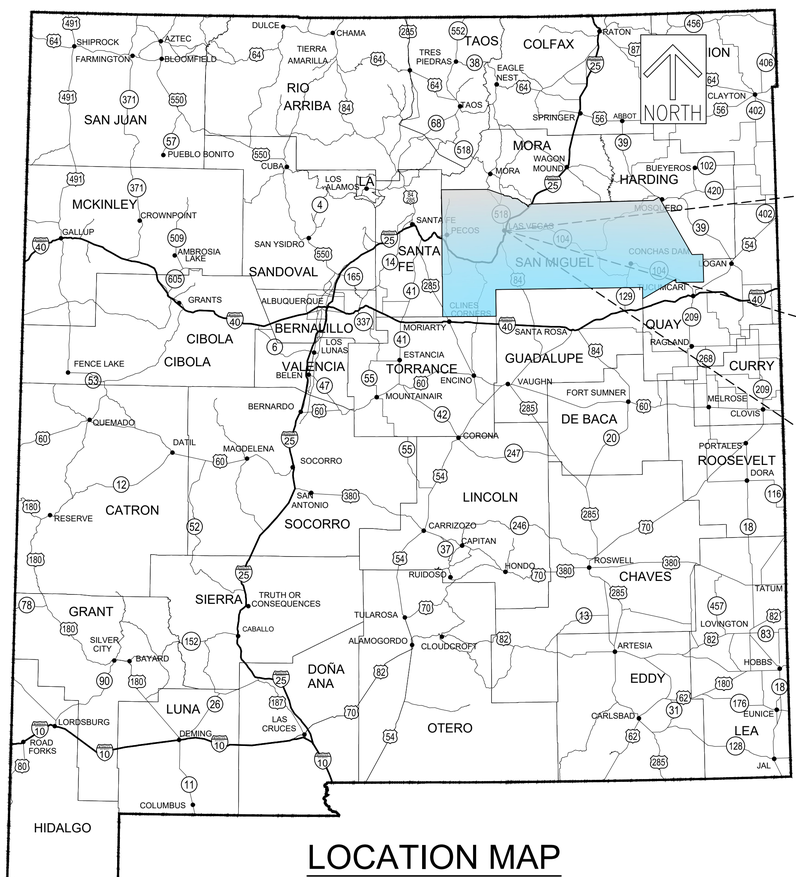
LAS VEGAS SOLID WASTE FACILITY

FIRE SUPPRESSION PROJECT

SAN MIGUEL COUNTY, LAS VEGAS, NEW MEXICO

March 2019

PROJECT DESCRIPTION:
ENGINEERING SERVICES FOR THE UPGRADES TO THE FIRE PROTECTION SYSTEM FOR THE CITY OF LAS VEGAS SOLID WASTE TRANSFER STATION AT
35 ARAGON RD, LAS VEGAS, NM 87701



LOCATION MAP
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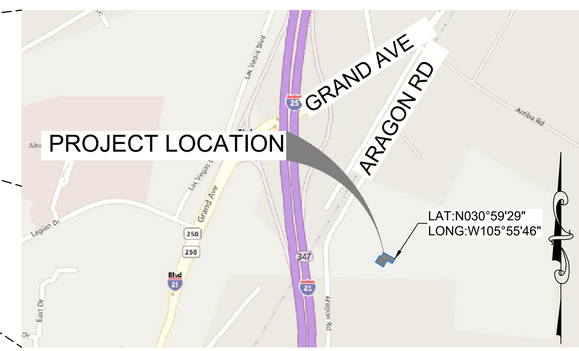

VICINITY MAP
NTS

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THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION ON BEHALF OF SOUDER, MILLER & ASSOCIATES.

