City of Sparks

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

PWP# WA-2020-053

BID# 19/20-005

98 RICHARDS WAY SPARKS, NEVADA 89431

City of Sparks

SHEET INDEX

DESIGN CONSULTANTS

Kimley»Horn

MECHANICAL
MATTHEW C. MYRES, PE
5370 KIETZKE LANE
SUITE 100, RENO, NV 89511
PHONE: 775-787-7552
WWW.KIMLEY-HORN.COM

DINTER ENGINEERING CONFIDENCE Airfield Electrical

ELECTRICAL
Tim Prockish, PE Electrical Engineer
Dinter Engineering Co.
385 Gentry Way Reno, Nevada, 89502
Office: 775-826-4044
Direct: 775-826-4044

STUCTURAL
Thomas Lundin, CE/SE
Structural Engineer
Structural System Solutions Inc.
410 Mill Street, Suite 206
Reno, Nevada, 89502
Office: 775-232-4664

JON R ERICSON, P.E. P.T.O.E.
CITY ENGINEER

DATE: 10/14/2019

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7332

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA MATTHEW C. MYRES Exp. 12/31/19 MECHANICAL No. 16816
10/14/19

REV.	DATE	APP'D	DESCRIPTION	DRAWING FILE. T0.1	DRAWN BY. KP	CHECKED BY. JH	APPROVED BY. MM

CITY OF SPARKS, NEVADA

City of Sparks It's Happening Here!

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

TITLE SHEET

Job No. 192079000.3

Date: 10/14/2019

SHEET T0.1

Sheet Number

MECHANICAL SYMBOL LIST

(NOTE: ALL OF THE SYMBOLS INDICATED BELOW MAY NOT APPEAR ON THIS PROJECT)

12" X 12" OR 12" X 12"		DUCT W/ SIZE INDICATED (FIRST FIG. IS SIDE SHOWN)
V.D.	V.D.	MANUAL VOLUME / BALANCING DAMPER
		DUCT WITH ACOUSTIC LINING
F	F.D.R.	FIRE DAMPER
SD	S.D.	SMOKE DAMPER
FSD	F.S.D.	COMBINATION FIRE / SMOKE DAMPER
	EX.	EXTRACTOR
12" X 12" OR		SQUARE TO ROUND DUCT TRANSITION
	TR	DUCT SIZE TRANSITION
		FLEXIBLE DUCT CONNECTOR
	FLEX	FLEXIBLE DUCT
	SD	SPLITTER DAMPER
TV	T.V.'S	TURNING VANES
	S.A.	SUPPLY AIR DUCT DOWN
	S.A.	SUPPLY AIR DUCT UP
	R.A.	RETURN AIR DUCT DOWN
	R.A.	RETURN AIR DUCT UP
	E.A.	EXHAUST AIR DUCT DOWN
	E.A.	EXHAUST AIR DUCT UP
M	M.D.	MOTORIZED DAMPER
O.B.D.	O.B.D.	OPPOSED BLADE DAMPER
RD	RD	REFRIGERANT DISCHARGE PIPING
RL	RL	REFRIGERANT LIQUID PIPING
RS	RS	REFRIGERANT SUCTION PIPING
	S.T.R.	STRAINER
	S.T.R.	STRAINER WITH 3/4" HOSE END DRAIN VALVE
	P.T.R.	PRESSURE - TEMPERATURE RELIEF VALVE
	RV	PRESSURE RELIEF VALVE
	2VAL	2-WAY CONTROL VALVE
	3VAL	3-WAY CONTROL VALVE
	P.R.G.	PRESSURE GAUGE WITH GAUGE COCK
	TH.	THERMOMETER
	A.A.V.	AUTOMATIC AIR VENT
	M.A.V.	MANUAL AIR VENT
	V.B.	VACUUM BREAKER
	P.D.	PIPING TEE DOWN
	P.U.	PIPING TEE UP
	P.U.	PIPING ELBOW UP
	P.D.	PIPING ELBOW DOWN
		BRANCH - TOP CONNECTION
		BRANCH - BOTTOM CONNECTION
		BRANCH - SIDE CONNECTION
OR		ARROW INDICATES DIRECTION OF FLOW
AP	A.P.	ACCESS PANEL
EQ #		MECHANICAL EQUIPMENT INDICATED (SEE SCHEDULE)
#		PLUMBING FIXTURE SCHEDULE - (SEE PLUMBING SCHEDULE)
1		DIFFUSER OR GRILLE INDICATED (SEE SCHEDULE)
T	T.	THERMOSTAT
S	S.E.N.	SENSOR
SD	S.D.E.T.	SMOKE DETECTOR
	T.C.C.	TEMPERATURE CONTROL PANEL

AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
BDD	BACKDRAFT DAMPER
BHP	BRAKE HORSEPOWER
BTUH	BRITISH THERMAL UNITS PER HOUR
CFH	CUBIC FEET PER HOUR
CFM	CUBIC FEET PER MINUTE
CLG	CEILING
DB	DRY BULB TEMPERATURE
DN	DOWN
(E)	EXISTING
EAT	ENTERING AIR TEMPERATURE
ESP	EXTERNAL STATIC PRESSURE
GA	GAUGE
GAL	GALLON
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
HSPF	HEATING SYSTEM PERFORMANCE FACTOR
KW	KILOWATTS
LAT	LEAVING AIR TEMPERATURE
MAX	MAXIMUM
MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
MIN	MINIMUM
MOCP	MAXIMUM OVER CURRENT PROTECCTION
MUA	MAKE-UP AIR
(N)	NEW
NOM	NOMINAL
OA	OUTSIDE AIR
PD	PRESSURE DROP
RPM	REVOLUTION PER MINUTE
SF	SQUARE FEET
SP	STATIC PRESSURE
STD	STANDARD
T	TEMPERATURE
TYP	TYPICAL
WB	WET BULB TEMPERATURE
WC	WATER COLUMN
W.P.D.	WATER PRESSURE DROP

GENERAL MECHANICAL NOTES

1. DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS IMPOSSIBLE TO SHOW ALL REQUIRED OFFSETS, ELEVATIONS, ETC. IT IS THEREFORE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE EXACT ROUTING, AND PLACEMENT OF EQUIPMENT AND PROVIDE REQUIRED OFFSETS INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND THE SPECIFICATIONS TO MEET THE INTENT OF THE DESIGN.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CUTTING, SAWCUTTING OPENINGS OF WALLS, CEILINGS, SOFFITS AS REQUIRED FOR THE INSTALLATION OF EQUIPMENT AND DUCTWORK AS REQUIRED.

3. ALL FACTORY PRODUCED AIR DUCT SHALL BE A CLASS '0' OR CLASS '1' IN ACCORDANCE WITH THE ADOPTED MECHANICAL CODE. ALL DUCTWORK CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING-AIR CONDITIONING SYSTEMS, LATEST EDITION, AS ISSUED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC. (SMACNA). LOW PRESSURE ROUND DUCTS SHALL BE UNITED SHEET METAL SPIRAL UNIRIB DUCT WITH UNITED UNIWELD FITTINGS. MATERIALS SHALL BE GALVANIZED STEEL OF GAUGES SHOWN IN THE LOW PRESSURE MANUAL UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS.

4. THE CONTRACTOR SHALL KEEP INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT ON THIS PROJECT AT THE JOBSITE AND SHALL HAVE THEM ACCESSIBLE FOR THE FIELD INSPECTOR UPON REQUEST.

MECHANICAL SHEET LIST

SHEET NUMBER	SHEET NAME
M0.1	MECHANICAL SCHEDULES, SYMBOLS AND LEGEND
M0.2	MECHANICAL SPECIFICATIONS
M1.1	MECHANICAL DEMOLITION PLAN
M2.1	MECHANICAL FLOOR PLAN
M3.1	MECHANICAL ENLARGED PLANS AND SECTION

DIFFUSER SCHEDULE

SYM	DESCRIPTION	MAKE & MODEL NO.	AIR FLOW	DIMENSIONS
RG-1	SUPPLY GRILLE (WITH DEBRIS SCREEN)	TITUS MODEL No. 50F	8,000 CFM, <30 NC	48" x 30"
FG-1	LINEAR BAR DIFFUSER	TITUS MODEL No. CT-580	66 CFM PER FT, 17 NC, .084 TOTAL PRESSURE	½" BAR SPACING, 0° DEFLECTION, 2" NOMINAL DUCT WIDTH

UNIT HEATER SCHEDULE

SYM	DESCRIPTION	MAKE & MODEL NO.	CAPACITY	ACCESSORIES	KW	ELECTRICAL	WT.	REMARKS
UH 1	ELECTRIC UNIT HEATER	QMARK MODEL No. MUH03-81	10,200 BTUH OUTPUT, 350 CFM, 27°F TEMP RISE, NOMINAL 3 kW	PROVIDE WITH SINGLE POLE INTERNAL THERMOSTAT WITH WALL MOUNTING KIT	3 kW	208V / 1Ø	30	FOR FREEZE PROTECTION ONLY

AIR HANDLING UNIT SCHEDULE

AHU ~	UNIT DATA								ELECTRICAL			DX COOLING					GAS HEATING				
	MANUFACTURER	MODEL	OPERATING WEIGHT (lb)	AIRFLOW (ACFM)	MINIMUM OUTSIDE AIR (ACFM)	E.S.P. (in. wg.)	SEER / EER	OUTDOOR SOUND LEVEL (dBA)	VOLTS/Ø/Hz	MCA	MOCP	CAPACITY (MBH) TOTAL	CAPACITY (MBH) SENSIBLE	EAT (°F db/wb)	LAT (°F db)	AMBIENT DESIGN (°F db/wb)	GAS INPUT (MBH)	OUTPUT CAPACITY (MBH)	EAT (°F)	LAT (°F)	AMBIENT DESIGN (°F)
1	ALLIED	LGH480H4M	7,915	16,000	6800	2.0	14.5 / 10.8	91	208/3/60	279	350	474.7	377.4	78/60	51.7	100/61	800	640	55	92.2	9

FEATURES AND OPTIONS:

1. POWER EXHAUST WITH VFD FOR BUILDING PRESSURIZATION CONTROL
2. FACTORY INSTALLED SUPPLY AND RETURN AIR DUCT SMOKE DETECTORS. INTERLOCKED AS REQUIRED TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
3. PROVIDE UNIT WITH BIRDSCREEN ON O.A. INTAKE AND E.A. OUTLET.
4. PROVIDE UNIT WITH 2" MERV 8 FILTERS.
5. SCROLL COMPRESSORS
6. VARIABLE AIR VOLUME CAPABLE.
7. FACTORY INSTALLED WEATHERPROOF DISCONNECT.
8. FACTORY INSTALLED GFCI SERVICE OUTLET, NON-POWERED.
9. FACTORY INSTALLED 100% SENSIBLE ECONOMIZER WITH HOOD.
10. FACTORY INSTALLED INTEGRAL VFD FOR SUPPLY AND EXHAUST FAN.
11. PROVIDE WITH MANUFACTURES SMART THERMOSTAT AND C02 SENSOR.

Kimley»Horn
© 2019 KIMLEY-HORN AND ASSOCIATES, INC.
5370 KIETZKE LANE, SUITE 100
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CITY OF SPARKS, NEVADA

City of Sparks — All Economy Here

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL SCHEDULES, SYMBOLS AND LEGEND

Job No. 192079000.3
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MECHANICAL SPECIFICATIONS

A. GENERAL

1. THE INFORMATION INDICATED ON THESE DRAWINGS AS EXISTING IS BASED UPON INFORMATION TAKEN FROM AS-BUILT DRAWINGS, FIELD INVESTIGATION, AND INFORMATION OBTAINED FROM SUBMITTAL DATA, ETC. THE PLANS DO NOT GUARANTEE ACCURACY BUT ARE ONLY AN INDICATION OF EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT CONDITIONS SUCH AS EQUIPMENT PLACEMENT, DUCTWORK (SIZE, ROUTING, AND ELEVATION), PIPING (SIZE, ROUTING, AND ELEVATION), ETC. THE DRAWINGS ARE INTENDED TO PROVIDE THE CONTRACTOR AN INDICATION OF THE SYSTEM INSTALLED IN THE FACILITY TO DATE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS TO THE DRAWING INFORMATION AS REQUIRED TO MATCH EXISTING FIELD CONDITIONS.
2. THE CONTRACTOR SHALL INSTALL THE NEW EQUIPMENT, DUCTWORK, AND PIPING AROUND ALL EXISTING OBSTACLES INCLUDING: ELECTRICAL CONDUIT, DOMESTIC WATER PIPING, WASTE AND VENT PIPING, ACID WASTE AND VENT PIPING, CHILLED AND HEATING WATER PIPING, AND FIRE SPRINKLER PIPING. PROVIDE OFFSETS TO AVOID RELOCATION OF OTHER UTILITIES. RELOCATE UTILITIES IF THEY ARE IN CONFLICT WITH THE MECHANICAL SYSTEM INSTALLATION, CAUSE DEVIATIONS IN THE DESIGN INTENT, UNSATISFACTORY OPERATION, NOISY CONDITIONS, OR INTERFERE WITH MAINTENANCE. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY UTILITY RELOCATION WITH THE APPROPRIATE SUBCONTRACTOR.
3. PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, SERVICES AND INSURANCES TO COMPLETE THE HEATING, VENTILATING AND AIR CONDITIONING WORK WITHIN THE FULL INTENT OF THE DRAWINGS AND SPECIFICATIONS CONTAINED HEREON AND TO THE ENTIRE SATISFACTION OF THE ARCHITECT/ENGINEER.
4. PROVIDE ALL PERMITS AND FEES AS REQUIRED FOR THE MECHANICAL WORK.
5. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT BEFORE BIDDING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC), 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2018 INTERNATIONAL FIRE CODE (IFC), 2018 UNIFORM MECHANICAL CODE (UMC), 2018 UNIFORM PLUMBING CODE (UPC), 2015 NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS, AND ALL OTHER APPLICABLE CODES, RULES, AND LOCAL REQUIREMENTS.
7. GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR.
8 ALL DIMENSIONS AND MEASUREMENTS SHALL BE VERIFIED AT THE JOBSITE BEFORE FABRICATION AND/OR INSTALLATION OF THE EQUIPMENT.
9 PROVIDE AND INSTALL ALL EQUIPMENT, DUCT, PIPING, AND CONTROLS AS SHOWN ON THE DRAWINGS.

B. SUBMITTALS

1. FURNISH SIX (6) SETS OF SUBMITTALS (BOUND WITH COVER) OF MANUFACTURER'S DATA SHEETS FOR ALL MATERIALS AND EQUIPMENT FOR APPROVAL OF THE ARCHITECT/ENGINEER PRIOR TO PURCHASE AND INSTALLATION. INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED.
2. ELECTRONIC SUBMITTALS IN ADOBE PDF FORMAT, IN LIEU OF PAPER COPIES, WILL BE ACCEPTABLE.
3. SUBSTITUTED ITEMS SHALL BE SUBMITTED WITH MANUFACTURER'S DESCRIPTIVE DATA AND MUST SHOW EQUALITY TO EQUIPMENT SPECIFIED. INFORMATION ON SUBSTITUTED ITEMS MUST BE COMPLETE, INCLUDING, BUT NOT LIMITED TO: DESIGN, CONSTRUCTION MATERIALS, CONSTRUCTION QUALITY, AND SOUND LEVELS. ENGINEER WILL NOT RESEARCH INFORMATION REQUIRED TO COMPARE EQUIPMENT. ENGINEER RESERVES THE RIGHT TO REQUIRE SPECIFIED EQUIPMENT.
4. SUBMIT MANUFACTURER'S DESCRIPTIVE DATA WITHIN TEN (10) WORKING DAYS AFTER AWARD OF THE CONTRACT. MATERIALS AND EQUIPMENT SHALL NOT BE ORDERED PRIOR TO SUBMITTAL APPROVAL. ALLOW TEN (10) WORKING DAYS AFTER RECEIPT OF SUBMITTALS IN THE ENGINEER'S OFFICE BEFORE REVIEWED SUBMITTALS WILL BE RETURNED.
5. UPON COMPLETION OF THE PROJECT, AND PRIOR TO FINAL ACCEPTANCE PAYMENT, SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS AND THREE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS (BOUND IN 3-RING BINDERS).

C. WORKMANSHIP

1. ALL WORK TO BE PERFORMED BY QUALIFIED PERSONNEL NORMALLY ENGAGED IN THE RESPECTIVE LINE OF WORK.
2. PERFORM ALL WORK IN A MANNER NOT TO DISTURB THE NORMAL OPERATION OF THE BUILDING.
3. COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE.
4. COORDINATE ALL WORK WITH THE OTHER TRADES.
5. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK ACCEPTABLE TO THE OWNER'S REPRESENTATIVE.

D. DEMOLITION

1. DEMOLITION WORK SHALL NOT CREATE ANY DUST PROBLEMS IN THE WORKING SPACES.
2. ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

E. CUTTING, PATCHING, AND PAINTING

1. ALL CUTTING AND PATCHING TO BE PERFORMED BY THE GENERAL CONTRACTOR.
2. CUTTING OF ALL OPENINGS SHALL BE COORDINATED WITH THE OWNER'S ENGINEERING REPRESENTATIVE.
3. WATER WILL NOT BE USED FOR CONCRETE CUTTING WITHOUT THE DIRECT SUPERVISION OF THE OWNER'S ENGINEERING REPRESENTATIVE.
4. WALL SURFACES SHALL BE PRIMED AND PAINTED. PAINT TYPE AND COLOR SHALL BE AS SPECIFIED BY THE OWNER'S REPRESENTATIVE.

F. PRODUCT HANDLING

1. USE ALL MEANS NECESSARY TO PROTECT ALL MATERIALS AND EQUIPMENT BEFORE, DURING, AND AFTER INSTALLATION AND TO PROTECT THE MATERIALS AND WORK OF THE OTHER TRADES.
2. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

G. EQUIPMENT

1. EQUIPMENT SHALL BE AS SPECIFIED IN THE EQUIPMENT SCHEDULE OR AN APPROVED EQUAL IF NOTED.
2. INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.
3. GENERAL CONTRACTOR SHALL PROVIDE ALL CURBED OPENINGS IN ROOF FOR ALL ROOF MOUNTED EQUIPMENT.
4. SECURELY FASTEN ALL EQUIPMENT TO PREVENT MOVEMENT DUE TO WIND OR SEISMIC FORCES.
5. PROVIDE 10'-0" MINIMUM CLEARANCE BETWEEN OUTSIDE AIR INTAKE AND ANY EXHAUST AIR OUTLETS OR PLUMBING VENTS.

H. DUCTWORK

1. AIR DISTRIBUTION DUCT SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CURRENT EDITIONS OF THE ASHRAE GUIDE AND WITH S.M.A.C.N.A. DUCT CONSTRUCTION STANDARDS.
2. RECTANGULAR AND ROUND DUCTWORK LOCATED INDOORS SHALL BE CONSTRUCTED FROM GALVANIZED STEEL IN ACCORDANCE WITH THE LATEST EDITION S.M.A.C.N.A. "HVAC DUCT CONSTRUCTION STANDARDS" FOR 2" W.G. PRESSURE SYSTEMS. FIBERGLASS DUCT WILL NOT BE PERMITTED.
3. RECTANGULAR AND ROUND DUCTWORK LOCATED OUTDOORS SHALL BE SUBMITTED AS A DEFERRED SUBMITTAL. CONTRACTOR TO PROVIDE DUCT SPECIFICATIONS AND A SAMPLE FOR ENGINEER APPROVAL.
4. DUCTS LINED WITH INSULATION SHALL BE INCREASED IN SIZE TO ALLOW FOR INSULATION THICKNESS SO THAT DIMENSIONS SHOWN ON DRAWINGS WILL BE NET INSIDE DIMENSIONS.
5. FITTINGS: ROUND TO RECTANGULAR DUCT CONNECTIONS SHALL BE MADE AS SHOWN ON DRAWINGS OR WITH CONICAL SHAPED PREFORMED FITTINGS. TURNING VANES SHALL BE USED FOR ALL MITERED ELBOWS IN RECTANGULAR DUCT. CENTERLINE RADIUS OF ALL ELBOWS SHALL BE ONE AND ONE HALF TIMES THE DIAMETER OF THE DUCT.
6. DUCTS SHALL BE PROVIDED WITH HANGERS TO PREVENT ANY BENDING OR SAGGING. HANGERS SHALL BE GALVANIZED STRAP IRON LOOPS WHICH SHALL BE FASTENED TO OVERHEAD CONSTRUCTION IN A SECURE MANNER. SIZE, GAUGE, AND SPACING SHALL BE PER S.M.A.C.N.A. STANDARDS.
7. ALL DUCT JOINTS SHALL BE SEALED WITH S.M.A.C.N.A. APPROVED TAPE AND POLYMER ADHESIVES AIR SEAL #33 OR DESIGN POLYMERICS #DP1010 WATER BASED DUCT SEALANT OR APPROVED EQUAL.
8. AT ALL DUCT CONNECTIONS TO UNITS, AND WHERE INDICATED, FURNISH AND INSTALL HEAVY FLEXIBLE CONNECTIONS 6" MINIMUM LENGTH. MATERIAL USED FOR FLEXIBLE CONNECTIONS SHALL BE VENTFAB AS MANUFACTURED BY VENTFABRIC, METALFAB AS MANUFACTURED BY DURODYNE, OR APPROVED EQUAL.

I. GRILLES, REGISTERS, AND DIFFUSERS

1. AN AIR DISTRIBUTION SCHEDULE IS SHOWN ON DRAWINGS. UNITS OF EQUAL PERFORMANCE, CONSTRUCTION, AND SOUND CRITERIA BY MAJOR MANUFACTURERS WILL BE CONSIDERED FOR APPROVAL. SEE SUBSTITUTION REQUIREMENTS.

J. DUCT INSULATION

1. ACCEPTABLE MANUFACTURERS: CERTAINTEED, KNAUF, JOHNS MANVILLE, AND OWENS CORNING.
2. ROUND SUPPLY AND RETURN DUCT AND FITTINGS LOCATED WITHIN THE CONDITIONED SPACE SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 75 (OR EQUAL) 1½" THICK, 3/4# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET. ROUND SUPPLY AND RETURN DUCT AND FITTINGS EXPOSED WITHIN THE AREA THAT IT SERVES SHALL NOT BE INSULATED.
3. RECTANGULAR SUPPLY AND RETURN DUCT AND FITTINGS LOCATED WITHIN THE CONDITIONED SPACE SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1" THICK, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
4. ROUND SUPPLY AND RETURN DUCT AND FITTINGS LOCATED IN UNCONDITIONED SPACE SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 100 (OR EQUAL) 2" THICK, R-6 MINIMUM INSTALLED INSULATING VALUE, 1# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET.
5. RECTANGULAR SUPPLY AND RETURN DUCT AND FITTINGS LOCATED IN UNCONDITIONED SPACE SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1½" THICK, R-6 MINIMUM INSULATING VALUE, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
6. OUTSIDE AIR DUCT AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 75 (OR EQUAL) 1½" THICK, 1# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET.
7. ROUND SUPPLY DUCT AND FITTINGS SHOWN AS LINED ON THE DRAWINGS SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE SPIRACOUSTIC (OR EQUAL) 1" THICK, 1# DENSITY ACOUSTIC DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
8. EXTERIOR DUCT AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH 2" THICK RIGID POLYISOCYANURATE OR POLYSTYRENE FOAM INSULATION (R-8 MINIMUM) WITH MINIMUM 20 GAUGE ALUMINUM OR GALVANIZED STEEL JACKET. LAP AND SEAL EXTERIOR JACKET JOINTS. INTERNALLY LINE DUCT (WHERE SHOWN ON DRAWINGS) WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1" THICK, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.

K. OTHER MATERIAL

1. ALL OTHER MATERIAL, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE JOB, SHALL BE NEW AND FIRST QUALITY, FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

L. IDENTIFICATION

1. PLASTIC NAMEPLATES: LAMINATED THREE LAYER WITH ENGRAVED BLACK LETTERS ON A LIGHT CONTRASTING BACKGROUND COLOR. INSTALL PLASTIC NAMEPLATES WITH CORROSION RESISTANT MECHANICAL FASTENERS, OR ADHESIVE.
2. LABELS: POLYESTER, SIZE AS REQUIRED, ADHESIVE BACKED WITH PRINTED IDENTIFICATION. INSTALL LABELS WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT PLACEMENT.
3. IDENTIFY ALL EQUIPMENT WITH PLASTIC NAMEPLATES.
4. IDENTIFY CONTROL PANELS AND MAJOR COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES. TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS. KEY TO CONTROL SCHEMATIC.

M. RELATED WORK

1. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL POWER WIRING AND EQUIPMENT DISCONNECTS, UNLESS INCLUDED WITH EQUIPMENT, TO MAKE SYSTEM OPERATIONAL.

N. CONTROLS

1. THERMOSTATS TO BE FURNISHED WITH MECHANICAL EQUIPMENT AND INSTALLED BY HVAC CONTRACTOR. PROVIDE POLYCARBONATE LOCKING COVER.

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City of Sparks

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL SPECIFICATIONS

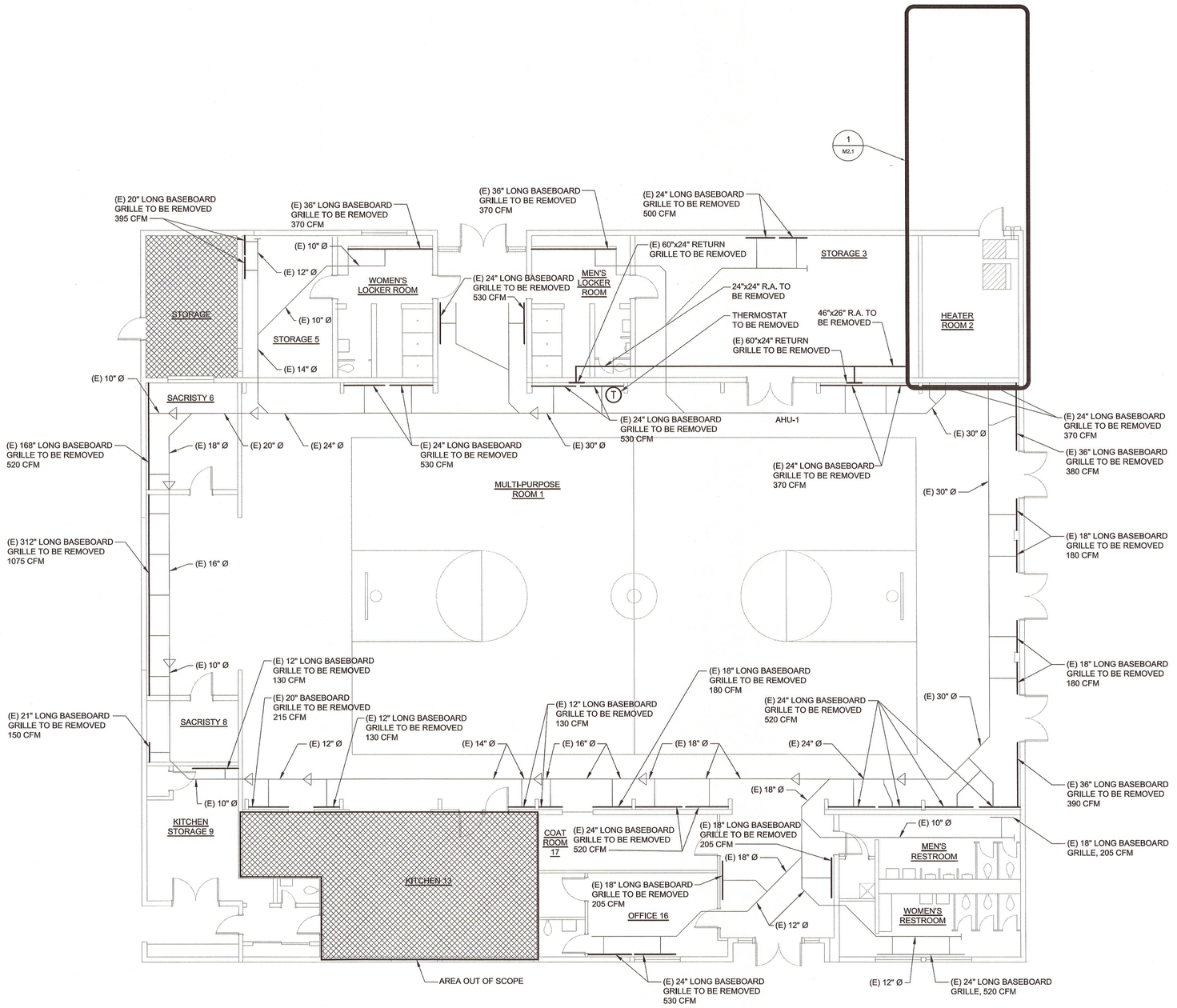
Job No. 192079000.3

Date: 10/14/2019

SHEET

M0.2

Sheet Number



1 / M1.1 **MECHANICAL DEMOLITION PLAN**

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

NORTH

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SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL DEMOLITION PLAN

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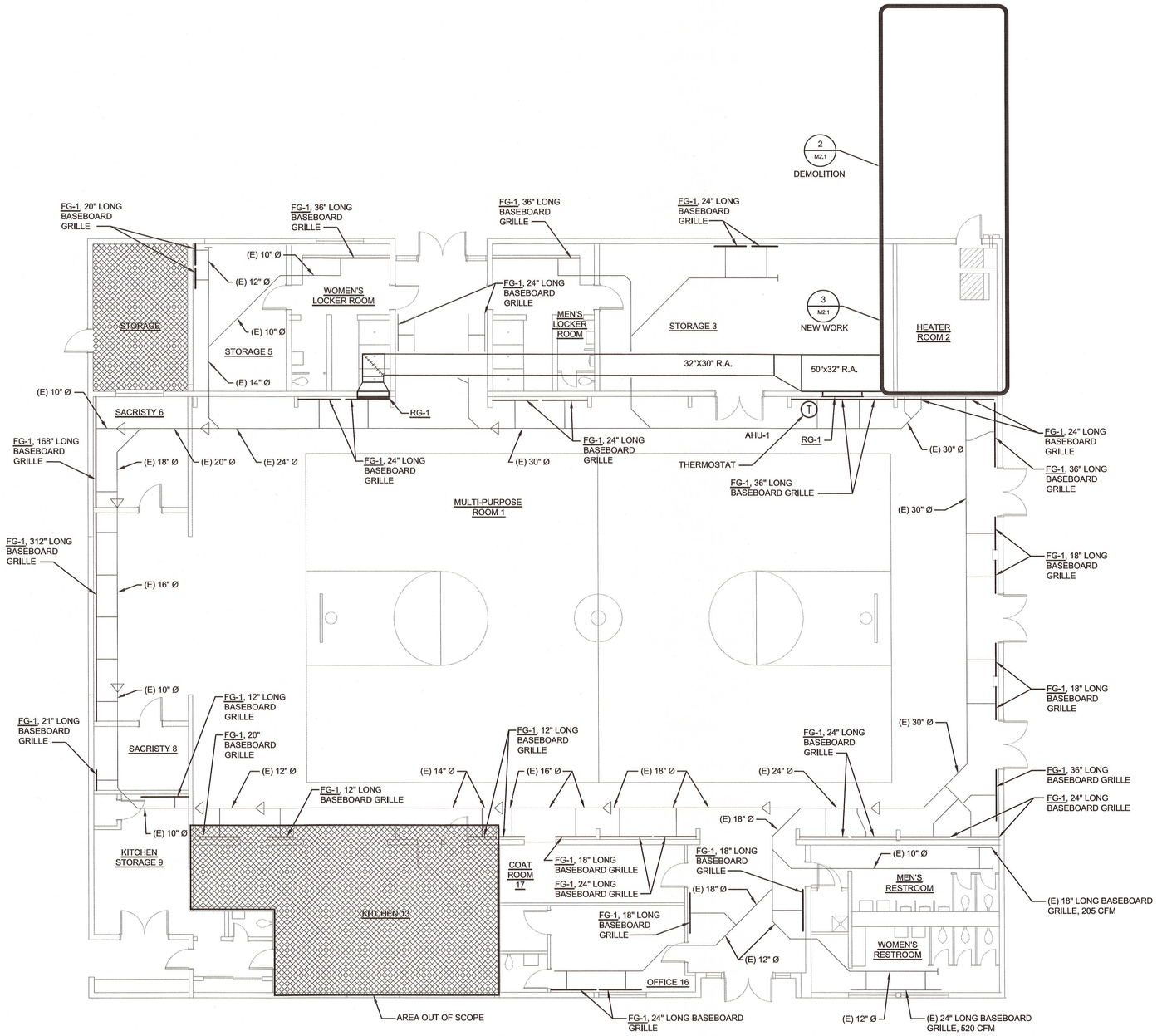
Sheet Number

GENERAL NOTE

1. CONTRACTOR TO FIELD VERIFY ALL (E) BASEBOARD GRILLE SIZES. NEW BASEBOARD GRILLES ARE TO BE REINSTALLED AND WILL NEED TO BE COSTUME MADE TO FIT (E) CONCRETE DUCT OPENINGS. CONTRACT TO PROVIDE A DEFERRED SUBMITTAL FOR CUSTOM GRILLES FOR OWNER AND ENGINEER APPROVAL.



1 / M2.1 **MECHANICAL FLOOR PLAN**

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

NORTH

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RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA No. 16816 MATTHEW MYRES Exp. 12/31/19 MECHANICAL

10/14/19

REV.	DATE	APPD	DESCRIPTION	DRAWING FILE. M2.1	DRAWN BY: KP	CHECKED BY: JH	APPROVED BY: MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

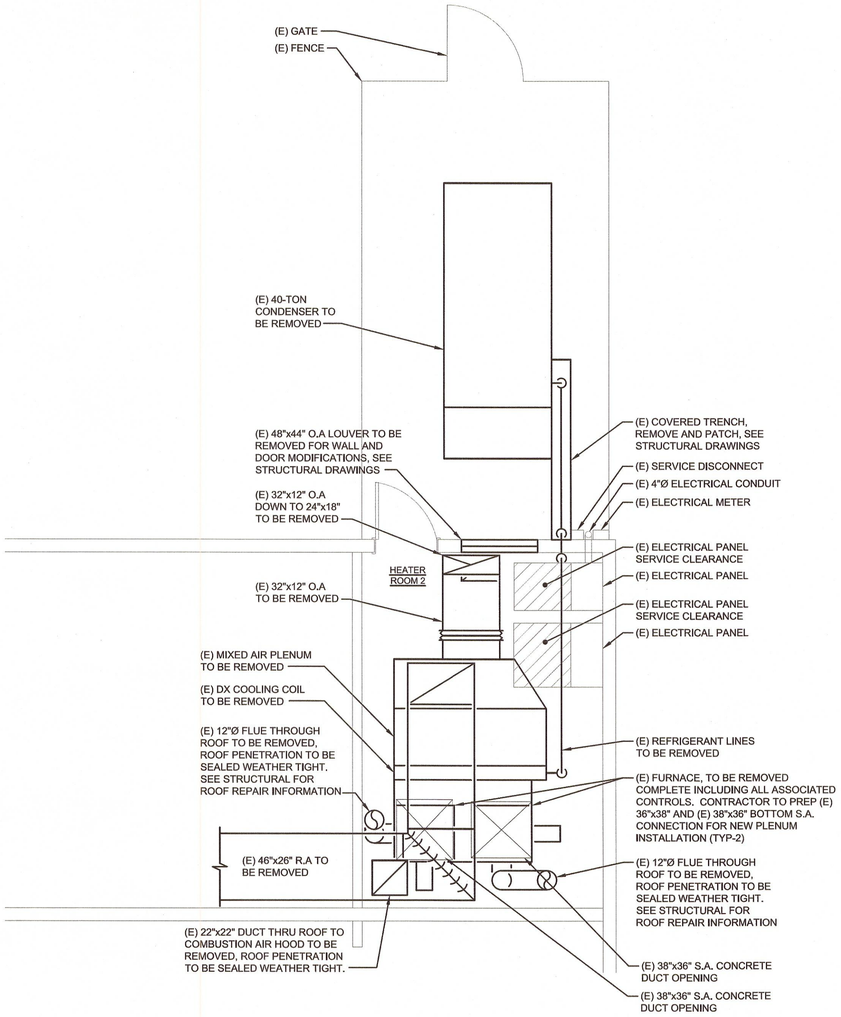
MECHANICAL FLOOR PLAN

Job No. 192079000.3

Date: 10/14/2019

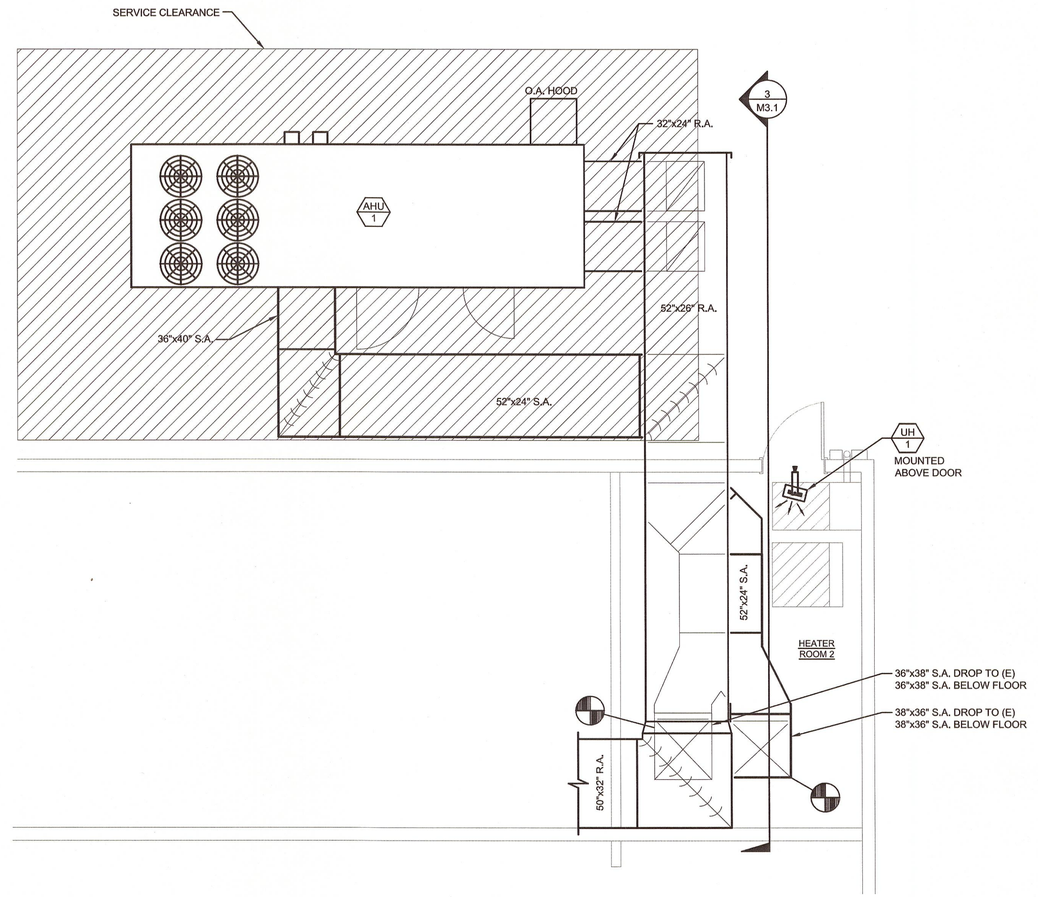
SHEET M2.1

Sheet Number



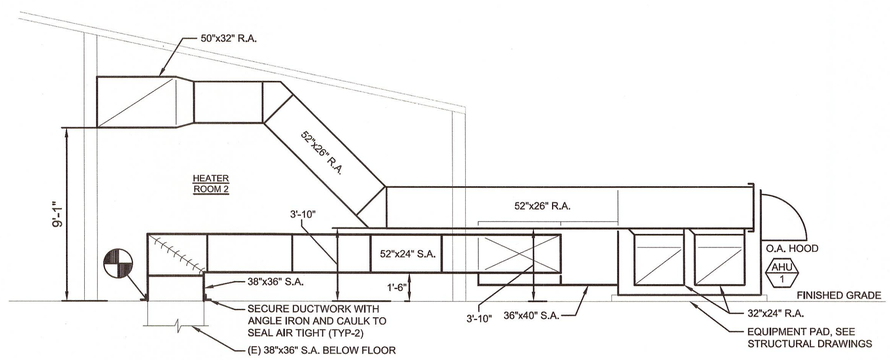
1 M3.1 MECHANICAL DEMOLITION ENLARGED PLAN

