

# ABBREVIATIONS

ABV ABOVE  
ACU AIR CONDITIONING UNIT  
A/C ABOVE CEILING  
AD ACCESS DOOR  
AFF ABOVE FINISHED FLOOR  
AFG ABOVE FINISHED GRADE  
AHU AIR HANDLING UNIT  
AP ACCESS PANEL  
AUX AUXILIARY  
AV AUTOMATIC AIR VENT

B/F BELOW FLOOR  
BFP BACKFLOW PREVENTER  
BTUH BRITISH THERMAL UNITS PER HOUR

C CONDENSATE DRAIN  
CFF CAP FOR FUTURE  
CFH CUBIC FEET PER HOUR  
CFM CUBIC FEET PER MINUTE  
C/L CENTERLINE  
CO CLEAN OUT  
CONC CONCRETE  
CONN CONNECTION  
CONT CONTINUED, CONTINUATION  
CV CONTROL VALVE  
CW COLD WATER

D DRAIN  
DF DRINKING FOUNTAIN  
DIA (Ø) DIAMETER  
DIM DIMENSION  
DN DOWN  
DWG DRAWING

EFF EFFICIENCY  
EL ELEVATION  
ELEC ELECTRIC  
ENT ENTERING  
EOM END OF MAIN DRIP  
EWH ELECTRIC WATER HEATER  
EWC ELECTRIC WATER COOLER  
EXIST EXISTING

F FIRE  
FA FRESH AIR  
FCO FLOOR CLEAN OUT  
FD FLOOR DRAIN  
FHV FIRE HOSE VALVE  
FIN FINISHED  
FL FLOOR  
FLEX FLEXIBLE  
FM FACTORY MUTUAL  
FP FIRE PUMP  
FPM FEET PER MINUTE  
FS FLOW SWITCH  
FT FEET  
FUT FUTURE  
FDC FIRE DEPT. CONNECTION  
FDV FIRE DEPT. VALVE

GCO GROUND CLEAN OUT  
GND GROUND  
GPM GALLONS PER MINUTE  
GV GATE VALVE

HB HOSE BIBB  
HORIZ HORIZONTAL  
HP HORSEPOWER  
HTG HEATING  
HW HOT WATER (DOMESTIC)  
HWR HOT WATER RETURN  
HWRP HOT WATER RETUR PUMP

IE INVERT ELEVATION  
IN INCHES  
ID INSIDE DIMENSION

KW KILOWATT

LAB LABORATORY  
LAV LAVATORY  
LB POUND  
LVG LEAVING

MBH THOUSANDS BTU/HR  
MECH MECHANICAL  
MS MOP SINK  
MV MIXING VALVE  
MUW MAKE-UP WATER

N/A NOT APPLICABLE  
NIC NOT IN CONTRACT  
NFWH NON-FREEZE WALL HYDRANT  
NPW NON-POTABLE/RE-USE WATER  
NTS NOT TO SCALE

OC ON CENTER  
OPP OPPOSED  
OS&Y OUTSIDE SCREW AND YOKE

P PUMP  
PD PRESSURE DROP  
PI PRESSURE INDICATOR  
PIV POST INDICATOR VALVE  
POC POINT OF CONNECTION  
PRESS PRESSURE  
PRV PRESSURE REGULATING VALVE  
PS PRESSURE SWITCH  
PSIG POUNDS PER SQUARE INCH GAUGE  
PVC POLYVINYL CHLORIDE

QTY QUANTITY  
RD ROOF DRAIN  
REF REFERENCE  
RM ROOM  
RL RAIN LEADER  
RTU ROOF TOP UNIT

SHT SHEET  
SQ FT SQUARE FOOT  
SS SERVICE SINK  
ST STORM  
STM STEAM

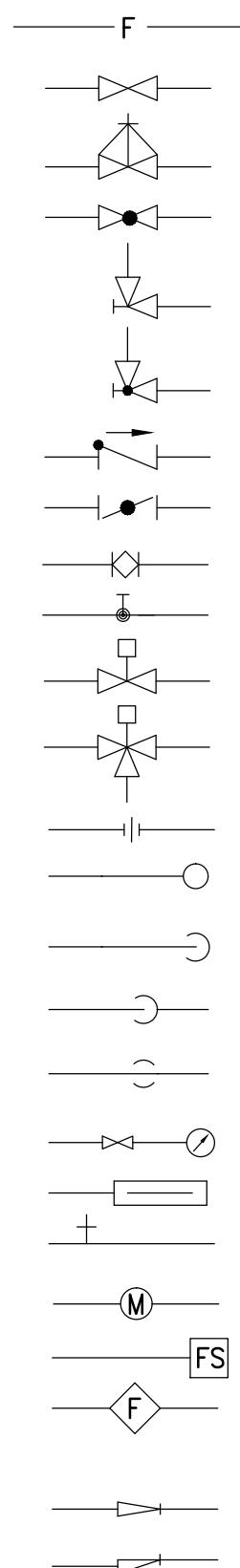
TEMP TEMPERATURE  
TK TANK  
TP TRAP PRIMER  
TYP TYPICAL  
TW TEMPERED WATER

U/G UNDER GROUND  
UR URINAL

V VENT  
VAC VACUUM  
VEL VELOCITY  
VERT VERTICAL  
VTR VENT THRU ROOF

W/ WITH  
WC WATER CLOSET  
WCO WALL CLEAN OUT  
WG WATER GAUGE  
WHA WATER HAMMER ARRESTER  
W/O WITHOUT  
WTR WATER

# PIPE AND FITTING SYSTEM



FIRE (F)  
GATE VALVE  
O.S.& Y. GAGE VALVE W/ TAMPER SWITCH  
GLOBE VALVE

ANGLE GATE VALVE

ANGLE GLOBE VALVE

SWING CHECK VALVE

BUTTERFLY VALVE

PLUG VALVE

BALL VALVE

TWO WAY CONTROL VALVE

THREE WAY CONTROL VALVE

UNION

ELBOW UP

ELBOW DN

RISE OR DROP

BRANCH CONNECTION DN

PRESSURE GAUGE W/TRY COCK

THERMOMETER

TEST PLUG

WATER METER

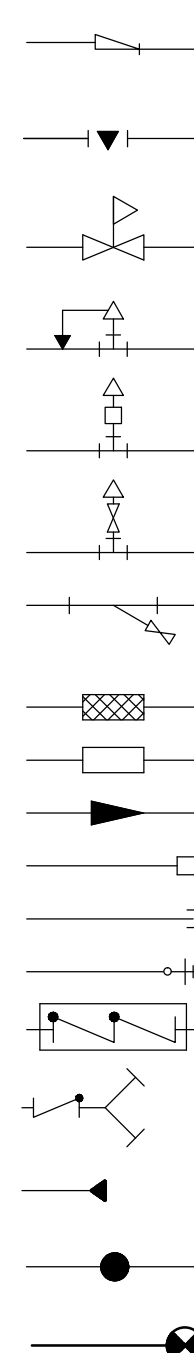
FLOW SWITCH

FLOW INDICATOR/SENSOR

REDUCER, CONCENTRIC

REDUCER, ECCENTRIC

STRAIGHT CROWN



REDUCER, ECCENTRIC  
STRAIGHT INVERT  
AUTO FLOW BALANCING VALVE

PRESSURE REDUCING VALVE

SAFETY OR RELIEF VALVE

AUTOMATIC AIR VENT VALVE

MANUAL AIR VENT VALVE

STRAINER, Y TYPE W/GATE

VALVE OR HOSE BIBB

FLEXIBLE CONNECTION

EXPANSION JOINT

FLOW DIRECTION

QUICK DISCONNECT

CAPPED END

WALL HYDRANT, HOSE BIBB W/VACUUM BREAKER

BACKFLOW PREVENTER

SIAMESE FIRE DEPARTMENT CONNECTION W/ CHECK VALVE

SIDEWALL SPRINKLER HEAD

EXISTING SPRINKLER HEAD TO REMAIN OR NEW SPRINKLER HEAD

POINT OF CONNECTION BETWEEN NEW AND EXISTING

NOTE:  
NOT ALL ABBREVIATIONS AND/OR  
SYMBOLS APPLY TO THIS PROJECT

# FIRE PROTECTION NOTES

- CONTRACTOR SHALL PROVIDE A COMPLETE HYDRAULICALLY DESIGNED MANUAL DRY STAND PIPE SYSTEM (S) FOR ALL AREAS OF THE PARKING GARAGE. COMPLETE SYSTEM SHALL BE DESIGNED, FURNISHED AND INSTALLED IN ACCORDANCE WITH FM, LOCAL CODE AUTHORITY AND NFPA 13, 14, 24. HYDRAULIC CALCULATIONS SHALL BE BASED ON NFPA REQUIREMENTS.
- PROVIDE AN ANGLE IRON SUPPORT AT THE RAMP AND LEVEL HOSE VALVES IN ACCORDANCE WITH NFPA DETAILS.
- CONTRACTOR SHALL PROVIDE PIPE HANGERS AND SUPPORTS IN ACCORDANCE WITH NFPA DETAILS AND FOR SEISMIC H-18-8 VA SEISMIC DESIGN REQUIREMENTS.
- CONTRACTOR SHALL PROVIDE AND LOCATE 2 1/2" FIRE DEPARTMENT CONNECTIONS A MIN. OF ONE FOOT AND A MAX. OF 3 FOOT ABOVE GRADE IN ACCORDANCE WITH CODE.
- CONTRACTOR SHALL PROVIDE AND LOCATE 2 1/2" FIRE HOSE VALVES AT EACH LEVEL IN EACH STARIWELL AND AT EACH MID LEVEL PARKING AREA AS SHOWN ON PLANS.
- CONTRACTOR SHALL PROVIDE FIRE HOSE VALVES AS SHOWN ON PLAN AND IN ACCORDANCE WITH NFPA.
- CONTRACTOR SHALL SLOPE ALL FIRE PROTECTION PIPING FOR PIPE FREEZE PROOF DRAIN DOWN VALVES AT EACH RISER.
- A SIGN SHALL BE PROVIDED AT ALL FDC VALVES THAT IDENTIFIES 175 PSI MAXIMUM PRESSURE.
- ALL FIRE PROTECTION SHALL BE INSTALLED BY A LICENSED F.A.C. CONTRACTOR.
- PROVIDE A PERMANENTLY ATTACHED NAME TAG STATING THE REQUIRED DESIGN CRITERIA FOR EACH HYDRAULICALLY DESIGNED SYSTEM.
- ADHERE TO AND OBTAIN ALL PERMITS, LICENSES AND ALL GOVERNMENT REQUIREMENTS.
- PROVIDE ALL OFFSETS OR FITTINGS REQUIRED FOR PROPER INSTALLATION, COORDINATION WITH OTHER TRADES, AND/OR TO MAINTAIN PROPER CLEARANCES AND SLOPE, VERIFY STRUCTURAL, MECHANICAL, ELECTRICAL INSTALLATIONS TO AVOID OBSTRUCTIONS OR INTERFERENCES WITH FIRE PROTECTION PIPE ROUTING.