Raymond J. Smith 03/28/19

RAYMOND J. SMITH, P.E. DATE
PROJECT MANAGER

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RAYMOND J. SMITH NEW MEXICO 18738 PROFESSIONAL ENGINEER 03/28/19

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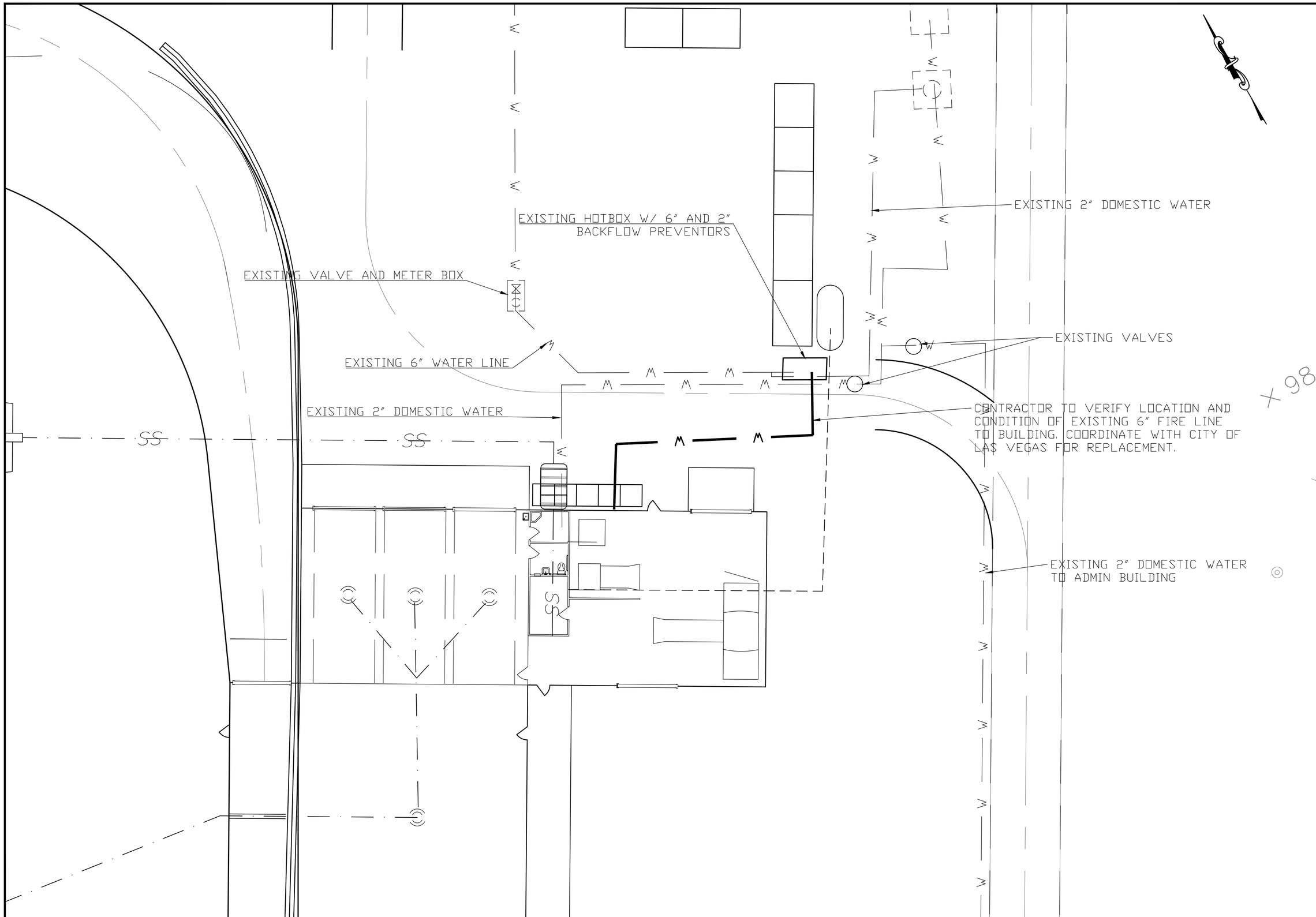

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CITY OF LAS VEGAS

LAS VEGAS, NM

SOLID WASTE TRANSFER STATION
FIRE SUPPRESSION SYSTEM
LAS VEGAS, NM
FIRE LINE PLAN

RAYMOND C. SMITH
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18738
03/28/19
PROFESSIONAL ENGINEER

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FIRE PROTECTION SYMBOL LEGEND

SECTION SYMBOL

A — SECTION LETTER
FX100 — DRAWING NUMBER WHERE DETAILED

DETAIL SYMBOL

1 — DETAIL NUMBER
FX500 — DRAWING NUMBER WHERE DETAILED

SECTION, ELEVATION, AND DETAIL TITLES

SECTION LETTER — A SECTION
DRAWING NUMBER WHERE DETAILED — FX300 SCALE

DETAIL NUMBER — 1 DETAIL
DRAWING NUMBER WHERE DETAILED — FX500 SCALE

ELEVATION LETTER — A ELEVATION
DRAWING NUMBER WHERE DETAILED — FX200 SCALE

SITE UTILITY SYMBOLS

DESCRIPTION	NEW	EXISTING
FIRE PROTECTION	F	EX. F
POST INDICATOR VALVE	PIV	PIV
REDUCED PRESSURE BACKFLOW PREVENTER		
FIRE HYDRANT	F.H.	F.H.(E)
FIRE DEPARTMENT INLET CONNECTION	F.D.C.	F.D.C.
VALVE WITH VALVE BOX		
CONSTRUCTION		
FENCING		

SCHEMATIC SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
XX		KEYED NOTE
		POINT OF CONNECTION TO EXISTING
X X X X X		EXISTING PIPE TO BE REMOVED
		NEW PIPING
		EXISTING PIPING TO REMAIN
		NEW PIPE CONNECTION TO EXISTING PIPING
		DIRECTION OF FLOW
		DROP IN PIPE
		RISE IN PIPE
		TOP CONNECTION, 45° OR 90°
		BOTTOM CONNECTION, 45° OR 90°
		CAPPED OUTLET
		SIDE CONNECTION
		UNION
		FLANGED UNION
		ORIFICE UNION
		REDUCER OR INCREASER
		ECCENTRIC REDUCER
		PIPE GUIDE
		FLEXIBLE CONNECTION
		UNIVERSAL TEMPERATURE–PRESSURE FITTING (PETE'S PLUG)
		STRAINER WITH BLOWDOWN VALVE & HOSE BIBB
		PRESSURE GAUGE AND GAUGE COCK
		TEST PLUG (PRESS/TEMP)
		PENETRATION
	MAV	MANUAL AIR VENT (MAV)
A	AAV	AUTOMATIC AIR VENT (AAV)
	FS/FD/AD	FLOOR SINK , FLOOR DRAIN , AREA DRAIN
		SLOPE OF PIPE
	AG	AIR GAP FITTING
	(WH) (HB)	WALL HYDRANT, HOSE BIBB
	TP	TRAP PRIMER WITH ACCESS PANEL
		WATER MOTOR GONG
		ALARM BELL
		FIRE HOSE CABINET
		FIRE HOSE VALVE CABINET
		CLEAN AGENT FIRE SUPPRESSION
		DISCHARGE NOZZLE
		AUDIO/VISUAL ALARM
C.P.		CONTROL PANEL
		ATMOSPHERIC VACUUM BREAKER
		PRESSURE STYLE VACUUM BREAKER