SCALE: 1/4" = 1'-0"



2 M3.1 MECHANICAL NEW ENLARGED PLAN

SCALE: 1/4" = 1'-0"



3 M3.1 MECHANICAL NEW SECTION

SCALE: 1/4" = 1'-0"

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STATE OF NEVADA REGISTERED PROFESSIONAL ENGINEER
No. 16816
MATTHEW C. MYRES
Exp. 12/31/19
MECHANICAL

10/14/19

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				M3.1	KP	JH	MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL ENLARGED PLANS AND SECTION

Job No. 192079000.3

Date: 10/14/2019

SHEET

M3.1

Sheet Number

PLUMBING SYMBOL LIST

(NOTE: ALL OF THE SYMBOLS INDICATED BELOW MAY NOT APPEAR ON THIS PROJECT)

S or W	SOIL OR WASTE PIPING (BELOW GRADE / FLOOR)	
S or W	SOIL OR WASTE PIPING (ABOVE GRADE / FLOOR)	
V	SOIL OR WASTE VENT PIPING	
RDL	RDL,SDL	STORM OR ROOF DRAIN PIPING (BELOW GRADE / FLOOR)
RDL	RDL,SDL	STORM OR ROOF DRAIN PIPING (ABOVE GRADE / FLOOR)
ODL	ODL	OVERFLOW ROOF DRAIN PIPING (BELOW GRADE / FLOOR)
ODL	ODL	OVERFLOW ROOF DRAIN PIPING (ABOVE GRADE / FLOOR)
D	D	DRAIN PIPING
IW	IW	INDIRECT WASTE PIPING
C	C	CONDENSATE DRAIN PIPING
	CW	COLD WATER PIPING
	HW	HOT WATER PIPING (105^ - 125^ F)
	HWR	HOT WATER RECIRCULATION PIPING (SPECIFY TEMP)
T	T	TEMPERED WATER (120^ F)
TR	TR	TEMPERED WATER RETURN PIPING
TP	TP	TRAP PRIMER WATER PIPING
LPG	LPG	LIQUID PROPANE GAS (7" W.C.)
G	G	GAS - LOW PRESSURE (LESS THAN 2 PSI)
MG	MG	GAS - MEDIUM PRESSURE (2-3 PSI)
HG	HG	GAS - HIGH PRESSURE (5 PSI AND ABOVE)
A	A	COMPRESSED AIR PIPING
FOS	FOS	FUEL OIL SUPPLY PIPING
FOR	FOR	FUEL OIL RETURN PIPING
	G.V.	GATE VALVE
	GLV	GLOBE VALVE
	BLV	BALL VALVE
	ANV	ANGLE VALVE
	B.F.V.	BUTTERFLY VALVE
	C.H.V.	CHECK VALVE
	G.C.	GAS COCK, GAS STOP
	B.V.	BALANCING VALVE
	H.B.	HOSE BIBB
	H.V.	3/4" HOSE END DRAIN VALVE
	S.O.V.	SHUT-OFF VALVE IN RISER
	BP	DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY
	R.P.B.P.	REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY
	G.P.R.	GAS PRESSURE REDUCING VALVE
	S.T.R.	STRAINER
	S.T.R.V.	STRAINER WITH 3/4" HOSE END DRAIN VALVE
	P.T.R.	PRESSURE - TEMPERATURE RELIEF VALVE
	RV	PRESSURE RELIEF VALVE
	U	UNION
	F	FLANGE
	FL	FLEXIBLE PIPING CONNECTOR (U.L. LABELED FOR GAS PIPING)
	RED.	REDUCER
	W.H.A.	WATER HAMMER ARRESTOR
	P.R.G.	PRESSURE GAUGE WITH GAUGE COCK

	TH.	THERMOMETER
	V.B.	VACUUM BREAKER
C.O.	C.O.	CLEANOUT PLUG
	F.C.O.	FLOOR CLEANOUT
	G.C.O.	GRADE CLEANOUT
	W.C.O.	WALL CLEANOUT
	P.D.	PIPING TEE DOWN
	P.U.	PIPING TEE UP
	P.U.	PIPING ELBOW UP
	P.D.	PIPING ELBOW DOWN
		BRANCH - TOP CONNECTION
		BRANCH - BOTTOM CONNECTION
		BRANCH - SIDE CONNECTION
	P.T.	PLUGGED TEE
	C.O.P.	CAP ON END OF PIPE
OR		ARROW INDICATES DIRECTION OF FLOW
P	P	POWER POINT CONNECTION FOR HOT WATER MAINT. SYSTEM
	F.L.S.	FLOOR SINK
	F.D.	FLOOR DRAIN
#		PLUMBING FIXTURE SCHEDULE - (SEE SCHEDULE)
1		KITCHEN EQUIPMENT CONNECTION SCHEDULE - (SEE SCHEDULE)
	V.T.R.	PLUMBING VENT THRU ROOF
	A.P.	ACCESS PANEL
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	BTUH	BRITISH THERMAL UNITS PER HOUR
	CD	CONDENSATE DRAIN PIPING
	CFH	CUBIC FEET PER HOUR
	DN	DOWN
	(E)	EXISTING
	GA	GAUGE
	GAL	GALLON
	GPH	GALLONS PER HOUR
	GPM	GALLONS PER MINUTE
	HD	HEAD
	HR	HOUR
	MAX	MAXIMUM
	MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
	MIN	MINIMUM
	(N)	NEW
	NOM	NOMINAL
	PD	PRESSURE DROP
	T.J.	THROUGH JOISTS
	TYP	TYPICAL
	U.F.	UNDER FLOOR
	WC	WATER COLUMN

PLUMBING SHEET LIST

SHEET NUMBER	SHEET NAME
P0.1	PLUMBING SYMBOLS, LEGENDS AND SPECIFICATIONS
P2.1	PLUMBING FLOOR PLANS

PLUMBING PROJECT NOTES

1. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL FLOOR PLANS FOR EXACT LOCATIONS OF ROUGH-IN FOR ALL UNITS AS SHOWN ON THE ENLARGED PLUMBING PLANS.

2. ALL PLUMBING SYSTEMS AND COMPONENTS SHALL BE INSTALLED PER 2012 U.P.C.

3. THE UNIT WATER PLANS HAVE BEEN SIZED ACCORDING THE TO LONGEST DEVELOPED LENGTH FOR THE UNIT TYPE. SOME UNITS HAVE LESS TOTAL DEVELOPED LENGTH OF WATER PIPING. THE CONTRACTOR SHALL IDENTIFY THESE UNITS AND MAY ADJUST THE WATER PIPE SIZES IN ACCORDANCE WITH 2012 U.P.C. TABLE 610.4 USING THE OVER 60 PSI WATER PRESSURE RANGE.

PLUMBING SPECIFICATIONS

A. GENERAL

1. THE INFORMATION INDICATED ON THESE DRAWINGS AS EXISTING IS BASED UPON INFORMATION TAKEN FROM AS-BUILT DRAWINGS, FIELD INVESTIGATION, AND INFORMATION OBTAINED FROM EXISTING SUBMITTAL DATA, ETC. THE PLANS DO NOT GUARANTEE ACCURACY BUT ARE ONLY AN INDICATION OF EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT CONDITIONS SUCH AS FIXTURE AND EQUIPMENT PLACEMENT, PIPING (SIZE, ROUTING, AND ELEVATION), ETC. THE DRAWINGS ARE INTENDED TO PROVIDE THE CONTRACTOR AN INDICATION OF THE SYSTEM INSTALLED IN THE FACILITY TO DATE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS TO THE DRAWING INFORMATION AS REQUIRED TO MATCH EXISTING FIELD CONDITIONS.
2. THE CONTRACTOR SHALL INSTALL THE NEW FIXTURES, EQUIPMENT, AND PIPING AROUND ALL EXISTING OBSTACLES INCLUDING: ELECTRICAL CONDUIT, DUCTWORK, CHILLED AND HEATING WATER PIPING, AND FIRE SPRINKLER PIPING. PROVIDE OFFSETS TO AVOID RELOCATION OF OTHER UTILITIES. THE UTILITIES WILL NEED TO BE RELOCATED IF THEY ARE IN CONFLICT WITH THE INSTALLATION OF THE PLUMBING SYSTEMS CAUSING DEVIATIONS IN THE DESIGN INTENT, UNSATISFACTORY OPERATION, NOISY CONDITIONS, OR INTERFERE WITH MAINTENANCE. IT IS THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY UTILITY RELOCATION WITH THE APPROPRIATE SUBCONTRACTOR.
3. PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, SERVICES AND INSURANCES TO COMPLETE THE PLUMBING WORK WITHIN THE FULL INTENT OF THE DRAWINGS AND SPECIFICATIONS CONTAINED HEREON AND TO THE ENTIRE SATISFACTION OF THE ARCHITECT/ENGINEER.
4. PROVIDE ALL PERMITS AND FEES AS REQUIRED FOR THE PLUMBING WORK.
5. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT BEFORE BIDDING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC), 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2018 INTERNATIONAL FIRE CODE (IFC), 2018 UNIFORM MECHANICAL CODE (UMC), 2018 UNIFORM PLUMBING CODE (UPC), 2015 NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS, AND ALL OTHER APPLICABLE CODES, RULES, AND LOCAL REQUIREMENTS.
7. GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR.
8. ALL DIMENSIONS AND MEASUREMENTS SHALL BE VERIFIED AT THE JOBSITE BEFORE FABRICATION AND/OR INSTALLATION OF THE FIXTURES.
9. DRAWINGS ARE DIAGRAMMATIC TO SHOW BASIC SIZING. COORDINATE THE RUNNING OF ALL MAINS WITH THE ENGINEER. ANY MAJOR REROUTING SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR APPROVAL.

B. SUBMITTALS

1. ELECTRONIC SUBMITTALS IN ADOBE PDF FORMAT, IN LIEU OF PAPER COPIES, WILL ONLY BE ACCEPTED.
2. SUBSTITUTED ITEMS SHALL BE SUBMITTED WITH MANUFACTURER'S DESCRIPTIVE DATA AND MUST SHOW EQUALITY TO ITEM SPECIFIED. INFORMATION ON SUBSTITUTED ITEMS MUST BE COMPLETE, INCLUDING, BUT NOT LIMITED TO: DESIGN, CONSTRUCTION MATERIALS, AND CONSTRUCTION QUALITY. ENGINEER WILL NOT RESEARCH INFORMATION REQUIRED TO COMPARE EQUIPMENT. ENGINEER RESERVES THE RIGHT TO REQUIRE SPECIFIED ITEM.
3. SUBMIT MANUFACTURER'S DESCRIPTIVE DATA WITHIN TEN (10) WORKING DAYS AFTER AWARD OF THE CONTRACT. MATERIALS AND FIXTURES SHALL NOT BE ORDERED PRIOR TO SUBMITTAL APPROVAL. ALLOW TEN (10) WORKING DAYS AFTER RECEIPT OF SUBMITTALS IN THE ENGINEER'S OFFICE BEFORE REVIEWED SUBMITTALS WILL BE RETURNED.
4. UPON COMPLETION OF THE PROJECT, AND PRIOR TO FINAL ACCEPTANCE PAYMENT, SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS.

C. WORKMANSHIP

1. ALL WORK TO BE PERFORMED BY QUALIFIED PERSONNEL NORMALLY ENGAGED IN THE RESPECTIVE LINE OF WORK.
2. PERFORM ALL WORK IN A MANNER NOT TO DISTURB THE NORMAL OPERATION OF THE BUILDING.
3. COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE.
4. COORDINATE ALL WORK WITH THE OTHER TRADES.
5. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK ACCEPTABLE TO THE OWNER'S REPRESENTATIVE.

D. DEMOLITION

1. DEMOLITION WORK SHALL NOT CREATE ANY DUST PROBLEMS IN THE WORKING SPACES.

E. CUTTING, PATCHING, AND PAINTING

1. ALL CUTTING AND PATCHING TO BE PERFORMED BY THE GENERAL CONTRACTOR.
2. CUTTING OF ALL OPENINGS SHALL BE COORDINATED WITH THE OWNER'S ENGINEERING REPRESENTATIVE.
3. WATER WILL NOT BE USED FOR CONCRETE CUTTING WITHOUT THE DIRECT SUPERVISION OF THE OWNER'S ENGINEERING REPRESENTATIVE.
4. WALL SURFACES SHALL BE PRIMED AND PAINTED. PAINT TYPE AND COLOR SHALL BE AS SPECIFIED BY THE OWNER'S REPRESENTATIVE.

F. PRODUCT HANDLING

1. USE ALL MEANS NECESSARY TO PROTECT ALL MATERIALS AND FIXTURES BEFORE, DURING, AND AFTER INSTALLATION AND TO PROTECT THE MATERIALS AND WORK OF THE OTHER TRADES.
2. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

G. PIPING

1. NATURAL GAS PIPING ABOVE GRADE SHALL BE ASTM A53 OR A120 SCHEDULE 40 BLACK STEEL PIPE. THREADED JOINTS WITH ANSI/ASME B16.3, MALLEABLE IRON THREADED FITTINGS FOR SIZES 2" AND UNDER. WELDED JOINTS WITH ASTM A234 FORGED STEEL WELDING TYPE FITTINGS ON SIZES OVER 2". EXTERIOR PIPING SHALL BE PAINTED TO PREVENT CORROSION.

H. VALVES & SPECIALTIES

1. GAS COCKS (UP TO 2"): IRON BODY AND PLUG, LEVER HANDLE, THREADED ENDS, UL LISTED.
2. GAS COCKS (OVER 2"): IRON BODY AND PLUG, LEVER HANDLE, FLANGED ENDS, UL LISTED.

I. ISOLATION

1. ISOLATE ALL DISSIMILAR METALS WITH ISOLATORS EQUALING OR EXCEEDING THE QUALITY OF "EPCO" DIELECTRIC UNIONS.
2. ISOLATE ALL COPPER PIPING FROM DISSIMILAR SUPPORTS.

J. OTHER MATERIAL

1. ALL OTHER MATERIAL, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE JOB, SHALL BE NEW AND FIRST QUALITY, FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR.

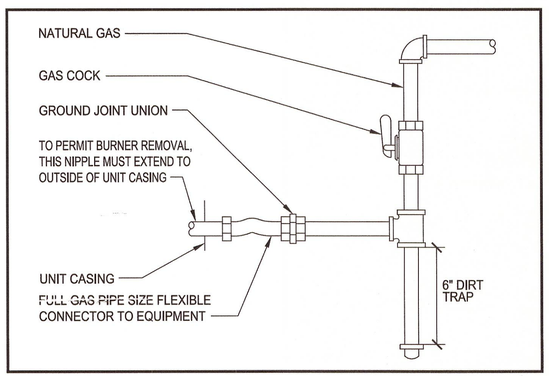
K. TESTING

1. ALL PIPING SHALL BE TESTED IN THE PRESENCE OF AN INSPECTOR BEFORE WORK IS CONCEALED. NOTIFY THREE DAYS PRIOR TO TESTS.
2. TEST PIPING AT COMPLETION OF ROUGHING-IN, IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

GAS	60 PSI W/AIR

L. RELATED WORK

1. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL POWER WIRING AND EQUIPMENT DISCONNECTS, UNLESS INCLUDED WITH EQUIPMENT, TO MAKE SYSTEM OPERATIONAL.



1 / P0.1 **EQUIPMENT GAS PIPING DETAIL**

SCALE: N.T.S.

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RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER
MATTHEW C. MYRES
Exp. 12/31/19
MECHANICAL
STATE OF NEVADA No. 16816

10/14/19

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DRAWING FILE: P0.1
DRAWN BY: KP
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CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

PLUMBING SYMBOLS, LEGENDS AND SPECIFICATIONS

Job No. 192079000.3
Date: 10/14/2019
SHEET
P0.1
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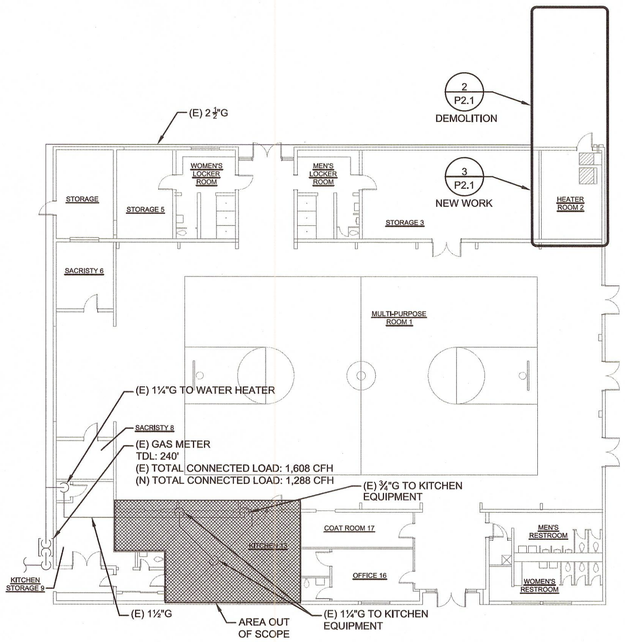
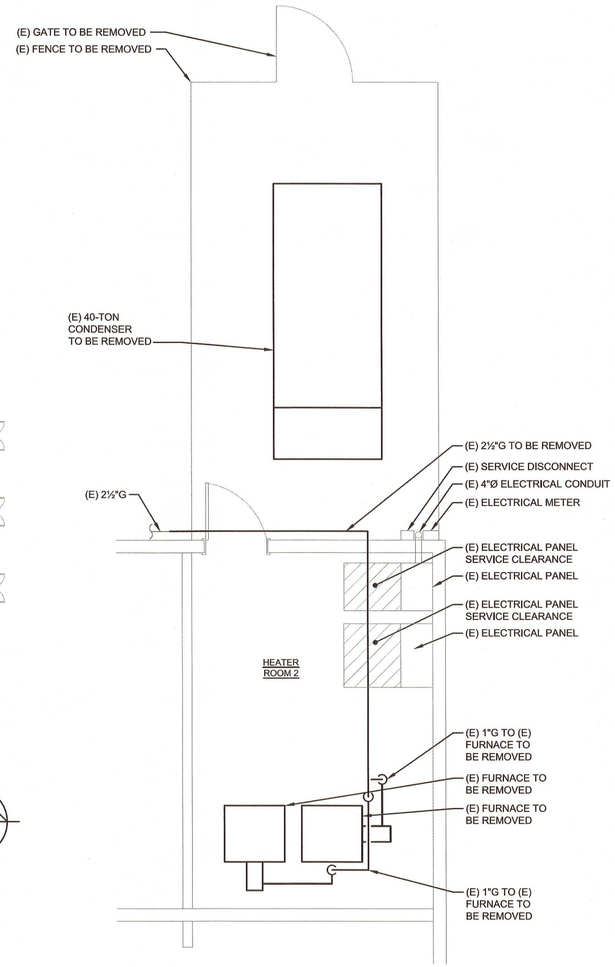


1 PLUMBING OVERALL PLAN

SCALE: 1/16" = 1'-0"

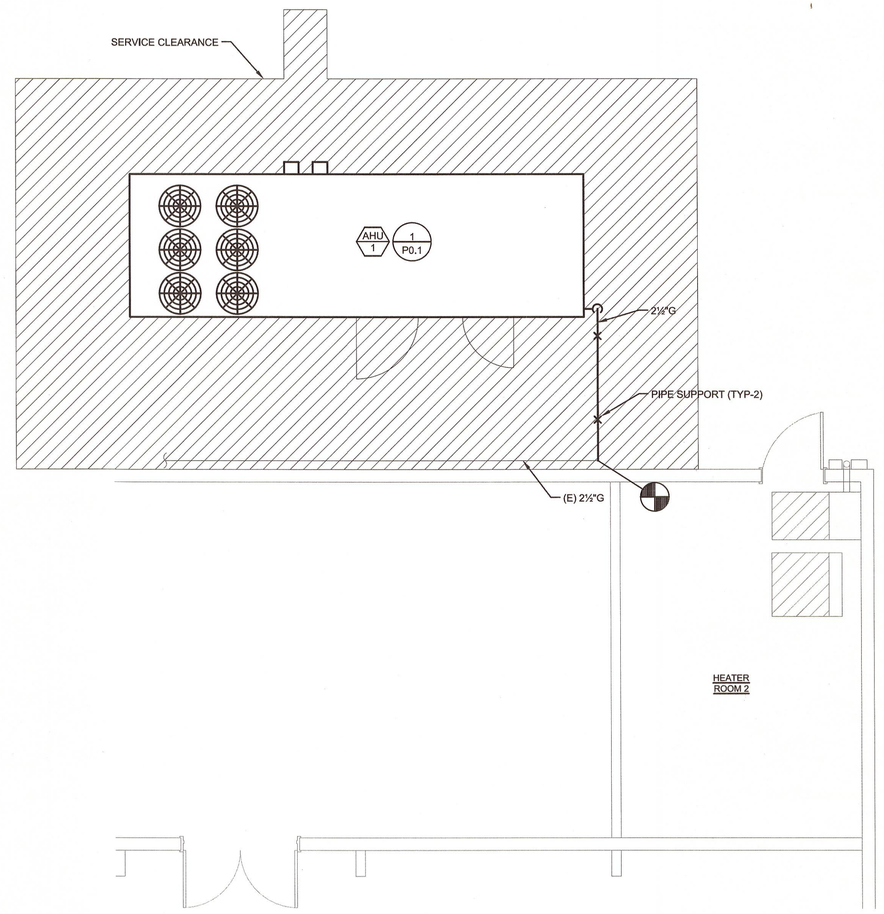
NORTH



2 PLUMBING DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

NORTH



3 PLUMBING NEW PLAN

SCALE: 1/4" = 1'-0"

NORTH

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CITY OF SPARKS, NEVADA

City of Sparks It's Happening Here

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

PLUMBING FLOOR PLANS

Job No. 192079000.3

Date: 10/14/2019

SHEET

P2.1

Sheet Number

ELECTRICAL SYMBOL LIST

- CONDUIT RUN IN OR ON CEILING OR WALL
- CONDUIT RUN IN OR UNDER FLOOR OR UNDERGROUND
- HASH MARKS INDICATE NUMBER OF #12 AWG CONDUCTORS IN CONDUIT. NO MARKS INDICATE 2 #12'S. DOES NOT INCLUDE GROUND WIRE. IF NON-METALLIC CONDUIT ADD GROUND PER NEC.
- LONG SLASH WITH HASH MARKS AS SHOWN INDICATES GROUND WIRE FOR ISOLATED GROUNDING SYSTEM. SIZE PER N.E.C.
- LA-1 — HOMERUN TO PANEL WITH PANEL AND CIRCUIT INDICATED
- LA-(1, 3, 5) — HOMERUN TO PANEL WITH CIRCUIT NUMBER IN BRACKETS INDICATING MULTI-POLE BREAKER.
- SURFACE/ PENDANT MOUNTED LIGHT FIXTURE
- $\$_w$ — AUTOMATIC WALL SWITCHES, ACUITY CONTROLS #WSX +48" AFF
- RACEWAY UP
- RACEWAY DOWN
- $\$_M$ — FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER
- MOTOR SYMBOL - HORSEPOWER AS INDICATED
- DISCONNECT SWITCH (30A/3P UNLESS INDICATED ON DWGS) "F" INDICATES FUSES PER MANUFACTURERS NAMEPLATE RATING
- MAGNETIC MOTOR STARTER (SIZE AS INDICATED ON DRAWINGS)
- COMBINATION STARTER / FUSED DISCONNECT SWITCH (SIZE AS INDICATED ON DRAWINGS - FUSES SIZED PER MANUFACTURER'S NAMEPLATE RATING)
- 120V DUPLEX CONVENIENCE RECEPTACLE +18" AFF
- JUNCTION BOX AS REQUIRED BY NATIONAL ELECTRIC CODE
- ELECTRICAL PANELBOARD - SURFACE MOUNTED
- SERVICE OR DISTRIBUTION EQUIPMENT
- T — TRANSFORMER
- —X— EXISTING WIRE AND/OR CONDUIT TO BE REMOVED OR ABANDONED
- —E— EXISTING WIRE AND/OR CONDUIT TO REMAIN
- DASHED DEVICES, LIGHT FIXTURES, ETC. EXISTING TO BE REMOVED
- E E E — "E" ADJACENT TO DEVICES, LIGHT FIXTURES, ETC. INDICATES EXISTING TO REMAIN
- 1 — SHEET NOTE
- AC 1 — MECHANICAL EQUIPMENT DESIGNATION. SEE MECHANICAL & PLUMBING PLANS
- B E3.1 — DETAIL DESIGNATION - "B" INDICATES DETAIL # ON SHEET E3.1

* NOTE: ALL MOUNTING HEIGHTS AS INDICATED UNLESS NOTED OTHERWISE.
ALL SYMBOLS MAY NOT BE USED ON PROJECTS.

ELECTRICAL ABBREVIATIONS

AC	ABOVE COUNTER. INSTALL 4" ABOVE SPLASH OR COUNTER OR AT HEIGHT AS INDICATED ON DRAWINGS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
A	AMPS
℄	CENTERLINE
CU	COPPER
EC	EMPTY CONDUIT WITH PULL WIRE
(E)	EXISTING
FBO	FURNISHED BY OTHER SECTION
GFI	GROUND FAULT INTERRUPTING
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NVE	NV ENERGY
PNL	PANEL
(RR)	REMOVE AND RELOCATE
SPD	SURGE PROTECTION DEVICE
UNO	UNLESS NOTED OTHERWISE
W/	WITH
WP	WEATHERPROOF (NEMA 3R)
XFMR	TRANSFORMER

GENERAL DEMOLITION NOTES

1. THESE PLANS DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. ANY OUTLETS, CIRCUITING AND/OR DEVICES THAT CONFLICT WITH ALL WORK BEING PERFORMED DURING THE COURSE OF THIS PROJECT SHALL BE RELOCATED/REROUTED OR REMOVED ENTIRELY AS DICTATED BY ENGINEER.
2. ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT SHALL BE OFFERED TO OWNER FOR SALVAGE. EQUIPMENT SELECTED SHALL BE TURNED OVER TO OWNER ON PROJECT SITE. ALL REMAINING EQUIPMENT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM PROJECT SITE.
3. IT IS MANDATORY THAT THE CONTRACTOR VISIT SITE AND VERIFY EXISTING CONDITIONS THAT MIGHT AFFECT HIS OR HER WORK. ALL DISCREPANCIES SHALL BE REPORTED TO ENGINEER PRIOR TO BID.
4. DEMOLITION AND MODIFICATION OF EXISTING DISTRIBUTION SYSTEMS SHALL BE PERFORMED AS FOLLOWS:
   A. EXISTING WIRING TO BE REMOVED SHALL BE REMOVED BACK TO ITS SOURCE. CONDUITS MAY BE ABANDONED IN PLACE IF THEY ARE IN CONCEALED LOCATION AND DO NOT CONFLICT WITH ANY NEW WORK. REMOVE ALL WIRING FROM ABANDONED RACEWAYS.
   B. REMOVAL OF EXISTING ELECTRICAL DISTRIBUTION SYSTEM SHALL INCLUDE EQUIPMENT, ASSOCIATED WIRING, INCLUDING (BUT NOT LIMITED TO) CONDUCTORS, CABLES, EXPOSED CONDUIT, SURFACE RACEWAYS, BOXES, FITTINGS, ETC. (BACK TO EQUIPMENT SOURCE.)

ELECTRICAL GENERAL NOTES

1. FURNISH ALL LABOR, MATERIALS, TOOLS ACCESSORIES, ETC. REQUIRED FOR A COMPLETE WORKING ELECTRICAL SYSTEM.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, COUNTY AND LOCAL CODES AND ORDINANCES, AS WELL AS ALL CURRENT STANDARDS, CODES AND PRACTICES AS REQUIRED BY NEC(2011), NEMA, ANSI, NFPA, IBC(2012), UL, IECC(2012).
3. ALL EQUIPMENT, MATERIALS AND WORK SHOWN ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING, OR NOTED OTHERWISE ON OTHER SHEETS.
4. ANY POWER OUTAGE OF ANY CIRCUIT SHALL BE APPROVED BY THE OWNER IN WRITING A MINIMUM OF 5 DAYS PRIOR TO OUTAGE. ALL OUTAGES SHALL BE DONE EXACTLY WHEN DETERMINED BY THE OWNER AND DONE DURING WORKING HOURS. NO SINGLE OUTAGE SHALL REQUIRE MORE THAN 4 HOURS. PROVIDE TEMPORARY POWER, HEAT & COOLING IF REQUIRED DURING OUTAGE.
5. DUE TO THE REQUIREMENTS TO INTERFACE WITH EXISTING FACILITIES AND UTILITIES, IT IS SUGGESTED THAT THE CONTRACTOR ATTEND SITE VISIT TO DETERMINE EXISTING CONDITIONS PRIOR TO BID.
6. PRIOR TO PURCHASE OF ANY PANEL, PROTECTIVE DEVICES, SWITCH, CONDUIT, WIRE, ETC., TO FEED ANY PIECE OF EQUIPMENT VERIFY THE VOLTAGE, PHASE, & LOAD OF THAT ITEM IN THE FIELD AND/OR WITH THE PARTICULAR ENTITY INVOLVED IN FURNISHING THE ITEM SUCH THAT THE PROPER SIZE & RATING OF THE MATERIALS ARE PURCHASED. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO COMPLY. THIS APPLIES TO ALL EQUIPMENT UNDER OTHER SECTIONS AND BY THE OWNER.
7. PULL ROPES: PROVIDE 12 GA PULL WIRE OR NYLON EQUIVALENT IN ALL INTERIOR EMPTY CONDUIT RUNS. PROVIDE 1/4" DIA NYLON PULL ROPE IN EACH EMPTY EXTERIOR CONDUIT OR DUCT.
8. APPEARANCE AND WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND STANDARDS.
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15. ALL WIRE SHALL BE COPPER.
16. UPDATE ALL PANEL BOARDS WITH TYPED DIRECTORIES INSTALLED UNDER A CLEAR PLASTIC CONER. SUBMIT DIRECTORY INFORMATION TO THE OWNER FOR APPROVAL PRIOR TO FINALIZATION.

DINTER
ENGINEERING CONFIDENCE
385 Gentry Way
Reno, NV 89502
Ph: 775.826.4044
Fax: 775.826.4190
Web: dinter.com
J-4672

Kimley»Horn

TIMOTHY A. PROKSCH
ELECTRICAL
NEVADA

4672 E0.1

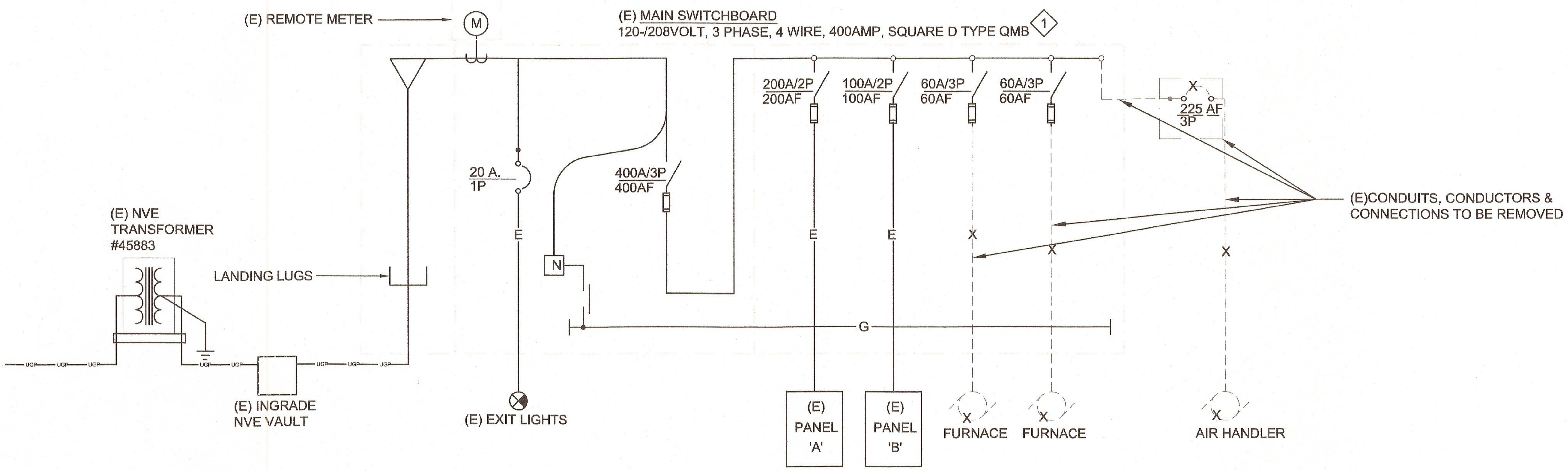
CITY OF SPARKS, NEVADA

City of Sparks

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

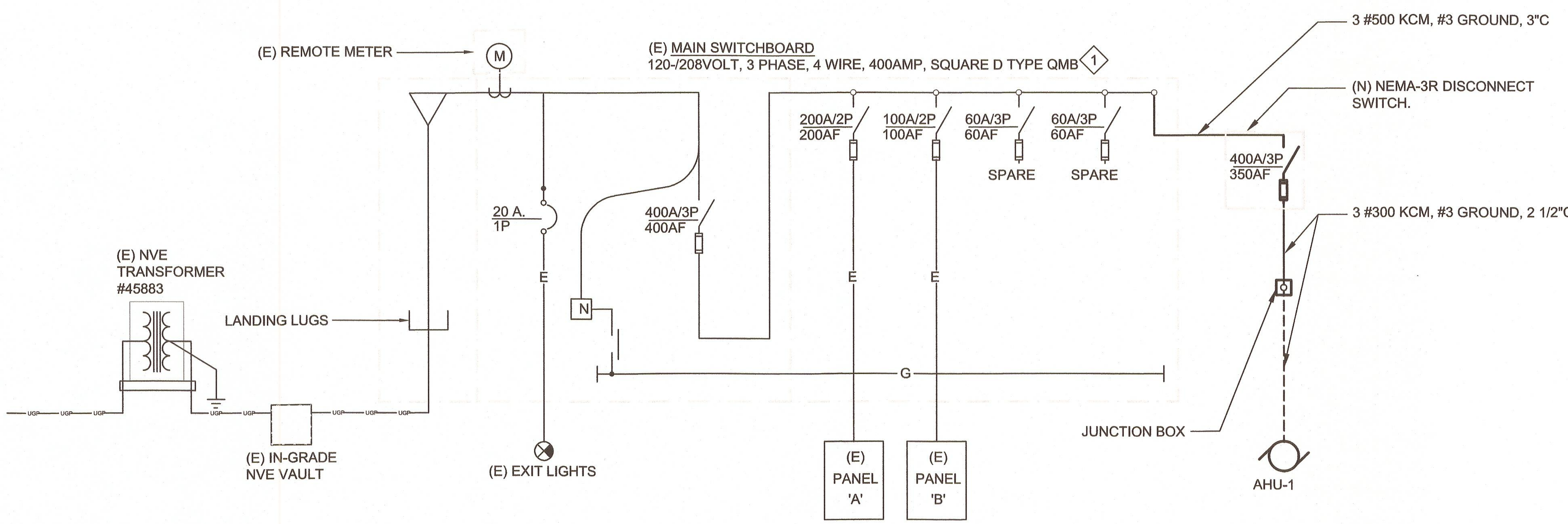
ELECTRICAL SYMBOL LIST AND GENERAL NOTES

E0.1



A E0.2 EXISTING SINGLE LINE DIAGRAM

NTS



B E0.2 NEW SINGLE LINE DIAGRAM

NTS

SHEET NOTES

1. EXISTING SWITCHBOARD LABELED AS 120.240V, 3PHASE, 4WIRE FROM ORIGINAL INSTALLATION. PROVIDE NEW WARNING LABEL INDICATING CORRECT SERVICE VOLTAGE, PHASE AND WIRE.

LOAD CALCULATION

(E) NVE DEMAND 47KW = 130.2 AMPS

Kimley»Horn

TIMOTHY A. PROKISH
ELECTRICAL
No. 12613
10-17-2019

DINTER
ENGINEERING CONFIDENCE
Airfield Electrical
385 Gentry Way
Reno, NV 89502
Ph: 775.826.4044
Fax: 775.826.4190
Web: dinter.com
J-4672

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

ELECTRICAL SINGLE LINE DIAGRAM

E0.2

SHEET NOTES

1. DISCONNECT AND REMOVE INCLUDING ALL ASSOCIATED CONTROLS, CONDUCTORS, AND EXPOSED CONDUIT BACK TO PANEL.
2. RECONNECT TO EXISTING CIRCUIT (A-10). RECONNECT IRRIGATION CONTROLS AS BEFORE RELOCATION.
3. PROVIDE NEW 20A, 1P CIRCUIT BREAKER IN SPACE 16, FOR NEW RECEPTACLE. PROVIDE NEW 20A, 2P CIRCUIT BREAKER IN SPACE 17,19, FOR UH-1.
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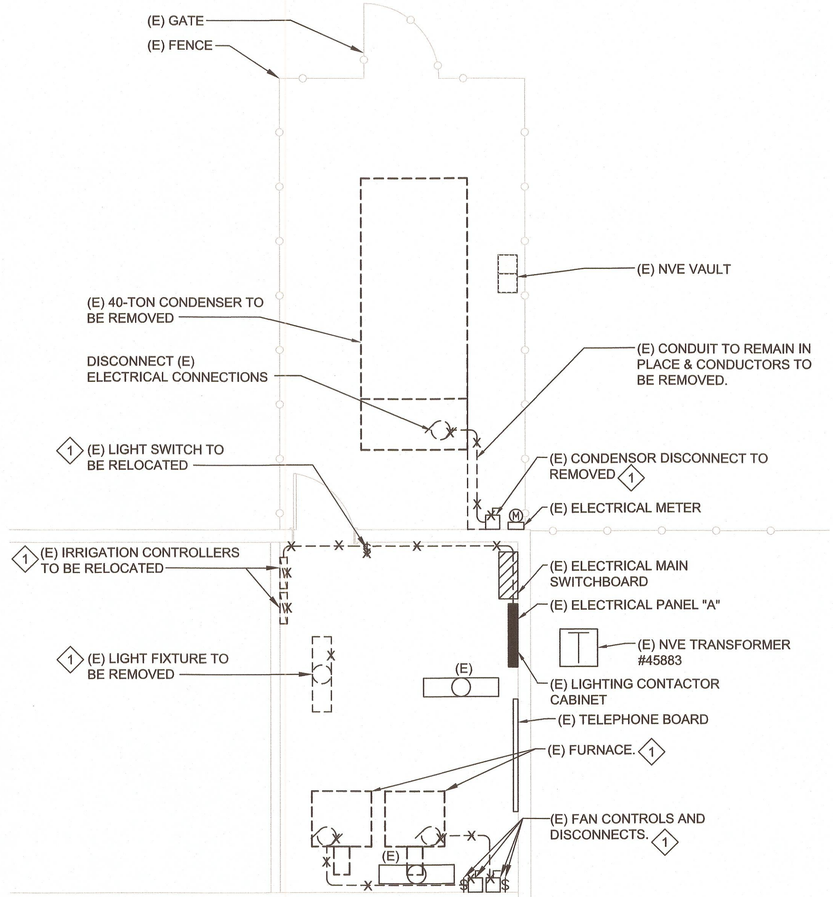
5. COORDINATE EXISTING LIGHT FIXTURE LOCATION WITH NEW DUCT WORK AND NEW UNIT HEATER (UH-1) TO ENSURE CLEARANCE.