FDC

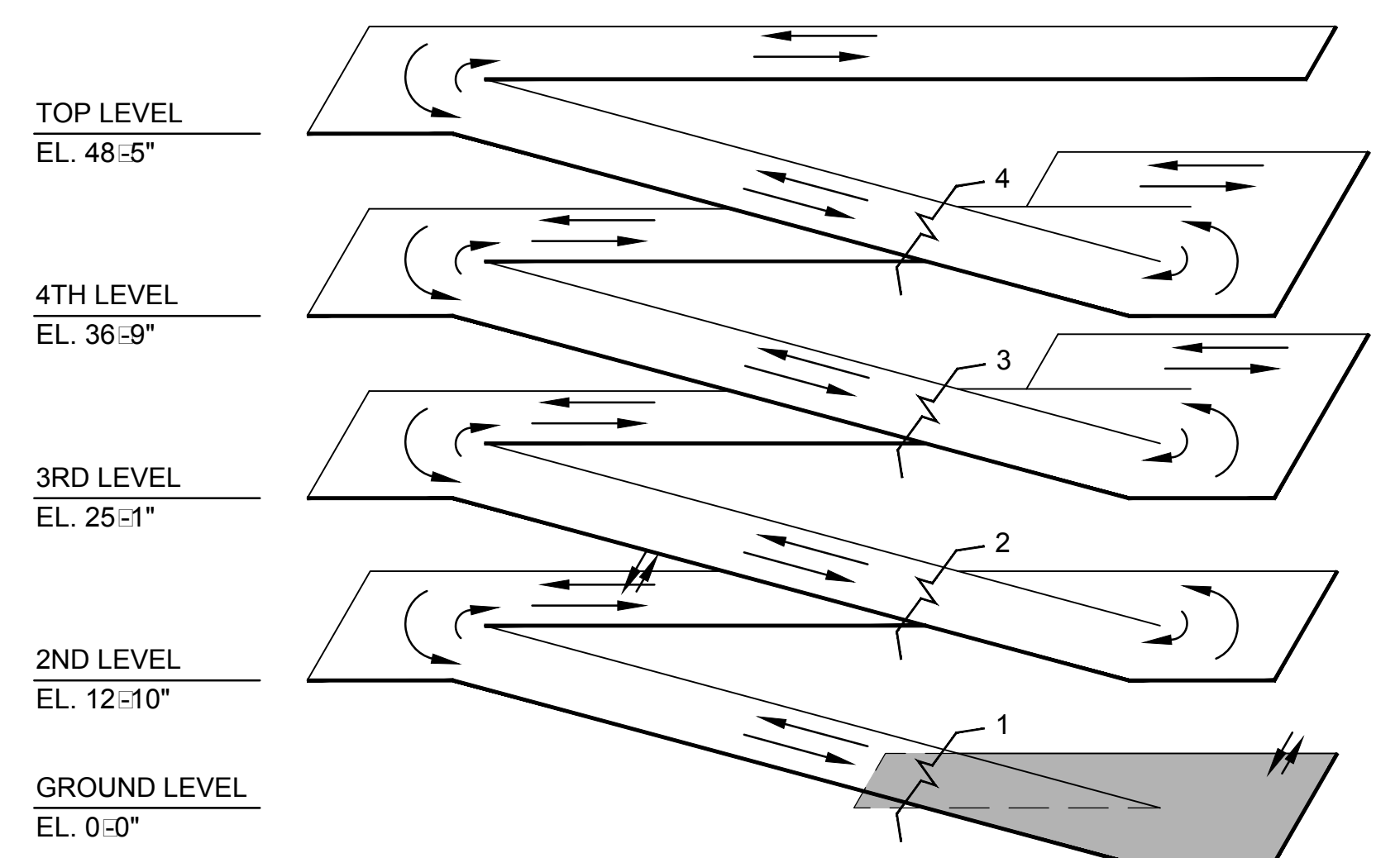
175 PSI  
MAXIMUM

PROVIDE FDC/MAXIMUM PRESSURE  
SIGNAGE IN ACCORDANCE WITH NFPA  
REQUIREMENTS

FINAL CONSTRUCTION DRAWINGS  
APPROVED FOR CONSTRUCTION

Dwg. File	ARCHITECT/ENGINEERS: <b>AKEA INC.</b> 3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017	Stephen T. Stoffe, PE Florida Reg. 70349  AKEA, INC. SEAL	CONSULTANTS: <b>WALKER</b> PARKING CONSULTANTS 4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5800 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com <b>FRANK DAUGHTRY</b> architect 200 E. Government Street Suite 240-A Pensacola, FL 32502 Voice 850-433-3023 Fax 850-433-3025 Email frank@frankda.com	Approved: Asst. Chief, Engineering Service Engineering Bldg. Maint. Foreman Engineering Operation Foreman Engineering Health & Safety Engineering Planning & Analysis C.O.T.R.	Drawing Title <b>LEGENDS SYMBOLS AND ABBREVIATIONS</b> Approved: Chief, Engineering Service Approved: Service Chief	Project Title <b>CONSTRUCT 525 SPACE PARKING GARAGE</b> CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254 Building Number 160 Checked STS Drawn CRR Location VAMC MOUNTAIN HOME, TENNESSEE	Date MARCH 26, 2015 Project No. 621-330 DRAWING NO. <b>F001</b> Page 98 of 131	Department of Veterans Affairs
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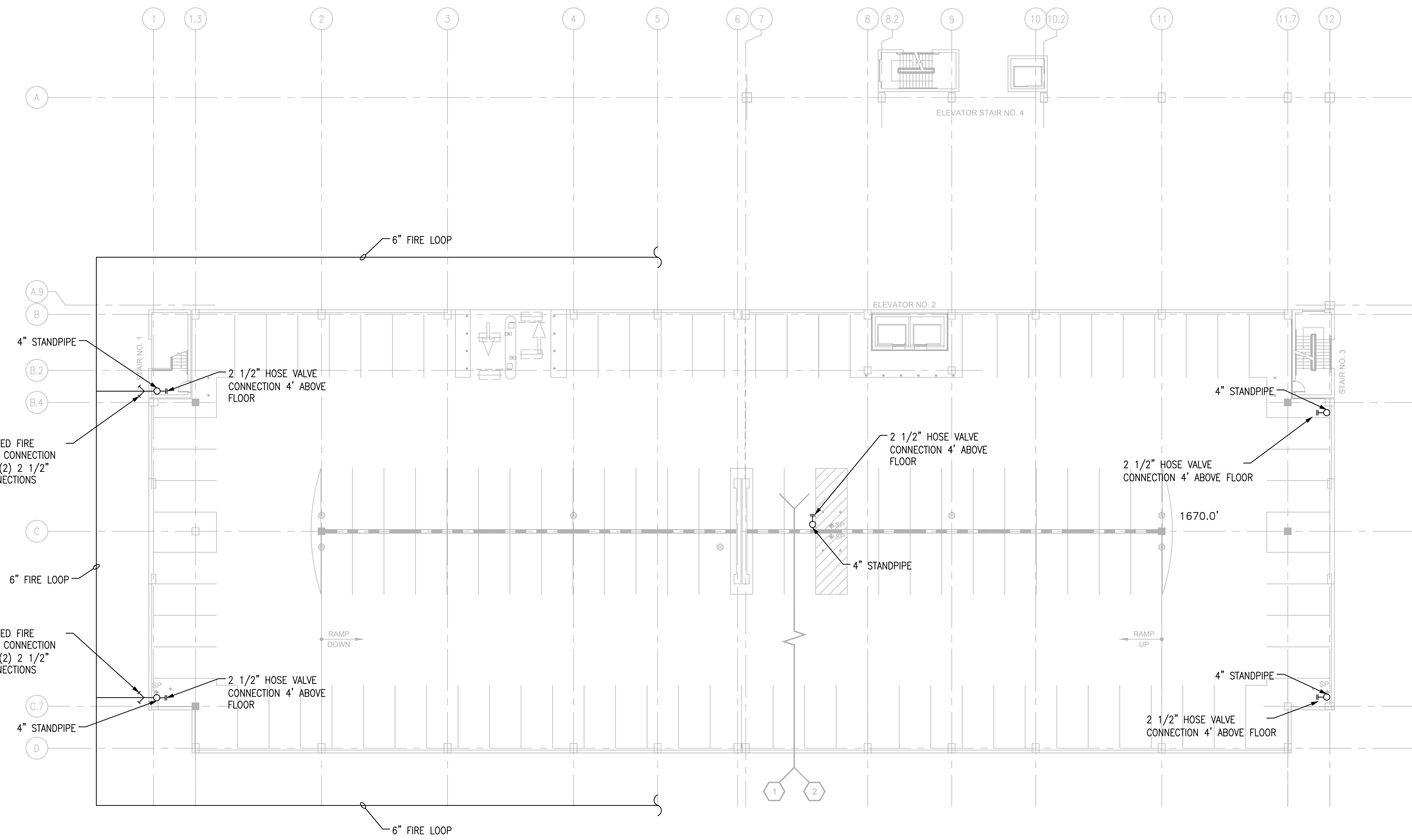