PIPING SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
CA	CA	COMPRESSED AIR
FP	FP	FIRE PROTECTION; WET PIPE
DFP	DFP	FIRE PROTECTION; DRY PIPE
SP	SP	STANDPIPE; WET
DSP	DSP	STANDPIPE; DRY
DP	DP	DRY PIPE/PRE–ACTION FIRE PROTECTION

FIRE PROTECTION–INTERIOR

SYMBOL	DESCRIPTION
●	PENDANT STYLE HEAD/DRY TYPE AS NOTED
○	UPRIGHT STYLE HEAD/DRY TYPE AS NOTED
◁	SIDEWALL STYLE HEAD/DRY TYPE AS NOTED

ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
ANT	ACID NEUTRALIZING TANK
BOP	BOTTOM OF PIPE
DN	DOWN
EL	ELEVATION
FFE	FINISHED FLOOR ELEVATION
FT	FEET
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HB	HOSE BIBB
HD	HEAD
HP	HORSEPOWER
IN	INCHES
INV	INVERT
NA	NOT APPLICABLE
NIC	NOT IN CONTRACT
No. #	NUMBER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
OS&Y	OUTSIDE SCREW AND YOKE
PH	PHASE
PSIG	POUNDS PER SQUARE INCH GAUGE
SP	STATIC PRESSURE
TD	TRENCH DRAIN
TYP	TYPICAL
YB	YARD BOX
YH	YARD HYDRANT

VALVE SYMBOLS

SYMBOL	ABBREVIATION	DESCRIPTION
FP		ROOF MANIFOLD
FDC	FDC	FIRE DEPARTMENT INLET CONNECTION
FDC (E)	(E)FDC	EXISTING FIRE DEPARTMENT INLET CONNECTION
FP	FP	WET PIPE FIRE RISER
FP DFP	DFP	DRY PIPE FIRE RISER
FP DP		DELUGE/PREACTION FIRE RISER
FP D		INSPECTOR'S TEST CONNECTION (HORIZONTAL)
FP D		INSPECTOR'S TEST CONNECTION (VERTICAL)
		STANDPIPE VALVE
		FLOW CONTROL VALVE
		FLOW SWITCH
		GATE VALVE
		GLOBE VALVE
		OS&Y VALVE
		BUTTERFLY VALVE
OR OR		BALL VALVE
OR		CHECK VALVE
		WATER PRESSURE REDUCING VALVE
		AUTO BALL DRIP VALVE
		PRESSURE RELIEF VALVE
		TEMPERATURE AND PRESSURE RELIEF VALVE
		DRAIN VALVE
		VALVE IN VERTICAL
		FLOW SWITCH
		DIAPHRAGM (PROCESS SYSTEMS)
		REDUCED PRESSURE BACKFLOW PREVENTER (RPBP)
		ATMOSPHERIC VACUUM BREAKER
		PRESSURE STYLE VACUUM BREAKER

NOTE: NOT ALL ABBREVIATIONS OR SYMBOLS APPLY TO THIS PROJECT

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LAS VEGAS TRANSFER STATION
LAS VEGAS, NEW MEXICO
FIRE PROTECTION LEGEND