A E1.1 **ELECTRICAL DEMOLITION FLOOR PLAN**

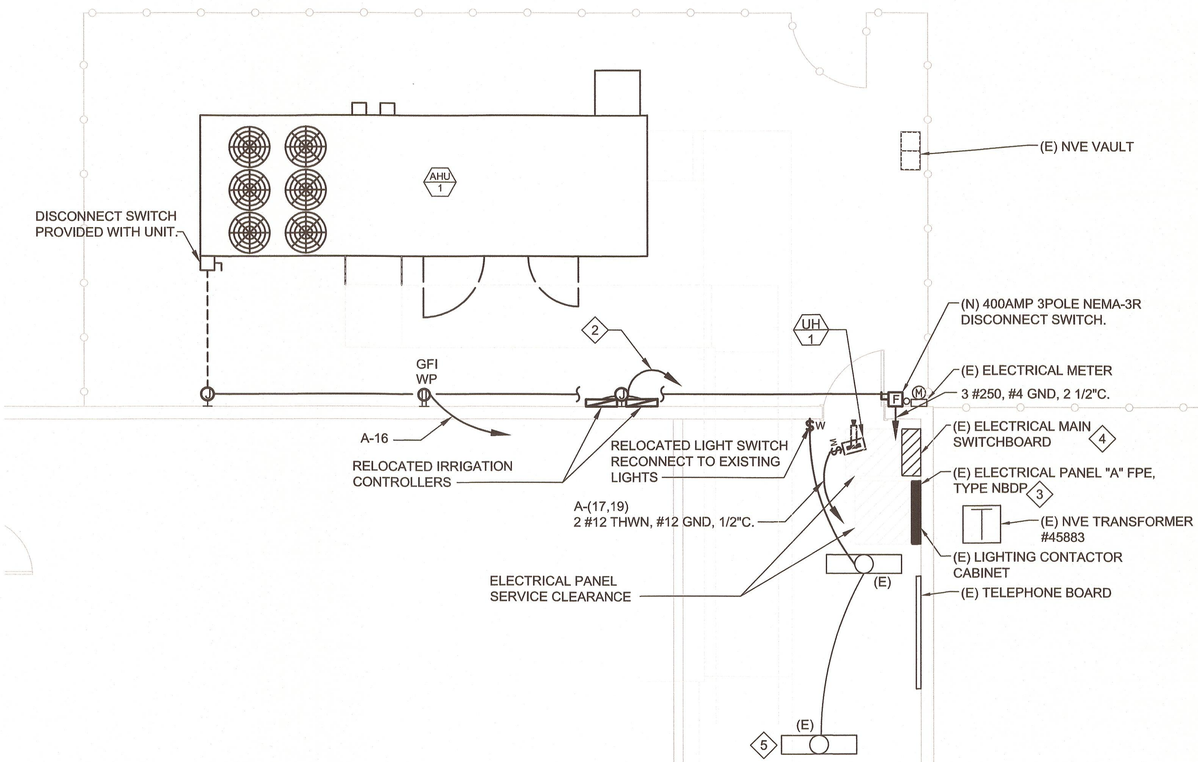
1/4"=1'-0"

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
SCALE: 1/4"=1'-0"

NORTH



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Kimley»Horn

4672.01.1

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

ELECTRICAL FLOOR PLAN

PROJECT NUMBER

SHEET

E1.1

ELECTRICAL SYMBOL LIST

Symbol	Description
———	CONDUIT RUN IN OR ON CEILING OR WALL
— — —	CONDUIT RUN IN OR UNDER FLOOR OR UNDERGROUND
	HASH MARKS INDICATE NUMBER OF #12 AWG CONDUCTORS IN CONDUIT. NO MARKS INDICATE 2 #12'S. DOES NOT INCLUDE GROUND WIRE. IF NON-METALLIC CONDUIT ADD GROUND PER NEC.
	LONG SLASH WITH HASH MARKS AS SHOWN INDICATES GROUND WIRE FOR ISOLATED GROUNDING SYSTEM. SIZE PER N.E.C.
LA-1	HOMERUN TO PANEL WITH PANEL AND CIRCUIT INDICATED
LA-(1, 3, 5)	HOMERUN TO PANEL WITH CIRCUIT NUMBER IN BRACKETS INDICATING MULTI-POLE BREAKER.
	SURFACE/ PENDANT MOUNTED LIGHT FIXTURE
$w	AUTOMATIC WALL SWITCHES, ACUITY CONTROLS #WSX +48" AFF
	RACEWAY UP
	RACEWAY DOWN
$M	FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER
X	MOTOR SYMBOL - HORSEPOWER AS INDICATED
F	DISCONNECT SWITCH (30A/3P UNLESS INDICATED ON DWGS) "F" INDICATES FUSES PER MANUFACTURERS NAMEPLATE RATING
	MAGNETIC MOTOR STARTER (SIZE AS INDICATED ON DRAWINGS)
	COMBINATION STARTER / FUSED DISCONNECT SWITCH (SIZE AS INDICATED ON DRAWINGS - FUSES SIZED PER MANUFACTURER'S NAMEPLATE RATING)
	120V DUPLEX CONVENIENCE RECEPTACLE +18" AFF
J	JUNCTION BOX AS REQUIRED BY NATIONAL ELECTRIC CODE
	ELECTRICAL PANELBOARD - SURFACE MOUNTED
	SERVICE OR DISTRIBUTION EQUIPMENT
T	TRANSFORMER
—X—	EXISTING WIRE AND/OR CONDUIT TO BE REMOVED OR ABANDONED
—E—	EXISTING WIRE AND/OR CONDUIT TO REMAIN
	DASHED DEVICES, LIGHT FIXTURES, ETC. EXISTING TO BE REMOVED
E E E	"E" ADJACENT TO DEVICES, LIGHT FIXTURES, ETC. INDICATES EXISTING TO REMAIN
1	SHEET NOTE
AC 1	MECHANICAL EQUIPMENT DESIGNATION. SEE MECHANICAL & PLUMBING PLANS
B E3.1	DETAIL DESIGNATION - "B" INDICATES DETAIL # ON SHEET E3.1

* NOTE: ALL MOUNTING HEIGHTS AS INDICATED UNLESS NOTED OTHERWISE. ALL SYMBOLS MAY NOT BE USED ON PROJECTS.

ELECTRICAL ABBREVIATIONS

Abbreviation	Meaning
AC	ABOVE COUNTER. INSTALL 4" ABOVE SPLASH OR COUNTER OR AT HEIGHT AS INDICATED ON DRAWINGS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
A	AMPS
℄	CENTERLINE
CU	COPPER
EC	EMPTY CONDUIT WITH PULL WIRE
(E)	EXISTING
FBO	FURNISHED BY OTHER SECTION
GFI	GROUND FAULT INTERRUPTING
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NVE	NV ENERGY
PNL	PANEL
(RR)	REMOVE AND RELOCATE
SPD	SURGE PROTECTION DEVICE
UNO	UNLESS NOTED OTHERWISE
W/	WITH
WP	WEATHERPROOF (NEMA 3R)
XFMR	TRANSFORMER

GENERAL DEMOLITION NOTES

1. THESE PLANS DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. ANY OUTLETS, CIRCUITING AND/OR DEVICES THAT CONFLICT WITH ALL WORK BEING PERFORMED DURING THE COURSE OF THIS PROJECT SHALL BE RELOCATED/REROUTED OR REMOVED ENTIRELY AS DICTATED BY ENGINEER.
2. ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT SHALL BE OFFERED TO OWNER FOR SALVAGE. EQUIPMENT SELECTED SHALL BE TURNED OVER TO OWNER ON PROJECT SITE. ALL REMAINING EQUIPMENT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM PROJECT SITE.
3. IT IS MANDATORY THAT THE CONTRACTOR VISIT SITE AND VERIFY EXISTING CONDITIONS THAT MIGHT AFFECT HIS OR HER WORK. ALL DISCREPANCIES SHALL BE REPORTED TO ENGINEER PRIOR TO BID.
4. DEMOLITION AND MODIFICATION OF EXISTING DISTRIBUTION SYSTEMS SHALL BE PERFORMED AS FOLLOWS:
   A. EXISTING WIRING TO BE REMOVED SHALL BE REMOVED BACK TO ITS SOURCE. CONDUITS MAY BE ABANDONED IN PLACE IF THEY ARE IN CONCEALED LOCATION AND DO NOT CONFLICT WITH ANY NEW WORK. REMOVE ALL WIRING FROM ABANDONED RACEWAYS.
   B. REMOVAL OF EXISTING ELECTRICAL DISTRIBUTION SYSTEM SHALL INCLUDE EQUIPMENT, ASSOCIATED WIRING, INCLUDING (BUT NOT LIMITED TO) CONDUCTORS, CABLES, EXPOSED CONDUIT, SURFACE RACEWAYS, BOXES, FITTINGS, ETC. (BACK TO EQUIPMENT SOURCE.)

ELECTRICAL GENERAL NOTES

1. FURNISH ALL LABOR, MATERIALS, TOOLS ACCESSORIES, ETC. REQUIRED FOR A COMPLETE WORKING ELECTRICAL SYSTEM.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, COUNTY AND LOCAL CODES AND ORDINANCES, AS WELL AS ALL CURRENT STANDARDS, CODES AND PRACTICES AS REQUIRED BY NEC(2011), NEMA, ANSI, NFPA, IBC(2012), UL, IECC(2012).
3. ALL EQUIPMENT, MATERIALS AND WORK SHOWN ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING, OR NOTED OTHERWISE ON OTHER SHEETS.
4. ANY POWER OUTAGE OF ANY CIRCUIT SHALL BE APPROVED BY THE OWNER IN WRITING A MINIMUM OF 5 DAYS PRIOR TO OUTAGE. ALL OUTAGES SHALL BE DONE EXACTLY WHEN DETERMINED BY THE OWNER AND DONE DURING WORKING HOURS. NO SINGLE OUTAGE SHALL REQUIRE MORE THAN 4 HOURS. PROVIDE TEMPORARY POWER, HEAT & COOLING IF REQUIRED DURING OUTAGE.
5. DUE TO THE REQUIREMENTS TO INTERFACE WITH EXISTING FACILITIES AND UTILITIES, IT IS SUGGESTED THAT THE CONTRACTOR ATTEND SITE VISIT TO DETERMINE EXISTING CONDITIONS PRIOR TO BID.
6. PRIOR TO PURCHASE OF ANY PANEL, PROTECTIVE DEVICES, SWITCH, CONDUIT, WIRE, ETC., TO FEED ANY PIECE OF EQUIPMENT VERIFY THE VOLTAGE, PHASE, & LOAD OF THAT ITEM IN THE FIELD AND/OR WITH THE PARTICULAR ENTITY INVOLVED IN FURNISHING THE ITEM SUCH THAT THE PROPER SIZE & RATING OF THE MATERIALS ARE PURCHASED. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO COMPLY. THIS APPLIES TO ALL EQUIPMENT UNDER OTHER SECTIONS AND BY THE OWNER.
7. PULL ROPES: PROVIDE 12 GA PULL WIRE OR NYLON EQUIVALENT IN ALL INTERIOR EMPTY CONDUIT RUNS. PROVIDE 1/4" DIA NYLON PULL ROPE IN EACH EMPTY EXTERIOR CONDUIT OR DUCT.
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SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

ELECTRICAL SYMBOL LIST AND GENERAL NOTES

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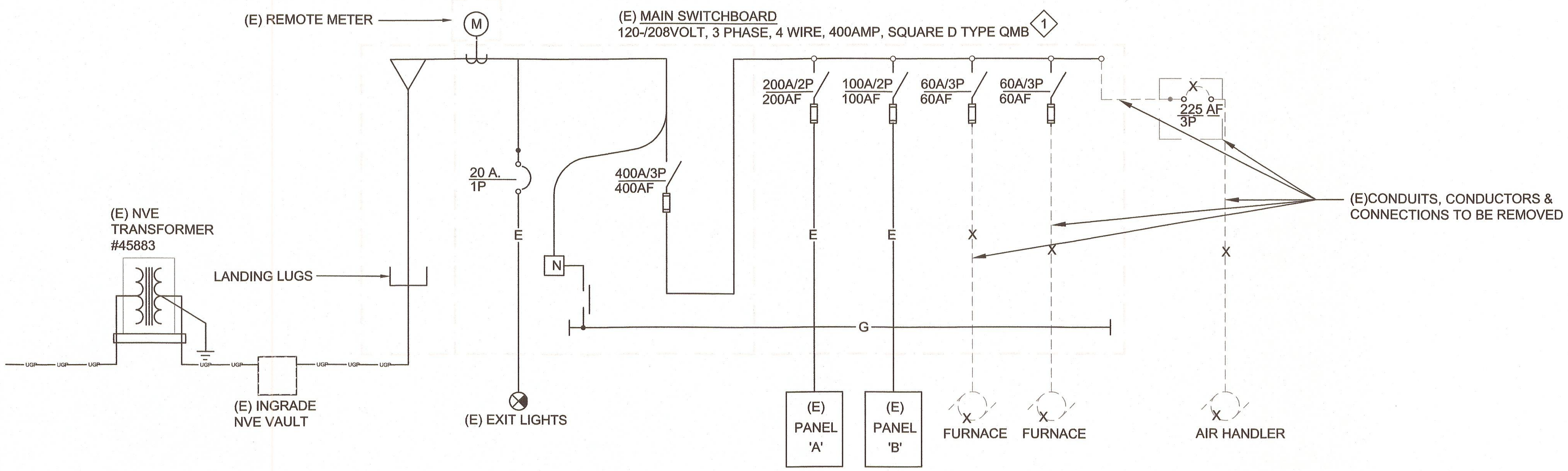

A
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EXISTING SINGLE LINE DIAGRAM

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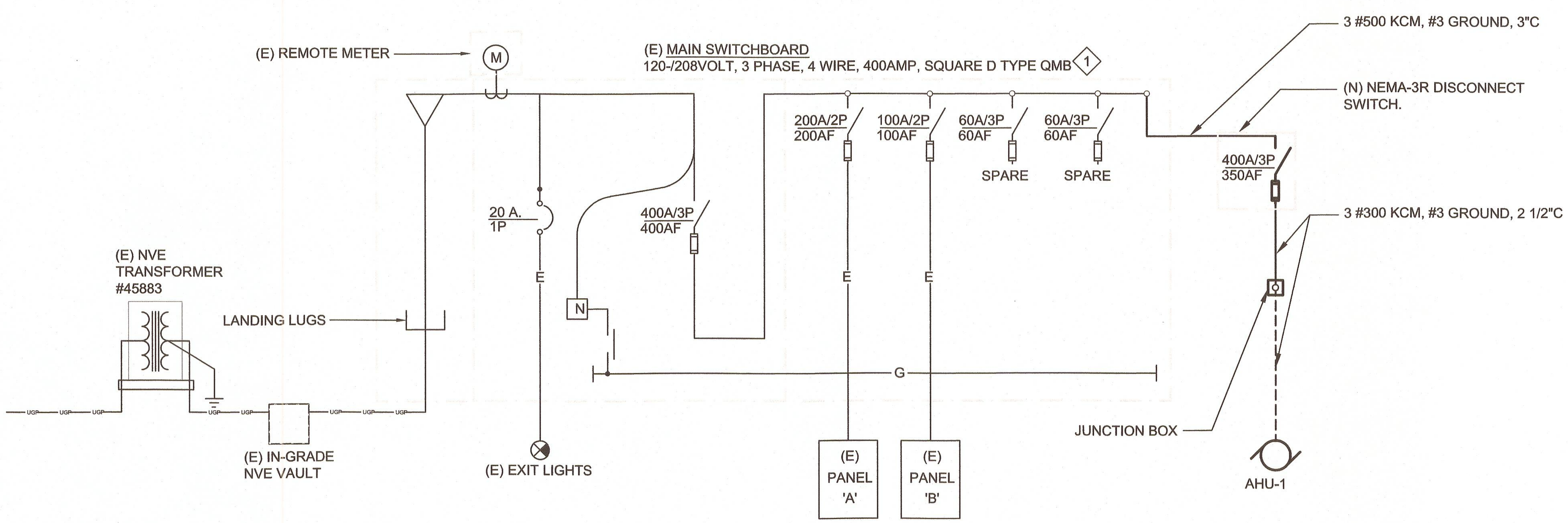

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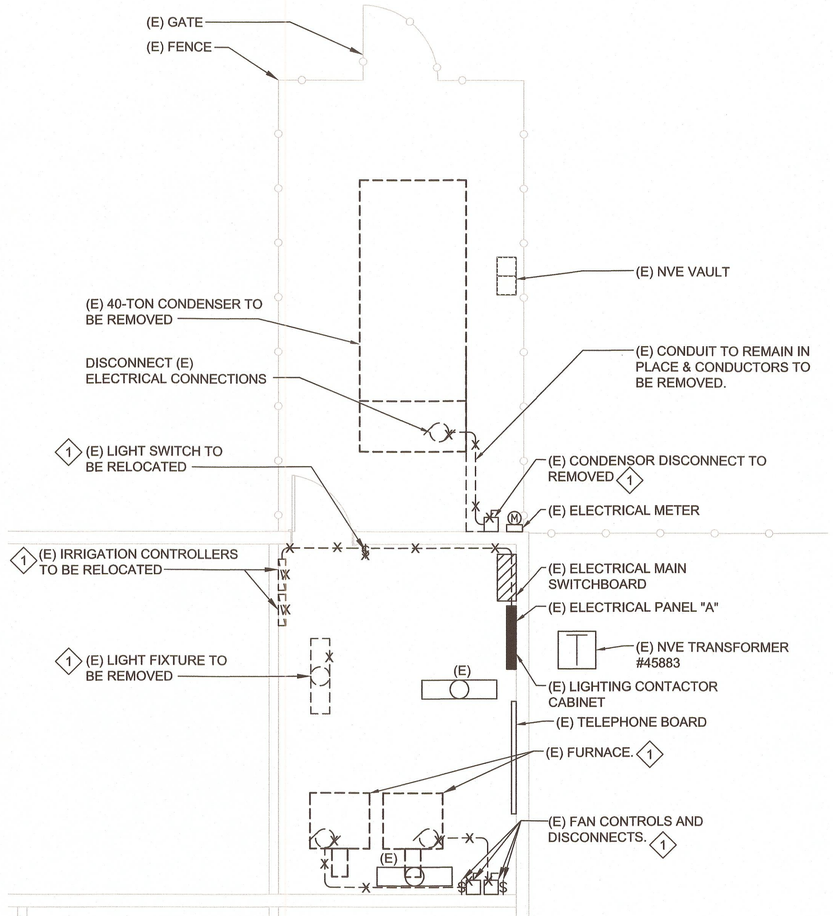

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(IN FEET)

SCALE: 1/4"=1'-0"

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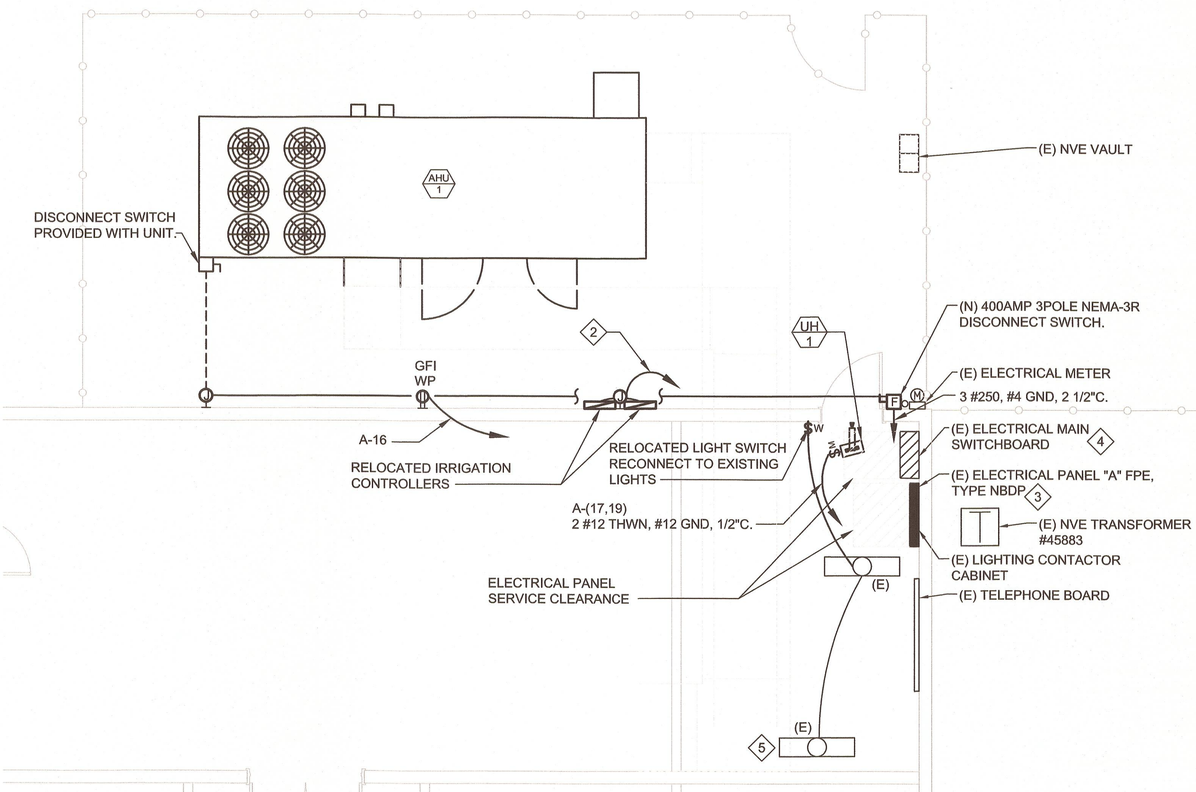

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SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

ELECTRICAL FLOOR PLAN

SHEET

E1.1

1. GENERAL

1.1 THE FOLLOWING STRUCTURAL NOTES SHALL APPLY TO ALL STRUCTURAL DRAWINGS UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE.
1.2 ALL WORK SHALL CONFORM TO THESE NOTES, DRAWINGS, AND SPECIFICATIONS IN ALL RESPECTS.
1.3 PROMPTLY REPORT ANY DISCREPANCY FOUND AMONG THESE NOTES, DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS TO THE ENGINEER, WHO WILL CORRECT SUCH DISCREPANCIES IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCY IS AT THE CONTRACTORS OWN RISK. VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. IT IS THE CONTRACTORS RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION.
1.4 DO NOT SCALE WORKING DIMENSIONS FROM THESE PLANS, SECTIONS, OR DETAILS. DIMENSIONS REFER TO ROUGH CONCRETE SURFACES, FACE OF STUDS, FACE OF CONCRETE BLOCK, TOP OF SHEATHING OR TOP OF SLAB UNLESS OTHERWISE INDICATED.
1.5 DETAILS OF THE CONSTRUCTION NOT FULLY SHOWN OR NOTED ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS SHALL BE OF THE SAME SIZE AND CHARACTER AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED.
1.6 THE WORD "TYPICAL" SHALL MEAN THAT INFORMATION SHOWN SHALL BE APPLIED TO ALL SIMILAR CONDITIONS WHETHER OR NOT THE INFORMATION IS SPECIFICALLY REFERENCED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
1.7 MODIFICATIONS OR SUBSTITUTIONS TO THE DESIGN, MATERIALS, OR PRODUCTS SPECIFIED ON THE PLANS ARE PROHIBITED WITH OUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.
1.8 THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES AND TO PAY ALL ASSOCIATED FEES PRIOR TO CONSTRUCTION.
1.9 THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING A SAFE WORK ENVIRONMENT IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL SAFETY AND HEALTH STANDARDS LAWS AND REGULATIONS. THE CONTRACTOR SHALL EXECUTE WORK TO ENSURE SAFETY OF PERSONS AND PROPERTY AGAINST DAMAGE AND SHALL PROVIDE ADEQUATE SHORING AND BRACING AS REQUIRED FOR STABILITY DURING ALL PHASES OF CONSTRUCTION.
1.10 THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE MEANS AND METHODS OF CONSTRUCTION. STRUCTURAL CALCULATIONS AS PROVIDED AS PART OF THE CONSTRUCTION DOCUMENTS ARE BASED ON A COMPLETED STRUCTURE. THE STRUCTURAL ADEQUACY OF THE PARTIALLY COMPLETED STRUCTURE TO RESIST APPLIED LOADS IS BEYOND THE SCOPE OF THESE STRUCTURAL DRAWINGS.
1.11 REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL OPENINGS, CONCRETE INSERTS AND SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES.

2. DESIGN CRITERIA

2.1 DESIGN, MATERIALS, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE AS AMENDED AND ADOPTED BY THE CITY OF SPARKS, NEVADA.
2.2 ALL OTHER CODES AND STANDARDS SHALL BE THE MOST CURRENT ADOPTED EDITION AS OF THE DATE OF THESE DRAWINGS.

2.3 SNOW LOADS:

SNOW LOAD IMPORTANCE FACTOR, Is:	1.1		
GROUND SNOW LOAD, Pg:	30	PSF	(ELEV: 4435')

2.6 WIND DESIGN:

BASIC WIND SPEED, Vult:	130	MPH	
NOMINAL WIND SPEED, Vasd:	101	MPH	
RISK CATEGORY:	II		
WIND EXPOSURE:	C		
INTERNAL PRESSURE COEFFICIENT:	±0.0		
VELOCITY PRESSURE AT MEAN HEIGHT:	36.9	PSF	(MWFRS)

2.7 SEISMIC DESIGN:

RISK CATEGORY:	III		
SEISMIC IMPORTANCE FACTOR, Is:	1.0		
MAPPED SPECTRAL ACCELERATION, Ss:	1.54	g	
S1:	0.52	g	
SITE CLASS:	D		
SPECTRAL RESPONSE COEFFICIENT, Sds:	1.02	g	
Sd1:	0.52	g	
SEISMIC DESIGN CATEGORY:	D		
BASIC SEISMIC FORCE-RESISTING SYSTEM:	NON-STRUCTURAL COMPONENTS WALLS		
SEISMIC DESIGN FORCE (Fp)	0.25		
COMPONENT AMPLIFICATION FACTOR, ap	1.0		
RESPONSE MODIFICATION FACTOR, R	2.5		

3. FOUNDATIONS

3.1 ALLOWABLE LOAD-BEARING VALUES OF SOILS (IBC TABLE 1804.2):

ALLOWABLE FOUNDATION PRESSURE:	1500	PSF	
LATERAL BEARING (PASSIVE):	150	PSF	
LATERAL BEARING (ACTIVE):	35	PSF	
LATERAL SLIDING:	0.35		
MIN DEPTH OF FOOTINGS:	24"	MIN	

3.2 BEFORE COMMENCING EARTHWORK, THE CONTRACTOR SHALL INSPECT THE SITE FOR ANY EXISTING ITEMS THAT MAY INTERFERE WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE DUTY OF THE CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES AND STRUCTURES. NOTIFY ENGINEER WHERE CONFLICTS EXIST. RELOCATE OR AVOID AS NECESSARY AS TO NOT DAMAGE OR INTERFERE WITH EXISTING TO REMAIN.
3.3 GENERAL SITE CLEARING SHALL INCLUDE THE REMOVAL OF ALL SURFACE DEBRIS, RUBBLE, AND LARGER VEGETATION AND ORGANICS AS DIRECTED BY THE ENGINEER.
3.4 SCARIFY THE SOILS EXPOSED TO EXCAVATION TO A DEPTH OF 6" AND RE-COMPACT TO 90% MAXIMUM DRY DENSITY (ASTM D-1557, METHOD C). WATER OR DRY MATERIALS AS NECESSARY TO OBTAIN PROPER MOISTURE CONTENT.
3.5 PLACE FOOTINGS ON APPROVED SOIL (UNDISTURBED NATURAL SOILS OR COMPACTED ENGINEERED FILL). FILL HOLES DUE TO REMOVAL OF LARGE ROCKS OR OVER-EXCAVATION WITH CONCRETE.
3.6 FOOTING EXCAVATIONS SHALL BE NEAT AND TRUE, WITH ALL LOOSE MATERIAL AND STANDING WATER REMOVED BEFORE FOOTING CONCRETE IS PLACED.
3.7 ALL EXCAVATIONS, FORMS AND REINFORCING SHALL BE INSPECTED BY THE BUILDING OFFICIAL AND ENGINEER PRIOR TO PLACING CONCRETE.

4. CAST-IN-PLACE CONCRETE

4.1 CONCRETE MATERIALS AND CONSTRUCTION SHALL COMPLY WITH IBC CHAPTER 19, ACI 318, AND ACI 301.
4.2 CONTRACTOR SHALL SUBMIT ALL MIX DESIGNS FOR REVIEW AND APPROVAL.
4.3 CONCRETE PROPERTIES AND COMPOSITION (ASTM C94):

PROPERTY	CLASS A
28-DAY f'c (1)	(4000 PSI)
W/C	0.45
UNIT WT (2)	145 PCF
AIR (+/-) (3)	6%
SLUMP (MAX) (4)	3"
SHRINKAGE (5)	NR
CEMENT (6)	TYPE II
MIN CEMENT	520
FIBER REINF (7)	1.5 LB PCY

NOTES:
(1) FOUNDATION DESIGN FOR CONCRETE ENCLOSED IN () IS DESIGNED FOR 2500 PSI AND DOES NOT REQUIRE SPECIAL INSPECTION.
(2) AGGREGATE PER ACI 318, SECTION 3.3.
(3) 6% MAXIMUM AIR FOR 3/4" MAX AGGREGATE AND 7% FOR 1/2" MAX AGGREGATE.
(4) SLUMPS ARE FOR UNPLASTICIZED CONCRETE. LARGER SLUMPS MAY BE ATTAINED THROUGH THE USE OF SUPERPLASTICIZER. WATER REDUCING ADMIXTURES FOR PIERS SHALL CONFORM TO ASTM C 494, TYPE D, TO MEET SLUMP REQUIREMENTS.
(5) SHRINKAGE AT 28 DAYS (IN/IN) PER ASTM C157.
(6) CEMENT PER ASTM C150, C595, C1157 AS APPROPRIATE.
(7) SYNTHETIC MICRO FIBERS (ASTM C1116) 1/2 - 3/4" LONG, MINIMUM RATE INDICATED, RATE PER MANUFACTURERS WRITTEN INSTRUCTIONS.

CLASS A: FOUNDATIONS, EXTERIOR SLABS ON GRADE, UNO

4.4 ADMIXTURES SHALL COMPLY WITH ACI 318, SECTION 3.6
4.5 CONCRETE THAT IS TO BE PLACED DURING FREEZING OR NEAR-FREEZING WEATHER SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318, SECTION 5.12. EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE. CONCRETE MATERIALS AND REINFORCEMENT, FORMS, FILLERS, AND GROUND WITH WHICH CONCRETE WILL COME IN CONTACT SHALL BE FREE OF FROST. FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL NOT BE USED.
4.6 APPROVAL MUST BE OBTAINED PRIOR TO PLACING CONCRETE FOR ANY OPENINGS, SLEEVES, OR OTHER ATTACHMENTS NOT SHOWN ON DRAWINGS.
4.7 ROUGHEN THE EXISTING CONCRETE SURFACE AT THE INTERFACE OF CONSTRUCTION JOINTS TO AN AMPLITUDE OF (+/-) 1/4" PRIOR TO PLACING NEW CONCRETE. THOROUGHLY WET THE INTERFACE SURFACE AND REMOVE AND STANDING WATER.
4.8 FORMS SHALL CONFORM TO ACI 347 AND SHALL BE PROPERLY CONSTRUCTED TO CONCRETE SURFACES AS SHOWN ON THE DRAWINGS, SUFFICIENT TIGHT TO PREVENT LEAKAGE, SUFFICIENTLY STRONG, AND BRACED TO MAINTAIN SHAPE AND ALIGNMENT.
4.9 FORMS AND SHORING SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO WITHSTAND ALL LOADS TO BE IMPOSED WITHOUT EXCESS STRESS, CREEP OR DEFLECTION.
4.10 SLEEVES IN CONCRETE SHALL BE SPACED WITH ONE SLEEVE DIAMETER (2" MIN) CLEAR DISTANCE BETWEEN ADJACENT SLEEVES. SLEEVES SHALL NOT TOUCH REBAR. SLEEVES GREATER THAN 12" IN DIAMETER SHALL BE REVIEWED BY THE ENGINEER FOR APPROVAL AND MAY REQUIRE ADDITIONAL TRIM REINFORCEMENT.

5. CONCRETE REINFORCEMENT

5.1 REINFORCEMENT SHALL CONFORM TO ACI 318, SECTION 3.5 AND ASTM A615, GRADE 60 (#4 AND LARGER) AND GRADE 40 (#3 BARS ONLY).
5.2 CONCRETE REINFORCEMENT DETAILS INCLUDING BAR SUPPORTS AND PLACING SHALL CONFORM TO ACI 315 AND THE CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE." HOOKS SHALL BE PER ACI 318, SECTION 7.1 UNLESS DETAILED OTHERWISE.
5.3 PROVIDE THE FOLLOWING COVER ON REINFORCEMENT UNLESS NOTED OTHERWISE IN DRAWINGS. COVER SHALL BE TO FACE OF BAR, MECHANICAL COUPLER, OR WELDED HEADED BAR.

CAST-IN-PLACE CONCRETE	MINIMUM CONCRETE COVER
CAST AGAINST AND EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#5 AND SMALLER	1 1/2"
CLEAR TO TOP FOR REINFORCEMENT IN SLAB-ON-GRADE	2"

5.4 PROVIDE LAP SPLICES, AND DEVELOPMENT OF STANDARD HOOKS AS SPECIFIED IN ACI 318, CHAPTER 12. MAKE LAP SPLICES ONLY AT LOCATIONS SHOWN ON DRAWINGS, AS INDICATED IN THESE NOTES, OR AS APPROVED BY THE ENGINEER.
5.5 LAP SPLICE ALL BARS A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. STAGGER LAP SPLICES A MINIMUM OF 24 INCHES.
5.6 SECURELY TIE ALL REINFORCEMENT PRIOR TO PLACING CONCRETE INCLUDING LAP SPLICES. TIES SHALL BE SUFFICIENT TO MAINTAIN THEIR EXACT POSITION THROUGHOUT THE PLACEMENT OF CONCRETE.
5.7 SUBMIT SHOP DRAWINGS OF REINFORCEMENT LAYOUTS AND DETAILS FOR REVIEW PRIOR TO FABRICATION. SHOW ALL PROPOSED SPLICE LOCATIONS, FABRICATE FROM APPROVED DRAWINGS ONLY.
5.8 BEND REINFORCING STEEL IN ACCORDANCE WITH ACI 301, SECTION 3.3.2.8. #3, #4, & #5 BARS MAY BE BENT COLD THE FIRST TIME PROVIDED TEMPERATURE OF BAR IS ABOVE 32F. FOR OTHER BAR SIZES PREHEAT REINFORCING BARS PRIOR TO BENDING.

6. SLABS-ON-GRADE

6.1 USE CONCRETE OF THE TYPE AND PROPORTION INDICATED IN SECTION 4 OF THESE NOTES.
6.2 LOCATE CONTROL JOINTS AS SHOWN ON PLANS (BUT NOT TO EXCEED 10'). MAKE JOINTS AS SOON AS THE SLAB IS STRONG ENOUGH TO ACCEPT THE JOINT. PROVIDE JOINTS SO THAT PANEL LENGTH TO WIDTH DOES NOT EXCEED 1.5 TO 1 FOR ANY PANEL. THE CONTRACTOR SHALL SUBMIT A CONTROL JOINT LAYOUT TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
6.3 PROTECT FRESHLY DEPOSITED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE HOT OR COLD TEMPERATURES FOR A MINIMUM (7) DAYS.
6.4 CONCRETE SLABS SHALL BE CONTINUOUSLY CURED FOR A MINIMUM OF (7) DAYS AFTER PLACING BY APPROPRIATE MEANS INCLUDING BUT NOT LIMITED TO, CURING COMPOUND OR PAPER.
6.5 DAMPEN BASE PRIOR TO PLACING CONCRETE.
6.6 CONSTRUCT EXTERIOR SLABS-ON-GRADE AS FOLLOWS:

BROOM FINISH FOR ALL EXTERIOR CONCRETE WORK
CONCRETE SLAB - MINIMUM THICKNESS AND REINFORCING PER PLAN
6" MINIMUM LAYER OF TYPE 2 CLASS B AGGREGATE BASE AND COMPACT TO 95%

7. ANCHORS TO CONCRETE AND MASONRY

7.1 THREADED ROD SHALL BE ASTM F1554, GRADE 36 GALVANIZED (ASTM A153), UNLESS OTHERWISE DETAILED.
7.2 MINIMUM ANCHOR EMBEDMENT SHALL BE AS INDICATED ON THE PLANS BUT IN NO CASE LESS THEN SPECIFIED BY THE MANUFACTURER FOR THE DIAMETER.
7.3 POST-INSTALLED EPOXY ANCHORS SHALL BE INSTALLED USING HILTI HY-200 (ESR-3187 CONCRETE, ESR-3963 MASONRY) PER THE MANUFACTURERS WRITTEN INSTRUCTION.
7.4 EPOXY ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT THE TIME OF ANCHOR INSTALLATION PER SECTION 17.1.2 OF ACI 318.
7.5 MINIMUM EMBEDMENT FOR POST-INSTALLED ANCHORS SHALL BE AS INDICATED ON THE PLANS BUT IN NO CASE LESS THEN SPECIFIED BY THE MANUFACTURER FOR THE DIAMETER.
7.6 CLEAN ALL NUTS, WASHERS, AND ANCHORS FROM CONTAMINANTS PRIOR TO INSTALLATION.
7.7 SCREW ANCHORS SHALL BE TITEN HD (ESR-2713/IAPMO EQ O493 CONCRETE, ESR-1056 MASONRY).
7.8 CONCRETE EXPANSION ANCHORS SHALL BE SIMPSON STRONG-BOLT 2 (ESR-3037).

8. STEEL CONSTRUCTION

8.1 STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO IBC CHAPTER 22 AND AISC 360, AISC 341, AND AISC 303.
8.2 PROVIDE SHOP DRAWINGS INCLUDING DETAILS FOR CUTS, HOLES AND WELDS FOR ALL FABRICATED PARTS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
8.3 HSS STEEL TUBING SHALL BE ASTM A500, GR B (FY = 46 ksi).
8.4 PLATES, CHANNELS AND ANGLES SHALL BE ASTM A36, UNO.
8.5 STEEL PIPE SHALL BE ASTM A53, GRADE B (FY = 35 KSI).
8.6 FASTENERS/THRU BOLTS ASTM A307A - GALVANIZED ASTM F2329.
8.7 WELDING SHALL CONFORM TO AWS D1.1. CERTIFIED WELDERS SHALL PERFORM ALL WELDING.
8.8 USE LOW-HYDROGEN E7018 ELECTRODES WITH A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT O°F.
8.9 ALL WELDS SHALL BE PRE-QUALIFIED AND SHALL BE PERFORMED IN STRICT CONFORMANCE WITH AN APPROVED WRITTEN WELD PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. CONTRACTOR TO PROVIDE ENGINEER OF RECORD WELDING PROCEDURES TO BE REVIEWED AND APPROVED PRIOR TO BEGINNING ANY WELDING.
8.10 ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND PRIOR TO INSTALLATION - ASTM A123. TOUCH UP AND REPAIR DAMAGED GALVANIZED SURFACES IN ACCORDANCE WITH ASTM A780. THICKNESS OF TOUCH UP PAINT SHALL BE 50% MORE THAN SURROUNDING COATING THICKNESS.
8.11 USE NON-METALLIC, NON-SHRINK GROUT CONFORMING TO ASTM C1107, GRADE A, B OR C UNDER BASE PLATES AND AT FENCE POSTS SLEEVES. NON-SHRINK GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 8000 PSI. INSTALL IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS. GROUT SHALL BE DELIVERED TO THE JOB SITE IN DRY, PRE-MIXED FACTORY PACKAGING REQUIRING ONLY THE ADDITION OF WATER. SURFACES TO RECEIVE GROUT SHALL BE FREE OF DIRT, OIL, GREASE, OR OTHER DELETERIOUS SUBSTANCES THAT MAY INHIBIT BOND. CONCRETE SURFACES SHALL BE ROUGH AND SATURATED (PONDED) WITH CLEAN WATER FOR A MINIMUM OF 4 HOURS PRIOR TO GROUTING. PLACE GROUT TO ENSURE FULL BEARING CONTACT AND CURE FOR A MINIMUM OF 8 HOURS WITH WET RAGS.