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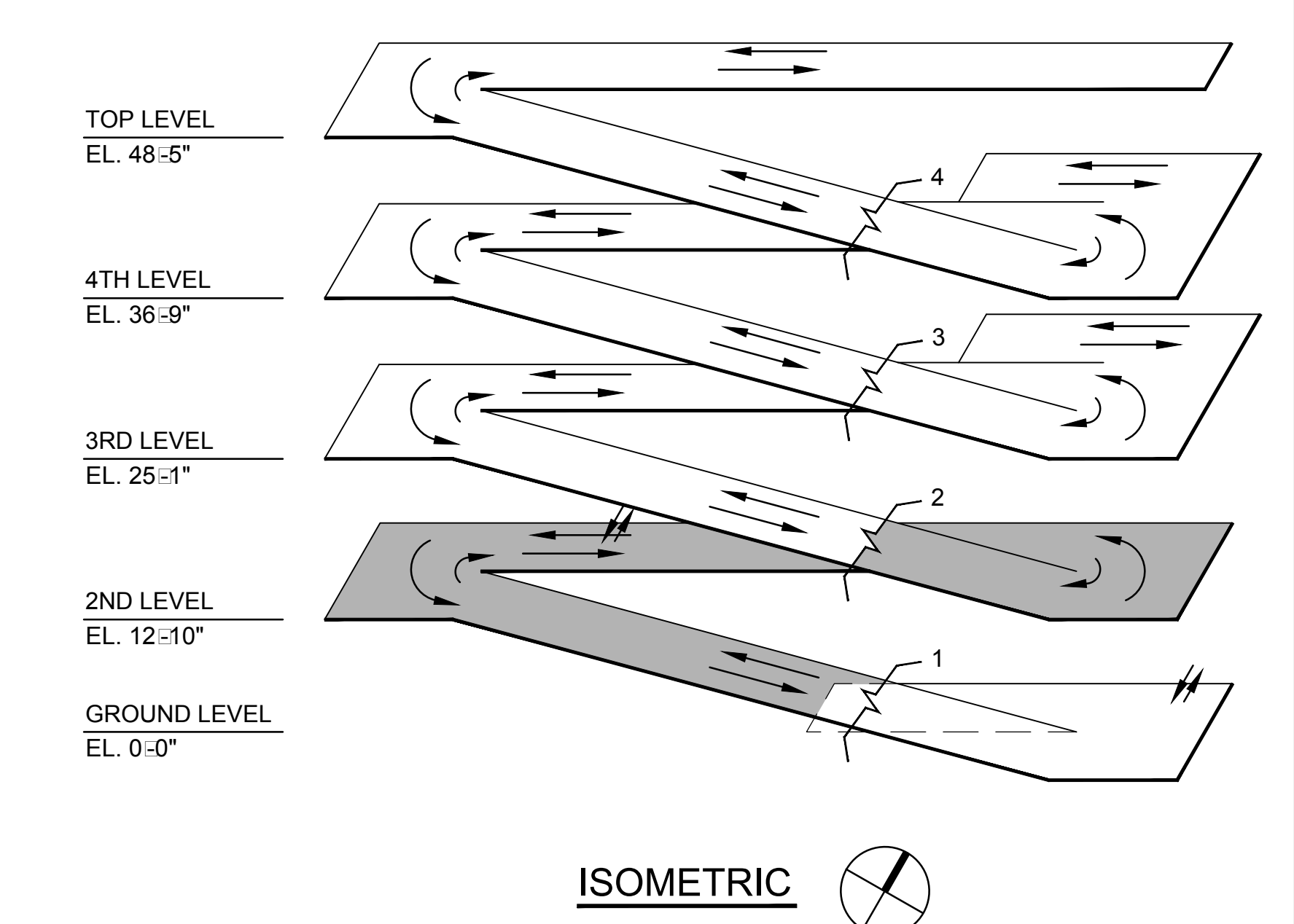
[illegible]

three inches = one foot  
one and one-half inches = one foot  
one inch = one foot  
three-quarters inch = one foot  
one-half inch = one foot  
three-eighths inch = one foot  
one-quarter inch = one foot  
one-eighth inch = one foot

1 2 3 4 5 6 7 8 9



**FIRE PROTECTION SYSTEMS PLAN - SECOND LEVEL**  
SCALE: 1/16" = 1'

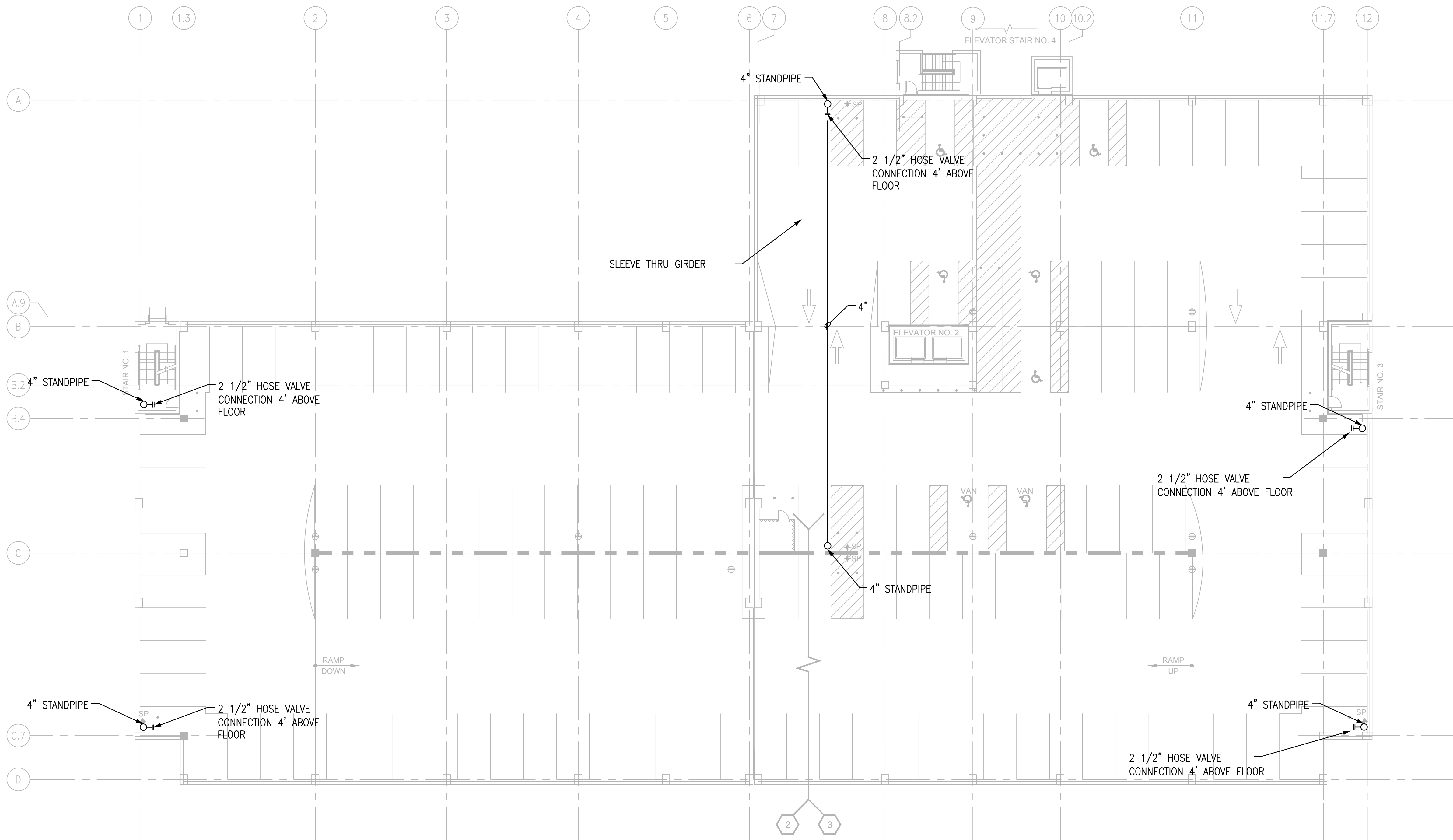


ISOMETRIC  
FINAL CONSTRUCTION DRAWINGS  
APPROVED FOR CONSTRUCTION

**SHEET NOTES**  
A. PROVIDE SEISMIC BRACING FOR ALL PIPING IN ACCORDANCE WITH NFPA FOR MOUNTAIN HOME, TENNESSEE.

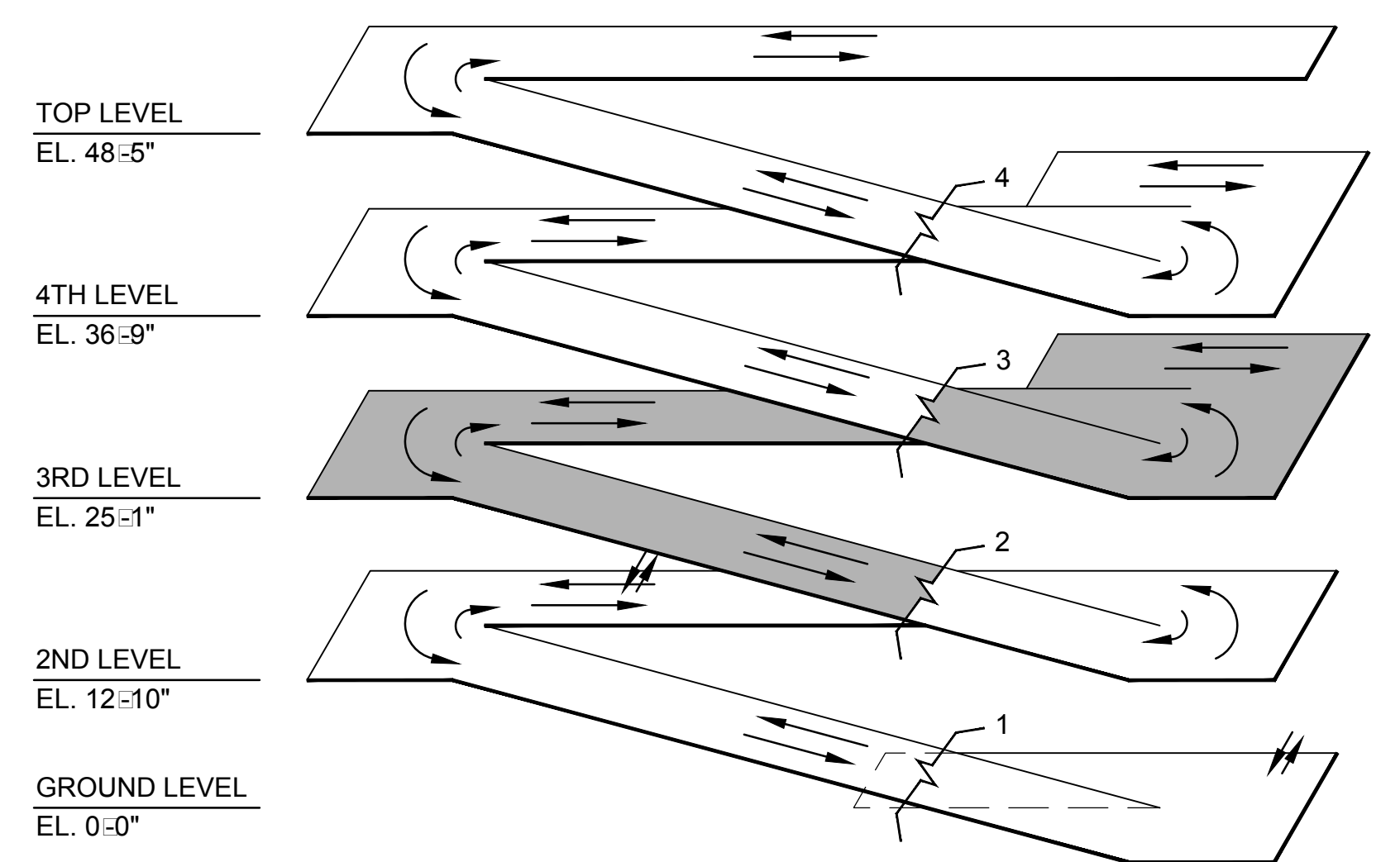
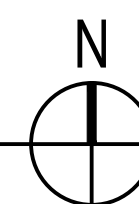
**SHEET KEYNOTES**  
NOT USED