PATRICK H. WATKINS
NEW MEXICO
18118
PROFESSIONAL ENGINEER
3/2019

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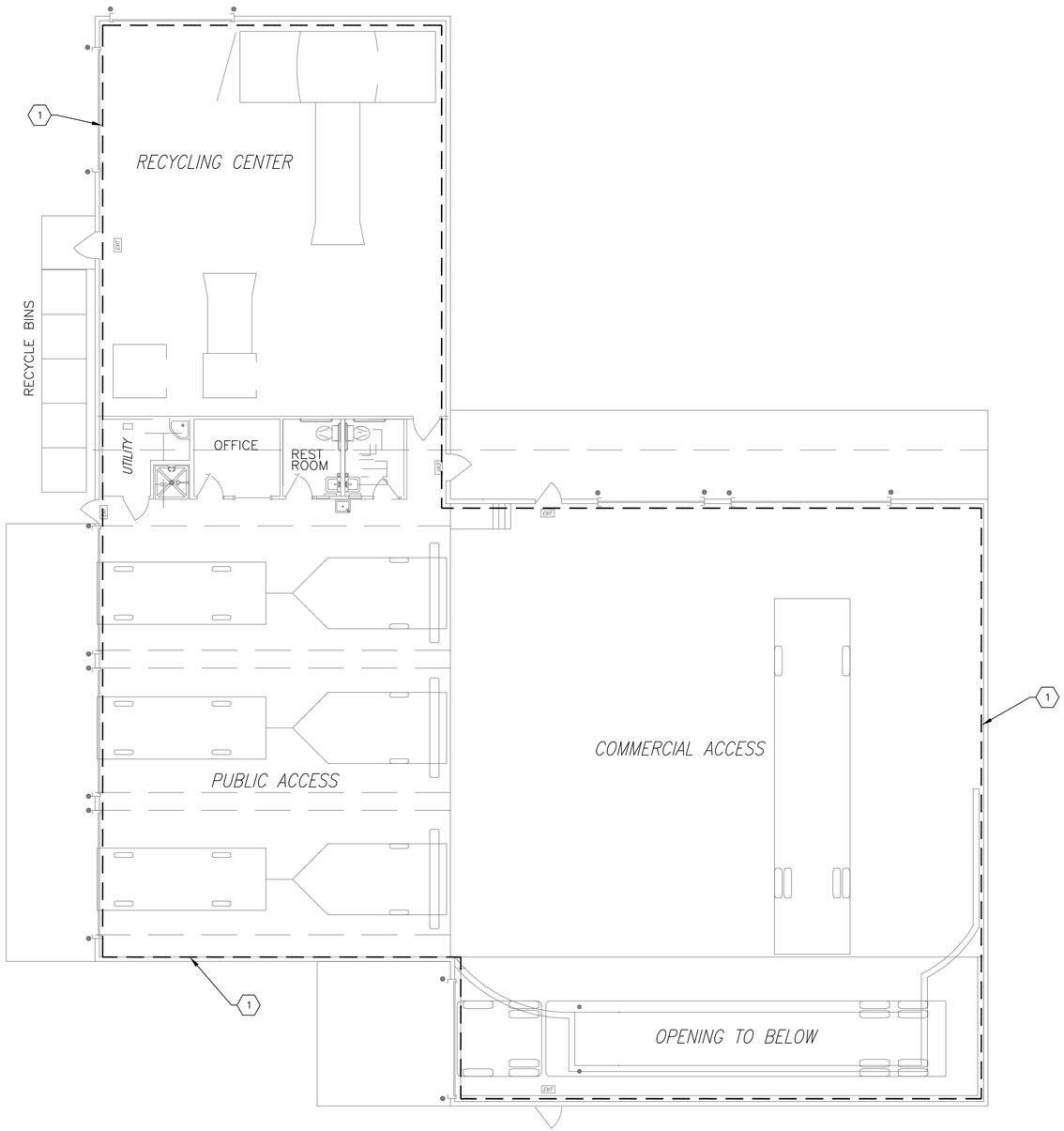

FIRE PROTECTION DEMOLITION PLAN

0 4' 8' 16'
SCALE: 1/8"=1 FT.

GENERAL NOTES

A. INFORMATION REGARDING THE EXISTING CONDITIONS WAS GATHERED FROM THE AVAILABLE EXISTING DRAWINGS, SURVEY AND CORRESPONDENCE WITH UTILITY, STAFF AND MUNICIPAL PERSONAL. THERE ARE NO GUARANTEE AS TO THE ACCURACY OF THIS INFORMATION AND IS OFFERED FOR INFORMATION ONLY. THE CONTRACTOR SHOULD VISIT THE SITE PRIOR TO SUBMITTAL OF BID.

B. VERIFY EXISTING LOCATIONS OF EQUIPMENT, PIPING AND SYSTEM COMPONENTS PRIOR TO DEMOLITION. IF EXISTING CONDITIONS ARE DIFFERENT THAN WHAT IS INDICATED ON THE CONTRACT DOCUMENTS, THE CONTRACTOR SHALL NOTIFY THE ARCHITECT PRIOR TO PROCEEDING WITH WORK.

C. MINIMIZE DISTURBANCE AND /OR DAMAGE TO EXISTING FINISHED SURFACES AND FINISHES. WHERE DEMOLITION OF EXISTING PLUMBING SYSTEM COMPONENTS DAMAGES EXISTING SURFACES THAT ARE TO REMAIN, RESTORE THOSE SURFACES TO THE SAME CONDITION AS THE ADJACENT SURFACES. RESTORATION MUST BE PERFORMED BY WORKMAN SKILLED IN PERFORMING SUCH WORK. ALL FIRE AND SMOKE RATINGS SHALL BE RETAINED AS PART OF THE REPAIRS AND PATCH/SEAL HOLES WEATHERTIGHT WHERE REQUIRED. ALL PATCHES AND REPAIRS SHALL BE SUBJECT TO REVIEW AND APPROVAL BY THE ARCHITECT.

D. ALL AREAS OF EGRESS SHALL BE KEPT OPEN AND FREE FROM DEBRIS AT ALL TIMES.

E. VERIFY EXTENT OF PIPING, EQUIPMENT, COMPONENTS AND CONTROLS TO BE RETAINED OR REUSED PRIOR TO THE DEMOLITION OF SPECIFIC SYSTEM. PROTECT ITEMS WHICH ARE TO BE REUSED ON SITE TO MINIMIZE POST CONSTRUCTION REPAIRS. ANY ITEMS THAT ARE DAMAGED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE CONTRACT.

F. VERIFY ALL EXISTING STRUCTURAL CONDITIONS AND NOTIFY STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO PENETRATING EXISTING BUILDING STRUCTURAL SYSTEMS.

G. THE CONTRACTOR SHALL REFER TO ALL SECTIONS AND DRAWINGS OF THE CONTRACT DOCUMENTS FOR DEMOLITION OF PLUMBING SYSTEM COMPONENTS INCLUDED IN THE PLUMBING CONTRACT.