9. COLD-FORMED STEEL

9.1 COLD-FORMED STEEL LIGHT-FRAMED CONSTRUCTION SHALL COMPLY WITH UFC 2-6.3, IBC CHAPTER 22, AISI S100.
9.3 CUT FRAMING COMPONENTS SQUARELY OR AT AN ANGLE TO FIT TIGHT AGAINST ABUTTING MEMBERS. HOLD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
9.3 CUT FRAMING COMPONENTS SQUARELY OR AT AN ANGLE TO FIT TIGHT AGAINST ABUTTING MEMBERS. HOLD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
9.4 WALL PANELS SHALL BE ROLLED-FORMED CORRUGATED PANEL (ASTM A 653, GRADE 50) OF THE THICKNESS INDICATED ON THESE PLANS.
9.5 STRUCTURAL FASTENERS (ANCHORAGE TO STRUCTURAL FRAMING) SHALL BE ITW BUILDEX OF THE SIZE AND TYPE INDICATED ON THESE PLANS OR APPROVED EQ. FASTENERS SHALL BE WEATHER RESISTANT (CLIMASEAL OR APPROVED EQ).
9.6 PANEL SCREWS (LAPS AND SPLICES) SHALL BE COLOR-MATCHED #12 x 1" SELF DRILLING TEKS W/NEOPRENE WASHERS.

10. WOOD CONSTRUCTION

10.1 FRAMING SHALL CONFORM TO IBC CHAPTER 23 AND AF&PA's NDS.
10.2 PROTECT ALL WOOD FRAMING MATERIALS FROM EXCESSIVE MOISTURE AND OR EXPOSURE AFTER DELIVERY TO JOB SITE. WOOD FRAMING SHALL BE STACKED ABOVE GRADE AND COVERED PRIOR TO INSTALLATION.
10.3 SAWN LUMBER SHALL BE STAMPED DOUGLAS FIR (DF OR D.FIR) NO. 2 OR BETTER WCLIB WITH A MAXIMUM MOISTURE CONTENT 19% AT TIME OF INSTALLATION AND PRIOR TO BEING COVERED WITH INSULATION OR WALL AND FLOOR FINISHES .
10.4 USE PRESSURE TREATED DOUGLAS-FIR #2 WHERE INDICATED ON THESE PLANS. HARDWARE IN CONTACT WITH PT LUMBER SHALL BE HOT-DIPPED GALVANIZED ASTM A653 (G185).
10.5 PLYWOOD SHEETS SHALL BE THE THICKNESS NOTED ON THE DRAWINGS AND SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE, TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA) AND SHALL MEET THE REQUIREMENTS OF PRODUCT STANDARD PS-95.

10.6 WALL SHEATHING SHALL BE APA C-D SPAN RATED PANELS, EXTERIOR (ICI 7-3-3-3), AS FOLLOWS:

MIN THICKNESS: 15/32" PLYWOOD, SPAN INDEX: 32/16
MIN FASTENING: BN = 6", EN = 6", FN = 12"

10.7 ROOF PATCHING SHEATHING SHALL BE APA C-D SPAN RATER PANELS, EXPOSURE I:

MIN THICKNESS: 23/32" PLYWOOD, SPAN INDEX: 48/24
MIN FASTENING: SDS 1/4 x 2-1/2" @ 10" MAX AROUND OPENING

10.8 USE COMMON NAILS ONLY FOR WALL FRAMING, BOX NAILS AND SINKERS ARE NOT ACCEPTABLE.
10.9 USE FRAMING HARDWARE AS MANUFACTURED BY SIMPSON STRONG-TIE OF THE SIZE AND TYPE INDICATED ON THESE PLANS. INSTALL PER MANUFACTURERS WRITTEN INSTRUCTIONS. USE THE MAXIMUM NUMBER OF FASTENERS FOR EACH CONNECTION, UNO.
10.10 FRAMING HARDWARE SHALL BE HOT-DIP GALVANIZED ASTM A653 (G90 MIN COATING). HARDWARE IN CONTACT WITH ACQ-C, ACQ-D, CBA-A, CA-B, OR SBX SHALL BE HOT-DIP GALVANIZED (G185 MIN COATING). HARDWARE IN CONTACT WITH PT LUMBER WITH AMMONIACAL COPPER ZINC ARSENATE (ACZA) OR OTHER AMMONIA CARRIER SHALL BE STAINLESS STEEL.
10.11 FOR WOOD TO WOOD NAILED CONNECTIONS USE A MINIMUM SPACING AND EDGE DISTANCE OF (11) DIAMETERS AND (6) DIAMETERS RESPECTIVELY.
10.12 WHERE REQUIRED TO AVOID SPLITTING, PRE-DRILL HOLES WITH A DRILL DIAMETER EQUAL TO THE NEXT SMALLER NAIL DIAMETER. IN NO CASE SHALL HOLES EXCEED 75% OF NAIL DIAMETER.
10.13 TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30° AND SHALL BE LOCATED WITHIN 1/3 OF THE NAIL LENGTH FROM THE END OF THE MEMBER.
10.14 BEARING SURFACES OF COLUMNS AND TIMBER JOINERY SHALL BE TIGHT AND TRUE.

11. SPECIAL INSPECTIONS AND TESTING

11.1 PROVIDE SPECIAL INSPECTIONS IN COMPLIANCE WITH IBC 1704 BY AN APPROVED INSPECTOR.

THE FOLLOWING ITEMS SHALL BE INSPECTED IN ACCORDANCE WITH THE APPROPRIATE SECTION IN THE IBC. THE INSPECTION AGENCY SHALL PROVIDE COPIES OF ALL INSPECTION REPORTS DIRECTLY TO THE ENGINEER. ANY CONSTRUCTION THAT FAILS TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.

11.2 CONCRETE CONSTRUCTION, IBC 1705.3:

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR POST-INSTALLED ANCHORS AS INDICATED IN THE CORRESPONDING RESEARCH REPORT ISSUED BY THE APPROVAL AGENCY.

12. STRUCTURAL OBSERVATIONS

STRUCTURAL OBSERVATION SHALL BE PROVIDED BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE OF CONSTRUCTION TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM.

STRUCTURAL OBSERVATIONS ARE NOT A SUBSTITUTE FOR SPECIAL INSPECTIONS. ALL SPECIAL INSPECTIONS SHALL BE PERFORMED BY THE PROJECT SPECIAL INSPECTOR.

ABBREVIATIONS

&	AND
@	AT
AB	ANCHOR BOLT
ABV	ABOVE
AC	ASPHALT CONCRETE
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
APPD	APPROVED
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BRG	BEARING
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEAR
CONC	CONCRETE
COND	CONDITION
CONN	CONNECTION
CONT	CONTINUOUS
CTJ	CONTROL JOINT
CTR	CENTER
CTRD	CENTERED
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DN	DOWN
DWG	DRAWING
DWL	DOWEL
(E)	EXISTING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXA	EXPANSION ANCHOR
EXT	EXTERIOR
FDN	FOUNDATION
FG	FINISHED GRADE
FIN	FINISH
FLR	FLOOR
FOC	FACE OF CONCRETE
FOW	FACE OF WALL
FS	FAR SIDE
FTG	FOOTING
GALV	GALVANIZED
GB	GRADE BEAM
GRD	GRADE
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SHAPE
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
IF	INSIDE FACE
IN	INCH
INT	INTERIOR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LW	LIGHTWEIGHT
MFG	MANUFACTURED
MAX	MAXIMUM
MB	MACHINE BOLT
MIN	MINIMUM
MTL	METAL
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPG	OPENING
PDF	POWER DRIVEN FASTENER
PL	PLATE
PLY	PLYWOOD
R	RADIUS
RE	REFER TO
REINF	REINFORCEMENT
REQ	REQUIRED
SCHD	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STGRD	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
SYMM	SYMMETRICAL
T&B	TOP AND BOTTOM
TFF	TOP OF FINISHED FLOOR
THRD	THREADED
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WS	WATERSTOP

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REV	DATE	DESCRIPTION	APPVD
0	10/14/19	ISSUED FOR PLAN REVIEW	TJL

THOMAS LUNDIN — Exp. 12/31/19 — CIVIL/STRUCTURAL — REGISTERED PROFESSIONAL ENGINEER — STATE OF NEVADA — No. 17911 — 10/14/2019

CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
SPARKS NEVADA
STRUCTURAL NOTES
ABREVIATIONS

DRAWN:	TJL
CHECKED:	TJL
DATE:	10/14/19
SCALE:	AS SHOWN
PROJECT NO:	1481901

SHEET NO:
S1.0

EXISTING CONDITIONS / DEMOLITION NOTES:

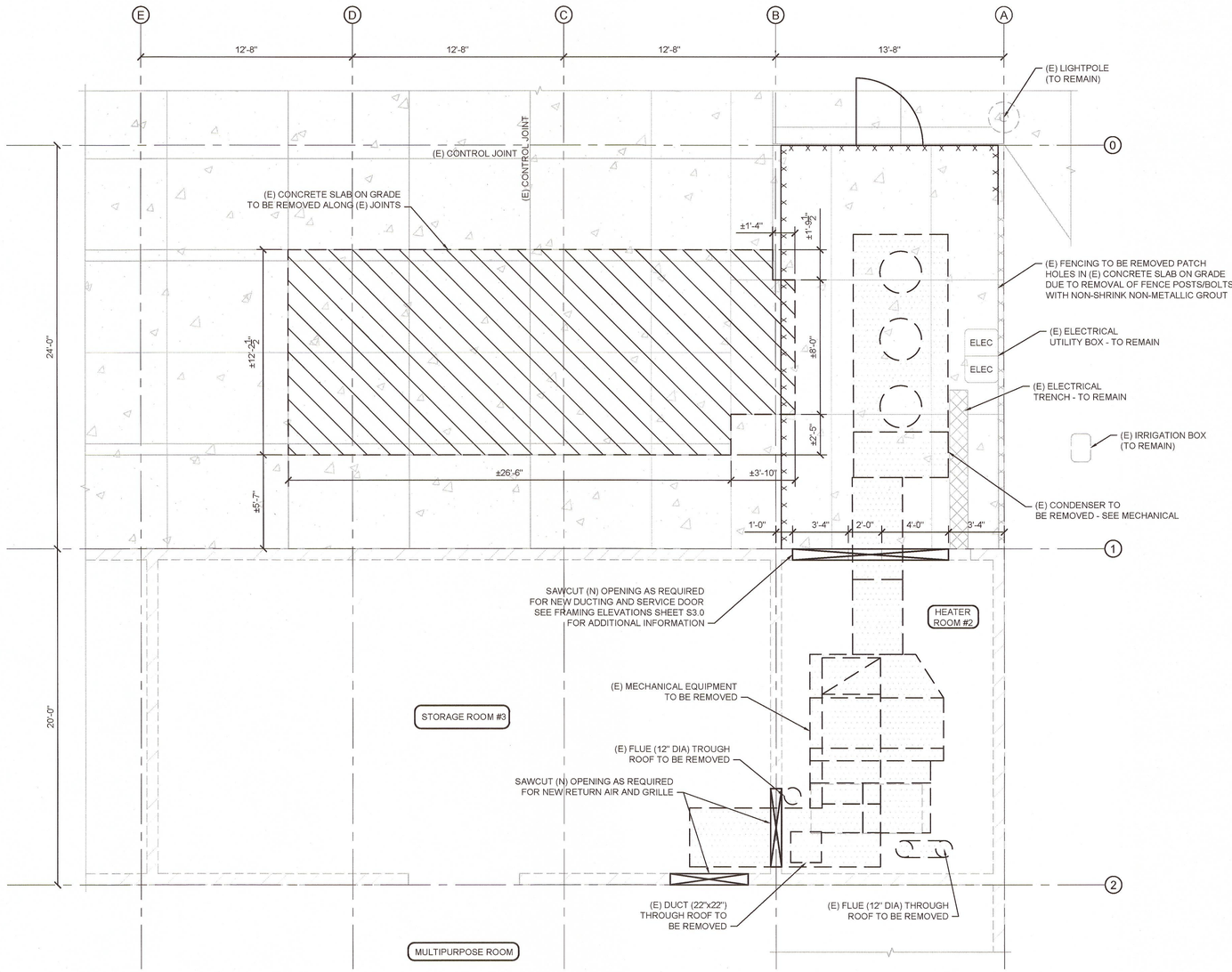
1. CONTRACTOR SHALL INSPECT THE SITE FOR ANY EXISTING ITEMS THAT MAY INTERFERE WITH THE PROPOSED IMPROVEMENTS AND PROMPTLY REPORT ANY DISCREPANCIES FOUND AMONG THESE DRAWINGS AND SPECIFICATIONS TO THE ENGINEER. ALL DISCREPANCIES SHALL BE CORRECTED IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES PRIOR TO RECEIVING WRITTEN DIRECTION FROM THE ENGINEER IS AT THE CONTRACTORS OWN RISK.
2. VERIFY AND COORDINATE ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY CONSTRUCTION.
3. THE UNDERGROUND UTILITIES SHOWN IN THESE DRAWINGS ARE APPROXIMATE. UTILITY LOCATIONS ARE BASED ON SURFACE FIELD TIES AND IMPROVEMENT PLAN MAPS FROM AS-BUILT DRAWINGS. ACTUAL LOCATIONS MAY VARY. STRUCTURAL SYSTEM SOLUTIONS, INC. IS NOT RESPONSIBLE FOR THE EXACT LOCATIONS OF THE UTILITIES SHOWN HERE ON, NOR FOR ANY DAMAGES CAUSED BY ANY CONSTRUCTION OR EXCAVATION ON OR NEAR SAID UTILITIES. DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY IN ACCORDANCE WITH THE UTILITIES COMPANIES OR OWNERS REQUIREMENTS AND AT THE CONTRACTORS EXPENSE.
4. IT SHALL BE THE DUTY OF THE OF THE CONTRACTOR TO MAKE THE DETERMINATION AS TO THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK. CONTACT USA AT 1-800-227-2900. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY/OWNER AND INFORM THEM OF ANY PLANNED DISTURBANCE TO OR AROUND EXISTING UTILITIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES WITHIN THE PROJECT AREA FROM ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT.
6. ALL SAWCUTTING OF CONCRETE SHALL BE NEAT AND STRAIGHT AS SHOWN.
7. ANY DAMAGE BY THE CONTRACTOR TO THE EXISTING IMPROVEMENTS TO REMAIN SHALL BE REMOVED AND REPLACED PER THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AT THE CONTRACTORS EXPENSE.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL USE TEMPORARY EROSION CONTROL FACILITIES DURING CONSTRUCTION TO PREVENT DISCHARGE OF EARTHEN MATERIALS FROM THE SITE DURING PERIODS OF PRECIPITATION.
2. EACH WEEK THE CONTRACTOR AND OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT HAVE BEEN DISCHARGED AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM DRAIN SYSTEM.
3. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED PRIOR ANY ANTICIPATED STORM EVENT. SEDIMENT MUST BE REMOVED WHEN THE BMP DESIGN CAPACITY IS REDUCED BY MORE THAN 50%.
4. THE CONTRACTOR SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE, VEHICLE PATH, AND BMPS WEEKLY, PRIOR TO A FORECASTED RAIN EVENT AND WITHIN 24 HOURS OF AN ACTUAL RAIN EVENT. THE CONTRACTOR SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY.
5. CONTRACTOR SHALL CONSTRUCT AND OR INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO ANY GRADING ACTIVITY.
6. CONTRACTOR SHALL STOCKPILE EXISTING GRAVEL TO BE REAPPLIED AFTER COMPLETION OF GRADING.
7. ALL LOOSE PILES OF SOIL, SILT, CLAY, SAND, DEBRIS, OR EARTHEN MATERIALS SHALL BE PROTECTED IN A REASONABLE WAY TO PREVENT DISCHARGE.
8. AFTER COMPLETION OF EACH PHASE, ALL SURPLUS OR WASTE MATERIAL SHALL BE REMOVED FROM THE SITE AND DEPOSITED AT A LEGAL POINT OF DISPOSAL.
9. THE CONTRACTOR SHALL DEVELOP, PROPOSE AND IMPLEMENT AN APPROPRIATE DUST CONTROL PROGRAM TO BE USED THROUGHOUT CONSTRUCTION. THE DUST CONTROL PLAN SHALL BE SUBMITTED TO THE CITY OF SPARKS BUILDING DEPARTMENT AND SHALL SATISFY ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. CONTRACTOR SHALL BE REQUIRED TO PAY ANY ASSOCIATED FEES TO SATISFY DUST CONTROL REQUIREMENTS. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST IN CONSTRUCTION AND STAGING AREAS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. THE CONTRACTOR IS REQUIRED TO SUPRESS DUST AT ALL TIMES, 24 HOURS A DAY, 7 DAYS A WEEK.

FOUNDATION DEMOLITION KEY

- (E) CMU WALL TO REMAIN
- (N) OPENING IN (E) CMU WALL
- (E) CONCRETE SLAB ON GRADE TO REMAIN
- (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED
- E) CONCRETE SLAB ON GRADE TO BE DEMOLISHED
- (E) FENCING TO BE DEMOLISHED



EXISTING CONDITIONS AND DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

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No. 17911
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CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
EXISTING CONDITIONS DEMOLITION PLAN
SPARKS NEVADA

DRAWN: TJL
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DATE: 10/14/19
SCALE: AS SHOWN
PROJECT NO: 1481901

SHEET NO:
S2.0

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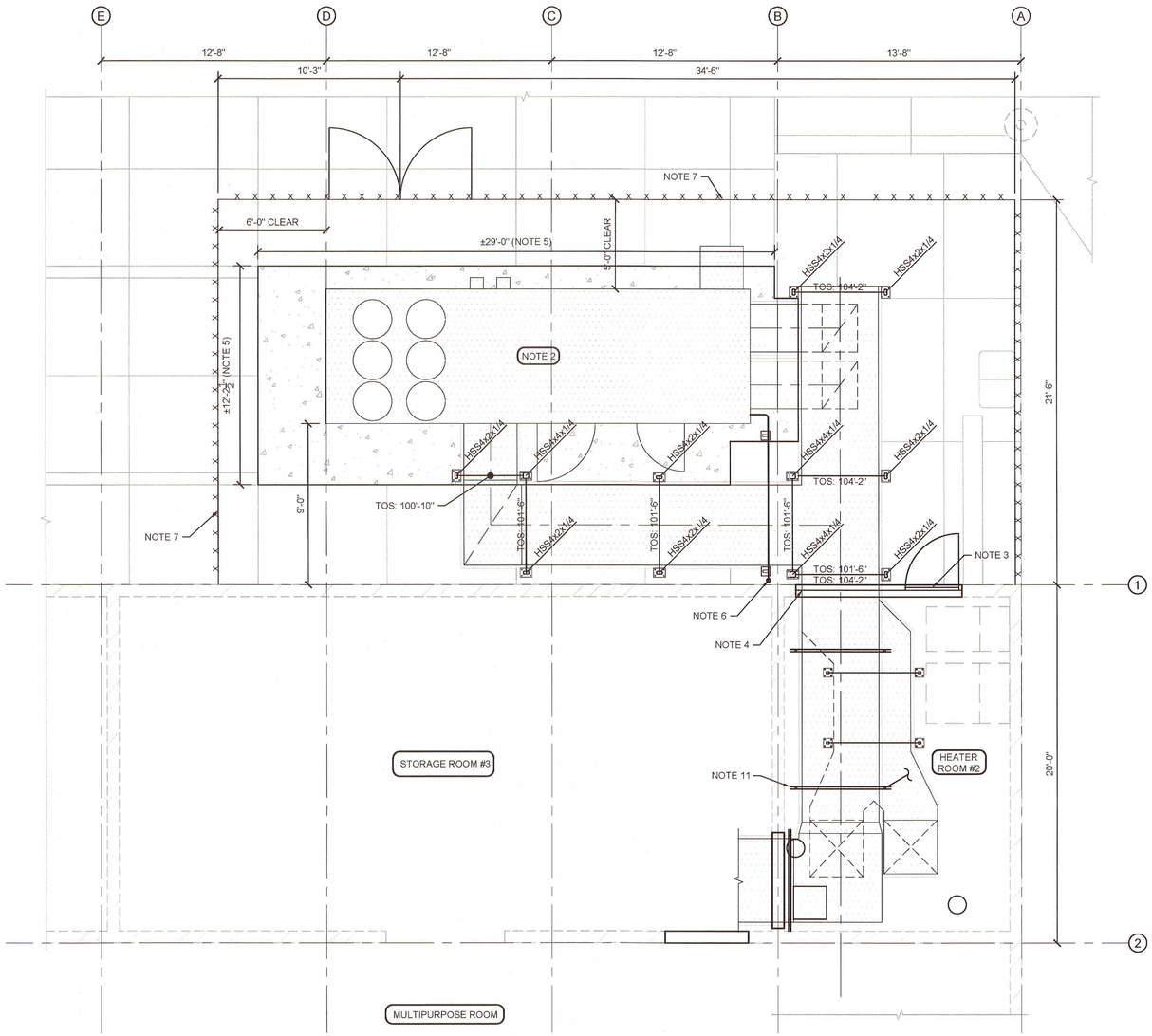
FRAMING NOTES:

1. ALL ELEVATIONS ARE WITH RESPECT TO A (E) TOC DATUM OF 100'-0".
2. MECHANICAL EQUIPMENT AND DUCTING ALIGNMENT SHOWN FOR REFERENCE ONLY - SEE MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE (N) 3068 METAL DOOR, FRAME & HARDWARE - SEE FRAMING ELEVATION SHEET S3.1 FOR ADDITIONAL INFORMATION.
4. (N) 2x6 WOOD FRAMED WALL W/ 1/2" PT PLYWOOD SHEATHING AND 24 GA PBC METAL WALL PANEL INFILL AROUND DUCT PENETRATIONS - SEE FRAMING ELEVATION SHEET S3.0 FOR ADDITIONAL INFORMATION.
5. (N) 8" THICK CONCRETE SLAB ON GRADE W/#5 @ 18" EACH WAY. SET TOP OF REINFORCING STEEL 2" CLEAR FROM TOP OF SLAB. PROVIDE 1" DEEP CONTROL JOINTS AS REQUIRED (10'-0" MAX SPACING) AND TO AVOID POST INSTALLED ANCHORS. SET TOP OF SLAB TO MATCH (E).
6. (N) GAS SUPPLY LINE - SEE PLUMBING PLAN - PROVIDE SUPPORTS AT 8' MAX PER DETAIL 205.
7. 7' TALL COMMERCIAL ORNAMENTAL SECURITY FENCE WITH MATCHING SWING GATES:
   PICKETS: 0.75" SQ x 14 GA
   RAILS: 1.4375" x 1.5" x 14 GA
   POSTS: 3" SQ x 14 GA
   DOUBLE 4' WIDE SWING GATES
   FINISH: GALVANIZED STEEL FRAMEWORK WITH EPOXY PRIMER AND ACRYLIC TOPCOAT.
8. SUBMIT SHOP DRAWINGS SHOWING FABRICATED DUCT PLANS AND ELEVATIONS.
9. SUBMIT SHOP DRAWINGS FOR DUCT SUPPORT STEEL.
10. SUBMIT THE FOLLOWING FENCE SHOP DRAWINGS FOR REVIEW AND APPROVAL:
    LOCATION OF CORNER POSTS, END POSTS, AND GATES
    FENCE ASSEMBLY INCLUDING ACCESSORIES, FITTINGS AND HARDWARE
    GATE ASSEMBLIES INCLUDING ACCESSORIES, LOCKS, AND COMPONENTS
11. TRAPEZE DUCT SUPPORT WITH LATERAL BRACE AT CORNER - SEE DETAIL 201/S9.1.

FRAMING KEY

- (E) CMU WALL TO REMAIN
- (E) CONCRETE SLAB ON GRADE
- (N) MECHANICAL DUCTING (RA/SA) - SEE MECHANICAL PLANS FOR SIZE, ALIGNMENT, AND ADDITIONAL REQUIREMENTS NOT SHOWN
- (N) EXTERIOR DUCT SUPPORTS - SEE DETAIL 103/S9.1
- (N) INTERIOR TRAPEZE DUCT SUPPORT - SEE DETAIL 200/S9.1
- (N) INTERIOR GROUND MOUNT SUPPORT - SEE DETAIL 104/S9.1
- (N) 7' TALL SECURITY FENCING
- (N) PIPE SUPPORT ASSEMBLY - SEE DETAIL 102/S9.1



STRUCTURAL FRAMING PLAN

SCALE: 1/4" = 1'-0"

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THOMAS LUNDIN
Exp. 12/31/19
CIVIL/ STRUCTURAL
No. 17911
10/14/19

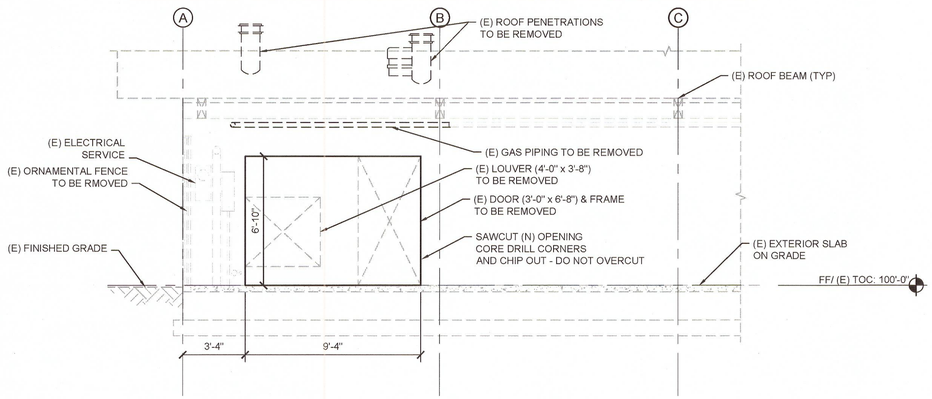
CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
STRUCTURAL FRAMING PLAN
NEVADA
SPARKS

DRAWN: TJL
CHECKED: TJL
DATE: 10/14/19
SCALE: AS SHOWN
PROJECT NO: 1481901

SHEET NO:
S2.1

DEMOLITION NOTES:

1. SEE MECHANICAL AND ELECTRICAL PLANS FOR ADDITIONAL INFORMATION NOT SHOWN.
2. CONTRACTOR SHALL INSPECT SITE FOR CONFLICTS PRIOR TO DEMOLITION.
3. INSTALL WALL STRENGTHENING STEEL PRIOR TO SAWCUTTING/DEMOING (N) OPENING.
4. SAWCUT (E) CMU ALONG (E) MORTAR JOINTS (HORIZONTAL) AND AT 1/2" BLOCKS (VERTICAL).
5. CONTRACTOR TO MARK WALLS DEPICTING ALIGNMENT AND GEOMETRY OF SAWCUTS FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO CUTTING WALL.
6. PROVIDE TEMPORARY WALL COVERINGS AS REQUIRED TO MAINTAIN

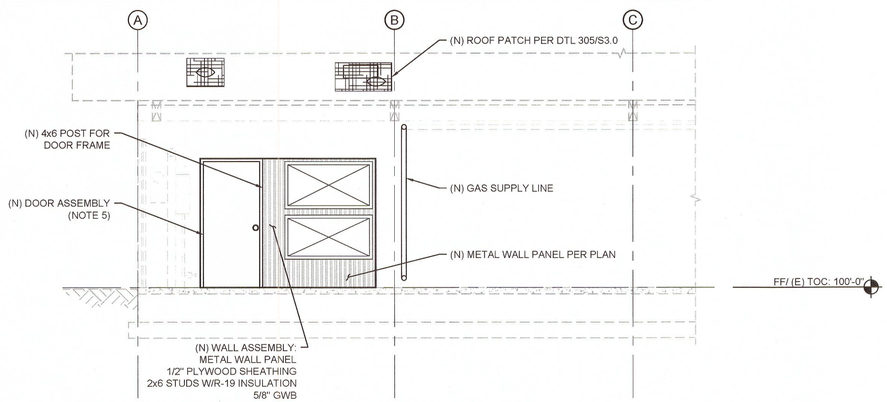


STRUCTURAL DEMOLITION ELEVATION

SCALE: 1/4" = 1'-0"

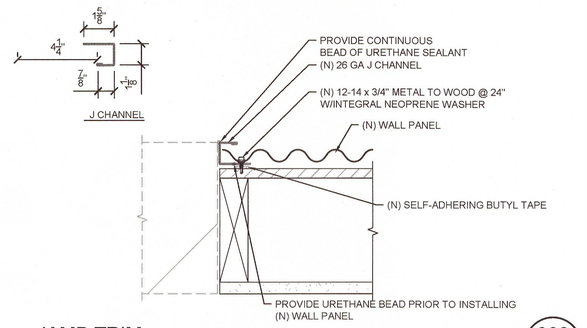
FRAMING NOTES:

1. VERIFY AND COORDINATE ALL DIMENSIONS (INCLUDING MINIMUM REQUIRED EDGE DISTANCES) AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY CONSTRUCTION.
2. CONTRACTOR TO PROVIDE COLOR SAMPLES AND FINISHES FOR ALL EXPOSED MATERIALS AND FINISHES TO BE APPROVED PRIOR TO INSTALLATION.
3. CONTRACTOR TO APPLY TOUCH-UP PAINT AS SUPPLIED BY THE PANEL MANUFACTURER TO ANY SCRATCHES OR NICKS TO THE PAINT FINISH OF THE (N) WALL PANELS AS A RESULT OF INSTALLATION OR HANDLING. PAINT SHALL BE APPLIED PER THE MANUFACTURERS REQUIREMENTS USING A SMALL BRUSH.
4. WALL PANELS SHALL BE INSTALLED CONTINOUS BETWEEN SILL AND HEAD EXCEPT WHERE PENETRATIONS REQUIRE BREAKS. PROVIDE SECONDARY FRAMING AT PANEL LAPS. INSTALL METAL PANELS AND TRIM FREE OF WAVES, WARPS, BUKCLES, FASTENING STRESSES AND DISTORTATIONS. ANY PANEL EXHIBITING VISUAL DEFECTS AFTER INSTALLATION SHALL BE REMOVED AND REPLACED WITH (N) PANELS.
5. PROVIDE (N) INSULATED METAL DOOR ASSEMBLY AND FRAME. DOORS AND FRAMES TO BE 18 GAUGE GALVANEAL EXTERIOR STEEL. PROVIDE CLOSER, WEATHERSEAL, HINGES, THRESHOLD, AND LOCKSET.
6. PROVIDE MATCHING PANEL TRIM AT ALL HEADS, SILLS, AND AROUND ALL PENETRATIONS AND OPENINGS.



STRUCTURAL FRAMING ELEVATION

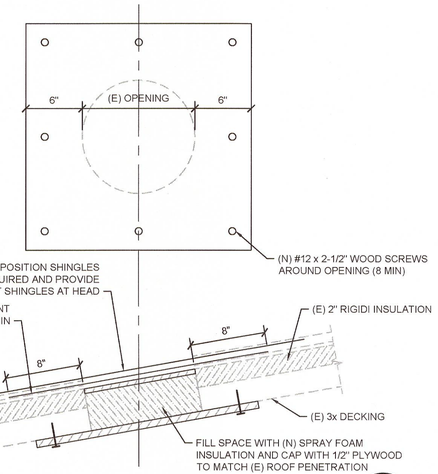
SCALE: 1/4" = 1'-0"



JAMB TRIM

SCALE: 3" = 1'-0"

306 S3.0

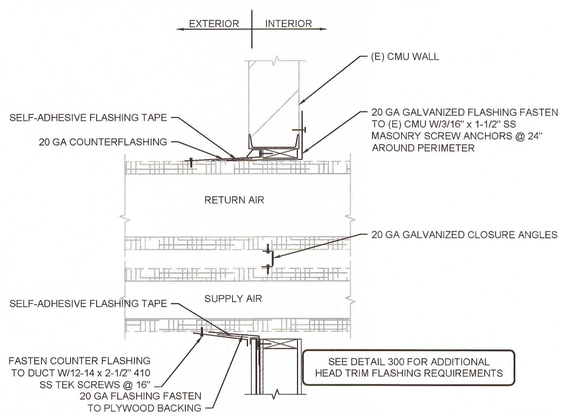


TYPICAL ROOF PATCH

SCALE: 1-1/2" = 1'-0"

305 S3.0

CONTRACTOR TO PROVIDE SHOP DRAWING OF PROPOSED LOUVER FLASHING ASSEMBLY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL INCLUDE DIMENSIONS OF OPENINGS AND FABRICATED PIECES. ALL SPLICES SHALL BE LAPPED A MINIMUM OF 6" WITH SEALANT BETWEEN.

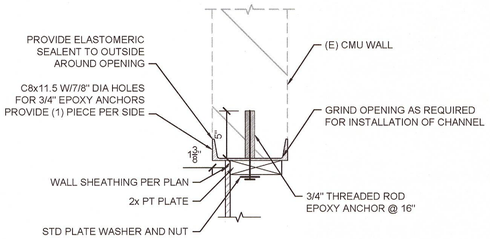


FLASHING AT DUCT PENETRATION

NO SCALE

304 S3.0

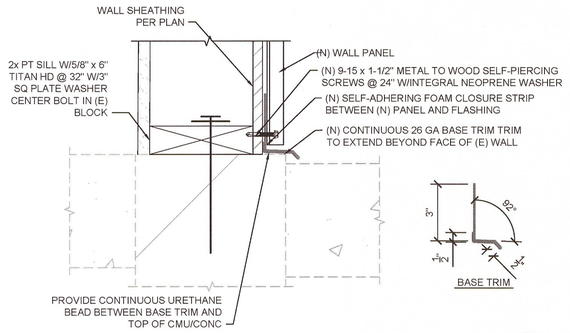
SHORE LINTEL/JAMB STEEL FOR 24 HRS MINIMUM TO ALLOW EPOXY TO CURE.



TYPICAL DOOR JAMB/LINTEL STEEL

SCALE: 1-1/2" = 1'-0"

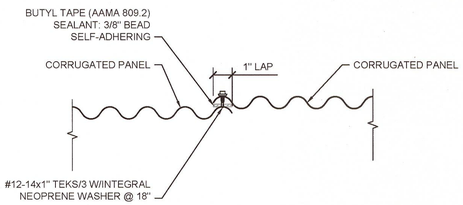
303 S3.0



TYPICAL PANEL SILL CONNECTION

SCALE: 3" = 1'-0"

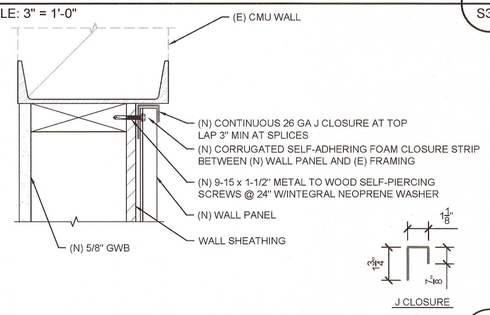
302 S3.0



TYPICAL SIDE LAP CONNECTION

SCALE: 3" = 1'-0"

301 S3.0



TYPICAL PANEL HEAD CONNECTION

SCALE: 3" = 1'-0"

300 S3.0

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CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
SPARKS NEVADA

FRAMING ELEVATIONS DETAILS

DRAWN:	TJL
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PROJECT NO:	1481901

SHEET NO:

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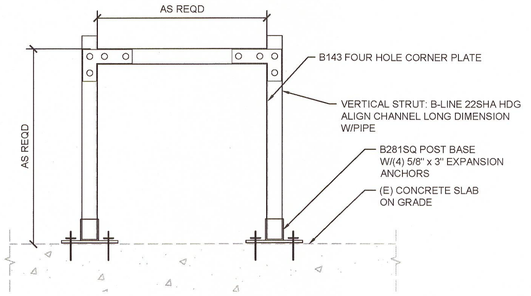
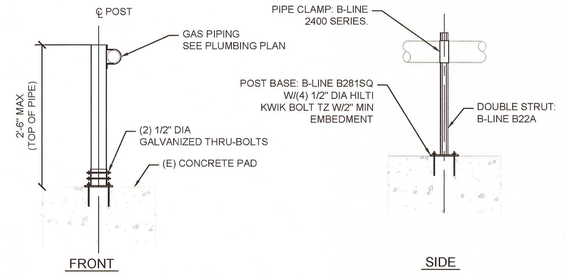


GROUND MOUNTED DUCT SUPPORT - INTERIOR

NO SCALE

104 / S9.1

INSTALL NUTS AND BOLTS PER MANUFACTURERS REQUIRMENTS AND THE PROJECT SPECIFICATIONS, TYP.