<b>Dwg. File</b>		<b>ARCHITECT/ENGINEERS:</b>		Stephen T. Stelfs, PE Florida Reg. 70349		<b>CONSULTANTS:</b>		<b>Approved:</b>		<b>Drawing Title</b>		<b>Project Title</b>		<b>Date</b>	
		<b>AKEA INC.</b>				<b>WALKER PARKING CONSULTANTS</b>				<b>FIRE PROTECTION PLAN - SECOND LEVEL</b>		<b>CONSTRUCT 525 SPACE PARKING GARAGE</b>		<b>MARCH 26, 2015</b>	
		3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017				4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5800 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com						CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254		Project No. 621-330	
						<b>FRANK DAUGHTRY architect</b>						Building Number 160		Checked STS	
						200 E. Government Street Suite 240-A Pensacola, FL 32502 Voice 850-433-3023 Fax 850-433-3025 Email frank@frankda.com						Drawn CRR			
												Location VAMC MOUNTAIN HOME, TENNESSEE			
														<b>DRAWING NO. F201</b>	
														Page 100 of 131	



FIRE PROTECTION SYSTEMS PLAN - THIRD LEVEL

SCALE: 1/16" = 1'



ISOMETRIC

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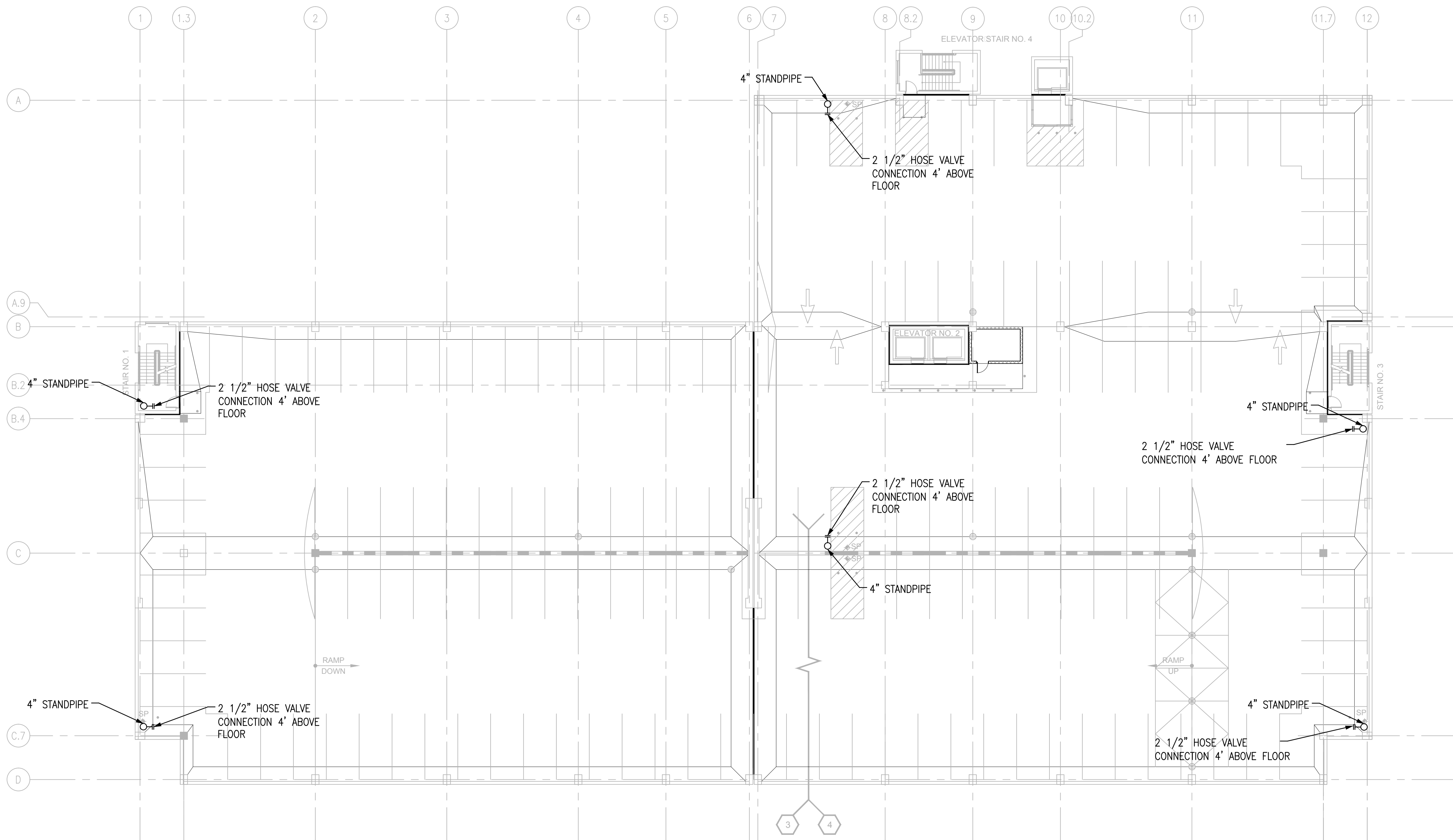
SHEET NOTES

A. PROVIDE SEISMIC BRACING FOR ALL PIPING IN ACCORDANCE WITH NFPA FOR MOUNTAIN HOME, TENNESSEE.

SHEET KEYNOTES

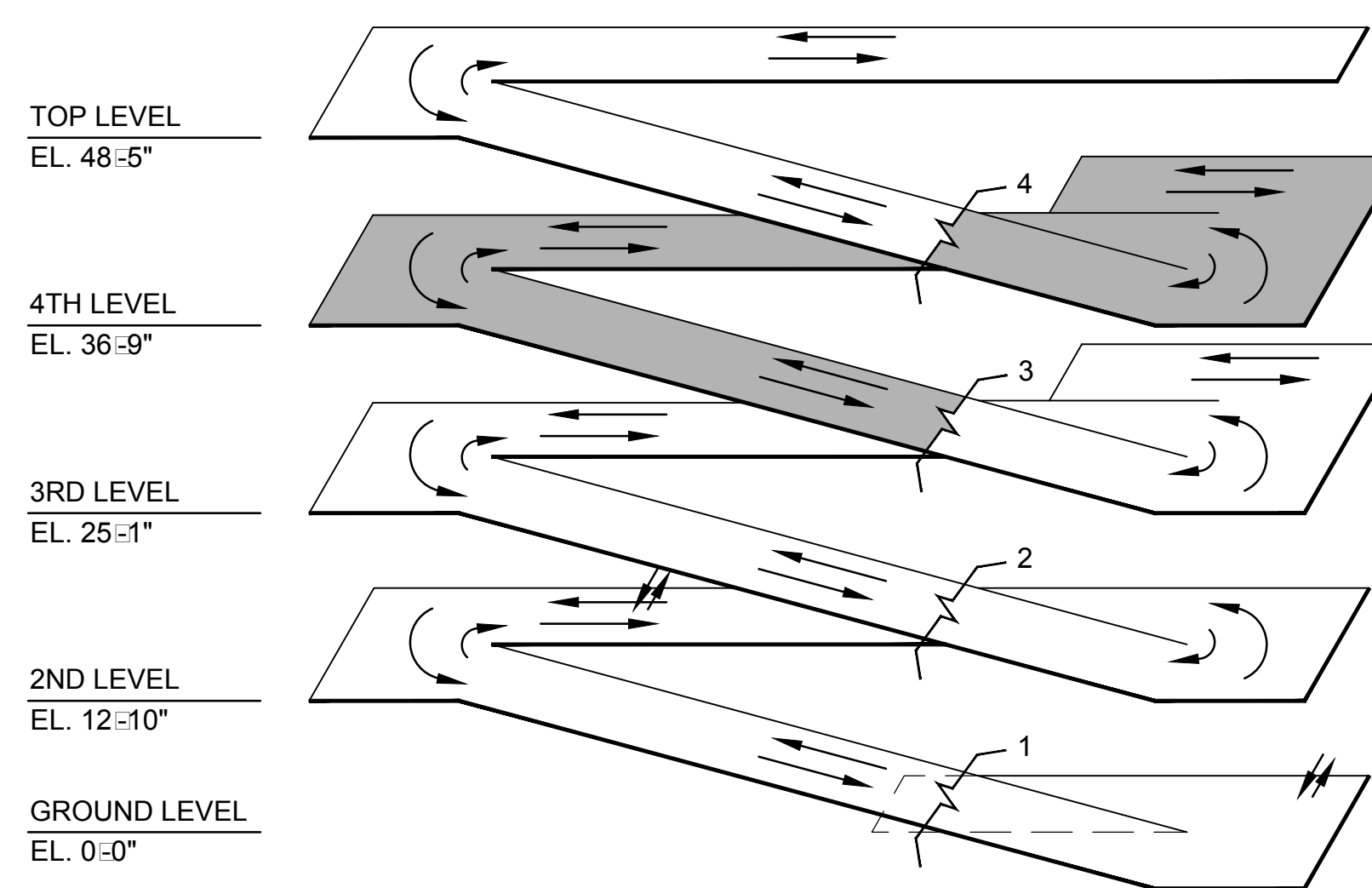
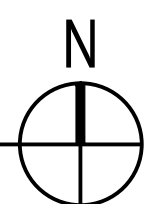
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	<b>AKEA INC.</b> 3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017	SEAL	<b>WALKER</b> PARKING CONSULTANTS 4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5800 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com	Asst. Chief, Engineering Service Engineering Bldg. Maint. Foreman Engineering Operation Foreman Engineering Health & Safety Engineering Planning & Analysis C.O.T.R.	<b>FIRE PROTECTION PLAN - THIRD LEVEL</b>	<b>CONSTRUCT 525 SPACE PARKING GARAGE</b> CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254	MARCH 26, 2015		
							Project No.		
							621-330		
Revisions							Date	DRAWING NO.	
						Building Number <b>160</b>	Checked STS	Drawn CRR	<b>F202</b>
						Location VAMC MOUNTAIN HOME, TENNESSEE			Page 101 of 131