SHEET KEYED NOTES

1. REMOVE EXISTING WET-PIPE FIRE PROTECTION SYSTEM COMPLETELY.

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LAS VEGAS, NEW MEXICO
FIRE PROTECTION DEMOLITION PLAN

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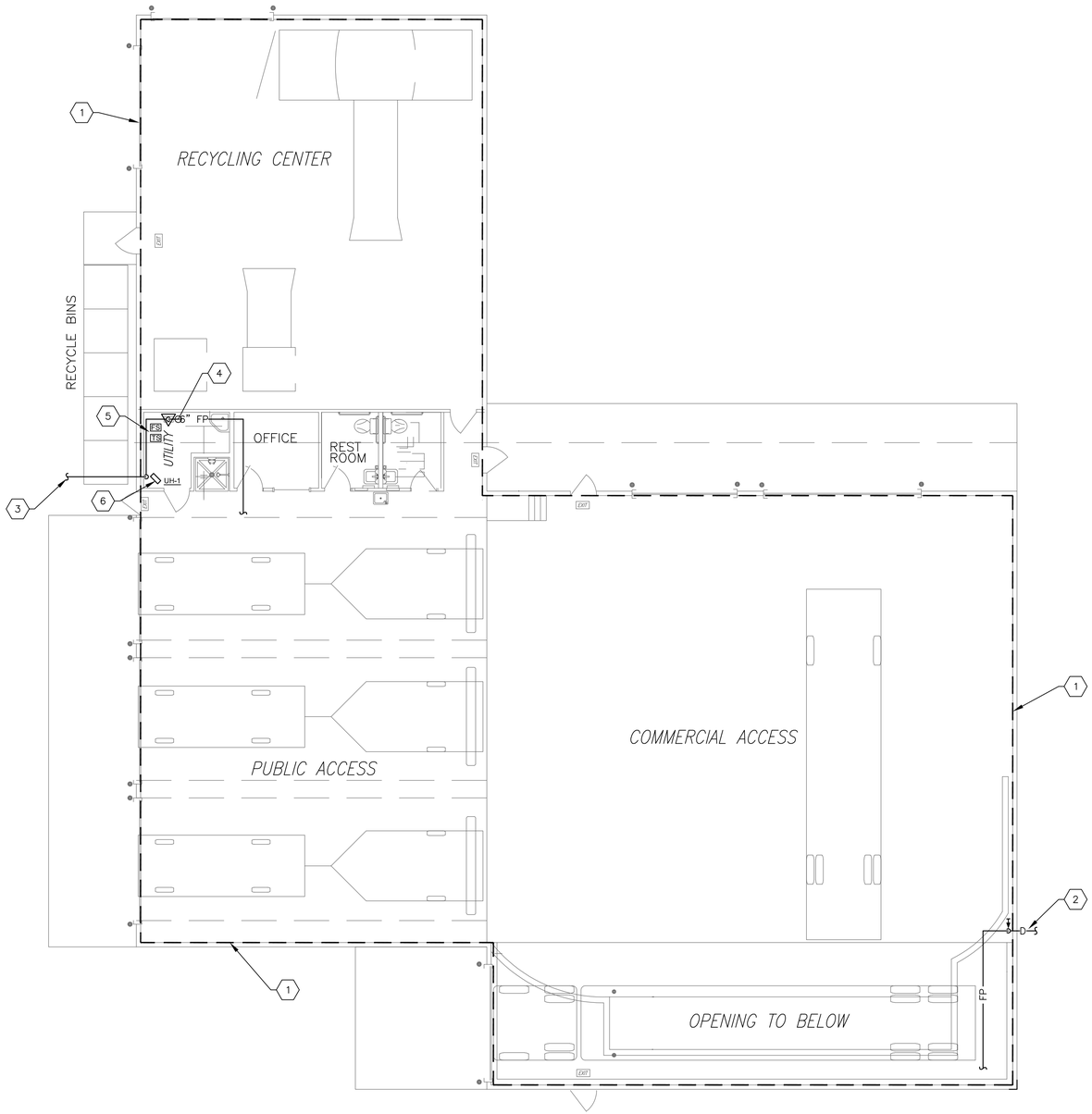
ELECTRIC UNIT HEATER SCHEDULE

GENERAL UNIT DATA						HEATING DATA		ELECTRICAL DATA				NOTES
SYMBOL NO.	MANUFACTURER	MODEL NO.	LOCATION	ARRANGEMENT	AIRFLOW (CFM)	CAPACITY (kW)	NO. OF STAGES	VOLT	PHASE	HZ	MCA	
UH-1	MARKEL	5100	FIRE RISER	VERTICAL	400	3.3	1	277	1	60	11.9	



FIRE PROTECTION PLAN

0 4' 8' 16'
SCALE: 1/8"=1 FT.

GENERAL NOTES

A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING THEIR WORK IN COMPLIANCE WITH NFPA#13 STANDARDS AND ALL REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

B. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO COMMENCING WORK.

C. ALL EQUIPMENT AND MATERIALS SHALL CONFORM TO NFPA STANDARDS AND BE UL LISTED.

D. SPRINKLER SYSTEMS SHALL BE DESIGNED FOR LIGHT HAZARD COVERAGE 0.10 GPM/1500 SQ.FT. THROUGHOUT ENTIRE BUILDING UNLESS NOTED OTHERWISE. PROVIDE ORDINARY HAZARD COVERAGE AS SHOWN ON PLANS.

E. MAXIMUM SPRINKLER HEAD COVERAGE SHALL BE 225 SQ.FT. PER HEAD IN LIGHT HAZARD AREAS.

F. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH THE MECHANICAL, PLUMBING, AND ELECTRICAL PRIOR TO FABRICATION AND DURING INSTALLATION.