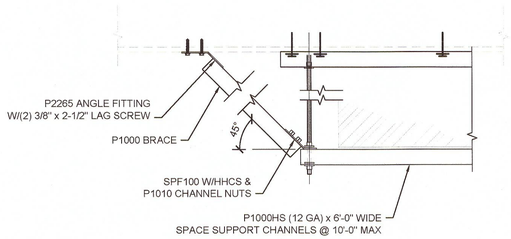


PIPE SUPPORT ELEVATION (2'-6" MAX HEIGHT)

SCALE: 3/4" = 1'-0"

PIPE SUPPORTS TO BE SPACED AT 10'-0" MAX

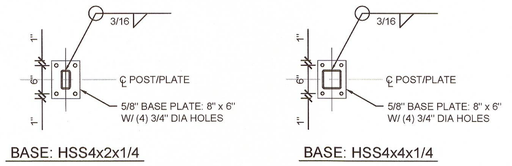
102 / S9.1

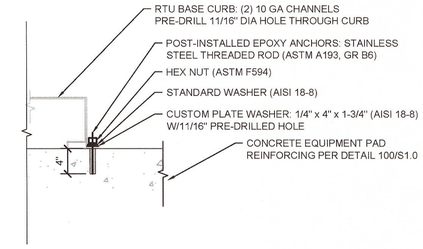


BRACED TRAPEZE ASSEMBLY

NO SCALE

201 / S9.1

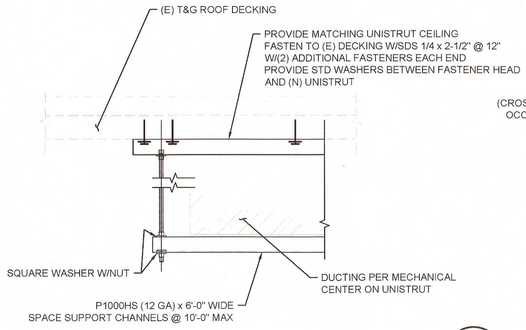




POST-INSTALLED CONCRETE ANCHOR

SCALE: 1" = 1'-0"

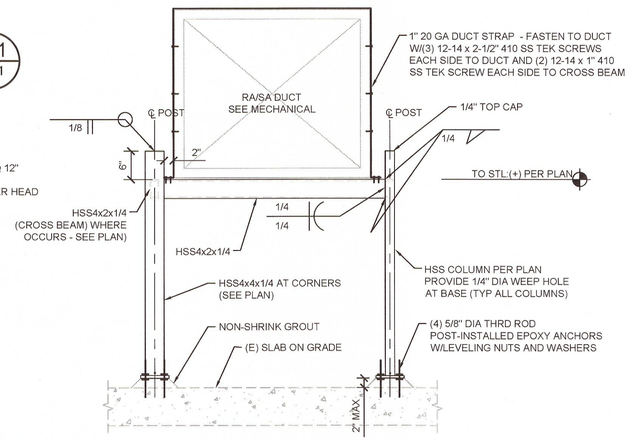
101 / S9.1



TRAPEZE HANGER

NO SCALE

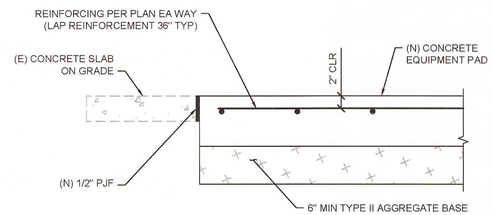
200 / S9.1



EXTERIOR DUCT SUPPORT FRAMING

SCALE: 3/4" = 1'-0"

103 / S9.1



SEE STRUCTURAL NOTES FOR UNDERSLAB REQUIREMENTS

TYPICAL SLAB EDGE

SCALE: 1" = 1'-0"

100 / S9.1

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CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
FRAMING DETAILS
NEVADA
SPARKS

DRAWN: TJL
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SCALE: AS SHOWN
PROJECT NO: 1481901

SHEET NO:
S9.1

SPARKS RECREATION CENTER
HVAC SYSTEM UPGRADE

PWP# WA-2020-053

BID# 19/20-005

98 RICHARDS WAY
SPARKS, NEVADA
89431

SHEET INDEX

DESIGN CONSULTANTS

Kimley»Horn

MECHANICAL
MATTHEW C. MYRES, PE
5370 KIETZKE LANE
SUITE 100, RENO, NV 89511
PHONE: 775-787-7552
WWW.KIMLEY-HORN.COM

DINTER ENGINEERING CONFIDENCE Airfield Electrical

ELECTRICAL
Tim Prockish, PE Electrical Engineer
Dinter Engineering Co.
385 Gentry Way Reno, Nevada, 89502
Office: 775-826-4044
Direct: 775-826-4044

STUCTURAL
Thomas Lundin, CE/SE
Structural Engineer
Structural System Solutions Inc.
410 Mill Street, Suite 206
Reno, Nevada, 89502
Office: 775-232-4664

JON R ERICSON, P.E, P.T.O.E.
CITY ENGINEER

DATE: 10/14/2019

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 858-7832

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MECHANICAL
No. 16816
10/14/19

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CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

TITLE SHEET

Job No. 192079000.3

Date: 10/14/2019

SHEET

T0.1

Sheet Number

MECHANICAL SYMBOL LIST

(NOTE: ALL OF THE SYMBOLS INDICATED BELOW MAY NOT APPEAR ON THIS PROJECT)

12" X 12" OR 12" X 12"		DUCT W/ SIZE INDICATED (FIRST FIG. IS SIDE SHOWN)
V.D.	V.D.	MANUAL VOLUME / BALANCING DAMPER
		DUCT WITH ACOUSTIC LINING
F	F.D.R.	FIRE DAMPER
SD	S.D.	SMOKE DAMPER
FSD	F.S.D.	COMBINATION FIRE / SMOKE DAMPER
	EX.	EXTRACTOR
12" X 12" OR		SQUARE TO ROUND DUCT TRANSITION
	TR	DUCT SIZE TRANSITION
		FLEXIBLE DUCT CONNECTOR
	FLEX	FLEXIBLE DUCT
	SD	SPLITTER DAMPER
TV	T.V.'S	TURNING VANES
	S.A.	SUPPLY AIR DUCT DOWN
	S.A.	SUPPLY AIR DUCT UP
	R.A.	RETURN AIR DUCT DOWN
	R.A.	RETURN AIR DUCT UP
	E.A.	EXHAUST AIR DUCT DOWN
	E.A.	EXHAUST AIR DUCT UP
M	M.D.	MOTORIZED DAMPER
O.B.D.	O.B.D.	OPPOSED BLADE DAMPER
RD	RD	REFRIGERANT DISCHARGE PIPING
RL	RL	REFRIGERANT LIQUID PIPING
RS	RS	REFRIGERANT SUCTION PIPING
	S.T.R.	STRAINER
	S.T.R.	STRAINER WITH 3/4" HOSE END DRAIN VALVE
	P.T.R.	PRESSURE - TEMPERATURE RELIEF VALVE
	RV	PRESSURE RELIEF VALVE
	2VAL	2-WAY CONTROL VALVE
	3VAL	3-WAY CONTROL VALVE
	P.R.G.	PRESSURE GAUGE WITH GAUGE COCK
	TH.	THERMOMETER
	A.A.V.	AUTOMATIC AIR VENT
	M.A.V.	MANUAL AIR VENT
	V.B.	VACUUM BREAKER
	P.D.	PIPING TEE DOWN
	P.U.	PIPING TEE UP
	P.U.	PIPING ELBOW UP
	P.D.	PIPING ELBOW DOWN
		BRANCH - TOP CONNECTION
		BRANCH - BOTTOM CONNECTION
		BRANCH - SIDE CONNECTION
OR		ARROW INDICATES DIRECTION OF FLOW
	A.P.	ACCESS PANEL
ED #		MECHANICAL EQUIPMENT INDICATED (SEE SCHEDULE)
#		PLUMBING FIXTURE SCHEDULE - (SEE PLUMBING SCHEDULE)
1		DIFFUSER OR GRILLE INDICATED (SEE SCHEDULE)
T	T.	THERMOSTAT
S	S.E.N.	SENSOR
SD	S.D.E.T.	SMOKE DETECTOR
	T.C.C.	TEMPERATURE CONTROL PANEL
	AFF	ABOVE FINISHED FLOOR
	AFG	ABOVE FINISHED GRADE
	BDD	BACKDRAFT DAMPER
	BHP	BRAKE HORSEPOWER
	BTUH	BRITISH THERMAL UNITS PER HOUR
	CFH	CUBIC FEET PER HOUR
	CFM	CUBIC FEET PER MINUTE
	CLG	CEILING
	DB	DRY BULB TEMPERATURE
	DN	DOWN
	(E)	EXISTING
	EAT	ENTERING AIR TEMPERATURE
	ESP	EXTERNAL STATIC PRESSURE
	GA	GAUGE
	GAL	GALLON
	GPH	GALLONS PER HOUR
	GPM	GALLONS PER MINUTE
	HSPF	HEATING SYSTEM PERFORMANCE FACTOR
	KW	KILOWATTS
	LAT	LEAVING AIR TEMPERATURE
	MAX	MAXIMUM
	MBH	BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
	MIN	MINIMUM
	MOCP	MAXIMUM OVER CURRENT PROTECCTION
	MUA	MAKE-UP AIR
	(N)	NEW
	NOM	NOMINAL
	OA	OUTSIDE AIR
	PD	PRESSURE DROP
	RPM	REVOLUTION PER MINUTE
	SF	SQUARE FEET
	SP	STATIC PRESSURE
	STD	STANDARD
	T	TEMPERATURE
	TYP	TYPICAL
	WB	WET BULB TEMPERATURE
	WC	WATER COLUMN
	W.P.D.	WATER PRESSURE DROP

GENERAL MECHANICAL NOTES

1. DUE TO THE SMALL SCALE OF THE DRAWINGS, IT IS IMPOSSIBLE TO SHOW ALL REQUIRED OFFSETS, ELEVATIONS, ETC. IT IS THEREFORE THE CONTRACTORS RESPONSIBILITY TO VERIFY THE EXACT ROUTING, AND PLACEMENT OF EQUIPMENT AND PROVIDE REQUIRED OFFSETS INSTALLED IN ACCORDANCE WITH SMACNA STANDARDS AND THE SPECIFICATIONS TO MEET THE INTENT OF THE DESIGN.

2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE CUTTING, SAWCUTTING OPENINGS OF WALLS, CEILINGS, SOFFITS AS REQUIRED FOR THE INSTALLATION OF EQUIPMENT AND DUCTWORK AS REQUIRED.

3. ALL FACTORY PRODUCED AIR DUCT SHALL BE A CLASS '0' OR CLASS '1' IN ACCORDANCE WITH THE ADOPTED MECHANICAL CODE. ALL DUCTWORK CONSTRUCTION SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE DUCT MANUAL AND SHEET METAL CONSTRUCTION FOR VENTILATING-AIR CONDITIONING SYSTEMS, LATEST EDITION, AS ISSUED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS' NATIONAL ASSOCIATION, INC. (SMACNA). LOW PRESSURE ROUND DUCTS SHALL BE UNITED SHEET METAL SPIRAL UNIRIB DUCT WITH UNITED UNIWELD FITTINGS. MATERIALS SHALL BE GALVANIZED STEEL OF GAUGES SHOWN IN THE LOW PRESSURE MANUAL UNLESS SPECIFICALLY NOTED OTHERWISE ON PLANS.

4. THE CONTRACTOR SHALL KEEP INSTALLATION INSTRUCTIONS FOR ALL LISTED EQUIPMENT ON THIS PROJECT AT THE JOBSITE AND SHALL HAVE THEM ACCESSIBLE FOR THE FIELD INSPECTOR UPON REQUEST.

MECHANICAL SHEET LIST

SHEET NUMBER	SHEET NAME
M0.1	MECHANICAL SCHEDULES, SYMBOLS AND LEGEND
M0.2	MECHANICAL SPECIFICATIONS
M1.1	MECHANICAL DEMOLITION PLAN
M2.1	MECHANICAL FLOOR PLAN
M3.1	MECHANICAL ENLARGED PLANS AND SECTION

DIFFUSER SCHEDULE

SYM	DESCRIPTION	MAKE & MODEL NO.	AIR FLOW	DIMENSIONS
RG-1	SUPPLY GRILLE (WITH DEBRIS SCREEN)	TITUS MODEL No. 50F	8,000 CFM, <30 NC	48" x 30"
FG-1	LINEAR BAR DIFFUSER	TITUS MODEL No. CT-580	66 CFM PER FT, 17 NC, .084 TOTAL PRESSURE	½" BAR SPACING, 0° DEFLECTION, 2" NOMINAL DUCT WIDTH

UNIT HEATER SCHEDULE

SYM	DESCRIPTION	MAKE & MODEL NO.	CAPACITY	ACCESSORIES	KW	ELECTRICAL	WT.	REMARKS
UH 1	ELECTRIC UNIT HEATER	QMARK MODEL No. MUH03-81	10,200 BTUH OUTPUT, 350 CFM, 27°F TEMP RISE, NOMINAL 3 kW	PROVIDE WITH SINGLE POLE INTERNAL THERMOSTAT WITH WALL MOUNTING KIT	3 kW	208V / 1Ø	30	FOR FREEZE PROTECTION ONLY

AIR HANDLING UNIT SCHEDULE

AHU ~	UNIT DATA											DX COOLING					GAS HEATING				
	MANUFACTURER	MODEL	OPERATING WEIGHT (lb)	AIRFLOW (ACFM)	MINIMUM OUTSIDE AIR (ACFM)	E.S.P. (in. wg.)	SEER / EER	OUTDOOR SOUND LEVEL (dBA)	ELECTRICAL			CAPACITY (MBH)		EAT (°F db/wb)	LAT (°F db)	AMBIENT DESIGN (°F db/wb)	GAS INPUT (MBH)	OUTPUT CAPACITY (MBH)	EAT (°F)	LAT (°F)	AMBIENT DESIGN (°F)
									VOLTS/Ø/Hz	MCA	MOCP	TOTAL	SENSIBLE								
1	ALLIED	LGH480H4M	7,915	16,000	6800	2.0	14.5 / 10.8	91	208/3/60	279	350	474.7	377.4	78/60	51.7	100/61	800	640	55	92.2	9

FEATURES AND OPTIONS:

1. POWER EXHAUST WITH VFD FOR BUILDING PRESSURIZATION CONTROL
2. FACTORY INSTALLED SUPPLY AND RETURN AIR DUCT SMOKE DETECTORS. INTERLOCKED AS REQUIRED TO SHUT DOWN UNIT UPON DETECTION OF SMOKE.
3. PROVIDE UNIT WITH BIRDSCREEN ON O.A. INTAKE AND E.A. OUTLET.
4. PROVIDE UNIT WITH 2" MERV 8 FILTERS.
5. SCROLL COMPRESSORS
6. VARIABLE AIR VOLUME CAPABLE.
7. FACTORY INSTALLED WEATHERPROOF DISCONNECT.
8. FACTORY INSTALLED GFCI SERVICE OUTLET, NON-POWERED.
9. FACTORY INSTALLED 100% SENSIBLE ECONOMIZER WITH HOOD.
10. FACTORY INSTALLED INTEGRAL VFD FOR SUPPLY AND EXHAUST FAN.
11. PROVIDE WITH MANUFACTURES SMART THERMOSTAT AND C02 SENSOR.

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TEL (775) 636-7832

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MATTHEW C MYRES
Exp. 12/31/19
MECHANICAL
No. 16816

10/14/19

REV.	DATE	APPD	DESCRIPTION	DRAWING FILE. M0.1	DRAWN BY: KP	CHECKED BY: JH	APPROVED BY: MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL SCHEDULES, SYMBOLS AND LEGEND

Job No. 192079000.3

Date: 10/14/2019

SHEET M0.1

Sheet Number

MECHANICAL SPECIFICATIONS

A. GENERAL

1. THE INFORMATION INDICATED ON THESE DRAWINGS AS EXISTING IS BASED UPON INFORMATION TAKEN FROM AS-BUILT DRAWINGS, FIELD INVESTIGATION, AND INFORMATION OBTAINED FROM SUBMITTAL DATA, ETC. THE PLANS DO NOT GUARANTEE ACCURACY BUT ARE ONLY AN INDICATION OF EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT CONDITIONS SUCH AS EQUIPMENT PLACEMENT, DUCTWORK (SIZE, ROUTING, AND ELEVATION), PIPING (SIZE, ROUTING, AND ELEVATION), ETC. THE DRAWINGS ARE INTENDED TO PROVIDE THE CONTRACTOR AN INDICATION OF THE SYSTEM INSTALLED IN THE FACILITY TO DATE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS TO THE DRAWING INFORMATION AS REQUIRED TO MATCH EXISTING FIELD CONDITIONS.
2. THE CONTRACTOR SHALL INSTALL THE NEW EQUIPMENT, DUCTWORK, AND PIPING AROUND ALL EXISTING OBSTACLES INCLUDING: ELECTRICAL CONDUIT, DOMESTIC WATER PIPING, WASTE AND VENT PIPING, ACID WASTE AND VENT PIPING, CHILLED AND HEATING WATER PIPING, AND FIRE SPRINKLER PIPING. PROVIDE OFFSETS TO AVOID RELOCATION OF OTHER UTILITIES. RELOCATE UTILITIES IF THEY ARE IN CONFLICT WITH THE MECHANICAL SYSTEM INSTALLATION, CAUSE DEVIATIONS IN THE DESIGN INTENT, UNSATISFACTORY OPERATION, NOISY CONDITIONS, OR INTERFERE WITH MAINTENANCE. IT IS THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY UTILITY RELOCATION WITH THE APPROPRIATE SUBCONTRACTOR.
3. PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, SERVICES AND INSURANCES TO COMPLETE THE HEATING, VENTILATING AND AIR CONDITIONING WORK WITHIN THE FULL INTENT OF THE DRAWINGS AND SPECIFICATIONS CONTAINED HEREON AND TO THE ENTIRE SATISFACTION OF THE ARCHITECT/ENGINEER.
4. PROVIDE ALL PERMITS AND FEES AS REQUIRED FOR THE MECHANICAL WORK.
5. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT BEFORE BIDDING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC), 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2018 INTERNATIONAL FIRE CODE (IFC), 2018 UNIFORM MECHANICAL CODE (UMC), 2018 UNIFORM PLUMBING CODE (UPC), 2015 NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS, AND ALL OTHER APPLICABLE CODES, RULES, AND LOCAL REQUIREMENTS.
7. GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR.
8 ALL DIMENSIONS AND MEASUREMENTS SHALL BE VERIFIED AT THE JOBSITE BEFORE FABRICATION AND/OR INSTALLATION OF THE EQUIPMENT.
9 PROVIDE AND INSTALL ALL EQUIPMENT, DUCT, PIPING, AND CONTROLS AS SHOWN ON THE DRAWINGS.

B. SUBMITTALS

1. FURNISH SIX (6) SETS OF SUBMITTALS (BOUND WITH COVER) OF MANUFACTURER'S DATA SHEETS FOR ALL MATERIALS AND EQUIPMENT FOR APPROVAL OF THE ARCHITECT/ENGINEER PRIOR TO PURCHASE AND INSTALLATION. INCOMPLETE SUBMITTALS WILL NOT BE REVIEWED.
2. ELECTRONIC SUBMITTALS IN ADOBE PDF FORMAT, IN LIEU OF PAPER COPIES, WILL BE ACCEPTABLE.
3. SUBSTITUTED ITEMS SHALL BE SUBMITTED WITH MANUFACTURER'S DESCRIPTIVE DATA AND MUST SHOW EQUALITY TO EQUIPMENT SPECIFIED. INFORMATION ON SUBSTITUTED ITEMS MUST BE COMPLETE, INCLUDING, BUT NOT LIMITED TO: DESIGN, CONSTRUCTION MATERIALS, CONSTRUCTION QUALITY, AND SOUND LEVELS. ENGINEER WILL NOT RESEARCH INFORMATION REQUIRED TO COMPARE EQUIPMENT. ENGINEER RESERVES THE RIGHT TO REQUIRE SPECIFIED EQUIPMENT.
4. SUBMIT MANUFACTURER'S DESCRIPTIVE DATA WITHIN TEN (10) WORKING DAYS AFTER AWARD OF THE CONTRACT. MATERIALS AND EQUIPMENT SHALL NOT BE ORDERED PRIOR TO SUBMITTAL APPROVAL. ALLOW TEN (10) WORKING DAYS AFTER RECEIPT OF SUBMITTALS IN THE ENGINEER'S OFFICE BEFORE REVIEWED SUBMITTALS WILL BE RETURNED.
5. UPON COMPLETION OF THE PROJECT, AND PRIOR TO FINAL ACCEPTANCE PAYMENT, SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS AND THREE SETS OF OPERATING AND MAINTENANCE INSTRUCTIONS (BOUND IN 3-RING BINDERS).

C. WORKMANSHIP

1. ALL WORK TO BE PERFORMED BY QUALIFIED PERSONNEL NORMALLY ENGAGED IN THE RESPECTIVE LINE OF WORK.
2. PERFORM ALL WORK IN A MANNER NOT TO DISTURB THE NORMAL OPERATION OF THE BUILDING.
3. COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE.
4. COORDINATE ALL WORK WITH THE OTHER TRADES.
5. THE MECHANICAL CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK ACCEPTABLE TO THE OWNER'S REPRESENTATIVE.

D. DEMOLITION

1. DEMOLITION WORK SHALL NOT CREATE ANY DUST PROBLEMS IN THE WORKING SPACES.
2. ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE SITE.

E. CUTTING, PATCHING, AND PAINTING

1. ALL CUTTING AND PATCHING TO BE PERFORMED BY THE GENERAL CONTRACTOR.
2. CUTTING OF ALL OPENINGS SHALL BE COORDINATED WITH THE OWNER'S ENGINEERING REPRESENTATIVE.
3. WATER WILL NOT BE USED FOR CONCRETE CUTTING WITHOUT THE DIRECT SUPERVISION OF THE OWNER'S ENGINEERING REPRESENTATIVE.
4. WALL SURFACES SHALL BE PRIMED AND PAINTED. PAINT TYPE AND COLOR SHALL BE AS SPECIFIED BY THE OWNER'S REPRESENTATIVE.

F. PRODUCT HANDLING

1. USE ALL MEANS NECESSARY TO PROTECT ALL MATERIALS AND EQUIPMENT BEFORE, DURING, AND AFTER INSTALLATION AND TO PROTECT THE MATERIALS AND WORK OF THE OTHER TRADES.
2. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

G. EQUIPMENT

1. EQUIPMENT SHALL BE AS SPECIFIED IN THE EQUIPMENT SCHEDULE OR AN APPROVED EQUAL IF NOTED.
2. INSTALL EQUIPMENT PER MANUFACTURER'S INSTRUCTIONS.
3. GENERAL CONTRACTOR SHALL PROVIDE ALL CURBED OPENINGS IN ROOF FOR ALL ROOF MOUNTED EQUIPMENT.
4. SECURELY FASTEN ALL EQUIPMENT TO PREVENT MOVEMENT DUE TO WIND OR SEISMIC FORCES.
5. PROVIDE 10'-0" MINIMUM CLEARANCE BETWEEN OUTSIDE AIR INTAKE AND ANY EXHAUST AIR OUTLETS OR PLUMBING VENTS.

H. DUCTWORK

1. AIR DISTRIBUTION DUCT SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH CURRENT EDITIONS OF THE ASHRAE GUIDE AND WITH S.M.A.C.N.A. DUCT CONSTRUCTION STANDARDS.
2. RECTANGULAR AND ROUND DUCTWORK LOCATED INDOORS SHALL BE CONSTRUCTED FROM GALVANIZED STEEL IN ACCORDANCE WITH THE LATEST EDITION S.M.A.C.N.A. "HVAC DUCT CONSTRUCTION STANDARDS" FOR 2" W.G. PRESSURE SYSTEMS. FIBERGLASS DUCT WILL NOT BE PERMITTED.
3. RECTANGULAR AND ROUND DUCTWORK LOCATED OUTDOORS SHALL BE SUBMITTED AS A DEFERRED SUBMITTAL. CONTRACTOR TO PROVIDE DUCT SPECIFICATIONS AND A SAMPLE FOR ENGINEER APPROVAL.
4. DUCTS LINED WITH INSULATION SHALL BE INCREASED IN SIZE TO ALLOW FOR INSULATION THICKNESS SO THAT DIMENSIONS SHOWN ON DRAWINGS WILL BE NET INSIDE DIMENSIONS.
5. FITTINGS: ROUND TO RECTANGULAR DUCT CONNECTIONS SHALL BE MADE AS SHOWN ON DRAWINGS OR WITH CONICAL SHAPED PREFORMED FITTINGS. TURNING VANES SHALL BE USED FOR ALL MITERED ELBOWS IN RECTANGULAR DUCT. CENTERLINE RADIUS OF ALL ELBOWS SHALL BE ONE AND ONE HALF TIMES THE DIAMETER OF THE DUCT.
6. DUCTS SHALL BE PROVIDED WITH HANGERS TO PREVENT ANY BENDING OR SAGGING. HANGERS SHALL BE GALVANIZED STRAP IRON LOOPS WHICH SHALL BE FASTENED TO OVERHEAD CONSTRUCTION IN A SECURE MANNER. SIZE, GAUGE, AND SPACING SHALL BE PER S.M.A.C.N.A. STANDARDS.
7. ALL DUCT JOINTS SHALL BE SEALED WITH S.M.A.C.N.A. APPROVED TAPE AND POLYMER ADHESIVES AIR SEAL #33 OR DESIGN POLYMERICS #DP1010 WATER BASED DUCT SEALANT OR APPROVED EQUAL.
8. AT ALL DUCT CONNECTIONS TO UNITS, AND WHERE INDICATED, FURNISH AND INSTALL HEAVY FLEXIBLE CONNECTIONS 6" MINIMUM LENGTH. MATERIAL USED FOR FLEXIBLE CONNECTIONS SHALL BE VENTFAB AS MANUFACTURED BY VENTFABRIC, METALFAB AS MANUFACTURED BY DURODYNE, OR APPROVED EQUAL.

I. GRILLES, REGISTERS, AND DIFFUSERS

1. AN AIR DISTRIBUTION SCHEDULE IS SHOWN ON DRAWINGS. UNITS OF EQUAL PERFORMANCE, CONSTRUCTION, AND SOUND CRITERIA BY MAJOR MANUFACTURERS WILL BE CONSIDERED FOR APPROVAL. SEE SUBSTITUTION REQUIREMENTS.

J. DUCT INSULATION

1. ACCEPTABLE MANUFACTURERS: CERTAINTEED, KNAUF, JOHNS MANVILLE, AND OWENS CORNING.
2. ROUND SUPPLY AND RETURN DUCT AND FITTINGS LOCATED WITHIN THE CONDITIONED SPACE SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 75 (OR EQUAL) 1½" THICK, 3/4# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET. ROUND SUPPLY AND RETURN DUCT AND FITTINGS EXPOSED WITHIN THE AREA THAT IT SERVES SHALL NOT BE INSULATED.
3. RECTANGULAR SUPPLY AND RETURN DUCT AND FITTINGS LOCATED WITHIN THE CONDITIONED SPACE SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1" THICK, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
4. ROUND SUPPLY AND RETURN DUCT AND FITTINGS LOCATED IN UNCONDITIONED SPACE SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 100 (OR EQUAL) 2" THICK, R-6 MINIMUM INSTALLED INSULATING VALUE, 1# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET.
5. RECTANGULAR SUPPLY AND RETURN DUCT AND FITTINGS LOCATED IN UNCONDITIONED SPACE SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1½" THICK, R-6 MINIMUM INSULATING VALUE, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
6. OUTSIDE AIR DUCT AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH JOHNS MANVILLE MICROLITE 75 (OR EQUAL) 1½" THICK, 1# DENSITY FIBERGLASS BLANKET INSULATION WITH FSK VAPOR BARRIER JACKET.
7. ROUND SUPPLY DUCT AND FITTINGS SHOWN AS LINED ON THE DRAWINGS SHALL BE INTERNALLY LINED WITH JOHNS MANVILLE SPIRACOUSTIC (OR EQUAL) 1" THICK, 1# DENSITY ACOUSTIC DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.
8. EXTERIOR DUCT AND FITTINGS SHALL BE EXTERNALLY INSULATED WITH 2" THICK RIGID POLYISOCYANURATE OR POLYSTYRENE FOAM INSULATION (R-8 MINIMUM) WITH MINIMUM 20 GAUGE ALUMINUM OR GALVANIZED STEEL JACKET. LAP AND SEAL EXTERIOR JACKET JOINTS. INTERNALLY LINE DUCT (WHERE SHOWN ON DRAWINGS) WITH JOHNS MANVILLE PERMACOTE LINACOUSTIC R-300 (OR EQUAL) 1" THICK, 1½# DENSITY ACOUSTICAL DUCT LINER. ADJUST DUCT SIZE TO ACCOMMODATE LINER AND GIVE NET DIMENSIONS SHOWN ON DRAWINGS.

K. OTHER MATERIAL

1. ALL OTHER MATERIAL, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE JOB, SHALL BE NEW AND FIRST QUALITY, FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.

L. IDENTIFICATION

1. PLASTIC NAMEPLATES: LAMINATED THREE LAYER WITH ENGRAVED BLACK LETTERS ON A LIGHT CONTRASTING BACKGROUND COLOR. INSTALL PLASTIC NAMEPLATES WITH CORROSION RESISTANT MECHANICAL FASTENERS, OR ADHESIVE.
2. LABELS: POLYESTER, SIZE AS REQUIRED, ADHESIVE BACKED WITH PRINTED IDENTIFICATION. INSTALL LABELS WITH SUFFICIENT ADHESIVE TO ENSURE PERMANENT PLACEMENT.
3. IDENTIFY ALL EQUIPMENT WITH PLASTIC NAMEPLATES.
4. IDENTIFY CONTROL PANELS AND MAJOR COMPONENTS OUTSIDE PANELS WITH PLASTIC NAMEPLATES. TAG AUTOMATIC CONTROLS, INSTRUMENTS, AND RELAYS. KEY TO CONTROL SCHEMATIC.

M. RELATED WORK

1. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL POWER WIRING AND EQUIPMENT DISCONNECTS, UNLESS INCLUDED WITH EQUIPMENT, TO MAKE SYSTEM OPERATIONAL.

N. CONTROLS

1. THERMOSTATS TO BE FURNISHED WITH MECHANICAL EQUIPMENT AND INSTALLED BY HVAC CONTRACTOR. PROVIDE POLYCARBONATE LOCKING COVER.

Kimley»Horn
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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7332

REGISTERED PROFESSIONAL ENGINEER - STATE OF NEVADA
MATTHEW C. MYERS
No. 16016
Exp. 12/31/19
MECHANICAL
10/14/19

REV.	DATE	APPD	DESCRIPTION	DRAWING FILE. M0.2	DRAWN BY. KP	CHECKED BY. JH	APPROVED BY. MM

CITY OF SPARKS, NEVADA

City of Sparks "It's Happening Here!"

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL SPECIFICATIONS

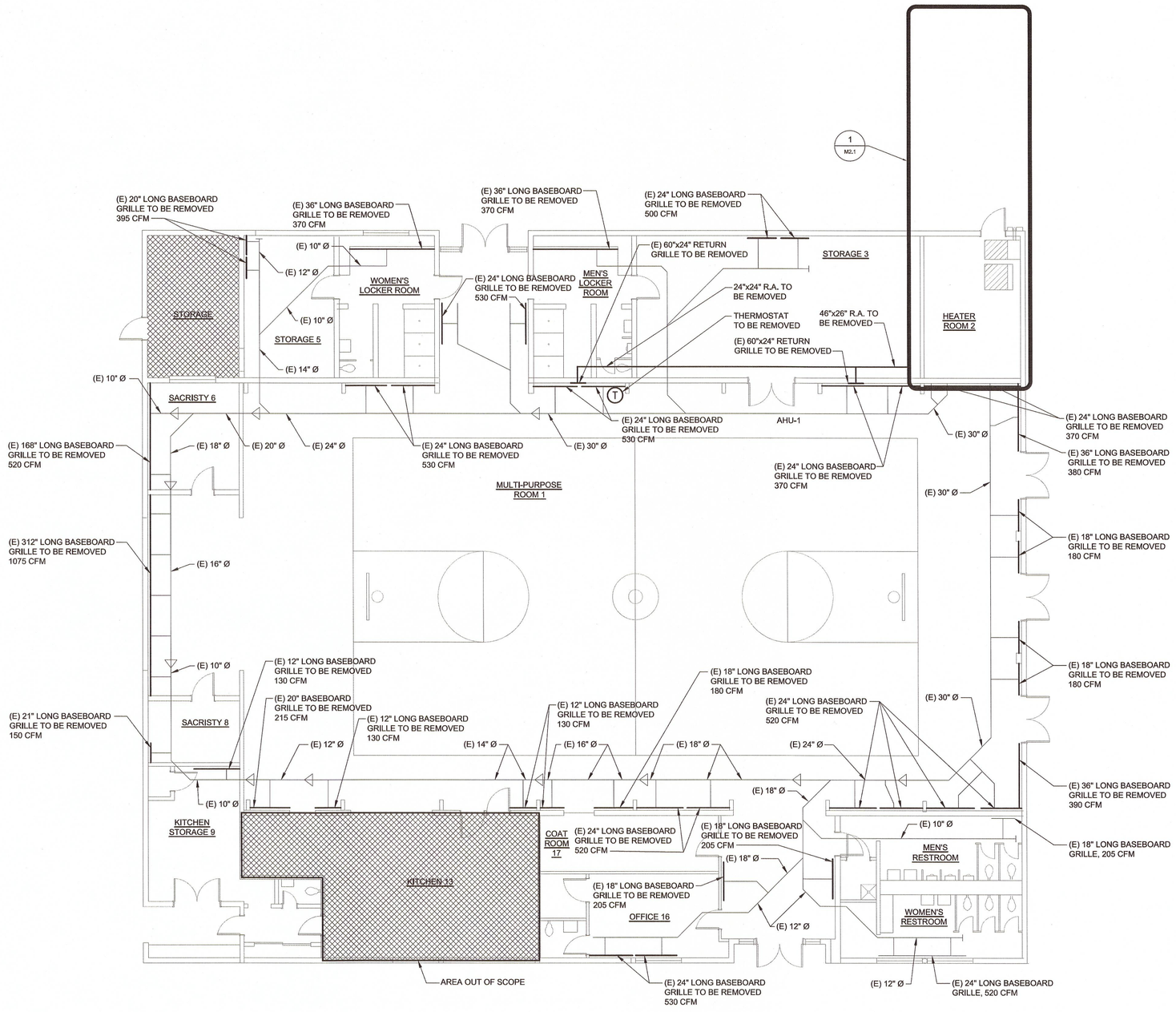
Job No. 192079000.3

Date: 10/14/2019

SHEET

M0.2

Sheet Number



1 / M1.1 **MECHANICAL DEMOLITION PLAN**

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

NORTH

Kimley»Horn
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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA
MATTHEW C MYRES
No. 16816
Exp. 12/31/19
MECHANICAL
10/14/19

REV.	DATE	APPD	DESCRIPTION
			M1.1

DRAWING FILE: M1.1
DRAWN BY: KP
CHECKED BY: JH
APPROVED BY: MM

CITY OF SPARKS, NEVADA

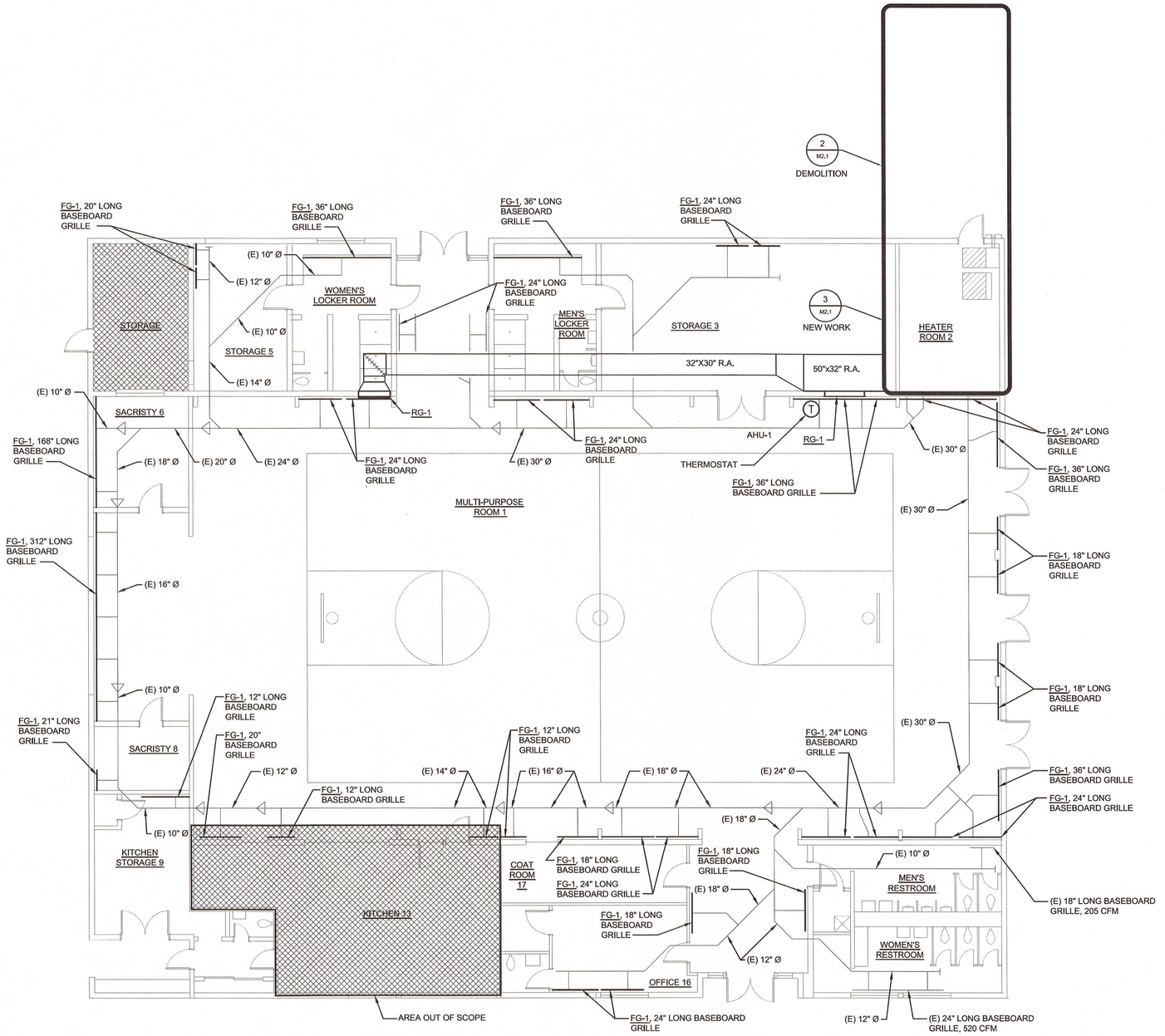
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL DEMOLITION PLAN

Job No. 192079000.3
Date: 10/14/2019
SHEET
M1.1
Sheet Number

GENERAL NOTE

1. CONTRACTOR TO FIELD VERIFY ALL (E) BASEBOARD GRILLE SIZES. NEW BASEBOARD GRILLES ARE TO BE REINSTALLED AND WILL NEED TO BE COSTUME MADE TO FIT (E) CONCRETE DUCT OPENINGS. CONTRACT TO PROVIDE A DEFERRED SUBMITTAL FOR CUSTOM GRILLES FOR OWNER AND ENGINEER APPROVAL.