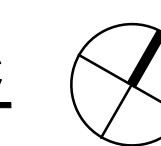


**FIRE PROTECTION SYSTEMS PLAN - FOURTH LEVEL**

SCALE: 1/16" = 1'



ISOMETRIC



FINAL CONSTRUCTION DRAWINGS  
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**SHEET NOTES**

A. PROVIDE SEISMIC BRACING FOR ALL PIPING IN ACCORDANCE WITH NFPA FOR MOUNTAIN HOME, TENNESSEE.

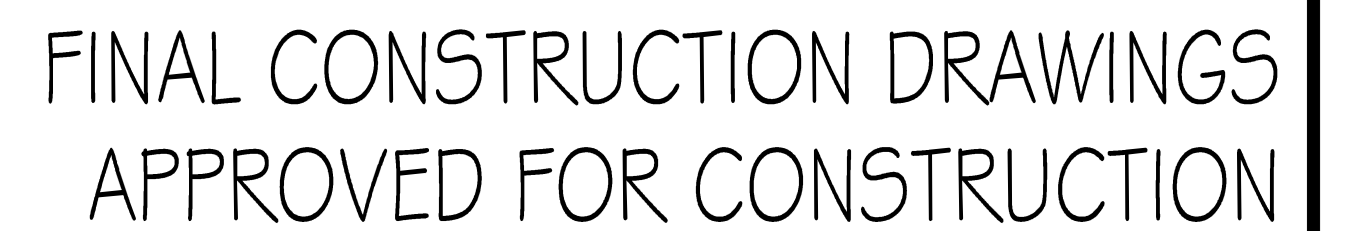
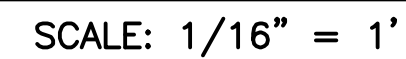
**SHEET KEYNOTES**

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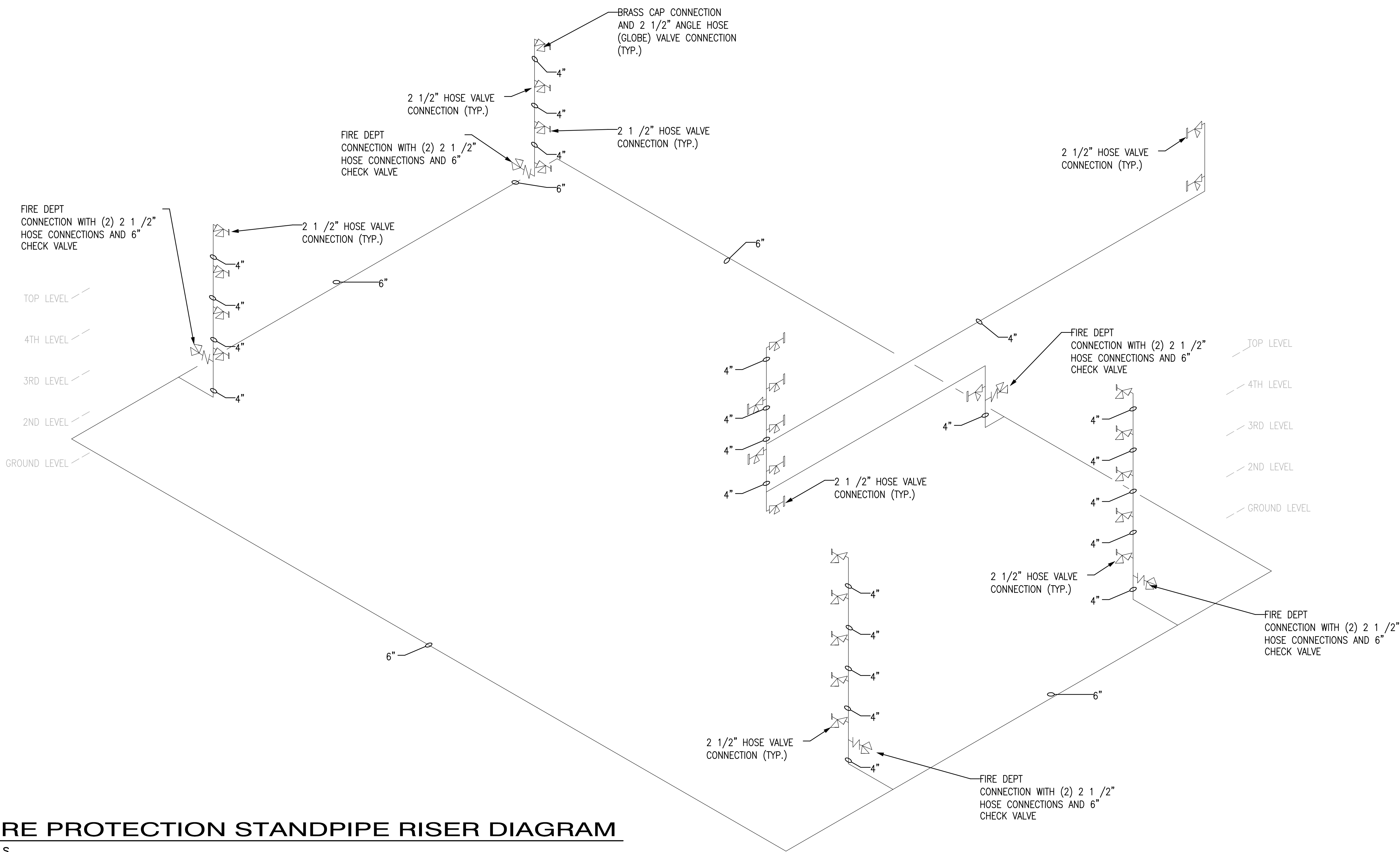
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							Project No.				
							621-330				
							DRAWING NO.				
							<b>F203</b>				
Revisions	Date	SEAL				Building Number <b>160</b>	Checked STS	Drawn CRR	Location VAMC MOUNTAIN HOME, TENNESSEE	Page 102 of 131	



## NOT USED



Veterans Affairs



**FIRE PROTECTION STANDPIPE RISER DIAGRAM**  
N.T.S.

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	<b>AKEA INC.</b> 3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017	SEAL	<b>WALKER</b> PARKING CONSULTANTS 4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5800 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com	Asst. Chief, Engineering Service Engineering Bldg. Maint. Foreman Engineering Operation Foreman Engineering Health & Safety Engineering Planning & Analysis C.O.T.R.	<b>FIRE PROTECTION RISER DIAGRAM</b>	<b>CONSTRUCT 525 SPACE PARKING GARAGE</b> CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254	MARCH 26, 2015			
							Project No.			
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							DRAWING NO.			
							<b>F205</b>			
Revisions	Date	AKEA, INC.				Building Number	Checked	Drawn	Location	Page 104 of 131
						160	STS	CRR	VAMC MOUNTAIN HOME, TENNESSEE	

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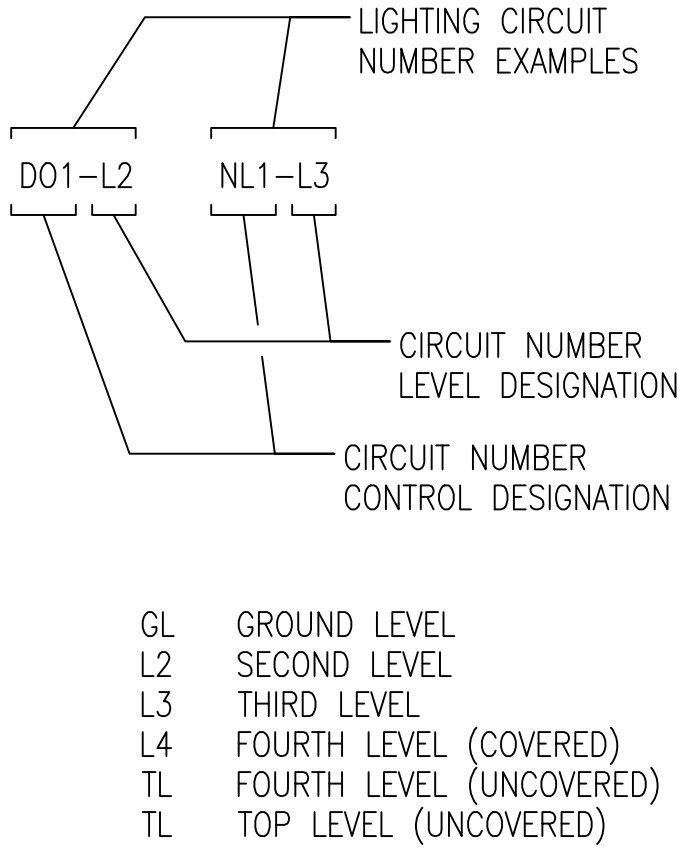
GENERAL ELECTRICAL NOTES