G. ALL PIPING 2" DIAMETER AND SMALLER SHALL BE SCHEDULE 40 BLACK STEEL PIPE.

H. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN INSPECTORS TEST CONNECTION (ITC) FOR EACH SPRINKLER SYSTEM. RUN THROUGH EXTERIOR WALLS WHERE APPROVED BY ARCHITECT/ENGINEER.

I. USE FLUSH CONCEALED HEADS IN ALL TOILET ROOMS. PROVIDE SPRINKLERS UNDER EXPOSED DUCT OR OBSTRUCTIONS 48" WIDE AND LARGER.

J. REFER TO CEILING TILE DETAIL X/FX-501 FOR SPRINKLER HEAD LOCATIONS IN CEILING TILES.

K. PROVIDE UPRIGHT PENDANT COVERAGE ABOVE OBSTRUCTIONS AS REQUIRED.

L. FIRE ALARM SUPERVISION IS REQUIRED FOR ALL FIRE ALARM AND FIRE SPRINKLER FLOW ALARMS AND TAMPER SWITCHES PER NFPA 72 BY AN APPROVED SUPERVISING STATION IN ACCORDANCE WITH CBC CHAPTER 9.

M. PROVIDE A CODE COMPLIANT, NICET LEVEL III DESIGN TO BE APPROVED BY THE FIRE MARSHAL. REPLACE AND ADD DEVICES AS REQUIRED TO MEET ALL NATIONAL AND LOCAL CODE REQUIREMENTS. COORDINATE IN FIELD.

N. INFORMATION ON CONTRACT DOCUMENTS IS FOR GENERAL INFORMATION AND BID PURPOSES ONLY. PERFORM REQUIRED CALCULATIONS AND FIELD COORDINATION AND PROVIDE ADDITIONAL DEVICES AS REQUIRED.

O. ADDITIONAL MATERIALS AND LABOR REQUIRED TO SUPPORT CHANGES REQUESTED BY THE AUTHORITY HAVING JURISDICTION SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.

P. THE CONTRACTOR MAY UTILIZE THE EXISTING RACEWAYS AND ASSOCIATED BACKBOXES WHERE APPLICABLE. PROVIDE BLANK COVERS ON ALL UNUSED BOXES.

SHEET KEYED NOTES

1. DRY PIPE FIRE PROTECTION SYSTEM ORDINARY HAZARD GROUP II. DESIGN DENSITY OF 0.20 GPM/SQUARE FOOT FOR A 15OO SQ.FT. AREA OF OPERATION.
2. INSPECTORS TEST CONNECTION.
3. REFER TO CIVIL DRAWINGS FOR CONTINUATION.
4. LOCATE PIPE MOUNTED COMPRESSOR IN THIS AREA.
5. PROVIDE FLOW AND TAMPER SWITCHES AT FIRE RISER AS REQUIRED. REFER TO GENERAL NOTES ABOVE. MAKE ALL REQUIRED INTERCONNECTIONS TO EXISTING FIRE ALARM SYSTEM. COORDINATE IN FIELD.
6. ELECTRIC UNIT HEATER SUSPENDED 8'-0" AFF WITH FACTORY WALL BRACKET. PROVIDE UNIT MOUNTED CONTROLS.

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FIRE PROTECTION PLAN

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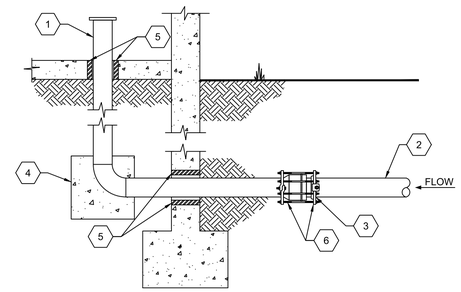
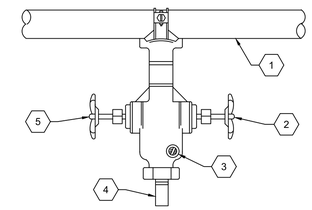


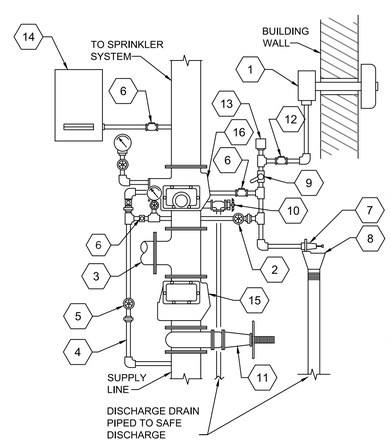
1. AMES IN-BUILDING RISER. STAINLESS STEEL TYPE 304. SEE PLANS FOR SIZE AND SERVICE
2. DUCTILE, CAST-IRON, OR PVC WATER SERVICE.
3. MECHANICAL JOINT FROM SUPPLY PIPE TO STAINLESS STEEL, CONTINUE INTO BUILDING WITH STAINLESS STEEL.
4. CONCRETE THRUST BLOCK SIZED IN ACCORDANCE WITH UBC IF REQUIRED BY AHJ
5. PIPE SLEEVE, SEE SPECIFICATIONS
6. MEGALUG PIPE RESTRAINT HARNESS

1 WATER ENTRY THRU FOOTING DETAIL
SCALE = NONE



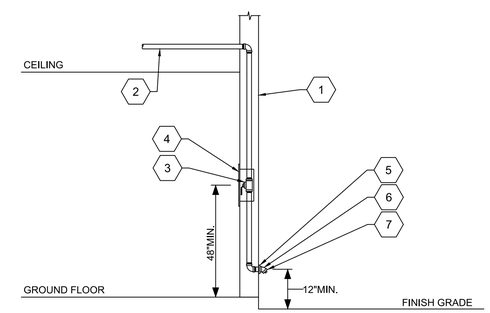
1. SPRINKLER MAIN (FOR SIZES, SEE FLOOR PLANS).
2. TEST VALVE.
3. SIGHT GLASS.
4. DISCHARGE DRAIN LINE, FOR SIZES AND CONTINUATION, SEE FLOOR PLANS.
5. DRAIN VALVE.