1 M2.1 MECHANICAL FLOOR PLAN

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

NORTH

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER STATE OF NEVADA No. 16816
MATTHEW MYRES
Exp. 12/31/19
MECHANICAL
10/14/19

REV.	DATE	APPD	DESCRIPTION

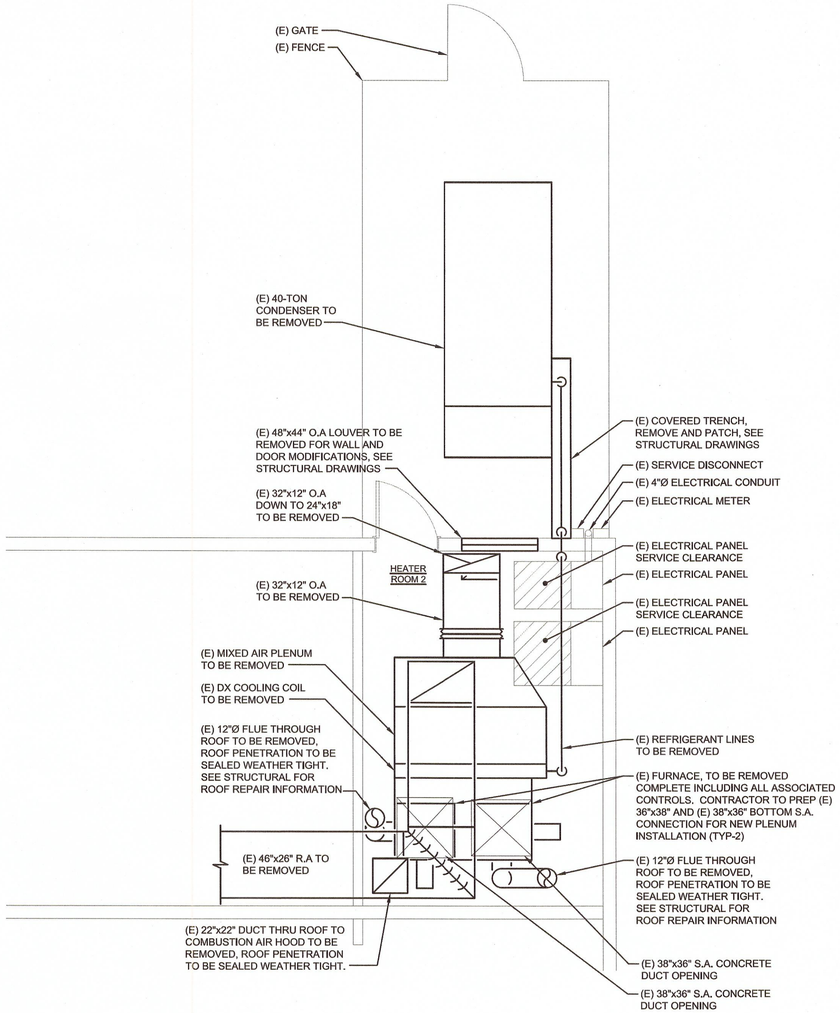
DRAWING FILE: M2.1
DRAWN BY: KP
CHECKED BY: JH
APPROVED BY: MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL FLOOR PLAN

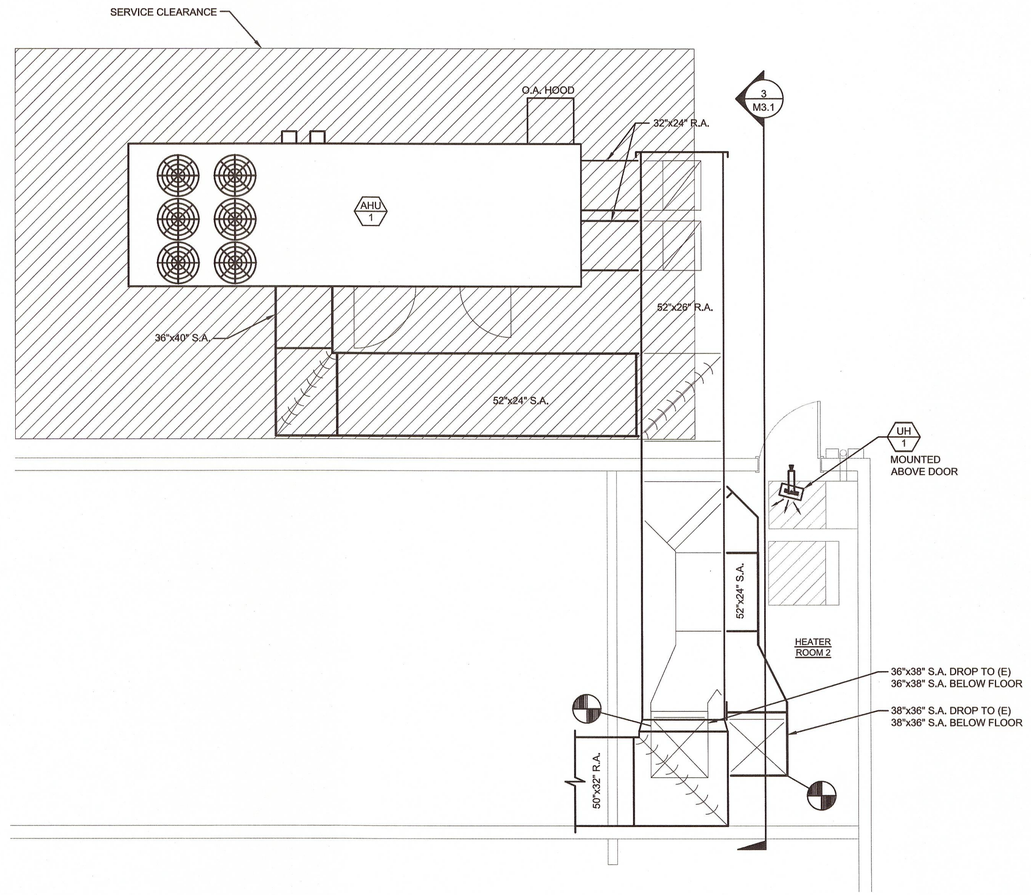
Job No. 192079000.3
Date: 10/14/2019
SHEET
M2.1
Sheet Number



1 / M3.1 **MECHANICAL DEMOLITION ENLARGED PLAN**

SCALE: 1/4" = 1'-0"

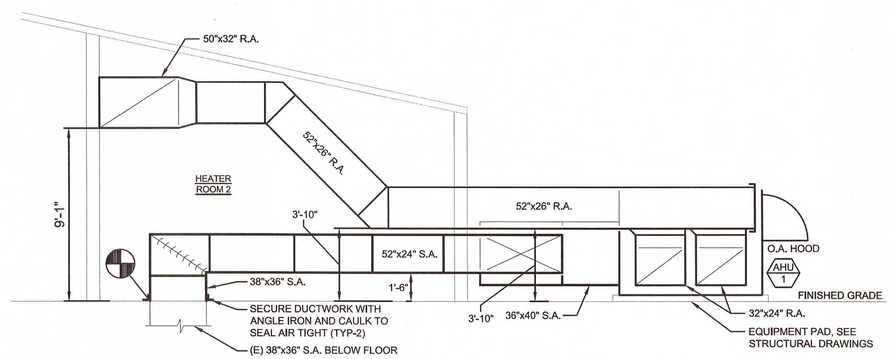
NORTH



2 / M3.1 **MECHANICAL NEW ENLARGED PLAN**

SCALE: 1/4" = 1'-0"

NORTH



3 / M3.1 **MECHANICAL NEW SECTION**

SCALE: 1/4" = 1'-0"

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER
STATE OF NEVADA
No. 16816
MATTHEW G. MYRES
Exp. 12/31/19
MECHANICAL

10/14/19

REV.	DATE	APPD	DESCRIPTION	DRAWING FILE.	DRAWN BY:	CHECKED BY:	APPROVED BY:
				M3.1	KP	JH	MM

CITY OF SPARKS, NEVADA

City of Sparks

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

MECHANICAL ENLARGED PLANS AND SECTION

Job No. 192079000.3

Date: 10/14/2019

SHEET

M3.1

Sheet Number

PLUMBING SYMBOL LIST

(NOTE: ALL OF THE SYMBOLS INDICATED BELOW MAY NOT APPEAR ON THIS PROJECT)

S or W	SOIL OR WASTE PIPING (BELOW GRADE / FLOOR)		TH.	THERMOMETER
S or W	SOIL OR WASTE PIPING (ABOVE GRADE / FLOOR)		V.B.	VACUUM BREAKER
V	SOIL OR WASTE VENT PIPING	C.O.	C.O.	CLEANOUT PLUG
RDL	RDL,SDL	STORM OR ROOF DRAIN PIPING (BELOW GRADE / FLOOR)	F.C.O.	FLOOR CLEANOUT
RDL	RDL,SDL	STORM OR ROOF DRAIN PIPING (ABOVE GRADE / FLOOR)	G.C.O.	GRADE CLEANOUT
ODL	ODL	OVERFLOW ROOF DRAIN PIPING (BELOW GRADE / FLOOR)	W.C.O.	WALL CLEANOUT
ODL	ODL	OVERFLOW ROOF DRAIN PIPING (ABOVE GRADE / FLOOR)	P.D.	PIPING TEE DOWN
D	D	DRAIN PIPING	P.U.	PIPING TEE UP
IW	IW	INDIRECT WASTE PIPING	P.U.	PIPING ELBOW UP
C	C	CONDENSATE DRAIN PIPING	P.D.	PIPING ELBOW DOWN
	CW	COLD WATER PIPING		BRANCH - TOP CONNECTION
	HW	HOT WATER PIPING (105^ - 125^ F)		BRANCH - BOTTOM CONNECTION
	HWR	HOT WATER RECIRCULATION PIPING (SPECIFY TEMP)		BRANCH - SIDE CONNECTION
T	T	TEMPERED WATER (120^ F)	P.T.	PLUGGED TEE
TR	TR	TEMPERED WATER RETURN PIPING	C.O.P.	CAP ON END OF PIPE
TP	TP	TRAP PRIMER WATER PIPING	OR	ARROW INDICATES DIRECTION OF FLOW
LPG	LPG	LIQUID PROPANE GAS (7" W.C.)	P	POWER POINT CONNECTION FOR HOT WATER MAINT. SYSTEM
G	G	GAS - LOW PRESSURE (LESS THAN 2 PSI)	F.L.S.	FLOOR SINK
MG	MG	GAS - MEDIUM PRESSURE (2-3 PSI)	F.D.	FLOOR DRAIN
HG	HG	GAS - HIGH PRESSURE (5 PSI AND ABOVE)	#	PLUMBING FIXTURE SCHEDULE - (SEE SCHEDULE)
A	A	COMPRESSED AIR PIPING	1	KITCHEN EQUIPMENT CONNECTION SCHEDULE - (SEE SCHEDULE)
FOS	FOS	FUEL OIL SUPPLY PIPING		V.T.R. PLUMBING VENT THRU ROOF
FOR	FOR	FUEL OIL RETURN PIPING		A.P. ACCESS PANEL
	G.V.	GATE VALVE		AFF ABOVE FINISHED FLOOR
	GLV	GLOBE VALVE		AFG ABOVE FINISHED GRADE
	BLV	BALL VALVE		BTUH BRITISH THERMAL UNITS PER HOUR
	ANV	ANGLE VALVE		CD CONDENSATE DRAIN PIPING
	B.F.V.	BUTTERFLY VALVE		CFH CUBIC FEET PER HOUR
	C.H.V.	CHECK VALVE		DN DOWN
	G.C.	GAS COCK, GAS STOP		(E) EXISTING
	B.V.	BALANCING VALVE		GA GAUGE
	H.B.	HOSE BIBB		GAL GALLON
	H.V.	3/4" HOSE END DRAIN VALVE		GPH GALLONS PER HOUR
	S.O.V.	SHUT-OFF VALVE IN RISER		GPM GALLONS PER MINUTE
	BP	DOUBLE CHECK BACKFLOW PREVENTION ASSEMBLY		HD HEAD
	R.P.B.P.	REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY		HR HOUR
	G.P.R.	GAS PRESSURE REDUCING VALVE		MAX MAXIMUM
	S.T.R.	STRAINER		MBH BRITISH THERMAL UNITS PER HOUR (THOUSANDS)
	S.T.R.V.	STRAINER WITH 3/4" HOSE END DRAIN VALVE		MIN MINIMUM
	P.T.R.	PRESSURE - TEMPERATURE RELIEF VALVE		(N) NEW
	RV	PRESSURE RELIEF VALVE		NOM NOMINAL
	U	UNION		PD PRESSURE DROP
	F	FLANGE		T.J. THROUGH JOISTS
	FL	FLEXIBLE PIPING CONNECTOR (U.L. LABELED FOR GAS PIPING)		TYP TYPICAL
	RED.	REDUCER		U.F. UNDER FLOOR
	W.H.A.	WATER HAMMER ARRESTOR		WC WATER COLUMN
	P.R.G.	PRESSURE GAUGE WITH GAUGE COCK		

PLUMBING SHEET LIST

SHEET NUMBER	SHEET NAME
P0.1	PLUMBING SYMBOLS, LEGENDS AND SPECIFICATIONS
P2.1	PLUMBING FLOOR PLANS

PLUMBING PROJECT NOTES

1. CONTRACTOR SHALL REFER TO THE ARCHITECTURAL FLOOR PLANS FOR EXACT LOCATIONS OF ROUGH-IN FOR ALL UNITS AS SHOWN ON THE ENLARGED PLUMBING PLANS.

2. ALL PLUMBING SYSTEMS AND COMPONENTS SHALL BE INSTALLED PER 2012 U.P.C.

3. THE UNIT WATER PLANS HAVE BEEN SIZED ACCORDING THE TO LONGEST DEVELOPED LENGTH FOR THE UNIT TYPE. SOME UNITS HAVE LESS TOTAL DEVELOPED LENGTH OF WATER PIPING. THE CONTRACTOR SHALL IDENTIFY THESE UNITS AND MAY ADJUST THE WATER PIPE SIZES IN ACCORDANCE WITH 2012 U.P.C. TABLE 610.4 USING THE OVER 60 PSI WATER PRESSURE RANGE.

PLUMBING SPECIFICATIONS

A. GENERAL

1. THE INFORMATION INDICATED ON THESE DRAWINGS AS EXISTING IS BASED UPON INFORMATION TAKEN FROM AS-BUILT DRAWINGS, FIELD INVESTIGATION, AND INFORMATION OBTAINED FROM EXISTING SUBMITTAL DATA, ETC. THE PLANS DO NOT GUARANTEE ACCURACY BUT ARE ONLY AN INDICATION OF EXISTING CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD VERIFY EXACT CONDITIONS SUCH AS FIXTURE AND EQUIPMENT PLACEMENT, PIPING (SIZE, ROUTING, AND ELEVATION), ETC. THE DRAWINGS ARE INTENDED TO PROVIDE THE CONTRACTOR AN INDICATION OF THE SYSTEM INSTALLED IN THE FACILITY TO DATE. IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ADJUSTMENTS TO THE DRAWING INFORMATION AS REQUIRED TO MATCH EXISTING FIELD CONDITIONS.
2. THE CONTRACTOR SHALL INSTALL THE NEW FIXTURES, EQUIPMENT, AND PIPING AROUND ALL EXISTING OBSTACLES INCLUDING: ELECTRICAL CONDUIT, DUCTWORK, CHILLED AND HEATING WATER PIPING, AND FIRE SPRINKLER PIPING. PROVIDE OFFSETS TO AVOID RELOCATION OF OTHER UTILITIES. THE UTILITIES WILL NEED TO BE RELOCATED IF THEY ARE IN CONFLICT WITH THE INSTALLATION OF THE PLUMBING SYSTEMS CAUSING DEVIATIONS IN THE DESIGN INTENT, UNSATISFACTORY OPERATION, NOISY CONDITIONS, OR INTERFERE WITH MAINTENANCE. IT IS THE PLUMBING CONTRACTOR'S RESPONSIBILITY TO COORDINATE ANY UTILITY RELOCATION WITH THE APPROPRIATE SUBCONTRACTOR.
3. PROVIDE ALL NECESSARY LABOR, MATERIALS, EQUIPMENT, SERVICES AND INSURANCES TO COMPLETE THE PLUMBING WORK WITHIN THE FULL INTENT OF THE DRAWINGS AND SPECIFICATIONS CONTAINED HEREON AND TO THE ENTIRE SATISFACTION OF THE ARCHITECT/ENGINEER.
4. PROVIDE ALL PERMITS AND FEES AS REQUIRED FOR THE PLUMBING WORK.
5. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH THE PROJECT BEFORE BIDDING.
6. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2018 INTERNATIONAL BUILDING CODE (IBC), 2018 INTERNATIONAL ENERGY CONSERVATION CODE (IECC), 2018 INTERNATIONAL FIRE CODE (IFC), 2018 UNIFORM MECHANICAL CODE (UMC), 2018 UNIFORM PLUMBING CODE (UPC), 2015 NATIONAL ELECTRICAL CODE (NEC), NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) STANDARDS, AND ALL OTHER APPLICABLE CODES, RULES, AND LOCAL REQUIREMENTS.
7. GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF ONE YEAR.
8. ALL DIMENSIONS AND MEASUREMENTS SHALL BE VERIFIED AT THE JOBSITE BEFORE FABRICATION AND/OR INSTALLATION OF THE FIXTURES.
9. DRAWINGS ARE DIAGRAMMATIC TO SHOW BASIC SIZING. COORDINATE THE RUNNING OF ALL MAINS WITH THE ENGINEER. ANY MAJOR REROUTING SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE FOR APPROVAL.

B. SUBMITTALS

1. ELECTRONIC SUBMITTALS IN ADOBE PDF FORMAT, IN LIEU OF PAPER COPIES, WILL ONLY BE ACCEPTED.
2. SUBSTITUTED ITEMS SHALL BE SUBMITTED WITH MANUFACTURER'S DESCRIPTIVE DATA AND MUST SHOW EQUALITY TO ITEM SPECIFIED. INFORMATION ON SUBSTITUTED ITEMS MUST BE COMPLETE, INCLUDING, BUT NOT LIMITED TO: DESIGN, CONSTRUCTION MATERIALS, AND CONSTRUCTION QUALITY. ENGINEER WILL NOT RESEARCH INFORMATION REQUIRED TO COMPARE EQUIPMENT. ENGINEER RESERVES THE RIGHT TO REQUIRE SPECIFIED ITEM.
3. SUBMIT MANUFACTURER'S DESCRIPTIVE DATA WITHIN TEN (10) WORKING DAYS AFTER AWARD OF THE CONTRACT. MATERIALS AND FIXTURES SHALL NOT BE ORDERED PRIOR TO SUBMITTAL APPROVAL. ALLOW TEN (10) WORKING DAYS AFTER RECEIPT OF SUBMITTALS IN THE ENGINEER'S OFFICE BEFORE REVIEWED SUBMITTALS WILL BE RETURNED.
4. UPON COMPLETION OF THE PROJECT, AND PRIOR TO FINAL ACCEPTANCE PAYMENT, SUBMIT ONE (1) SET OF AS-BUILT DRAWINGS.

C. WORKMANSHIP

1. ALL WORK TO BE PERFORMED BY QUALIFIED PERSONNEL NORMALLY ENGAGED IN THE RESPECTIVE LINE OF WORK.
2. PERFORM ALL WORK IN A MANNER NOT TO DISTURB THE NORMAL OPERATION OF THE BUILDING.
3. COORDINATE ALL WORK WITH THE OWNER'S REPRESENTATIVE.
4. COORDINATE ALL WORK WITH THE OTHER TRADES.
5. THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL WORK ACCEPTABLE TO THE OWNER'S REPRESENTATIVE.

D. DEMOLITION

1. DEMOLITION WORK SHALL NOT CREATE ANY DUST PROBLEMS IN THE WORKING SPACES.

E. CUTTING, PATCHING, AND PAINTING

1. ALL CUTTING AND PATCHING TO BE PERFORMED BY THE GENERAL CONTRACTOR.
2. CUTTING OF ALL OPENINGS SHALL BE COORDINATED WITH THE OWNER'S ENGINEERING REPRESENTATIVE.
3. WATER WILL NOT BE USED FOR CONCRETE CUTTING WITHOUT THE DIRECT SUPERVISION OF THE OWNER'S ENGINEERING REPRESENTATIVE.
4. WALL SURFACES SHALL BE PRIMED AND PAINTED. PAINT TYPE AND COLOR SHALL BE AS SPECIFIED BY THE OWNER'S REPRESENTATIVE.

F. PRODUCT HANDLING

1. USE ALL MEANS NECESSARY TO PROTECT ALL MATERIALS AND FIXTURES BEFORE, DURING, AND AFTER INSTALLATION AND TO PROTECT THE MATERIALS AND WORK OF THE OTHER TRADES.
2. IN THE EVENT OF DAMAGE, IMMEDIATELY MAKE ALL REPAIRS AND REPLACEMENTS NECESSARY TO THE APPROVAL OF THE ENGINEER AND AT NO ADDITIONAL COST TO THE OWNER.

G. PIPING

1. NATURAL GAS PIPING ABOVE GRADE SHALL BE ASTM A53 OR A120 SCHEDULE 40 BLACK STEEL PIPE. THREADED JOINTS WITH ANSI/ASME B16.3, MALLEABLE IRON THREADED FITTINGS FOR SIZES 2" AND UNDER. WELDED JOINTS WITH ASTM A234 FORGED STEEL WELDING TYPE FITTINGS ON SIZES OVER 2". EXTERIOR PIPING SHALL BE PAINTED TO PREVENT CORROSION.

H. VALVES & SPECIALTIES

1. GAS COCKS (UP TO 2"): IRON BODY AND PLUG, LEVER HANDLE, THREADED ENDS, UL LISTED.
2. GAS COCKS (OVER 2"): IRON BODY AND PLUG, LEVER HANDLE, FLANGED ENDS, UL LISTED.

I. ISOLATION

1. ISOLATE ALL DISSIMILAR METALS WITH ISOLATORS EQUALING OR EXCEEDING THE QUALITY OF "EPCO" DIELECTRIC UNIONS.
2. ISOLATE ALL COPPER PIPING FROM DISSIMILAR SUPPORTS.

J. OTHER MATERIAL

1. ALL OTHER MATERIAL, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE JOB, SHALL BE NEW AND FIRST QUALITY, FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR.

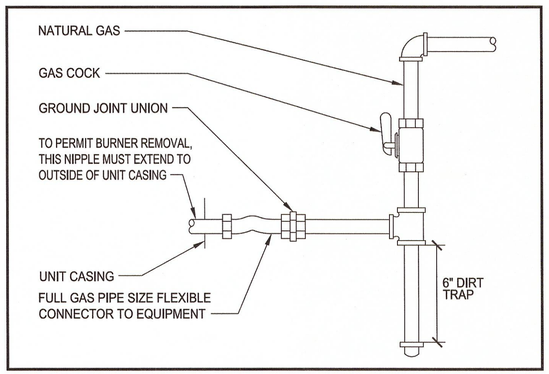
K. TESTING

1. ALL PIPING SHALL BE TESTED IN THE PRESENCE OF AN INSPECTOR BEFORE WORK IS CONCEALED. NOTIFY THREE DAYS PRIOR TO TESTS.
2. TEST PIPING AT COMPLETION OF ROUGHING-IN, IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

GAS	60 PSI W/AIR

L. RELATED WORK

1. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL ALL POWER WIRING AND EQUIPMENT DISCONNECTS, UNLESS INCLUDED WITH EQUIPMENT, TO MAKE SYSTEM OPERATIONAL.



1 / P0.1 **EQUIPMENT GAS PIPING DETAIL**

SCALE: N.T.S.

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER - STATE OF NEVADA - No. 16815 - MATTHEW C. MYRES - Exp. 12/31/19 - MECHANICAL

10/14/19

REV.	DATE	APPD	DESCRIPTION

DRAWING FILE. P0.1 | DRAWN BY. KP | CHECKED BY: JH | APPROVED BY. MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

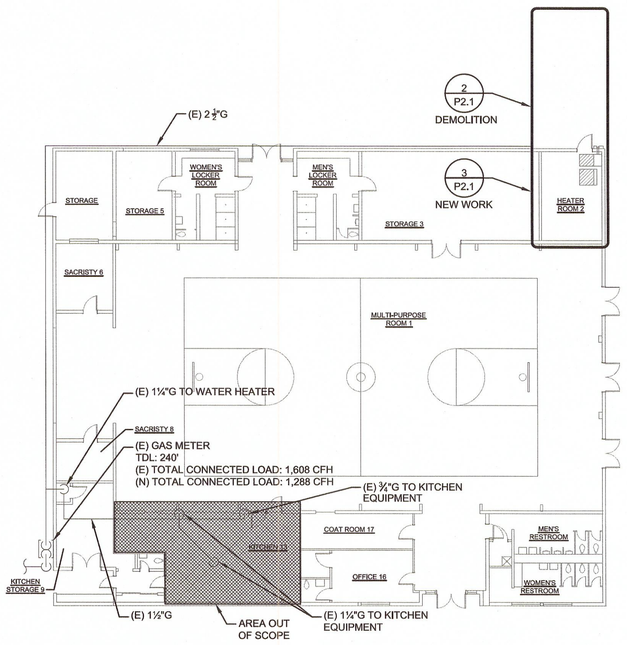
PLUMBING SYMBOLS, LEGENDS AND SPECIFICATIONS

Job No. 192079000.3

Date: 10/14/2019

SHEET P0.1

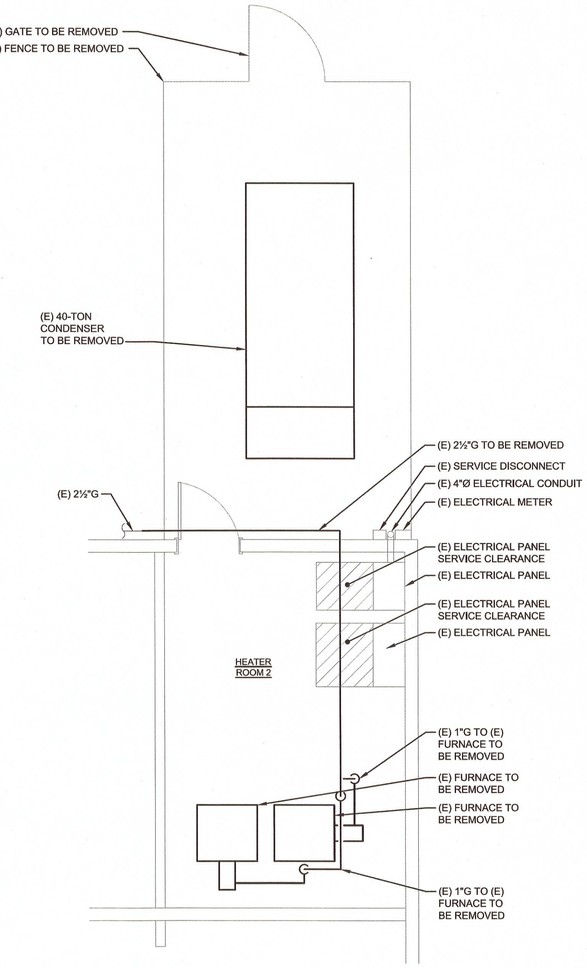
Sheet Number



1 P2.1 **PLUMBING OVERALL PLAN**

SCALE: 1/16" = 1'-0"

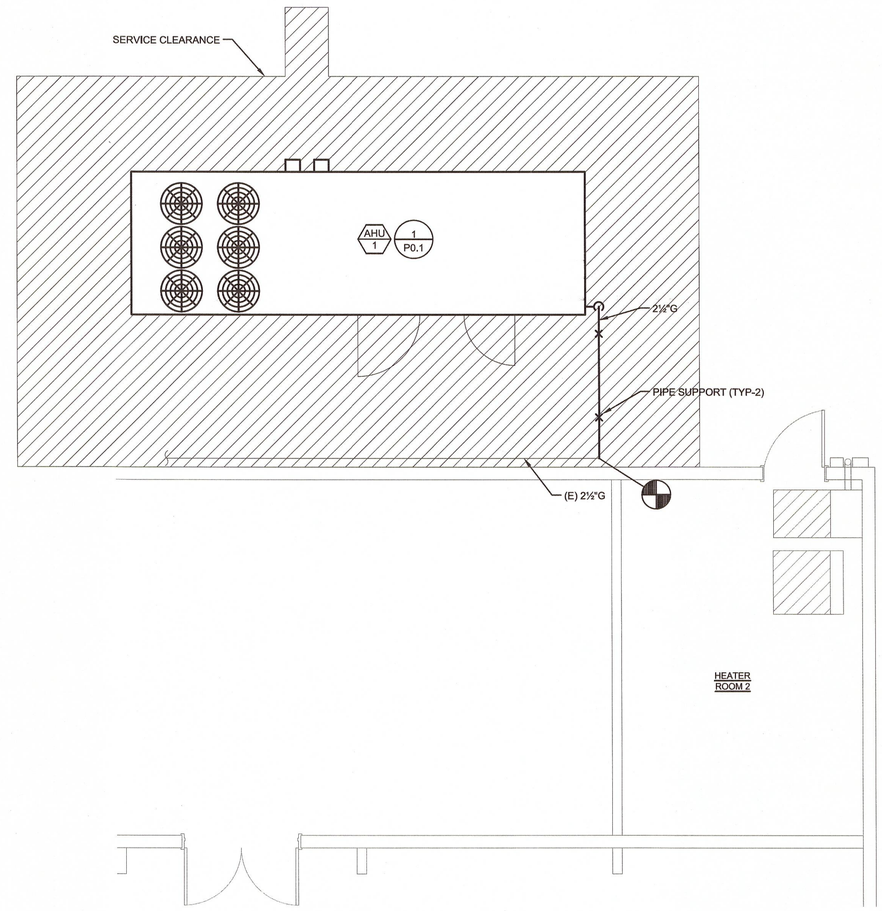
NORTH



2 P2.1 **PLUMBING DEMOLITION PLAN**

SCALE: 1/4" = 1'-0"

NORTH



3 P2.1 **PLUMBING NEW PLAN**

SCALE: 1/4" = 1'-0"

NORTH

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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 636-7832

REGISTERED PROFESSIONAL ENGINEER
MATTHEW MYRES
Exp. 12/31/19
MECHANICAL
No. 18816
STATE OF NEVADA

10/14/19

REV.	DATE	APPD	DESCRIPTION

DRAWING FILE: P2.1
DRAWN BY: KP
CHECKED BY: JH
APPROVED BY: MM

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

PLUMBING FLOOR PLANS

Job No. 192079000.3
Date: 10/14/2019
SHEET
P2.1
Sheet Number

ELECTRICAL SYMBOL LIST

- CONDUIT RUN IN OR ON CEILING OR WALL
- CONDUIT RUN IN OR UNDER FLOOR OR UNDERGROUND
- HASH MARKS INDICATE NUMBER OF #12 AWG CONDUCTORS IN CONDUIT. NO MARKS INDICATE 2 #12'S. DOES NOT INCLUDE GROUND WIRE. IF NON-METALLIC CONDUIT ADD GROUND PER NEC.
- LONG SLASH WITH HASH MARKS AS SHOWN INDICATES GROUND WIRE FOR ISOLATED GROUNDING SYSTEM. SIZE PER N.E.C.
- LA-1 — HOMERUN TO PANEL WITH PANEL AND CIRCUIT INDICATED
- LA-(1, 3, 5) — HOMERUN TO PANEL WITH CIRCUIT NUMBER IN BRACKETS INDICATING MULTI-POLE BREAKER.
- SURFACE/ PENDANT MOUNTED LIGHT FIXTURE
- AUTOMATIC WALL SWITCHES, ACUITY CONTROLS #WSX +48" AFF
- RACEWAY UP
- RACEWAY DOWN
- FRACTIONAL HORSEPOWER MOTOR MANUAL STARTER
- MOTOR SYMBOL - HORSEPOWER AS INDICATED
- DISCONNECT SWITCH (30A/3P UNLESS INDICATED ON DWGS) "F" INDICATES FUSES PER MANUFACTURERS NAMEPLATE RATING
- MAGNETIC MOTOR STARTER (SIZE AS INDICATED ON DRAWINGS)
- COMBINATION STARTER / FUSED DISCONNECT SWITCH (SIZE AS INDICATED ON DRAWINGS - FUSES SIZED PER MANUFACTURER'S NAMEPLATE RATING)
- 120V DUPLEX CONVENIENCE RECEPTACLE +18" AFF
- JUNCTION BOX AS REQUIRED BY NATIONAL ELECTRIC CODE
- ELECTRICAL PANELBOARD - SURFACE MOUNTED
- SERVICE OR DISTRIBUTION EQUIPMENT
- TRANSFORMER
- —X— EXISTING WIRE AND/OR CONDUIT TO BE REMOVED OR ABANDONED
- —E— EXISTING WIRE AND/OR CONDUIT TO REMAIN
- DASHED DEVICES, LIGHT FIXTURES, ETC. EXISTING TO BE REMOVED
- "E" ADJACENT TO DEVICES, LIGHT FIXTURES, ETC. INDICATES EXISTING TO REMAIN
- SHEET NOTE
- AC / 1 — MECHANICAL EQUIPMENT DESIGNATION. SEE MECHANICAL & PLUMBING PLANS
- B / E3.1 — DETAIL DESIGNATION - "B" INDICATES DETAIL # ON SHEET E3.1

* NOTE: ALL MOUNTING HEIGHTS AS INDICATED UNLESS NOTED OTHERWISE.
ALL SYMBOLS MAY NOT BE USED ON PROJECTS.

ELECTRICAL ABBREVIATIONS

AC	ABOVE COUNTER. INSTALL 4" ABOVE SPLASH OR COUNTER OR AT HEIGHT AS INDICATED ON DRAWINGS
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
A	AMPS
℄	CENTERLINE
CU	COPPER
EC	EMPTY CONDUIT WITH PULL WIRE
(E)	EXISTING
FBO	FURNISHED BY OTHER SECTION
GFI	GROUND FAULT INTERRUPTING
NEC	NATIONAL ELECTRICAL CODE
NIC	NOT IN CONTRACT
NVE	NV ENERGY
PNL	PANEL
(RR)	REMOVE AND RELOCATE
SPD	SURGE PROTECTION DEVICE
UNO	UNLESS NOTED OTHERWISE
W/	WITH
WP	WEATHERPROOF (NEMA 3R)
XFMR	TRANSFORMER

GENERAL DEMOLITION NOTES

1. THESE PLANS DO NOT PURPORT TO SHOW ALL EXISTING CONDITIONS. ANY OUTLETS, CIRCUITING AND/OR DEVICES THAT CONFLICT WITH ALL WORK BEING PERFORMED DURING THE COURSE OF THIS PROJECT SHALL BE RELOCATED/REROUTED OR REMOVED ENTIRELY AS DICTATED BY ENGINEER.
2. ALL EXISTING EQUIPMENT REMOVED DURING THE COURSE OF THIS PROJECT SHALL BE OFFERED TO OWNER FOR SALVAGE. EQUIPMENT SELECTED SHALL BE TURNED OVER TO OWNER ON PROJECT SITE. ALL REMAINING EQUIPMENT BECOMES THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM PROJECT SITE.
3. IT IS MANDATORY THAT THE CONTRACTOR VISIT SITE AND VERIFY EXISTING CONDITIONS THAT MIGHT AFFECT HIS OR HER WORK. ALL DISCREPANCIES SHALL BE REPORTED TO ENGINEER PRIOR TO BID.
4. DEMOLITION AND MODIFICATION OF EXISTING DISTRIBUTION SYSTEMS SHALL BE PERFORMED AS FOLLOWS:
   A. EXISTING WIRING TO BE REMOVED SHALL BE REMOVED BACK TO ITS SOURCE. CONDUITS MAY BE ABANDONED IN PLACE IF THEY ARE IN CONCEALED LOCATION AND DO NOT CONFLICT WITH ANY NEW WORK. REMOVE ALL WIRING FROM ABANDONED RACEWAYS.
   B. REMOVAL OF EXISTING ELECTRICAL DISTRIBUTION SYSTEM SHALL INCLUDE EQUIPMENT, ASSOCIATED WIRING, INCLUDING (BUT NOT LIMITED TO) CONDUCTORS, CABLES, EXPOSED CONDUIT, SURFACE RACEWAYS, BOXES, FITTINGS, ETC. (BACK TO EQUIPMENT SOURCE.)

ELECTRICAL GENERAL NOTES

1. FURNISH ALL LABOR, MATERIALS, TOOLS ACCESSORIES, ETC. REQUIRED FOR A COMPLETE WORKING ELECTRICAL SYSTEM.
2. ALL ELECTRICAL WORK SHALL COMPLY WITH ALL APPLICABLE STATE, COUNTY AND LOCAL CODES AND ORDINANCES, AS WELL AS ALL CURRENT STANDARDS, CODES AND PRACTICES AS REQUIRED BY NEC(2011), NEMA, ANSI, NFPA, IBC(2012), UL, IECC(2012).
3. ALL EQUIPMENT, MATERIALS AND WORK SHOWN ARE NEW UNLESS SPECIFICALLY NOTED AS EXISTING, OR NOTED OTHERWISE ON OTHER SHEETS.
4. ANY POWER OUTAGE OF ANY CIRCUIT SHALL BE APPROVED BY THE OWNER IN WRITING A MINIMUM OF 5 DAYS PRIOR TO OUTAGE. ALL OUTAGES SHALL BE DONE EXACTLY WHEN DETERMINED BY THE OWNER AND DONE DURING WORKING HOURS. NO SINGLE OUTAGE SHALL REQUIRE MORE THAN 4 HOURS. PROVIDE TEMPORARY POWER, HEAT & COOLING IF REQUIRED DURING OUTAGE.
5. DUE TO THE REQUIREMENTS TO INTERFACE WITH EXISTING FACILITIES AND UTILITIES, IT IS SUGGESTED THAT THE CONTRACTOR ATTEND SITE VISIT TO DETERMINE EXISTING CONDITIONS PRIOR TO BID.
6. PRIOR TO PURCHASE OF ANY PANEL, PROTECTIVE DEVICES, SWITCH, CONDUIT, WIRE, ETC., TO FEED ANY PIECE OF EQUIPMENT VERIFY THE VOLTAGE, PHASE, & LOAD OF THAT ITEM IN THE FIELD AND/OR WITH THE PARTICULAR ENTITY INVOLVED IN FURNISHING THE ITEM SUCH THAT THE PROPER SIZE & RATING OF THE MATERIALS ARE PURCHASED. NO EXTRAS WILL BE ALLOWED FOR FAILURE TO COMPLY. THIS APPLIES TO ALL EQUIPMENT UNDER OTHER SECTIONS AND BY THE OWNER.
7. PULL ROPES: PROVIDE 12 GA PULL WIRE OR NYLON EQUIVALENT IN ALL INTERIOR EMPTY CONDUIT RUNS. PROVIDE 1/4" DIA NYLON PULL ROPE IN EACH EMPTY EXTERIOR CONDUIT OR DUCT.
8. APPEARANCE AND WORKMANSHIP SHALL BE OF THE HIGHEST QUALITY AND STANDARDS.
9. ELECTRICAL CONTRACTOR SHALL GUARANTEE THE ELECTRICAL WORK TO BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
10. VERIFY THE EXACT LOCATION AND ELEVATION OF ALL ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN. FINAL CONNECTIONS OF EQUIPMENT SHALL BE PER MANUFACTURERS APPROVED WIRING DIAGRAMS, DETAILS AND INSTRUCTIONS. THE ELECTRICAL CONTRACTOR SHALL PROVIDE MATERIALS AND EQUIPMENT COMPATIBLE WITH EQUIPMENT ACTUALLY SUPPLIED.
11. ORDER AND/OR RELEASE ORDERED MATERIALS PROMPTLY AFTER SUBMITTAL APPROVAL. NO SUBSTITUTIONS OR ALTERNATE METHODS OF INSTALLATION WILL BE ACCEPTED FOR FAILURE TO ORDER MATERIALS IN A TIMELY FASHION.
12. OBTAIN WRITTEN APPROVAL FROM THE ENGINEER OF ALL SHOP DRAWINGS AND MANUFACTURERS DATA FOR PANEL BOARDS, TRANSFORMERS, WIRING DEVICES, ETC. BEFORE RELEASING ORDERED MATERIALS. SUBMITTAL DATA SHALL INDICATE THAT THE CONTRACTOR HAS REVIEWED THE INFORMATION THERIN AND THAT THE PROPOSED EQUIPMENT WILL NEET THE PHYSICAL CONSTRAINTS AT THE JOB SITE. ANY SUBSTITUTIONS SHALL BE OF EQUIVALENT OR BETTER QUALITY THAN THE SPECIFIED COMPONENTS.
13. TYPE MC OR TYPE AC CABLE SHALL ONLY BE USED WITH THE SPECIFIC WRITTEN PERMISSION OF THE ENGINEER. ENT TYPE CONDUIT IS NOT ALLOWED.
14. CONDUIT/ CONDUCTOR RUNS SHOWN ARE DIAGRAMMATICAL ONLY. THE BEST FINAL CONDUIT ROUTING SHALL BE AS DETERMINED BY THE ELECTRICAL CONTRACTOR AT TIME OF CONSTRUCTION AND ACCURATELY LOCATED ON THE ON-SITE RECORD DRAWINGS.
15. ALL WIRE SHALL BE COPPER.
16. UPDATE ALL PANEL BOARDS WITH TYPED DIRECTORIES INSTALLED UNDER A CLEAR PLASTIC CONER. SUBMIT DIRECTORY INFORMATION TO THE OWNER FOR APPROVAL PRIOR TO FINALIZATION.