APPLICABLE TO ALL ELECTRICAL SHEETS

- REFER TO SHEET G002 FOR BID ALTERNATE DESCRIPTIONS.
- ALL WORK SHALL COMPLY WITH NEC, NFPA, AND ALL APPLICABLE FEDERAL CODES.
- ALL RECEPTACLES SHALL HAVE THE NEMA 5-20R CONFIGURATION, UNO. EACH RECEPTACLE SHALL BE CAPABLE OF ACCEPTING 15A AND 20A PLUGS. ALL RECEPTACLES SHALL BE GFI TYPE, U.N.O. ALL RECEPTACLES NOT LOCATED IN ENCLOSED ROOMS SHALL HAVE WEATHERPROOF IN-USE COVERS.
- CONDUCTORS FOR ALL LIGHTING CIRCUITS SHALL BE CU #10 AWG MIN.
- ALL ABOVEGROUND RACEWAY EXPOSED TO NON-CONDITIONED AIR (i.e. PARKING AREAS, STAIR TOWERS, AND NON-CONDITIONED SPACES) SHALL BE IMC OR RMC, NOT EMT. USE OF EMT SHALL BE PERMITTED ONLY IN CONDITIONED ROOMS, SUCH AS THE MECHANICAL ROOM, ELECTRICAL ROOM, ELEVATOR CONTROL ROOM, AND CONDITIONED LOBBIES.
- ALL BRANCH CIRCUITS SHALL BE RUN WITH DEDICATED NEUTRALS: NO SHARED NEUTRALS.
- COORDINATE BLOCKOUTS AND PROVISION FOR CONDUITS W/ PRECASTER. SEE SHEET E401. HORIZONTAL CONDUITS SHALL BE ROUTED THROUGH BLOCKOUTS IN TEES AND BEAMS. CONDUIT SHALL NOT BE ROUTED UNDER TEES OR BEAMS.
- EACH FACEPLATE FOR RECEPTACLES AND LIGHT SWITCHES SHALL BE LABELED WITH SOURCE PANEL AND CIRCUIT NUMBER.
- SEE SPECIFICATIONS AND DETAILS ON SHEET E502 FOR ALL CONDUITS CROSSING EXPANSION JOINTS. CONDUITS SHALL NOT BE ROUTED THROUGH EXPANSION JOINTS; THIS INCLUDES BUT IS NOT LIMITED TO VERTICAL RISERS NEAR STAIRS, ELEVATORS, AND SHEER WALLS.
- ALL UNDERGROUND ELBOWS AND SWEEPS (BOTH VERTICAL AND HORIZONTAL) SHALL BE PVC-COATED RGS. PVC ONLY ELBOWS AND SWEEPS ARE NOT ALLOWED.
- WP BOXES SHALL NOT BE ENTERED THROUGH THE TOP - NO EXCEPTIONS WILL BE ACCEPTED.
- PROVIDE PHENOLIC NAMEPLATES FOR ALL ELECTRICAL EQUIPMENT AND CABINETS. SEE DETAIL AND REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS REGARDING EQUIPMENT AND DEVICE LABELING.
- PERMANENTLY LABEL ALL JUNCTION BOXES WITH CIRCUIT NUMBERS OF THE ENCLOSED CONDUCTORS. JUNCTION BOXES FOR FUTURE USE SHALL BE LABELED WITH THE NAME OF THE EQUIPMENT THE ATTACHED RACEWAY EXTENDS TO (i.e. "LCP" OR "PNL ELA"). JUNCTION BOXES FOR CONTROL CONDUCTORS ONLY SHALL INDICATE SOURCE (i.e. ATS-ELVDP) AND DESTINATION (i.e. ELEVATOR CONTROL ROOM).
- PROVIDE APPROVED STEEL GUARDS AROUND JUNCTION BOXES, CONDUITS, AND OTHER EQUIPMENT EXPOSED TO POSSIBLE BUMPER DAMAGE. SEE DETAIL 6 SHEET E401 FOR CONDUIT RISER GUARDS.
- REGARDLESS OF BID ALTERNATE SELECTED, CONTRACTOR SHALL INCLUDE ALL RACEWAY INFRASTRUCTURE NECESSARY FOR FUTURE LEVELS TO BE COMPLETED WITHOUT THE NEED FOR FUTURE ADDITIONAL RACEWAY AT LOWER LEVELS. CONDUIT FOR FUTURE USE SHALL BE INSTALLED TO AND CAPPED AT THE HIGHEST COVERED LEVEL.
- EQUIPMENT SHALL BE ANCHORED AND BRACED FOR SEISMIC ACTIVITY PER SPECS AND STRUCTURAL DRAWINGS. THIS INCLUDES, BUT IS NOT LIMITED TO, LIGHTING, PANELBOARDS, TRANSFORMERS, AUTOMATIC TRANSFER SWITCHES, AND CONDUITS.
- PROVIDE ALL SPARE OR EMPTY CONDUITS WITH PULLSTRINGS FOR FUTURE USE. ALSO PROVIDE TEMPORARY CAPS TO PREVENT ACCUMULATION OF DEBRIS.
- EXCESS CABLING OR SERVICE LOOPS SHALL BE PROVIDED IN EACH PULLBOX AND MANHOLE.

LIGHTING

- EXTERIOR POLE MOUNTED LIGHT FIXTURE ASSEMBLY, NUMBER OF HEADS AS INDICATED ON DRAWINGS
- GARAGE LIGHT FIXTURE
- GARAGE LIGHT FIXTURE, ALWAYS ON, CONNECTED TO EMERGENCY CIRCUIT
- 4" FLUORESCENT LIGHT FIXTURE, SURFACE MTD
- 4" FLUORESCENT LIGHT FIXTURE, CONNECTED TO EMERGENCY CIRCUIT
- 4" FLUORESCENT STRIP FIXTURE,
- LINEAR FLUORESCENT LIGHT FIXTURE, WALL MTD.
- WALL MOUNTED LIGHT FIXTURE
- LED EXIT SIGN, SINGLE-FACE, DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS
- LED EXIT SIGN, DOUBLE-FACE, DIRECTIONAL ARROWS AS INDICATED ON DRAWINGS
- PHOTOCELL
- OCCUPANCY SENSOR AND RELAY, INFRARED/ULTRASONIC DUAL TECHNOLOGY, UNO CEILING OR WALL MTD.
- TOGGLE SWITCH
- TOGGLE SWITCH, 3-WAY
- TOGGLE SWITCH, 4-WAY



SYMBOLS

POWER

- PANELBOARD, DOOR-IN-DOOR COVER, SURFACE MTD.
- ENCLOSURE OR EQUIPMENT CABINET
- TRANSFORMER
- DISCONNECT SWITCH
- MOTOR STARTER
- MOTOR
- TOGGLE SWITCH, MOTOR RATED
- DUPLEX RECEPTACLE, GFI TYPE, MTD. +18", UNO
- DUPLEX RECEPTACLE, GFI TYPE, WEATHERPROOF, MTD. +18", UNO
- DUPLEX RECEPTACLE, GFI TYPE, CEILING MTD.
- QUADPLEX RECEPTACLE, MTD. +18" UNO
- CEILING MOUNTED JUNCTION BOX
- WALL MOUNTED JUNCTION BOX
- JUNCTION BOX FOR CONNECTION TO AUTOMATIC DOOR OPERATOR
- JUNCTION BOX FOR CONNECTION TO AUTOMATIC DOOR OPERATOR PUSH BUTTON, MTD. +48" UNO
- WP JUNCTION BOX TO CONNECT CIRCUIT CONDUCTORS TO HEAT TRACE CABLE. HEAT TRACE CABLE AND THERMOSTAT SHALL BE SUBMITTED UNDER DIVISION 22. BASIS OF DESIGN FOR CIRCUIT SIZING: 5-WATTS/FOOT MAXIMUM, SELF-REGULATING CABLE WITH THERMOSTAT SET TO TURN ON AT AN OUTSIDE TEMPERATURE NOT LESS THAN 40°F, MAXIMUM HEAT TRACE CABLE LENGTH PER 20A CIRCUIT SHALL BE 200'. PROVIDE LABEL ON BOX COVER INDICATING CIRCUIT NUMBER AND "HEAT TRACE CABLE". ACCESSORIES FOR CONNECTION SHALL BE PROVIDED SUCH THAT ALL HEAT TRACE CABLE IS CONCEALED UNDER THE INSULATION OR WITHIN THE JUNCTION BOX (EXPOSED HEAT TRACE CABLE IS NOT PERMITTED). HEAT TRACE CABLE CIRCUITS SHALL BE FED FROM GFI-TYPE CIRCUIT BREAKERS WITH (2)#10, (1)#10G IN 3/4" MIN. CONDUCTORS.
- THERMOSTAT SWITCH FOR HEAT TRACE CIRCUIT CONTROL. SEE SPECS. PROVIDE LOCKED ENCLOSURE TO PROHIBIT ADJUSTABLE SETTING CHANGES EXCEPT BY VA FACILITIES PERSONNEL.
- LIGHTNING PROTECTION AIR TERMINAL
- LIGHTNING PROTECTION CONDUCTOR
- DRIVEN GROUND ROD
- MECHANICAL OR EXOTHERMIC BOND AS NOTED
- CONDUIT CONCEALED IN WALL OR CLG.
- CONDUIT UNDER FLOOR
- FLEXIBLE METAL CONDUIT CONNECTION
- HOMERUN TO PNL WITH (2) #12, #12G IN 3/4", UNO.

SINGLE LINE DIAGRAMS

- TRANSFORMER
- CIRCUIT BREAKER
- FUSE
- SWITCH
- TERMINALS
- CONTACT (NORMALLY OPEN)
- CONTACT (NORMALLY CLOSED)
- OVERLOAD RELAY
- PILOT LIGHT
- GROUND
- DENOTES SCOPE OF DEMOLITION ON RISER

SYSTEMS

- TELEPHONE OUTLET, MTD. +48", UNO
- DATA/TELEPHONE OUTLET, MTD. +48", UNO
- EMERGENCY TELEPHONE OUTLET, MTD. +48", UNO
- JUNCTION BOX FOR FUTURE SECURITY CAMERA, MTD. AT +9'-0" AFF, UNO
- FIRE ALARM PULL STATION, MTD. +48", UNO
- FIRE ALARM HEAT DETECTOR, CEILING MTD., UNO
- FIRE ALARM SMOKE DETECTOR, CEILING MTD., UNO
- FIRE ALARM HORN/STROBE
- FIRE ALARM STROBE
- FIRE ALARM END-OF-LINE RESISTOR
- BREAK LINE OR CONTINUATION