2 INSPECTORS TEST CONNECTION
SCALE = NONE



1. WATER MOTOR ALARM 8'-0" MINIMUM A.F.G. AND ADJACENT TO SIAMESE FIRE DEPARTMENT INLET.
2. SYSTEM DRAIN VALVE.
3. TO SIAMESE FIRE DEPARTMENT INLET.
4. PRIMING LINE.
5. PRIMING VALVE.
6. CHECK VALVE.
7. DRIP CHECK.
8. DRIP CUP.
9. ALARM TEST VALVE.
10. MAIN DRAIN VALVE.
11. SUPPLY O S & Y VALVE.
12. STRAINER.
13. FLOW SWITCH.
14. SUPERVISORY AIR MAINTENANCE SUPPLY.
15. CHECK VALVE.
16. DRY SPRINKLER ALARM VALVE.

3 DRY FIRE SPRINKLER ALARM VALVE
SCALE = NONE



1. EXTERIOR WALL
2. 1" SUPPLY FROM SPRINKLER SYSTEM ZONE
3. 1" TEST & DRAIN VALVE WITH SIGNAGE (NORMALLY CLOSED) ON WARM SIDE OF INSULATION
4. 14"X14" LOCKING ACCESS DOOR WITH "INSPECTORS TEST VALVE" SIGNAGE
5. 1" GALVANIZED WALL PLATE
6. 1" GALVANIZED 45 DEGREE ELBOW
7. SMOOTH BORE CORROSION RESISTANT OUTLET WITH FLOW EQUAL TO ONE SPRINKLER WITH SMALLEST ORFICE

4 INSPECTORS TEST DRAIN VALVE
SCALE = NONE

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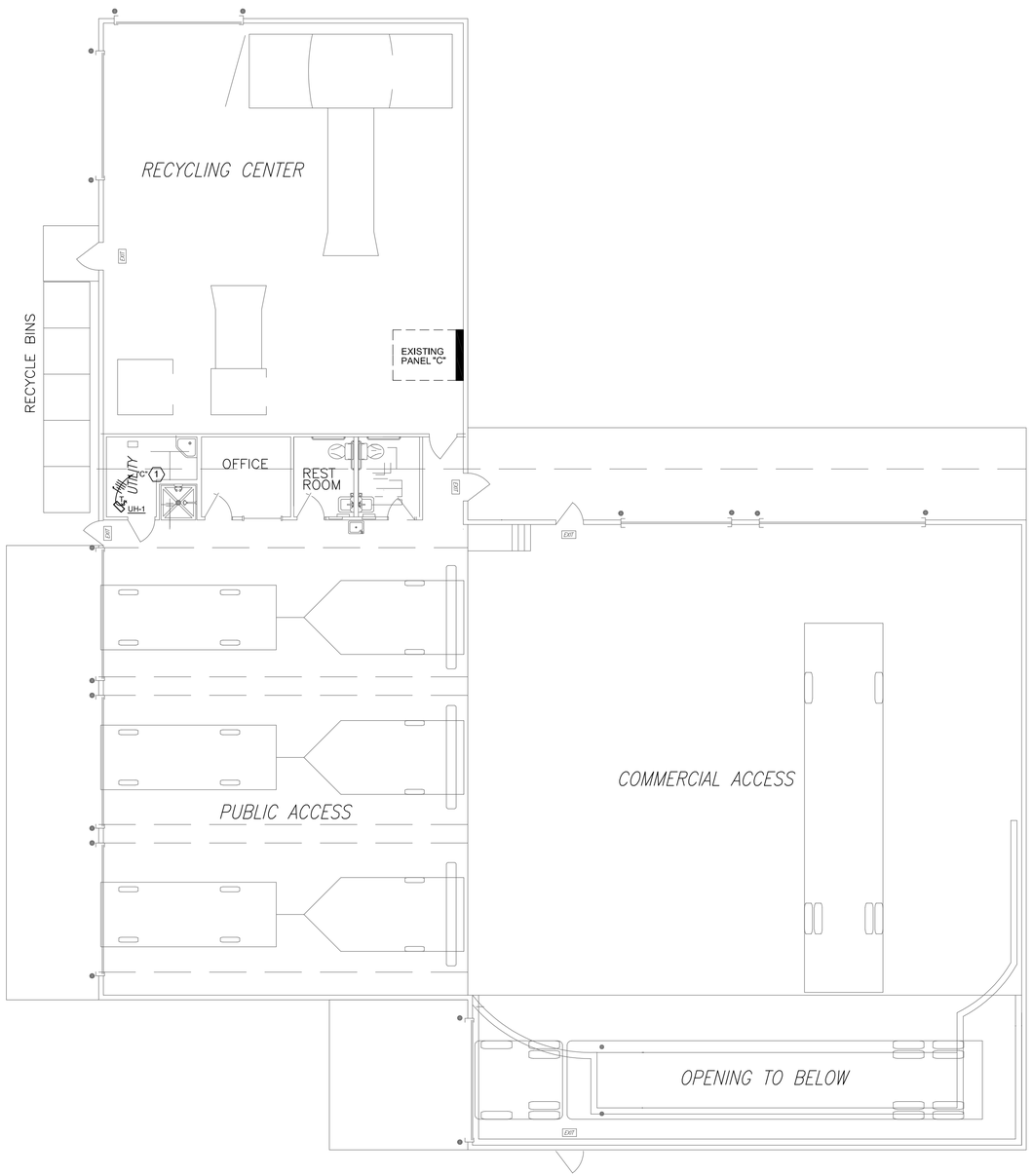

POWER PLAN

0 4' 8' 16'
SCALE: 1/8"=1 FT.