DINTER
ENGINEERING CONFIDENCE
Airfield Electrical
385 Gentry Way
Reno, NV 89502
Ph: 775.826.4044
Fax: 775.826.4190
Web: dinter.com
J-4672

Kimley»Horn
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5370 KIETZKE LANE, SUITE 100
RENO, NV 89511
TEL (775) 686-7362

PROFESSIONAL ENGINEER STATE OF NEVADA
TIMOTHY A. PROCKISH
ELECTRICAL
No. 12931
10.17.2019

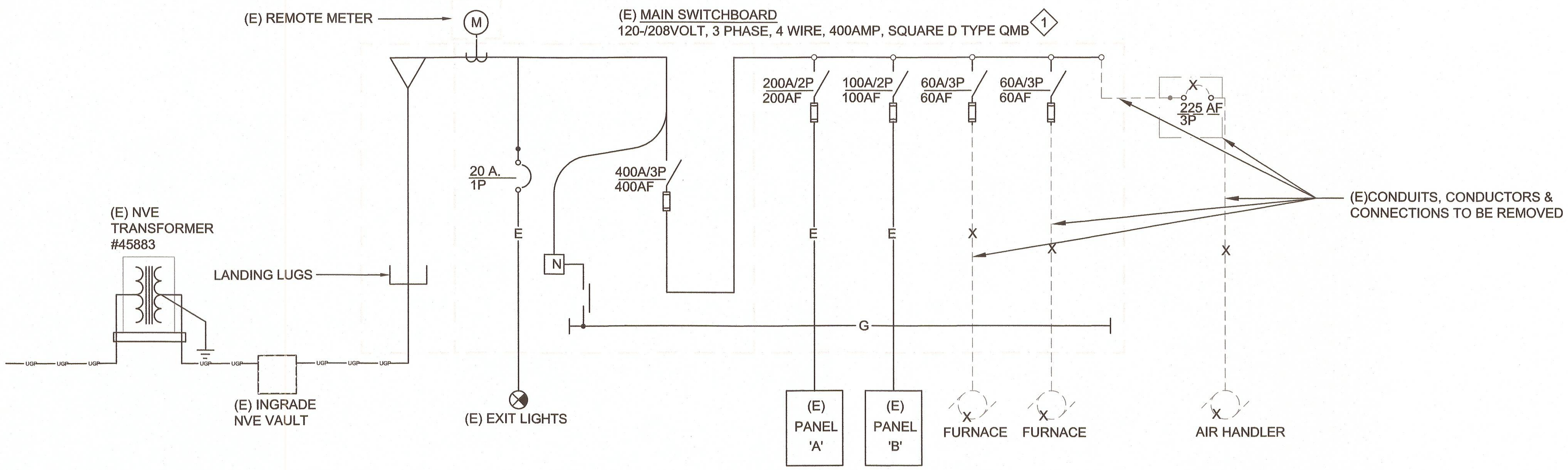
REV	DATE	APP'D	DESCRIPTION	DRAWING FILE: 4672 E0.1
				DRAWN BY: MWE
				CHECKED BY: DRG
				APPROVED BY: TAP

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

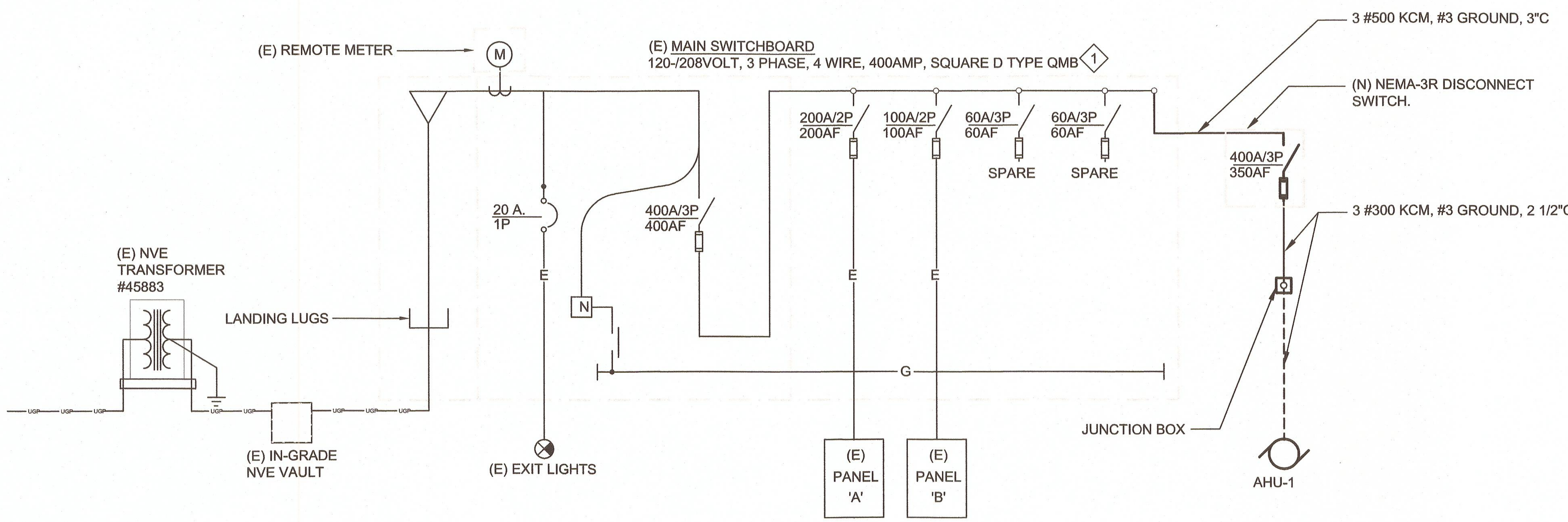
ELECTRICAL SYMBOL LIST AND GENERAL NOTES

Job No. 192079000.3
Date: 10/10/2019
SHEET
E0.1
Sheet Number



A E0.2 **EXISTING SINGLE LINE DIAGRAM**

NTS



B E0.2 **NEW SINGLE LINE DIAGRAM**

NTS

SHEET NOTES

1. EXISTING SWITCHBOARD LABELED AS 120.240V, 3PHASE, 4WIRE FROM ORIGINAL INSTALLATION. PROVIDE NEW WARNING LABEL INDICATING CORRECT SERVICE VOLTAGE, PHASE AND WIRE.

LOAD CALCULATION

(E) NVE DEMAND 47KW = 130.2 AMPS

Kimley»Horn

TIMOTHY A. PROKISH, ELECTRICAL, No. 12[illegible], STATE OF NEVADA, PROFESSIONAL ENGINEER

DINTER
ENGINEERING CONFIDENCE
Airfield Electrical
385 Gentry Way
Reno, NV 89502
Ph: 775.826.4044
Fax: 775.826.4190
Web: dinter.com
J-4672

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

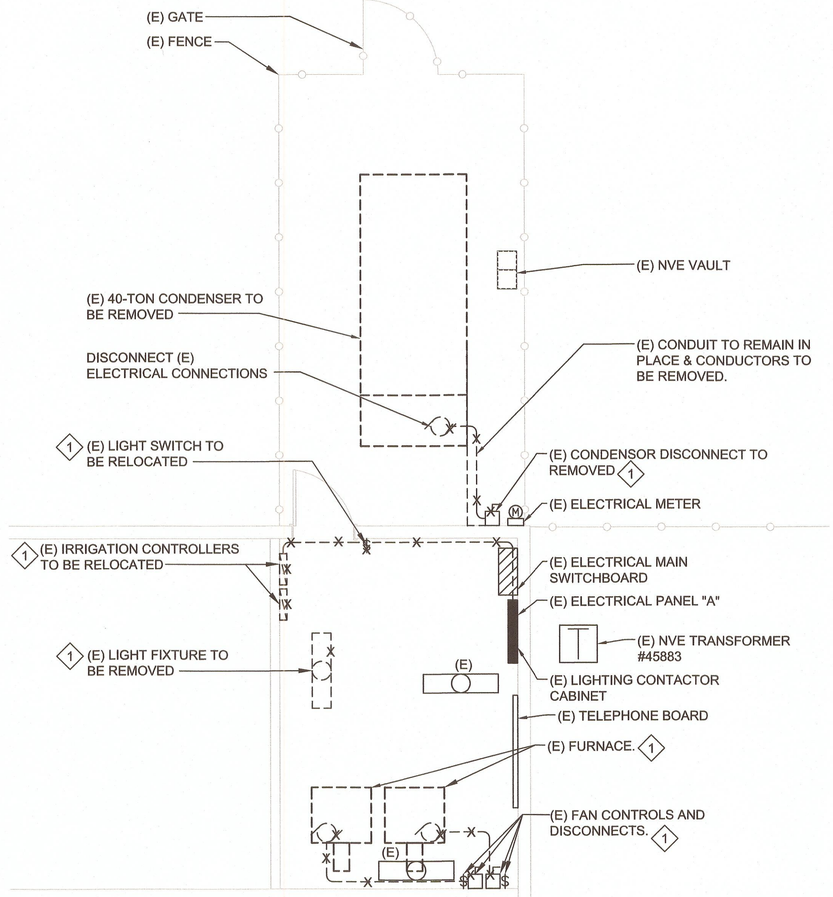
City of Sparks

ELECTRICAL SINGLE LINE DIAGRAM

E0.2

SHEET NOTES

1. DISCONNECT AND REMOVE INCLUDING ALL ASSOCIATED CONTROLS, CONDUCTORS, AND EXPOSED CONDUIT BACK TO PANEL.
2. RECONNECT TO EXISTING CIRCUIT (A-10). RECONNECT IRRIGATION CONTROLS AS BEFORE RELOCATION.
3. PROVIDE NEW 20A, 1P CIRCUIT BREAKER IN SPACE 16, FOR NEW RECEPTACLE. PROVIDE NEW 20A, 2P CIRCUIT BREAKER IN SPACE 17,19, FOR UH-1.
4. PROVIDE NEW BUS TAP FOR AHU-1 CONDUCTORS.
5. COORDINATE EXISTING LIGHT FIXTURE LOCATION WITH NEW DUCT WORK AND NEW UNIT HEATER (UH-1) TO ENSURE CLEARANCE.



A E1.1 **ELECTRICAL DEMOLITION FLOOR PLAN**

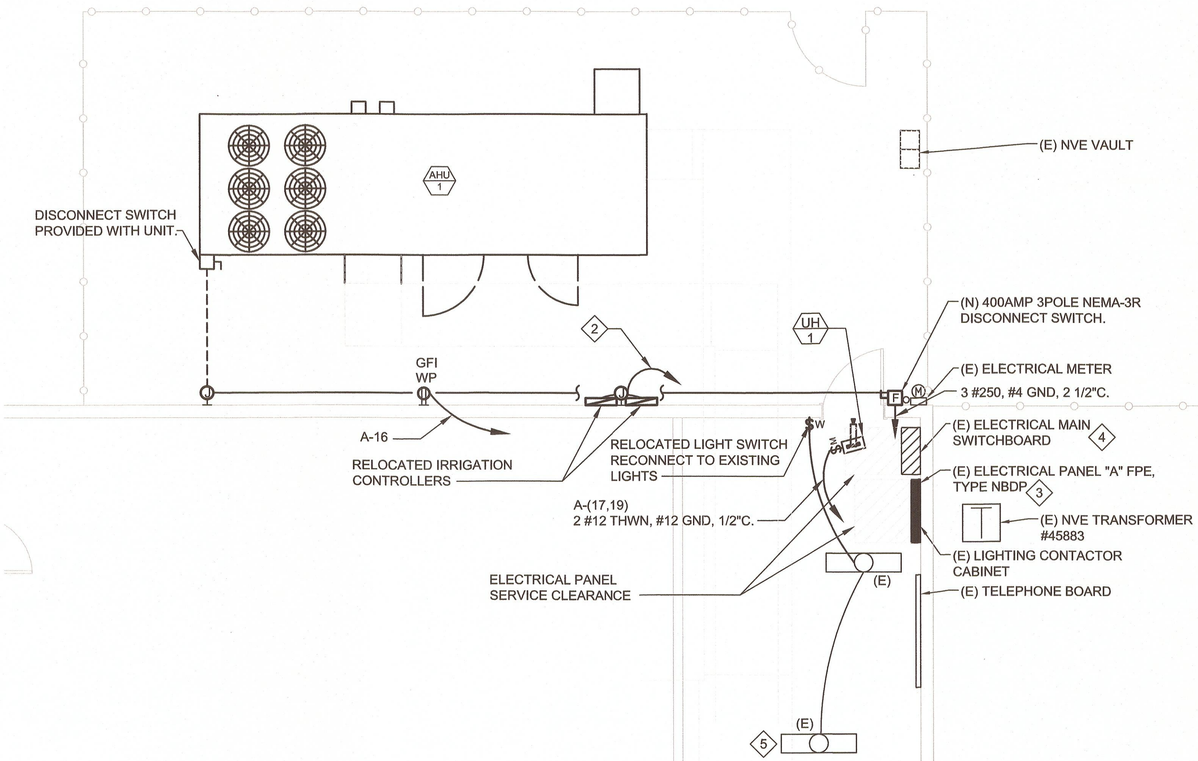
1/4"=1'-0"

GRAPHIC SCALE

4 0 2 4 8 16

(IN FEET)
SCALE: 1/4"=1'-0"

NORTH



B E1.1 **NEW ELECTRICAL FLOOR PLAN**

1/4"=1'-0"

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DINTER
ENGINEERING CONFIDENCE
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385 Gentry Way
Reno, NV 89502
Ph: 775.826.4044
Fax: 775.826.4190
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J-4672

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4672 E1.1

CITY OF SPARKS, NEVADA

SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE

ELECTRICAL FLOOR PLAN

SHEET
E1.1

1. GENERAL

1.1 THE FOLLOWING STRUCTURAL NOTES SHALL APPLY TO ALL STRUCTURAL DRAWINGS UNLESS SPECIFICALLY SHOWN OR NOTED OTHERWISE.
1.2 ALL WORK SHALL CONFORM TO THESE NOTES, DRAWINGS, AND SPECIFICATIONS IN ALL RESPECTS.
1.3 PROMPTLY REPORT ANY DISCREPANCY FOUND AMONG THESE NOTES, DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS TO THE ENGINEER, WHO WILL CORRECT SUCH DISCREPANCIES IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCY IS AT THE CONTRACTORS OWN RISK. VERIFY AND COORDINATE THE DIMENSIONS AMONG ALL DRAWINGS PRIOR TO PROCEEDING WITH ANY WORK OR FABRICATION. IT IS THE CONTRACTORS RESPONSIBILITY FOR THE REVIEW AND COORDINATION OF ALL DRAWINGS AND SPECIFICATIONS PRIOR TO THE START OF CONSTRUCTION.
1.4 DO NOT SCALE WORKING DIMENSIONS FROM THESE PLANS, SECTIONS, OR DETAILS. DIMENSIONS REFER TO ROUGH CONCRETE SURFACES, FACE OF STUDS, FACE OF CONCRETE BLOCK, TOP OF SHEATHING OR TOP OF SLAB UNLESS OTHERWISE INDICATED.
1.5 DETAILS OF THE CONSTRUCTION NOT FULLY SHOWN OR NOTED ON THE DRAWINGS NOR CALLED FOR IN THE SPECIFICATIONS SHALL BE OF THE SAME SIZE AND CHARACTER AS FOR SIMILAR CONDITIONS WHICH ARE SHOWN AND NOTED.
1.6 THE WORD "TYPICAL" SHALL MEAN THAT INFORMATION SHOWN SHALL BE APPLIED TO ALL SIMILAR CONDITIONS WHETHER OR NOT THE INFORMATION IS SPECIFICALLY REFERENCED, UNLESS OTHERWISE NOTED ON THE DRAWINGS.
1.7 MODIFICATIONS OR SUBSTITUTIONS TO THE DESIGN, MATERIALS, OR PRODUCTS SPECIFIED ON THE PLANS ARE PROHIBITED WITH OUT PRIOR WRITTEN APPROVAL BY THE ENGINEER.
1.8 THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES AND TO PAY ALL ASSOCIATED FEES PRIOR TO CONSTRUCTION.
1.9 THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR PROVIDING AND MAINTAINING A SAFE WORK ENVIRONMENT IN ACCORDANCE WITH ALL LOCAL, STATE, FEDERAL SAFETY AND HEALTH STANDARDS LAWS AND REGULATIONS. THE CONTRACTOR SHALL EXECUTE WORK TO ENSURE SAFETY OF PERSONS AND PROPERTY AGAINST DAMAGE AND SHALL PROVIDE ADEQUATE SHORING AND BRACING AS REQUIRED FOR STABILITY DURING ALL PHASES OF CONSTRUCTION.
1.10 THE CONTRACT DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE AND DO NOT INDICATE MEANS AND METHODS OF CONSTRUCTION. STRUCTURAL CALCULATIONS AS PROVIDED AS PART OF THE CONSTRUCTION DOCUMENTS ARE BASED ON A COMPLETED STRUCTURE. THE STRUCTURAL ADEQUACY OF THE PARTIALLY COMPLETED STRUCTURE TO RESIST APPLIED LOADS IS BEYOND THE SCOPE OF THESE STRUCTURAL DRAWINGS.
1.11 REFER TO THE MECHANICAL AND ELECTRICAL DRAWINGS FOR PIPE RUNS, SLEEVES, HANGERS, TRENCHES, WALL OPENINGS, CONCRETE INSERTS AND SIZE AND LOCATION OF MACHINE AND EQUIPMENT BASES.

2. DESIGN CRITERIA

2.1 DESIGN, MATERIALS, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MINIMUM REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE AS AMENDED AND ADOPTED BY THE CITY OF SPARKS, NEVADA.
2.2 ALL OTHER CODES AND STANDARDS SHALL BE THE MOST CURRENT ADOPTED EDITION AS OF THE DATE OF THESE DRAWINGS.

2.3 SNOW LOADS:

SNOW LOAD IMPORTANCE FACTOR, Is:	1.1		
GROUND SNOW LOAD, Pg:	30	PSF	(ELEV: 4435')

2.6 WIND DESIGN:

BASIC WIND SPEED, Vult:	130	MPH	
NOMINAL WIND SPEED, Vasd:	101	MPH	
RISK CATEGORY:	II		
WIND EXPOSURE:	C		
INTERNAL PRESSURE COEFFICIENT:	±0.0		
VELOCITY PRESSURE AT MEAN HEIGHT:	36.9	PSF	(MWFRS)

2.7 SEISMIC DESIGN:

RISK CATEGORY:	III	
SEISMIC IMPORTANCE FACTOR, Is:	1.0	
MAPPED SPECTRAL ACCELERATION, Ss:	1.54	g
S1:	0.52	g
SITE CLASS:	D	
SPECTRAL RESPONSE COEFFICIENT, Sds:	1.02	g
Sd1:	0.52	g
SEISMIC DESIGN CATEGORY:	D	
BASIC SEISMIC FORCE-RESISTING SYSTEM:	NON-STRUCTURAL COMPONENTS WALLS	
SEISMIC DESIGN FORCE (Fp)	0.25	
COMPONENT AMPLIFICATION FACTOR, ap	1.0	
RESPONSE MODIFICATION FACTOR, R	2.5	

3. FOUNDATIONS

3.1 ALLOWABLE LOAD-BEARING VALUES OF SOILS (IBC TABLE 1804.2):

ALLOWABLE FOUNDATION PRESSURE:	1500	PSF
LATERAL BEARING (PASSIVE):	150	PSF
LATERAL BEARING (ACTIVE):	35	PSF
LATERAL SLIDING:	0.35	
MIN DEPTH OF FOOTINGS:	24"	MIN

3.2 BEFORE COMMENCING EARTHWORK, THE CONTRACTOR SHALL INSPECT THE SITE FOR ANY EXISTING ITEMS THAT MAY INTERFERE WITH THE PROPOSED IMPROVEMENTS. IT SHALL BE THE DUTY OF THE CONTRACTOR TO VERIFY LOCATION OF ALL UTILITIES AND STRUCTURES. NOTIFY ENGINEER WHERE CONFLICTS EXIST. RELOCATE OR AVOID AS NECESSARY AS TO NOT DAMAGE OR INTERFERE WITH EXISTING TO REMAIN.
3.3 GENERAL SITE CLEARING SHALL INCLUDE THE REMOVAL OF ALL SURFACE DEBRIS, RUBBLE, AND LARGER VEGETATION AND ORGANICS AS DIRECTED BY THE ENGINEER.
3.4 SCARIFY THE SOILS EXPOSED TO EXCAVATION TO A DEPTH OF 6" AND RE-COMPACT TO 90% MAXIMUM DRY DENSITY (ASTM D-1557, METHOD C). WATER OR DRY MATERIALS AS NECESSARY TO OBTAIN PROPER MOISTURE CONTENT.
3.5 PLACE FOOTINGS ON APPROVED SOIL (UNDISTURBED NATURAL SOILS OR COMPACTED ENGINEERED FILL). FILL HOLES DUE TO REMOVAL OF LARGE ROCKS OR OVER-EXCAVATION WITH CONCRETE.
3.6 FOOTING EXCAVATIONS SHALL BE NEAT AND TRUE, WITH ALL LOOSE MATERIAL AND STANDING WATER REMOVED BEFORE FOOTING CONCRETE IS PLACED.
3.7 ALL EXCAVATIONS, FORMS AND REINFORCING SHALL BE INSPECTED BY THE BUILDING OFFICIAL AND ENGINEER PRIOR TO PLACING CONCRETE.

4. CAST-IN-PLACE CONCRETE

4.1 CONCRETE MATERIALS AND CONSTRUCTION SHALL COMPLY WITH IBC CHAPTER 19, ACI 318, AND ACI 301.
4.2 CONTRACTOR SHALL SUBMIT ALL MIX DESIGNS FOR REVIEW AND APPROVAL.
4.3 CONCRETE PROPERTIES AND COMPOSITION (ASTM C94):

PROPERTY	CLASS A
28-DAY f'c (1)	(4000 PSI)
W/C	0.45
UNIT WT (2)	145 PCF
AIR (+/-) (3)	6%
SLUMP (MAX) (4)	3"
SHRINKAGE (5)	NR
CEMENT (6)	TYPE II
MIN CEMENT	520
FIBER REINF (7)	1.5 LB PCY

NOTES:
(1) FOUNDATION DESIGN FOR CONCRETE ENCLOSED IN () IS DESIGNED FOR 2500 PSI AND DOES NOT REQUIRE SPECIAL INSPECTION.
(2) AGGREGATE PER ACI 318, SECTION 3.3.
(3) 6% MAXIMUM AIR FOR 3/4" MAX AGGREGATE AND 7% FOR 1/2" MAX AGGREGATE.
(4) SLUMPS ARE FOR UNPLASTICIZED CONCRETE. LARGER SLUMPS MAY BE ATTAINED THROUGH THE USE OF SUPERPLASTICIZER. WATER REDUCING ADMIXTURES FOR PIERS SHALL CONFORM TO ASTM C 494, TYPE D, TO MEET SLUMP REQUIREMENTS.
(5) SHRINKAGE AT 28 DAYS (IN/IN) PER ASTM C157.
(6) CEMENT PER ASTM C150, C595, C1157 AS APPROPRIATE.
(7) SYNTHETIC MICRO FIBERS (ASTM C1116) 1/2 - 3/4" LONG, MINIMUM RATE INDICATED, RATE PER MANUFACTURERS WRITTEN INSTRUCTIONS.

CLASS A: FOUNDATIONS, EXTERIOR SLABS ON GRADE, UNO

4.4 ADMIXTURES SHALL COMPLY WITH ACI 318, SECTION 3.6
4.5 CONCRETE THAT IS TO BE PLACED DURING FREEZING OR NEAR-FREEZING WEATHER SHALL COMPLY WITH THE REQUIREMENTS OF ACI 318, SECTION 5.12. EQUIPMENT SHALL BE PROVIDED FOR HEATING CONCRETE MATERIALS AND PROTECTING CONCRETE. CONCRETE MATERIALS AND REINFORCEMENT, FORMS, FILLERS, AND GROUND WITH WHICH CONCRETE WILL COME IN CONTACT SHALL BE FREE OF FROST. FROZEN MATERIALS OR MATERIALS CONTAINING ICE SHALL NOT BE USED.
4.6 APPROVAL MUST BE OBTAINED PRIOR TO PLACING CONCRETE FOR ANY OPENINGS, SLEEVES, OR OTHER ATTACHMENTS NOT SHOWN ON DRAWINGS.
4.7 ROUGHEN THE EXISTING CONCRETE SURFACE AT THE INTERFACE OF CONSTRUCTION JOINTS TO AN AMPLITUDE OF (+/-) 1/4" PRIOR TO PLACING NEW CONCRETE. THOROUGHLY WET THE INTERFACE SURFACE AND REMOVE AND STANDING WATER.
4.8 FORMS SHALL CONFORM TO ACI 347 AND SHALL BE PROPERLY CONSTRUCTED TO CONCRETE SURFACES AS SHOWN ON THE DRAWINGS, SUFFICIENT TIGHT TO PREVENT LEAKAGE, SUFFICIENTLY STRONG, AND BRACED TO MAINTAIN SHAPE AND ALIGNMENT.
4.9 FORMS AND SHORING SHALL NOT BE REMOVED UNTIL THE CONCRETE HAS ATTAINED SUFFICIENT STRENGTH TO WITHSTAND ALL LOADS TO BE IMPOSED WITHOUT EXCESS STRESS, CREEP OR DEFLECTION.
4.10 SLEEVES IN CONCRETE SHALL BE SPACED WITH ONE SLEEVE DIAMETER (2" MIN) CLEAR DISTANCE BETWEEN ADJACENT SLEEVES. SLEEVES SHALL NOT TOUCH REBAR. SLEEVES GREATER THAN 12" IN DIAMETER SHALL BE REVIEWED BY THE ENGINEER FOR APPROVAL AND MAY REQUIRE ADDITIONAL TRIM REINFORCEMENT.

5. CONCRETE REINFORCEMENT

5.1 REINFORCEMENT SHALL CONFORM TO ACI 318, SECTION 3.5 AND ASTM A615, GRADE 60 (#4 AND LARGER) AND GRADE 40 (#3 BARS ONLY).
5.2 CONCRETE REINFORCEMENT DETAILS INCLUDING BAR SUPPORTS AND PLACING SHALL CONFORM TO ACI 315 AND THE CONCRETE REINFORCING STEEL INSTITUTE "MANUAL OF STANDARD PRACTICE." HOOKS SHALL BE PER ACI 318, SECTION 7.1 UNLESS DETAILED OTHERWISE.
5.3 PROVIDE THE FOLLOWING COVER ON REINFORCEMENT UNLESS NOTED OTHERWISE IN DRAWINGS. COVER SHALL BE TO FACE OF BAR, MECHANICAL COUPLER, OR WELDED HEADED BAR.

CAST-IN-PLACE CONCRETE	MINIMUM CONCRETE COVER
CAST AGAINST AND EXPOSED TO EARTH	3"
EXPOSED TO EARTH OR WEATHER	
#5 AND SMALLER	1 1/2"
CLEAR TO TOP FOR REINFORCEMENT IN SLAB-ON-GRADE	2"

5.4 PROVIDE LAP SPLICES, AND DEVELOPMENT OF STANDARD HOOKS AS SPECIFIED IN ACI 318, CHAPTER 12. MAKE LAP SPLICES ONLY AT LOCATIONS SHOWN ON DRAWINGS, AS INDICATED IN THESE NOTES, OR AS APPROVED BY THE ENGINEER.
5.5 LAP SPLICE ALL BARS A MINIMUM OF 40 BAR DIAMETERS UNLESS OTHERWISE NOTED. STAGGER LAP SPLICES A MINIMUM OF 24 INCHES.
5.6 SECURELY TIE ALL REINFORCEMENT PRIOR TO PLACING CONCRETE INCLUDING LAP SPLICES. TIES SHALL BE SUFFICIENT TO MAINTAIN THEIR EXACT POSITION THROUGHOUT THE PLACEMENT OF CONCRETE.
5.7 SUBMIT SHOP DRAWINGS OF REINFORCEMENT LAYOUTS AND DETAILS FOR REVIEW PRIOR TO FABRICATION. SHOW ALL PROPOSED SPLICE LOCATIONS, FABRICATE FROM APPROVED DRAWINGS ONLY.
5.8 BEND REINFORCING STEEL IN ACCORDANCE WITH ACI 301, SECTION 3.3.2.8. #3, #4, & #5 BARS MAY BE BENT COLD THE FIRST TIME PROVIDED TEMPERATURE OF BAR IS ABOVE 32F. FOR OTHER BAR SIZES PREHEAT REINFORCING BARS PRIOR TO BENDING.

6. SLABS-ON-GRADE

6.1 USE CONCRETE OF THE TYPE AND PROPORTION INDICATED IN SECTION 4 OF THESE NOTES.
6.2 LOCATE CONTROL JOINTS AS SHOWN ON PLANS (BUT NOT TO EXCEED 10'). MAKE JOINTS AS SOON AS THE SLAB IS STRONG ENOUGH TO ACCEPT THE JOINT. PROVIDE JOINTS SO THAT PANEL LENGTH TO WIDTH DOES NOT EXCEED 1.5 TO 1 FOR ANY PANEL. THE CONTRACTOR SHALL SUBMIT A CONTROL JOINT LAYOUT TO THE ENGINEER FOR APPROVAL PRIOR TO BEGINNING CONSTRUCTION.
6.3 PROTECT FRESHLY DEPOSITED CONCRETE FROM PREMATURE DRYING AND EXCESSIVE HOT OR COLD TEMPERATURES FOR A MINIMUM (7) DAYS.
6.4 CONCRETE SLABS SHALL BE CONTINUOUSLY CURED FOR A MINIMUM OF (7) DAYS AFTER PLACING BY APPROPRIATE MEANS INCLUDING BUT NOT LIMITED TO, CURING COMPOUND OR PAPER.
6.5 DAMPEN BASE PRIOR TO PLACING CONCRETE.
6.6 CONSTRUCT EXTERIOR SLABS-ON-GRADE AS FOLLOWS:

BROOM FINISH FOR ALL EXTERIOR CONCRETE WORK.
CONCRETE SLAB - MINIMUM THICKNESS AND REINFORCING PER PLAN
6" MINIMUM LAYER OF TYPE 2 CLASS B AGGREGATE BASE AND COMPACT TO 95%

7. ANCHORS TO CONCRETE AND MASONRY

7.1 THREADED ROD SHALL BE ASTM F1554, GRADE 36 GALVANIZED (ASTM A153), UNLESS OTHERWISE DETAILED.
7.2 MINIMUM ANCHOR EMBEDMENT SHALL BE AS INDICATED ON THE PLANS BUT IN NO CASE LESS THEN SPECIFIED BY THE MANUFACTURER FOR THE DIAMETER.
7.3 POST-INSTALLED EPOXY ANCHORS SHALL BE INSTALLED USING HILTI HY-200 (ESR-3187 CONCRETE, ESR-3963 MASONRY) PER THE MANUFACTURERS WRITTEN INSTRUCTION.
7.4 EPOXY ANCHORS SHALL BE INSTALLED IN CONCRETE HAVING A MINIMUM AGE OF 21 DAYS AT THE TIME OF ANCHOR INSTALLATION PER SECTION 17.1.2 OF ACI 318.
7.5 MINIMUM EMBEDMENT FOR POST-INSTALLED ANCHORS SHALL BE AS INDICATED ON THE PLANS BUT IN NO CASE LESS THEN SPECIFIED BY THE MANUFACTURER FOR THE DIAMETER.
7.6 CLEAN ALL NUTS, WASHERS, AND ANCHORS FROM CONTAMINANTS PRIOR TO INSTALLATION.
7.7 SCREW ANCHORS SHALL BE TITEN HD (ESR-2713/IAPMO EQ 0493 CONCRETE, ESR-1056 MASONRY).
7.8 CONCRETE EXPANSION ANCHORS SHALL BE SIMPSON STRONG-BOLT 2 (ESR-3037).

8. STEEL CONSTRUCTION

8.1 STRUCTURAL STEEL DETAILING, FABRICATION AND ERECTION SHALL CONFORM TO IBC CHAPTER 22 AND AISC 360, AISC 341, AND AISC 303.
8.2 PROVIDE SHOP DRAWINGS INCLUDING DETAILS FOR CUTS, HOLES AND WELDS FOR ALL FABRICATED PARTS FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
8.3 HSS STEEL TUBING SHALL BE ASTM A500, GR B (FY = 46 ksi).
8.4 PLATES, CHANNELS AND ANGLES SHALL BE ASTM A36, UNO.
8.5 STEEL PIPE SHALL BE ASTM A53, GRADE B (FY = 35 KSI).
8.6 FASTENERS/THRU BOLTS ASTM A307A - GALVANIZED ASTM F2329.
8.7 WELDING SHALL CONFORM TO AWS D1.1. CERTIFIED WELDERS SHALL PERFORM ALL WELDING.
8.8 USE LOW-HYDROGEN E7018 ELECTRODES WITH A MINIMUM CHARPY V-NOTCH TOUGHNESS OF 20 FT-LB AT O°F.
8.9 ALL WELDS SHALL BE PRE-QUALIFIED AND SHALL BE PERFORMED IN STRICT CONFORMANCE WITH AN APPROVED WRITTEN WELD PROCEDURE SPECIFICATION (WPS) PER AWS D1.1. CONTRACTOR TO PROVIDE ENGINEER OF RECORD WELDING PROCEDURES TO BE REVIEWED AND APPROVED PRIOR TO BEGINNING ANY WELDING.
8.10 ALL STRUCTURAL STEEL SHALL BE HOT-DIPPED GALVANIZED AFTER FABRICATION AND PRIOR TO INSTALLATION - ASTM A123. TOUCH UP AND REPAIR DAMAGED GALVANIZED SURFACES IN ACCORDANCE WITH ASTM A780. THICKNESS OF TOUCH UP PAINT SHALL BE 50% MORE THAN SURROUNDING COATING THICKNESS.
8.11 USE NON-METALLIC, NON-SHRINK GROUT CONFORMING TO ASTM C1107, GRADE A, B OR C UNDER BASE PLATES AND AT FENCE POSTS SLEEVES. NON-SHRINK GROUT SHALL HAVE A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 8000 PSI. INSTALL IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS. GROUT SHALL BE DELIVERED TO THE JOB SITE IN DRY, PRE-MIXED FACTORY PACKAGING REQUIRING ONLY THE ADDITION OF WATER. SURFACES TO RECEIVE GROUT SHALL BE FREE OF DIRT, OIL, GREASE, OR OTHER DELETERIOUS SUBSTANCES THAT MAY INHIBIT BOND. CONCRETE SURFACES SHALL BE ROUGH AND SATURATED (PONDED) WITH CLEAN WATER FOR A MINIMUM OF 4 HOURS PRIOR TO GROUTING. PLACE GROUT TO ENSURE FULL BEARING CONTACT AND CURE FOR A MINIMUM OF 8 HOURS WITH WET RAGS.

9. COLD-FORMED STEEL

9.1 COLD-FORMED STEEL LIGHT-FRAMED CONSTRUCTION SHALL COMPLY WITH UFC 2-6.3, IBC CHAPTER 22, AISI S100.
9.3 CUT FRAMING COMPONENTS SQUARELY OR AT AN ANGLE TO FIT TIGHT AGAINST ABUTTING MEMBERS. HOLD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
9.3 CUT FRAMING COMPONENTS SQUARELY OR AT AN ANGLE TO FIT TIGHT AGAINST ABUTTING MEMBERS. HOLD FIRMLY IN POSITION UNTIL PROPERLY FASTENED.
9.4 WALL PANELS SHALL BE ROLLED-FORMED CORRUGATED PANEL (ASTM A 653, GRADE 50) OF THE THICKNESS INDICATED ON THESE PLANS.
9.5 STRUCTURAL FASTENERS (ANCHORAGE TO STRUCTURAL FRAMING) SHALL BE ITW BUILDEX OF THE SIZE AND TYPE INDICATED ON THESE PLANS OR APPROVED EQ. FASTENERS SHALL BE WEATHER RESISTANT (CLIMASEAL OR APPROVED EQ).
9.6 PANEL SCREWS (LAPS AND SPLICES) SHALL BE COLOR-MATCHED #12 x 1" SELF DRILLING TEKS W/NEOPRENE WASHERS.

10. WOOD CONSTRUCTION

10.1 FRAMING SHALL CONFORM TO IBC CHAPTER 23 AND AF&PA's NDS.
10.2 PROTECT ALL WOOD FRAMING MATERIALS FROM EXCESSIVE MOISTURE AND OR EXPOSURE AFTER DELIVERY TO JOB SITE. WOOD FRAMING SHALL BE STACKED ABOVE GRADE AND COVERED PRIOR TO INSTALLATION.
10.3 SAWN LUMBER SHALL BE STAMPED DOUGLAS FIR (DF OR D.FIR) NO. 2 OR BETTER WCLB WITH A MAXIMUM MOISTURE CONTENT 19% AT TIME OF INSTALLATION AND PRIOR TO BEING COVERED WITH INSULATION OR WALL AND FLOOR FINISHES.
10.4 USE PRESSURE TREATED DOUGLAS-FIR #2 WHERE INDICATED ON THESE PLANS. HARDWARE IN CONTACT WITH PT LUMBER SHALL BE HOT-DIPPED GALVANIZED ASTM A653 (G185).
10.5 PLYWOOD SHEETS SHALL BE THE THICKNESS NOTED ON THE DRAWINGS AND SHALL BE IDENTIFIED WITH THE APPROPRIATE GRADE, TRADEMARK OF THE AMERICAN PLYWOOD ASSOCIATION (APA) AND SHALL MEET THE REQUIREMENTS OF PRODUCT STANDARD PS-95.

10.6 WALL SHEATHING SHALL BE APA C-D SPAN RATED PANELS, EXTERIOR (ICI 7-3-3-3), AS FOLLOWS:

MIN THICKNESS: 15/32" PLYWOOD, SPAN INDEX: 32/16
MIN FASTENING: BN = 6", EN = 6", FN = 12"

10.7 ROOF PATCHING SHEATHING SHALL BE APA C-D SPAN RATER PANELS, EXPOSURE I:

MIN THICKNESS: 23/32" PLYWOOD, SPAN INDEX: 48/24
MIN FASTENING: SDS 1/4 x 2-1/2" @ 10" MAX AROUND OPENING

10.8 USE COMMON NAILS ONLY FOR WALL FRAMING, BOX NAILS AND SINKERS ARE NOT ACCEPTABLE.
10.9 USE FRAMING HARDWARE AS MANUFACTURED BY SIMPSON STRONG-TIE OF THE SIZE AND TYPE INDICATED ON THESE PLANS. INSTALL PER MANUFACTURERS WRITTEN INSTRUCTIONS. USE THE MAXIMUM NUMBER OF FASTENERS FOR EACH CONNECTION, UNO.
10.10 FRAMING HARDWARE SHALL BE HOT-DIP GALVANIZED ASTM A653 (G90 MIN COATING). HARDWARE IN CONTACT WITH ACQ-C, ACQ-D, CBA-A, CA-B, OR SBX SHALL BE HOT-DIP GALVANIZED (G185 MIN COATING). HARDWARE IN CONTACT WITH PT LUMBER WITH AMMONIACAL COPPER ZINC ARSENATE (ACZA) OR OTHER AMMONIA CARRIER SHALL BE STAINLESS STEEL.
10.11 FOR WOOD TO WOOD NAILED CONNECTIONS USE A MINIMUM SPACING AND EDGE DISTANCE OF (11) DIAMETERS AND (6) DIAMETERS RESPECTIVELY.
10.12 WHERE REQUIRED TO AVOID SPLITTING, PRE-DRILL HOLES WITH A DRILL DIAMETER EQUAL TO THE NEXT SMALLER NAIL DIAMETER. IN NO CASE SHALL HOLES EXCEED 75% OF NAIL DIAMETER.
10.13 TOE-NAILS SHALL BE DRIVEN AT AN ANGLE OF 30° AND SHALL BE LOCATED WITHIN 1/3 OF THE NAIL LENGTH FROM THE END OF THE MEMBER.
10.14 BEARING SURFACES OF COLUMNS AND TIMBER JOINERY SHALL BE TIGHT AND TRUE.