SHEET SYMBOLS

- SHEET KEYNOTE SYMBOL, SEE RIGHT BORDER FOR TEXT
- DETAIL NUMBER SHEET NUMBER WHERE DETAIL CAN BE FOUND

ABBREVIATIONS

- |        |                                     |
|--------|-------------------------------------|
| A      | AMPERE                              |
| AFC    | AVAILABLE FAULT CURRENT             |
| AFF    | ABOVE FINISHED FLOOR                |
| ATS    | AUTOMATIC TRANSFER SWITCH           |
| AWG    | AMERICAN WIRE GAUGE                 |
| BKR    | BREAKER                             |
| BR     | BRANCH                              |
| C      | CONDUIT                             |
| CFL    | COMPACT FLUORESCENT                 |
| CKT    | CIRCUIT                             |
| CLG    | CEILING                             |
| COORD  | COORDINATE                          |
| CPT    | CONTROL POWER TRANSFORMER           |
| CR     | CONTROL RELAY                       |
| CRI    | COLOR RENDITION INDEX               |
| CU     | COPPER                              |
| DISC   | DISCONNECT                          |
| DGR    | DRIVEN GROUND ROD                   |
| EBJ    | EQUIPMENT BONDING JUMPER            |
| EF     | EXHAUST FAN                         |
| EGC    | EQUIPMENT GROUNDING CONDUCTOR       |
| EM     | EMERGENCY                           |
| ENCL   | ENCLOSURE, ENCLOSED                 |
| ETR    | EXISTING TO REMAIN                  |
| EXIST  | EXISTING                            |
| EXP JT | EXPANSION JOINT                     |
| FACP   | FIRE ALARM CONTROL PANEL            |
| FLUOR  | FLUORESCENT                         |
| FO     | FIBER OPTIC                         |
| FR     | FIRE RESISTANT                      |
| FTR    | FUTURE                              |
| G, GND | GROUND                              |
| GBB    | GROUND BUS BAR                      |
| GEC    | GROUNDING ELECTRODE CONDUCTOR       |
| GFI    | GROUND FAULT INTERRUPT              |
| GSB    | GYPSPUM WALL BOARD                  |
| HD     | HEAVY DUTY                          |
| HOA    | HAND-OFF-AUTO                       |
| HOR    | HAND-OFF-REMOTE                     |
| JB     | JUNCTION BOX                        |
| K      | KELVIN                              |
| KVA    | KILO-VOLT AMPERE                    |
| KW     | KILO-WATT                           |
| LED    | LIGHT EMITTING DIODE                |
| LS     | LIFE SAFETY                         |
| LTFMC  | LIQUID TIGHT FLEXIBLE METAL CONDUIT |
| MBJ    | MAIN BONDING JUMPER                 |
| MCB    | MAIN CIRCUIT BREAKER                |
| MIN    | MINIMUM                             |
| MLO    | MAIN LUGS ONLY                      |
| MTD    | MOUNTED                             |
| MV     | MEDIUM VOLTAGE                      |
| N      | NEUTRAL                             |
| NEC    | NATIONAL ELECTRICAL CODE            |
| NF     | NON-FUSED                           |
| NTS    | NOT TO SCALE                        |
| OEM    | ORIGINAL EQUIPMENT MANUFACTURER     |
| OL     | OVERLOAD                            |
| P      | POLE                                |
| PB     | PULL BOX                            |
| P/C    | PRECAST                             |
| PH, Ø  | PHASE                               |
| PNL    | PANEL                               |
| PRI    | PRIMARY                             |
| RC     | REMOTE CONTROL                      |
| REF    | REFRIGERATOR                        |
| RGS    | RIGID GALVANIZED STEEL              |
| SBJ    | SYSTEM BONDING JUMPER               |
| SEC    | SECONDARY                           |
| SHT    | SHEET                               |
| SW     | SWITCH                              |
| TFA    | TO FLOOR ABOVE                      |
| TFB    | TO FLOOR BELOW                      |
| THD    | TOTAL HARMONIC DISTORTION           |
| TLA    | TO LANDING ABOVE                    |
| TLB    | TO LANDING BELOW                    |
| TVSS   | TRANSIENT VOLTAGE SURGE SUPPRESSOR  |
| TYP    | TYPICAL                             |
| UG     | UNDERGROUND                         |
| UNO    | UNLESS NOTED OTHERWISE              |
| UPS    | UNINTERRUPTIBLE POWER SUPPLY        |
| V      | VOLT                                |
| VA     | VOLT-AMPERE                         |
| VAC    | VOLTS ALTERNATING CURRENT           |
| W      | WIRE OR WATT                        |
| W/     | WITH                                |
| WP     | WEATHERPROOF                        |
| XFMR   | TRANSFORMER                         |

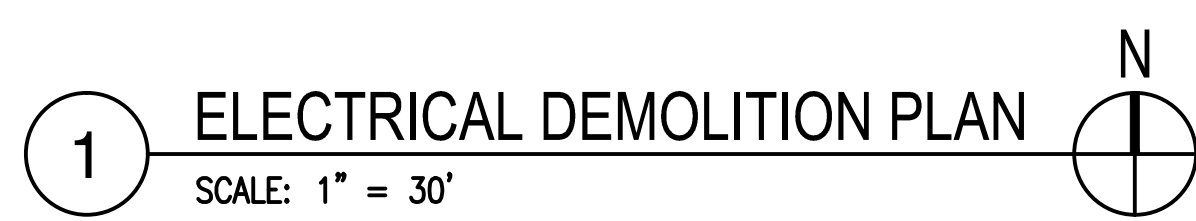
FINAL CONSTRUCTION DRAWINGS  
APPROVED FOR CONSTRUCTION

Dwg. File	ARCHITECT/ENGINEERS:	Chad J. Frelick, PE Florida Reg. 73811	CONSULTANTS:	Approved:	Drawing Title	Project Title	Date
	<b>AKEA INC.</b>		<b>WALKER</b> PARKING CONSULTANTS 4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5900 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com	Asst. Chief, Engineering Service Engineering Bldg. Maint. Foreman Engineering Operation Foreman Engineering Health & Safety Engineering Planning & Analysis C.O.T.R.	<b>ELECTRICAL ABBREVIATIONS, SYMBOLS AND GENERAL NOTES</b>	<b>CONSTRUCT 525 SPACE PARKING GARAGE</b>	MARCH 26, 2015
	3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017		<b>FRANK DAUCHTRY architect</b> 200 E. Government Street Suite 240-A Pensacola, FL 32502 Voice 850-433-3023 Fax 850-433-3025 Email frank@frankda.com			CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254	Project No. 621-330
(1) CTP REVIEW - REPLACEMENT PAGE Revisions	04/14/15 Date	AKEA, INC. SEAL			Approved: Chief, Engineering Service Approved: Service Chief	Building Number 160 Checked CJF Drawn KLL Location VAMC MOUNTAIN HOME, TENNESSEE	DRAWING NO. <b>E001</b> Page 105 of 131



REMOVE EXISTING UNDERGROUND  
PULLBOX, LIGHT FIXTURE, LAMP, LIGHT  
POLE, AND HANDHOLE AT BOTTOM OF  
POLE; DELIVER ITEMS TO VA UNDAMAGED  
(COORDINATE WITH COR). CONCRETE BASE  
AND UNUSED CONDUIT SHALL BE  
REMOVED AND DISPOSED OF. ENSURE  
DOWNSTREAM EXISTING-TO-REMAIN LIGHTS  
REMAIN OPERATIONAL.

EXACT SERVICE FEEDERS FOR EXISTING POLE MOUNTED LIGHTING IS NOT KNOWN. CONTRACTOR SHALL INCLUDE IN THE BID A REASONABLE ASSUMPTION FOR DEMOLITION OF CIRCUITRY FOR TO-BE-REMOVED LIGHT FIXTURES, BUT SHALL ENSURE THAT ANY DOWNSTREAM EXISTING-TO-REMAIN (ETR) FIXTURES ARE RE-CIRCUITED. INACCESSIBLE SPLICES ARE NOT PERMITTED.



VA FORM 08-6231, DEC 1989									
1	2	3	4	5	6	7	8	9	



## SHEET NOTES

- A. REFER TO SHEET E001 FOR ADDITIONAL GENERAL NOTES.
- B. CONTRACTOR SHALL VERIFY EXIST. UNDERGROUND UTILITIES AND STRUCTURES (SUCH AS FUEL STORAGE TANKS, STORM WATER LINES, ETC.)
- C. ENCASE POWER AND SYSTEMS RACEWAY IN CONCRETE FOR ALL AREAS NOT UNDER GARAGE. SEE DETAIL THIS SHEET. PROVIDE 24" MIN. SEPARATION BETWEEN SYSTEMS AND POWER DUCT BANKS.

## SHEET KEYNOTES

1. CUT AND PATCH EXISTING PARKING AND ROADWAY AREAS TO INSTALL NEW RACEWAY. SEE CIVIL PLANS FOR REPAIR DETAIL.
2. THIS AREA HAS A HIGH CONCENTRATION OF UNDERGROUND UTILITIES, INCLUDING: MV ELECT., LV ELECT., TELECOM, CHILLED WATER, STORM WATER, SANITARY AND DOMESTIC WATER. EXTREME CARE SHALL BE TAKEN TO LOCATE UNDERGROUND LINES PRIOR TO DIGGING.
3. FOR SYSTEMS (BETWEEN GARAGE AND BLDG 160), PROVIDE:
- (1) 2"C. - DATA  
(1) 2"C. - FIRE ALARM  
(1) 2"C. - TELEPHONE  
(3) 2"C. - SPARES
4. FOR POWER FEEDERS, PROVIDE:
- (2) 3"C. - NORMAL POWER  
(1) 3"C. - EMERGENCY POWER  
(2) 3"C. - SPARES  
(1) 1-1/2"C. - ATS CONTROL
5. COORDINATE UG CONDUIT RUNS WITH STRUCTURAL COMPONENTS. SEE SHEET E210.
6. FOR POWER RACEWAY BETWEEN UG PB AT BLDG 160 AND BLDG 160 ELEC. ROOM:
- (2) 3"C. - NORMAL POWER  
(1) 3"C. - SPARE
7. FOR POWER RACEWAY BETWEEN UG PB AT BLDG 160 AND BLDG 161 GENERATOR ROOM:
- (1) 3"C. - EMERGENCY POWER  
(1) 3"C. - SPARE  
(1) 1-1/2"C. - ATS CONTROL
8. FOR SYSTEMS RACEWAY TO BLDG 160 ELEC. ROOM:
- (1) 2"C. - FIRE ALARM  
(1) 2"C. - SPARE
9. FOR SYSTEMS RACEWAY TO BLDG 160 TELECOM ROOM:
- (1) 2"C. - DATA  
(1) 2"C. - TELEPHONE  
(2) 2"C. - SPARE
10. PROVIDE CABLING IN EXIST. UG RACEWAY.