ELECTRICAL SYMBOLS LEGEND

EQUIPMENT

SYMBOL	DESCRIPTION
H1A	FLUSH MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
L1A	SURFACE MOUNTED PANELBOARD. DASHED LINES INDICATE CLEARANCES.
$x	DEVICE INDICATOR LETTER. "X" EQUALS DESIGNATION BELOW (TYPICAL FOR MOST SWITCH TYPES): a = SMALL CASE LETTER DENOTES SWITCHING CONTROL 2 = DOUBLE POLE TOGGLE SWITCH 3 = THREE-WAY TOGGLE SWITCH 4 = FOUR-WAY TOGGLE SWITCH P = PILOT LIGHT TOGGLE SWITCH M = MOMENTARY CONTACT SWITCH K = KEY OPERATED SWITCH WP = WEATHERPROOF TOGGLE SWITCH T = MANUAL MOTOR STARTER SWITCH WITH THERMAL OVERLOAD PROTECTION

RACEWAY & CONDUCTORS

BRANCH CIRCUIT GENERAL INFORMATION:

BRANCH CIRCUITS FROM OVERCURRENT PROTECTION (20A) TO FURTHEST DEVICE SHALL NOT EXCEED 75 FEET FOR #12AWG COPPER AND 150 FEET FOR #10AWG COPPER; MEASURED ALONG CONDUCTORS ROUTING PATH. BRANCH CIRCUITS EXCEEDING 150 FEET WILL BE SIZED SO THAT VOLTAGE DROP DOES NOT EXCEED 5%.

SYMBOL	DESCRIPTION
= GROUND = HOT/PHASE = NEUTRAL = SWITCH LEG	CONDUCTOR IDENTIFICATION SYMBOLS. REFER TO PLANS FOR COMBINATION USE. CONDUCTOR IDENTIFICATION MOSTLY USED IN HOMERUN LOCATION, BUT CAN ALSO BE USED IN BRANCH CIRCUITING WHERE APPLIED. GROUND CONDUCTORS WILL BE INSTALLED IN ALL RACEWAYS WHETHER SHOWN OR NOT.
LA-1	HOMERUN FROM EQUIPMENT LOCATION. THE CIRCUIT NUMBER ADJACENT TO HOMERUN INDICATES PANEL SOURCE AND INDIVIDUAL SINGLE POLE CIRCUIT BREAKER (S). CONDUCTOR IDENTIFICATION SYMBOL INDICATES NUMBER OF CONDUCTORS IN HOMERUN. MINIMUM #12 CONDUCTORS AND 3/4" RACEWAY PATH WILL BE PROVIDED IN HOMERUN UON. ALL HOMERUNS WILL INCLUDE GROUND CONDUCTOR.

REFERENCE TAGS

SYMBOL	DEFINITION
⬡	KEYED NOTE REFERENCE
VAV-9	MECHANICAL EQUIPMENT REFERENCE
+44"	DENOTES MOUNTING HEIGHT AFF
▭	KITCHEN EQUIPMENT REFERENCE
⬭	MEDICAL EQUIPMENT REFERENCE

⬡ KEYED NOTES

1. EXTEND CONDUIT AND WIRE TO EXISTING PANEL "C". REMOVE (3) 20A/1P BREAKERS AND INSTALL (1) 20A/3P BREAKER. SEE LOAD SUMMARY THIS SHEET.

LOAD SUMMARY - PANEL "C" - 400A 120/208V

EXISTING PANEL "C" HAS AN EXISTING CONNECTED LOAD OF 97 KW PER THE ORIGINAL ENGINEERING DOCUMENTS. THE EXISTING SERVICE LOAD CALCULATION INDICATES A DEMAND LOAD OF 104.9 KW AT PANEL "C". THE ADDITION OF UH-1 WILL ADD 3.3 KW TO THE EXISTING PANEL "C" FOR A TOTAL REVISED LOAD OF 108.2 KW WITH A POWER FACTOR OF 1 OR 300 AMPS.

Rev #	Date	Description	By	Chk'd
			-	-

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CITY

CLIENT

LAS VEGAS TRANSFER STATION
LAS VEGAS, NEW MEXICO
POWER PLAN

Digitally signed by John F. Heck
Date: 2019.03.19 18:00:38-06'00'

JOHN F. HECK IV
STATE OF NEW MEXICO
NO. 12498
REGISTERED PROFESSIONAL ENGINEER
3/2019

THIS DRAWING IS INCOMPLETE AND NOT TO BE USED FOR CONSTRUCTION UNLESS IT IS STAMPED, SIGNED AND DATED

Designed	Drawn	Checked
DS	DRN	CHK

Date: March 2019
Scale: Horiz: Vert:
Project No:
Sheet: E-101

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