11. SPECIAL INSPECTIONS AND TESTING

11.1 PROVIDE SPECIAL INSPECTIONS IN COMPLIANCE WITH IBC 1704 BY AN APPROVED INSPECTOR.

THE FOLLOWING ITEMS SHALL BE INSPECTED IN ACCORDANCE WITH THE APPROPRIATE SECTION IN THE IBC. THE INSPECTION AGENCY SHALL PROVIDE COPIES OF ALL INSPECTION REPORTS DIRECTLY TO THE ENGINEER. ANY CONSTRUCTION THAT FAILS TO COMPLY WITH THE APPROVED CONSTRUCTION DOCUMENTS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER.

11.2 CONCRETE CONSTRUCTION, IBC 1705.3:

PERIODIC SPECIAL INSPECTION IS REQUIRED FOR POST-INSTALLED ANCHORS AS INDICATED IN THE CORRESPONDING RESEARCH REPORT ISSUED BY THE APPROVAL AGENCY.

12. STRUCTURAL OBSERVATIONS

STRUCTURAL OBSERVATION SHALL BE PROVIDED BY A REGISTERED DESIGN PROFESSIONAL FOR GENERAL CONFORMANCE OF CONSTRUCTION TO THE APPROVED CONSTRUCTION DOCUMENTS AT SIGNIFICANT CONSTRUCTION STAGES AND AT COMPLETION OF THE STRUCTURAL SYSTEM.

STRUCTURAL OBSERVATIONS ARE NOT A SUBSTITUTE FOR SPECIAL INSPECTIONS. ALL SPECIAL INSPECTIONS SHALL BE PERFORMED BY THE PROJECT SPECIAL INSPECTOR.

ABBREVIATIONS

&	AND
@	AT
AB	ANCHOR BOLT
ABV	ABOVE
AC	ASPHALT CONCRETE
ADDL	ADDITIONAL
ADJ	ADJACENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
APPD	APPROVED
BLDG	BUILDING
BLK	BLOCK
BLKG	BLOCKING
BLW	BELOW
BM	BEAM
BO	BOTTOM OF
BOT	BOTTOM
BRG	BEARING
CIP	CAST-IN-PLACE
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR	CLEAR
CONC	CONCRETE
COND	CONDITION
CONN	CONNECTION
CONT	CONTINUOUS
CTJ	CONTROL JOINT
CTR	CENTER
CTRD	CENTERED
DBA	DEFORMED BAR ANCHOR
DBL	DOUBLE
DET	DETAIL
DIA	DIAMETER
DIAG	DIAGONAL
DN	DOWN
DWG	DRAWING
DWL	DOWEL
(E)	EXISTING
EA	EACH
EF	EACH FACE
EJ	EXPANSION JOINT
ELEV	ELEVATION
EOR	ENGINEER OF RECORD
EPS	EXPANDED POLYSTYRENE
EQ	EQUAL
ES	EACH SIDE
EW	EACH WAY
EXA	EXPANSION ANCHOR
EXT	EXTERIOR
FDN	FOUNDATION
FG	FINISHED GRADE
FIN	FINISH
FLR	FLOOR
FOC	FACE OF CONCRETE
FOW	FACE OF WALL
FS	FAR SIDE
FTG	FOOTING
GALV	GALVANIZED
GB	GRADE BEAM
GRD	GRADE
HORIZ	HORIZONTAL
HSA	HEADED STUD ANCHOR
HSB	HIGH STRENGTH BOLT
HSS	HOLLOW STRUCTURAL SHAPE
HWS	HOT WATER SUPPLY
HWR	HOT WATER RETURN
IF	INSIDE FACE
IN	INCH
INT	INTERIOR
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
LW	LIGHTWEIGHT
MFG	MANUFACTURED
MAX	MAXIMUM
MB	MACHINE BOLT
MIN	MINIMUM
MTL	METAL
N/A	NOT APPLICABLE
NIC	NOT IN CONTRACT
NS	NEAR SIDE
NTS	NOT TO SCALE
OC	ON CENTER
OF	OUTSIDE FACE
OH	OPPOSITE HAND
OPG	OPENING
PDF	POWER DRIVEN FASTENER
PL	PLATE
PLY	PLYWOOD
R	RADIUS
RE	REFER TO
REINF	REINFORCEMENT
REQ	REQUIRED
SCHD	SCHEDULE
SECT	SECTION
SIM	SIMILAR
SPECS	SPECIFICATIONS
SQ	SQUARE
SS	STAINLESS STEEL
STGRD	STAGGERED
STD	STANDARD
STIFF	STIFFENER
STL	STEEL
SYMM	SYMMETRICAL
T&B	TOP AND BOTTOM
TFF	TOP OF FINISHED FLOOR
THRD	THREADED
TOC	TOP OF CONCRETE
TOS	TOP OF STEEL
TYP	TYPICAL
UNO	UNLESS NOTED OTHERWISE
VIF	VERIFY IN FIELD
VERT	VERTICAL
W/	WITH
W/O	WITHOUT
WF	WIDE FLANGE
WP	WORK POINT
WS	WATERSTOP

City of Sparks — It's Happening Here!

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REV	DATE	DESCRIPTION	APPVD
0	10/14/19	ISSUED FOR PLAN REVIEW	TJL

REGISTERED PROFESSIONAL ENGINEER - STATE OF NEVADA
No. 17911
THOMAS LUNDIN
Exp. 12/31/19
CIVIL
STRUCTURAL
10/14/2019

CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
SPARKS NEVADA
STRUCTURAL NOTES
ABREVIATIONS

DRAWN:	TJL
CHECKED:	TJL
DATE:	10/14/19
SCALE:	AS SHOWN
PROJECT NO:	1481901

SHEET NO:
S1.0

EXISTING CONDITIONS / DEMOLITION NOTES:

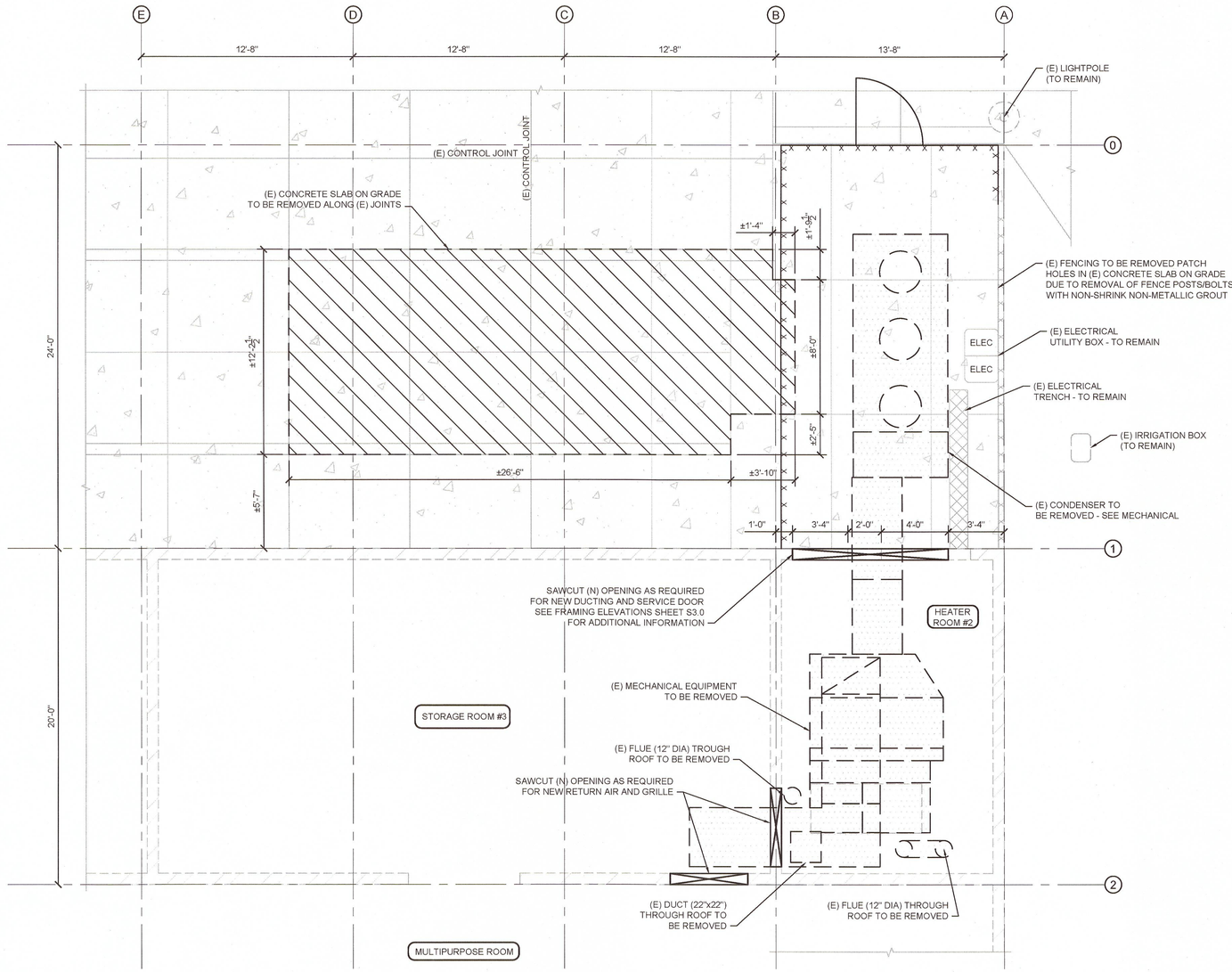
1. CONTRACTOR SHALL INSPECT THE SITE FOR ANY EXISTING ITEMS THAT MAY INTERFERE WITH THE PROPOSED IMPROVEMENTS AND PROMPTLY REPORT ANY DISCREPANCIES FOUND AMONG THESE DRAWINGS AND SPECIFICATIONS TO THE ENGINEER. ALL DISCREPANCIES SHALL BE CORRECTED IN WRITING. ANY WORK DONE BY THE CONTRACTOR AFTER THE DISCOVERY OF SUCH DISCREPANCIES PRIOR TO RECEIVING WRITTEN DIRECTION FROM THE ENGINEER IS AT THE CONTRACTORS OWN RISK.
2. VERIFY AND COORDINATE ALL DIMENSIONS AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY CONSTRUCTION.
3. THE UNDERGROUND UTILITIES SHOWN IN THESE DRAWINGS ARE APPROXIMATE. UTILITY LOCATIONS ARE BASED ON SURFACE FIELD TIES AND IMPROVEMENT PLAN MAPS FROM AS-BUILT DRAWINGS. ACTUAL LOCATIONS MAY VARY. STRUCTURAL SYSTEM SOLUTIONS, INC. IS NOT RESPONSIBLE FOR THE EXACT LOCATIONS OF THE UTILITIES SHOWN HERE ON, NOR FOR ANY DAMAGES CAUSED BY ANY CONSTRUCTION OR EXCAVATION ON OR NEAR SAID UTILITIES. DAMAGE TO ANY EXISTING UTILITIES DURING CONSTRUCTION SHALL BE REPAIRED IMMEDIATELY IN ACCORDANCE WITH THE UTILITIES COMPANIES OR OWNERS REQUIREMENTS AND AT THE CONTRACTORS EXPENSE.
4. IT SHALL BE THE DUTY OF THE OF THE CONTRACTOR TO MAKE THE DETERMINATION AS TO THE LOCATION OF ALL EXISTING UTILITIES PRIOR TO BEGINNING ANY WORK. CONTACT USA AT 1-800-227-2900. PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY COMPANY/OWNER AND INFORM THEM OF ANY PLANNED DISTURBANCE TO OR AROUND EXISTING UTILITIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES WITHIN THE PROJECT AREA FROM ACTIVITIES ASSOCIATED WITH THE CONSTRUCTION OF THIS PROJECT.
6. ALL SAWCUTTING OF CONCRETE SHALL BE NEAT AND STRAIGHT AS SHOWN.
7. ANY DAMAGE BY THE CONTRACTOR TO THE EXISTING IMPROVEMENTS TO REMAIN SHALL BE REMOVED AND REPLACED PER THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, LATEST EDITION, AT THE CONTRACTORS EXPENSE.

EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL USE TEMPORARY EROSION CONTROL FACILITIES DURING CONSTRUCTION TO PREVENT DISCHARGE OF EARTHEN MATERIALS FROM THE SITE DURING PERIODS OF PRECIPITATION.
2. EACH WEEK THE CONTRACTOR AND OR THEIR AUTHORIZED AGENTS SHALL REMOVE ALL SEDIMENT, MUD, CONSTRUCTION DEBRIS, OR OTHER POTENTIAL POLLUTANTS THAT HAVE BEEN DISCHARGED AS A RESULT OF CONSTRUCTION ACTIVITIES ASSOCIATED WITH THIS PROJECT. SUCH MATERIALS SHALL BE PREVENTED FROM ENTERING THE STORM DRAIN SYSTEM.
3. ACCUMULATED SEDIMENT IN BMPS SHALL BE REMOVED PRIOR ANY ANTICIPATED STORM EVENT. SEDIMENT MUST BE REMOVED WHEN THE BMP DESIGN CAPACITY IS REDUCED BY MORE THAN 50%.
4. THE CONTRACTOR SHALL INSPECT ALL DISTURBED AREAS, AREAS USED FOR STORAGE, VEHICLE PATH, AND BMPS WEEKLY, PRIOR TO A FORECASTED RAIN EVENT AND WITHIN 24 HOURS OF AN ACTUAL RAIN EVENT. THE CONTRACTOR SHALL UPDATE OR MODIFY THE STORMWATER POLLUTION PREVENTION PLAN AS NECESSARY.
5. CONTRACTOR SHALL CONSTRUCT AND OR INSTALL TEMPORARY SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO ANY GRADING ACTIVITY.
6. CONTRACTOR SHALL STOCKPILE EXISTING GRAVEL TO BE REAPPLIED AFTER COMPLETION OF GRADING.
7. ALL LOOSE PILES OF SOIL, SILT, CLAY, SAND, DEBRIS, OR EARTHEN MATERIALS SHALL BE PROTECTED IN A REASONABLE WAY TO PREVENT DISCHARGE.
8. AFTER COMPLETION OF EACH PHASE, ALL SURPLUS OR WASTE MATERIAL SHALL BE REMOVED FROM THE SITE AND DEPOSITED AT A LEGAL POINT OF DISPOSAL.
9. THE CONTRACTOR SHALL DEVELOP, PROPOSE AND IMPLEMENT AN APPROPRIATE DUST CONTROL PROGRAM TO BE USED THROUGHOUT CONSTRUCTION. THE DUST CONTROL PLAN SHALL BE SUBMITTED TO THE CITY OF SPARKS BUILDING DEPARTMENT AND SHALL SATISFY ALL APPLICABLE STATE AND FEDERAL REQUIREMENTS. CONTRACTOR SHALL BE REQUIRED TO PAY ANY ASSOCIATED FEES TO SATISFY DUST CONTROL REQUIREMENTS. CONTRACTOR SHALL TAKE ALL NECESSARY STEPS TO CONTROL DUST IN CONSTRUCTION AND STAGING AREAS. SUFFICIENT WATER TRUCKS SHALL BE MADE AVAILABLE FOR DUST CONTROL PURPOSES. THE CONTRACTOR IS REQUIRED TO SUPRESS DUST AT ALL TIMES, 24 HOURS A DAY, 7 DAYS A WEEK.

FOUNDATION DEMOLITION KEY

- (E) CMU WALL TO REMAIN
- (N) OPENING IN (E) CMU WALL
- (E) CONCRETE SLAB ON GRADE TO REMAIN
- (E) MECHANICAL EQUIPMENT TO BE DEMOLISHED
- E) CONCRETE SLAB ON GRADE TO BE DEMOLISHED
- (E) FENCING TO BE DEMOLISHED



EXISTING CONDITIONS AND DEMOLITION PLAN

SCALE: 1/4" = 1'-0"

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REV	DATE	DESCRIPTION	APPVD
0	10/14/19	ISSUED FOR PLAN REVIEW	TJL

REGISTERED PROFESSIONAL ENGINEER - STATE OF NEVADA
THOMAS LUNDIN
No. 17911
Exp. 12/31/19
CIVIL/STRUCTURAL
10/14/2019

CITY OF SPARKS
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
SPARKS NEVADA
EXISTING CONDITIONS DEMOLITION PLAN

DRAWN:	TJL
CHECKED:	TJL
DATE:	10/14/19
SCALE:	AS SHOWN
PROJECT NO:	1481901

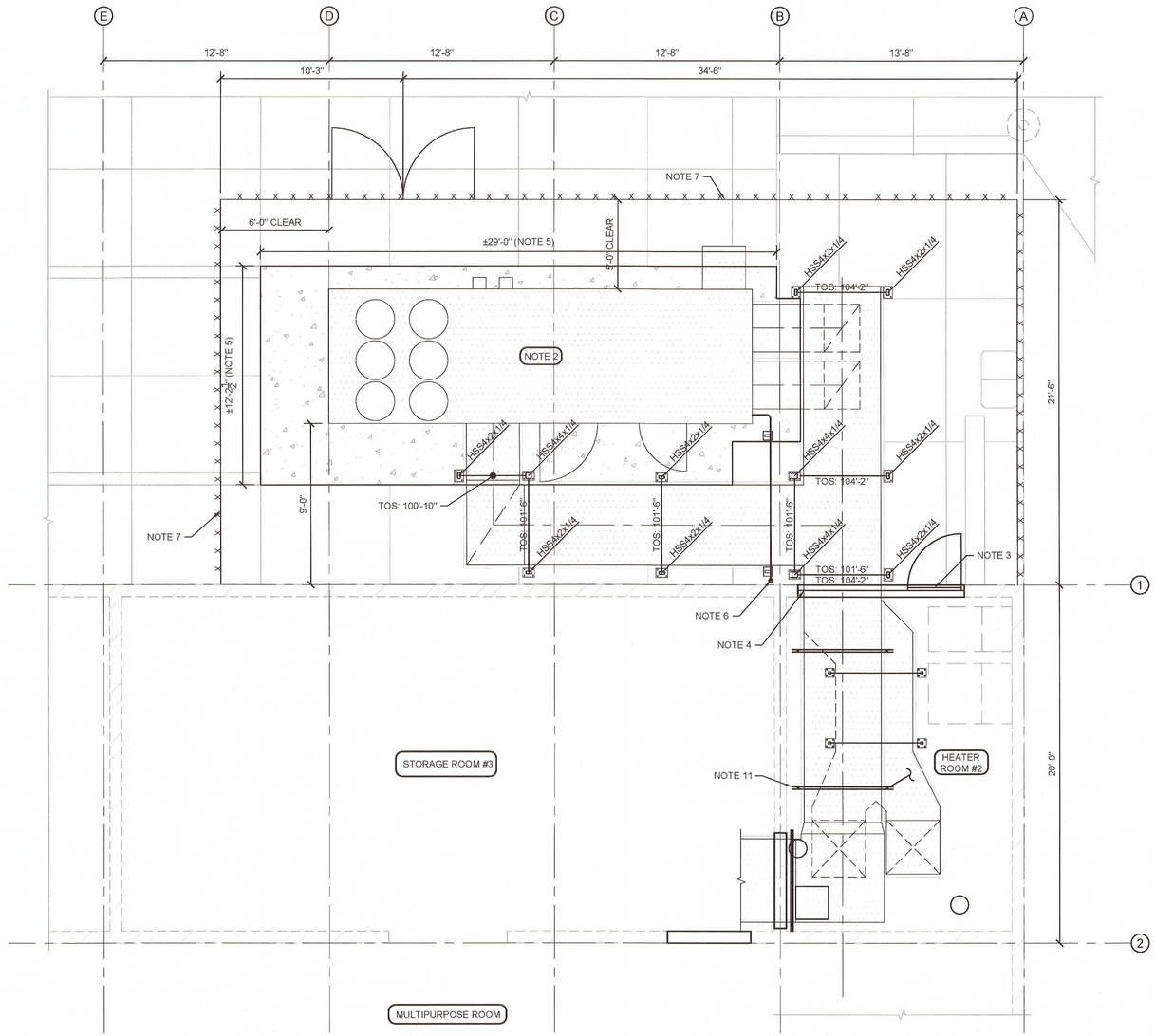
SHEET NO:
S2.0

FRAMING NOTES:

1. ALL ELEVATIONS ARE WITH RESPECT TO A (E) TOC DATUM OF 100'-0".
2. MECHANICAL EQUIPMENT AND DUCTING ALIGNMENT SHOWN FOR REFERENCE ONLY - SEE MECHANICAL PLANS FOR ADDITIONAL REQUIREMENTS.
3. PROVIDE (N) 3068 METAL DOOR, FRAME & HARDWARE - SEE FRAMING ELEVATION SHEET S3.1 FOR ADDITIONAL INFORMATION.
4. (N) 2x6 WOOD FRAMED WALL W/ 1/2" PT PLYWOOD SHEATHING AND 24 GA PBC METAL WALL PANEL INFILL AROUND DUCT PENETRATIONS - SEE FRAMING ELEVATION SHEET S3.0 FOR ADDITIONAL INFORMATION.
5. (N) 8" THICK CONCRETE SLAB ON GRADE W/#5 @ 18" EACH WAY. SET TOP OF REINFORCING STEEL 2" CLEAR FROM TOP OF SLAB. PROVIDE 1" DEEP CONTROL JOINTS AS REQUIRED (10'-0" MAX SPACING) AND TO AVOID POST INSTALLED ANCHORS. SET TOP OF SLAB TO MATCH (E).
6. (N) GAS SUPPLY LINE - SEE PLUMBING PLAN - PROVIDE SUPPORTS AT 8' MAX PER DETAIL 205.
7. 7' TALL COMMERCIAL ORNAMENTAL SECURITY FENCE WITH MATCHING SWING GATES:
   PICKETS: 0.75" SQ x 14 GA
   RAILS: 1.4375" x 1.5" x 14 GA
   POSTS: 3" SQ x 14 GA
   DOUBLE 4' WIDE SWING GATES
   FINISH: GALVANIZED STEEL FRAMEWORK WITH EPOXY PRIMER AND ACRYLIC TOPCOAT.
8. SUBMIT SHOP DRAWINGS SHOWING FABRICATED DUCT PLANS AND ELEVATIONS.
9. SUBMIT SHOP DRAWINGS FOR DUCT SUPPORT STEEL.
10. SUBMIT THE FOLLOWING FENCE SHOP DRAWINGS FOR REVIEW AND APPROVAL:
    LOCATION OF CORNER POSTS, END POSTS, AND GATES
    FENCE ASSEMBLY INCLUDING ACCESSORIES, FITTINGS AND HARDWARE
    GATE ASSEMBLIES INCLUDING ACCESSORIES, LOCKS, AND COMPONENTS
11. TRAPEZE DUCT SUPPORT WITH LATERAL BRACE AT CORNER - SEE DETAIL 201/S9.1.

FRAMING KEY

- (E) CMU WALL TO REMAIN
- (E) CONCRETE SLAB ON GRADE
- (N) MECHANICAL DUCTING (RA/SA) - SEE MECHANICAL PLANS FOR SIZE, ALIGNMENT, AND ADDITIONAL REQUIREMENTS NOT SHOWN
- (N) EXTERIOR DUCT SUPPORTS - SEE DETAIL 103/S9.1
- (N) INTERIOR TRAPEZE DUCT SUPPORT - SEE DETAIL 200/S9.1
- (N) INTERIOR GROUND MOUNT SUPPORT - SEE DETAIL 104/S9.1
- (N) 7' TALL SECURITY FENCING
- (N) PIPE SUPPORT ASSEMBLY - SEE DETAIL 102/S9.1



STRUCTURAL FRAMING PLAN

SCALE: 1/4" = 1'-0"

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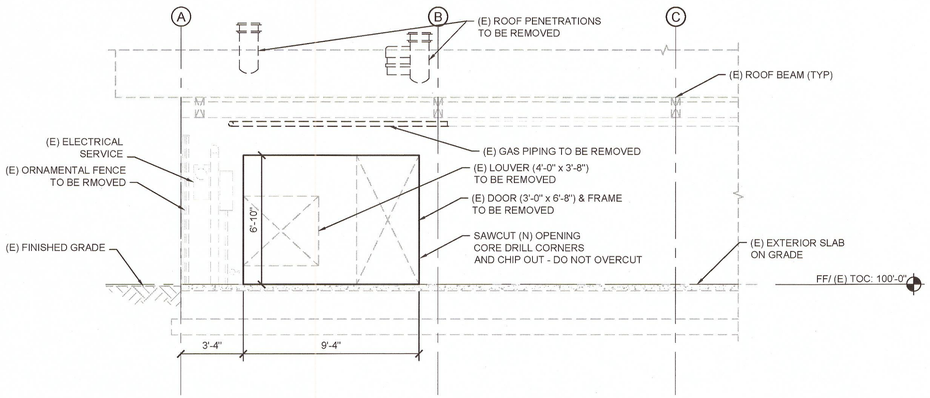
SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
STRUCTURAL FRAMING PLAN
NEVADA
SPARKS

DRAWN: TJL
CHECKED: TJL
DATE: 10/14/19
SCALE: AS SHOWN
PROJECT NO: 1481901

SHEET NO:
S2.1

DEMOLITION NOTES:

1. SEE MECHANICAL AND ELECTRICAL PLANS FOR ADDITIONAL INFORMATION NOT SHOWN.
2. CONTRACTOR SHALL INSPECT SITE FOR CONFLICTS PRIOR TO DEMOLITION.
3. INSTALL WALL STRENGTHENING STEEL PRIOR TO SAWCUTTING/DEMOING (N) OPENING.
4. SAWCUT (E) CMU ALONG (E) MORTAR JOINTS (HORIZONTAL) AND AT 1/2" BLOCKS (VERTICAL).
5. CONTRACTOR TO MARK WALLS DEPICTING ALIGNMENT AND GEOMETRY OF SAWCUTS FOR REVIEW AND APPROVAL BY ENGINEER PRIOR TO CUTTING WALL.
6. PROVIDE TEMPORARY WALL COVERINGS AS REQUIRED TO MAINTAIN

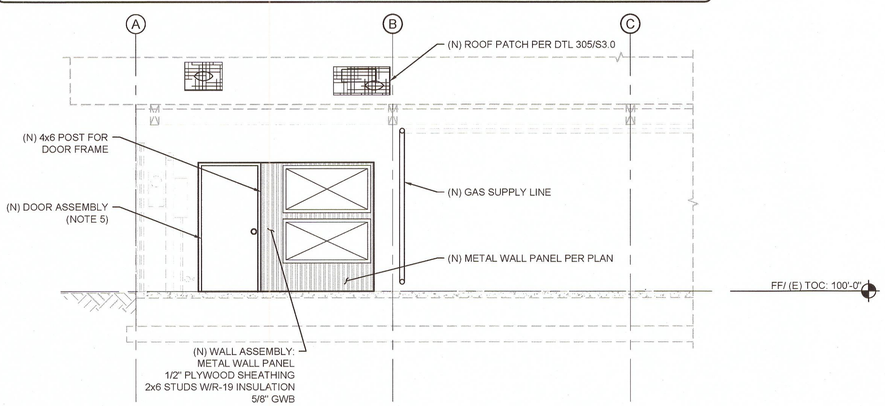


STRUCTURAL DEMOLITION ELEVATION

SCALE: 1/4" = 1'-0"

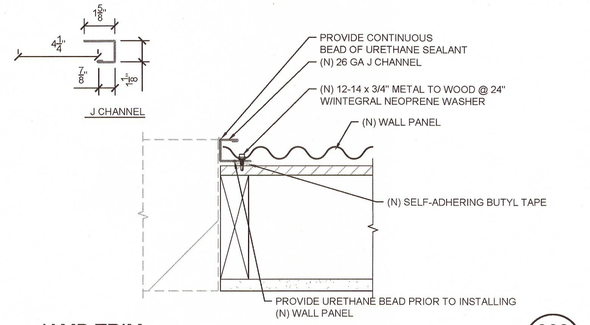
FRAMING NOTES:

1. VERIFY AND COORDINATE ALL DIMENSIONS (INCLUDING MINIMUM REQUIRED EDGE DISTANCES) AND EXISTING CONDITIONS PRIOR TO BEGINNING ANY CONSTRUCTION.
2. CONTRACTOR TO PROVIDE COLOR SAMPLES AND FINISHES FOR ALL EXPOSED MATERIALS AND FINISHES TO BE APPROVED PRIOR TO INSTALLATION.
3. CONTRACTOR TO APPLY TOUCH-UP PAINT AS SUPPLIED BY THE PANEL MANUFACTURER TO ANY SCRATCHES OR NICKS TO THE PAINT FINISH OF THE (N) WALL PANELS AS A RESULT OF INSTALLATION OR HANDLING. PAINT SHALL BE APPLIED PER THE MANUFACTURERS REQUIREMENTS USING A SMALL BRUSH.
4. WALL PANELS SHALL BE INSTALLED CONTINOUS BETWEEN SILL AND HEAD EXCEPT WHERE PENETRATIONS REQUIRE BREAKS. PROVIDE SECONDARY FRAMING AT PANEL LAPS. INSTALL METAL PANELS AND TRIM FREE OF WAVES, WARPS, BUKCLES, FASTENING STRESSES AND DISTORTATIONS. ANY PANEL EXHIBITING VISUAL DEFECTS AFTER INSTALLATION SHALL BE REMOVED AND REPLACED WITH (N) PANELS.
5. PROVIDE (N) INSULATED METAL DOOR ASSEMBLY AND FRAME. DOORS AND FRAMES TO BE 18 GAUGE GALVANEAL EXTERIOR STEEL. PROVIDE CLOSER, WEATHERSEAL, HINGES, THRESHOLD, AND LOCKSET.
6. PROVIDE MATCHING PANEL TRIM AT ALL HEADS, SILLS, AND AROUND ALL PENETRATIONS AND OPENINGS.



STRUCTURAL FRAMING ELEVATION

SCALE: 1/4" = 1'-0"

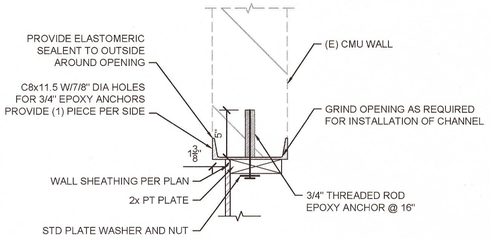


JAMB TRIM

SCALE: 3" = 1'-0"

306 S3.0

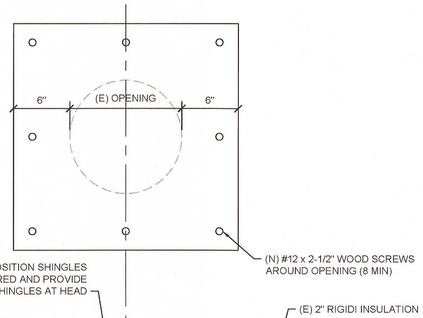
SHORE LINTEL/JAMB STEEL FOR 24 HRS MINIMUM TO ALLOW EPOXY TO CURE.

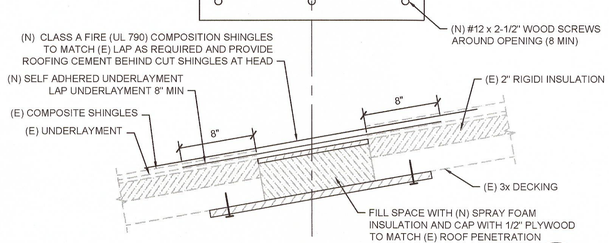


TYPICAL DOOR JAMB/LINTEL STEEL

SCALE: 1-1/2" = 1'-0"

303 S3.0



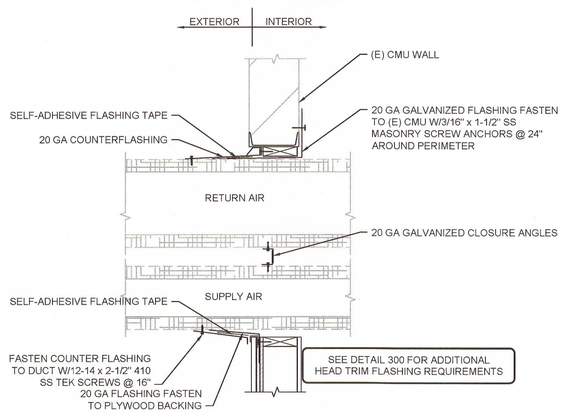


TYPICAL ROOF PATCH

SCALE: 1-1/2" = 1'-0"

305 S3.0

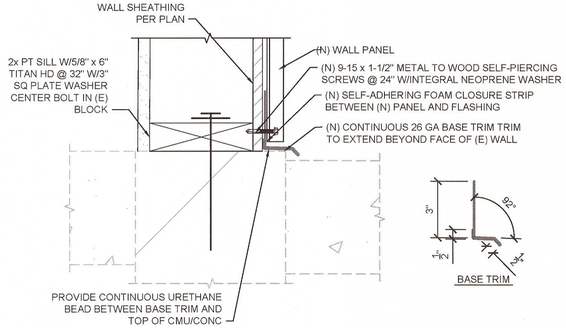
CONTRACTOR TO PROVIDE SHOP DRAWING OF PROPOSED LOUVER FLASHING ASSEMBLY FOR REVIEW AND APPROVAL PRIOR TO FABRICATION. DRAWINGS SHALL INCLUDE DIMENSIONS OF OPENINGS AND FABRICATED PIECES. ALL SPLICES SHALL BE LAPPED A MINIMUM OF 6" WITH SEALANT BETWEEN.



FLASHING AT DUCT PENETRATION

NO SCALE

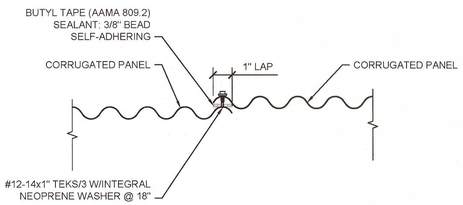
304 S3.0



TYPICAL PANEL SILL CONNECTION

SCALE: 3" = 1'-0"

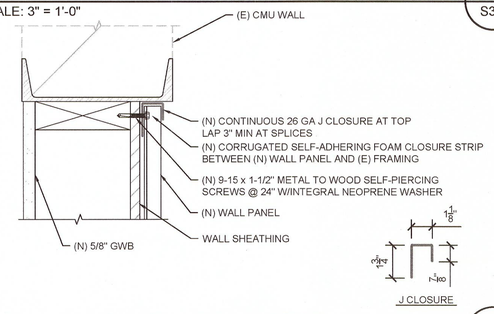
302 S3.0



TYPICAL SIDE LAP CONNECTION

SCALE: 3" = 1'-0"

301 S3.0



TYPICAL PANEL HEAD CONNECTION

SCALE: 3" = 1'-0"

300 S3.0

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SPARKS RECREATION CENTER HVAC SYSTEM UPGRADE
98 RICHARDS WAY
SPARKS NEVADA
FRAMING ELEVATIONS DETAILS

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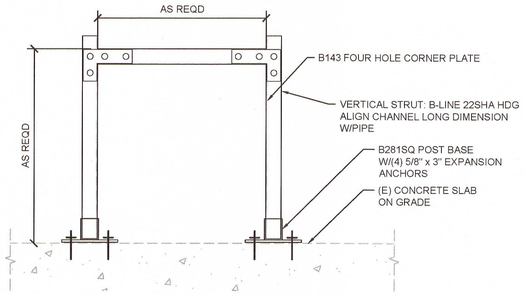
SHEET NO:
S3.0

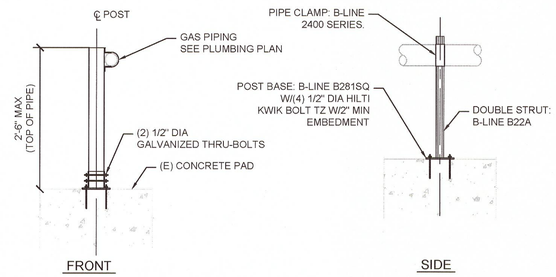


GROUND MOUNTED DUCT SUPPORT - INTERIOR

NO SCALE

104 / S9.1

INSTALL NUTS AND BOLTS PER MANUFACTURERS REQUIRMENTS AND THE PROJECT SPECIFICATIONS, TYP.

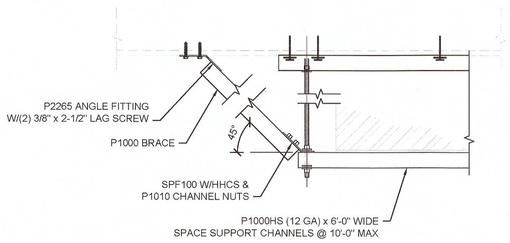


PIPE SUPPORT ELEVATION (2'-6" MAX HEIGHT)

SCALE: 3/4" = 1'-0"

PIPE SUPPORTS TO BE SPACED AT 10'-0" MAX

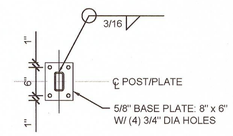
102 / S9.1



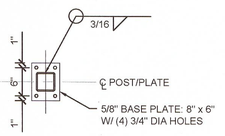
BRACED TRAPEZE ASSEMBLY

NO SCALE

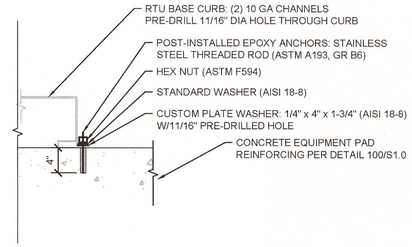
201 / S9.1



BASE: HSS4x2x1/4



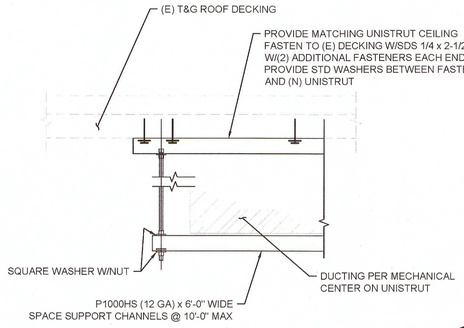
BASE: HSS4x4x1/4



POST-INSTALLED CONCRETE ANCHOR

SCALE: 1" = 1'-0"

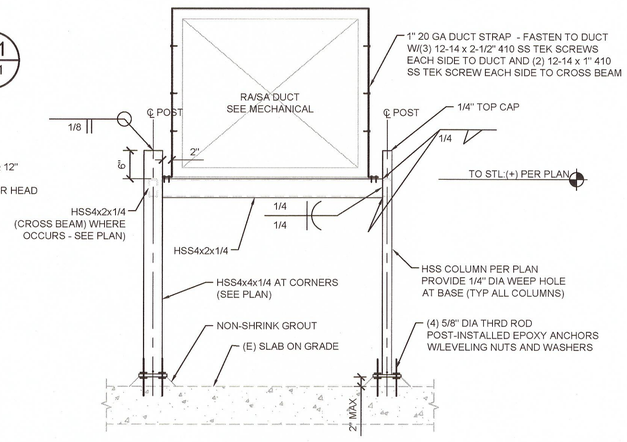
101 / S9.1



TRAPEZE HANGER

NO SCALE

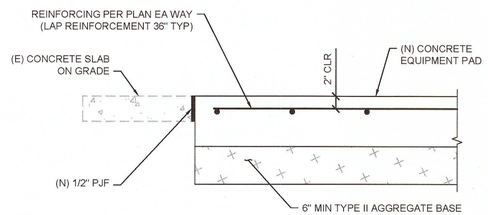
200 / S9.1



EXTERIOR DUCT SUPPORT FRAMING

SCALE: 3/4" = 1'-0"

103 / S9.1



SEE STRUCTURAL NOTES FOR UNDERSLAB REQUIREMENTS

TYPICAL SLAB EDGE

SCALE: 1" = 1'-0"

100 / S9.1

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