## KEY PLAN

NOT TO SCALE

FINAL CONSTRUCTION DRAWINGS  
APPROVED FOR CONSTRUCTION

Department of Veterans Affairs

Date MARCH 26, 2015

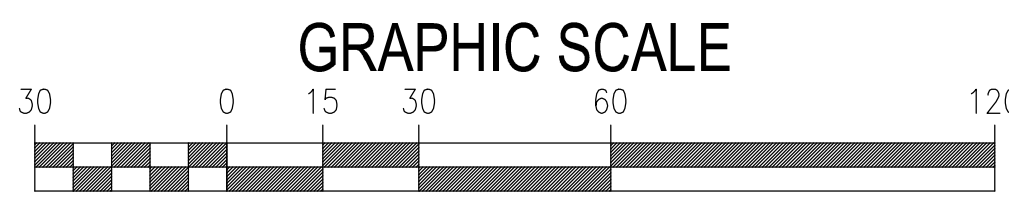
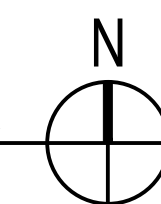
Project No. 621-330

DRAWING NO. E101

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1 ELECTRICAL SITE PLAN - NEW WORK  
SCALE: 1" = 30'



## ARCHITECT/ENGINEERS:

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EXPIRES: 02/28/2017

Chad J. Frolick, PE  
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SEAL

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## Approved:

Asst. Chief, Engineering Service  
Engineering Bldg. Maint. Foreman  
Engineering Operation Foreman  
Engineering Health & Safety  
Engineering Planning & Analysis  
C.O.T.R.

Drawing Title

ELECTRICAL SITE PLAN -  
NEW WORK

Approved: Chief, Engineering Service

10

Approved: Service Chief

Project Title

CONSTRUCT 525 SPACE  
PARKING GARAGE

CONTRACT No. VA249-14-C-0150

P.O. No. 621C40254

Building Number

160

Checked

CJF

Drawn

KLL

Location

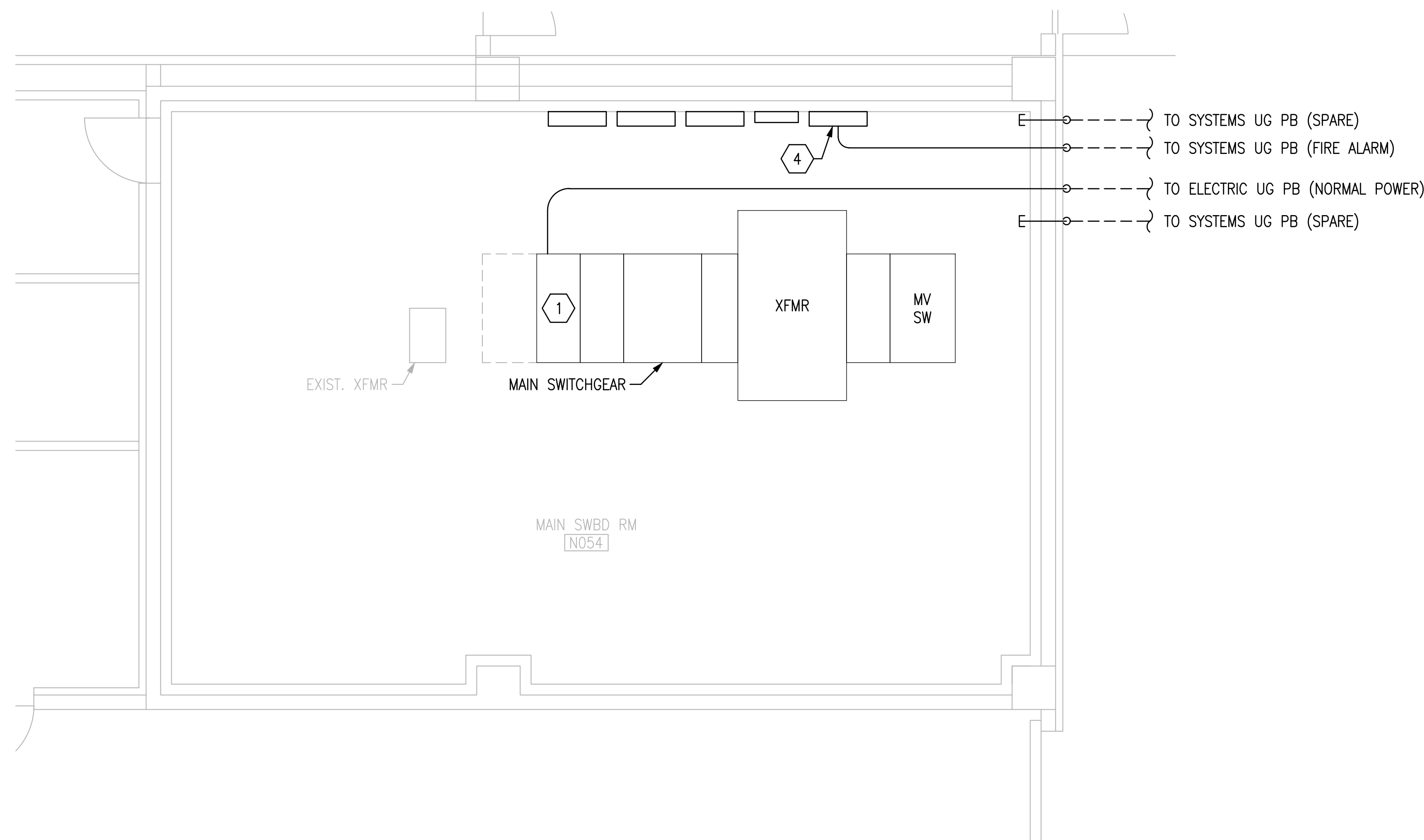
VAMC MOUNTAIN HOME, TENNESSEE

## SHEET NOTES

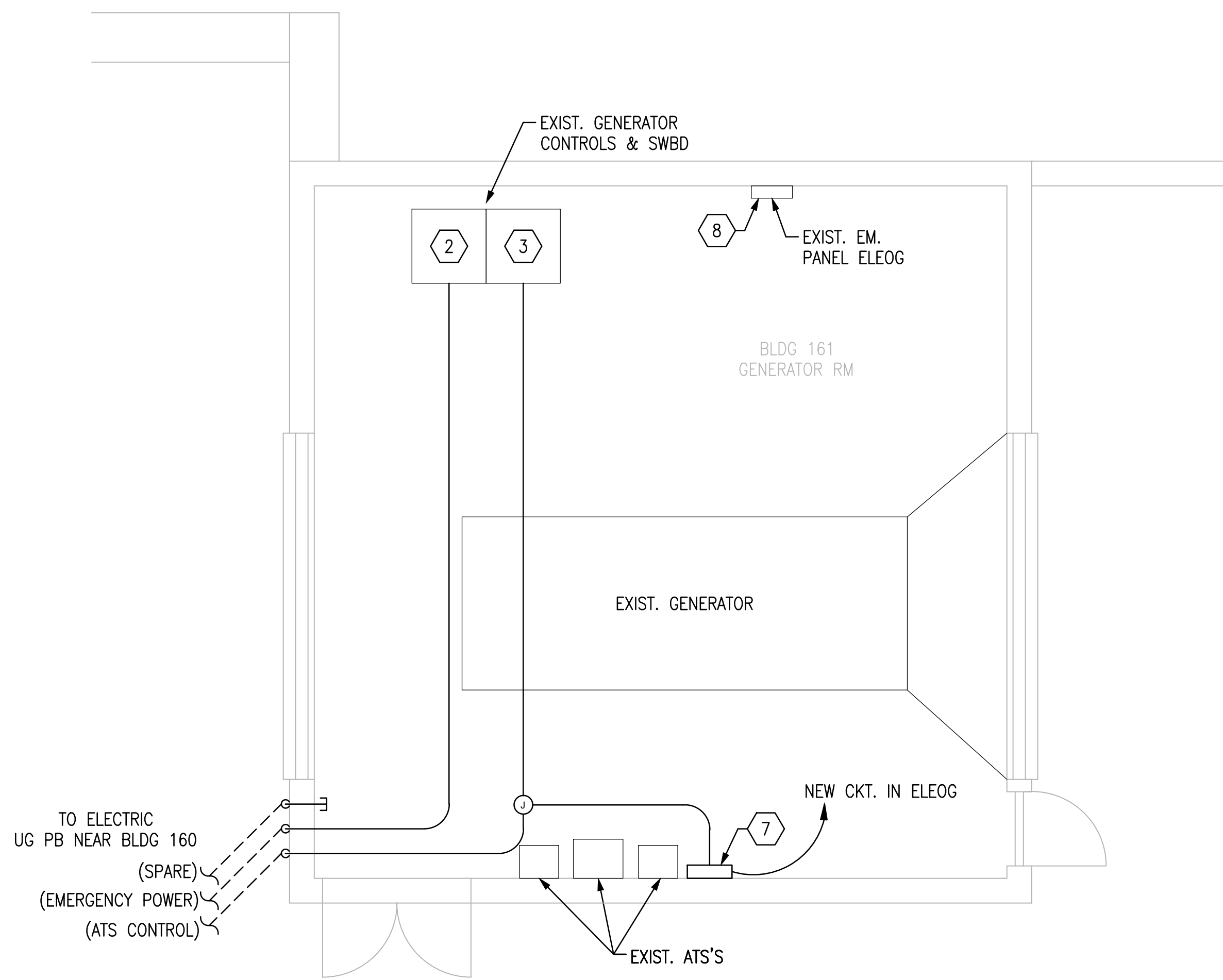
- A. REFER TO SHEET E001 FOR ADDITIONAL GENERAL NOTES.
- B. CONTRACTOR SHALL VERIFY EXIST. UNDERGROUND UTILITIES AND STRUCTURES (SUCH AS FUEL STORAGE TANKS, STORM WATER LINES, ETC.).
- C. WORK SHOWN ON THIS SHEET WILL REQUIRE DOWNTIME OF EXISTING ELECTRICAL EQUIPMENT IN BUILDINGS 160 & 161. CONTRACTOR SHALL COORDINATE WITH VA. DOWNTIME SHALL OCCUR DURING NIGHTS ON WEEKENDS, UNLESS DIRECTED OTHERWISE BY VA.
- D. CONDUIT ROUTING SHOWN ON THIS SHEET IS APPROXIMATE. CONTRACTOR SHALL COORDINATE EXACT ROUTING IN THE FIELD TO AVOID EXISTING SYSTEMS AND STRUCTURAL COMPONENTS.

## SHEET KEYNOTES

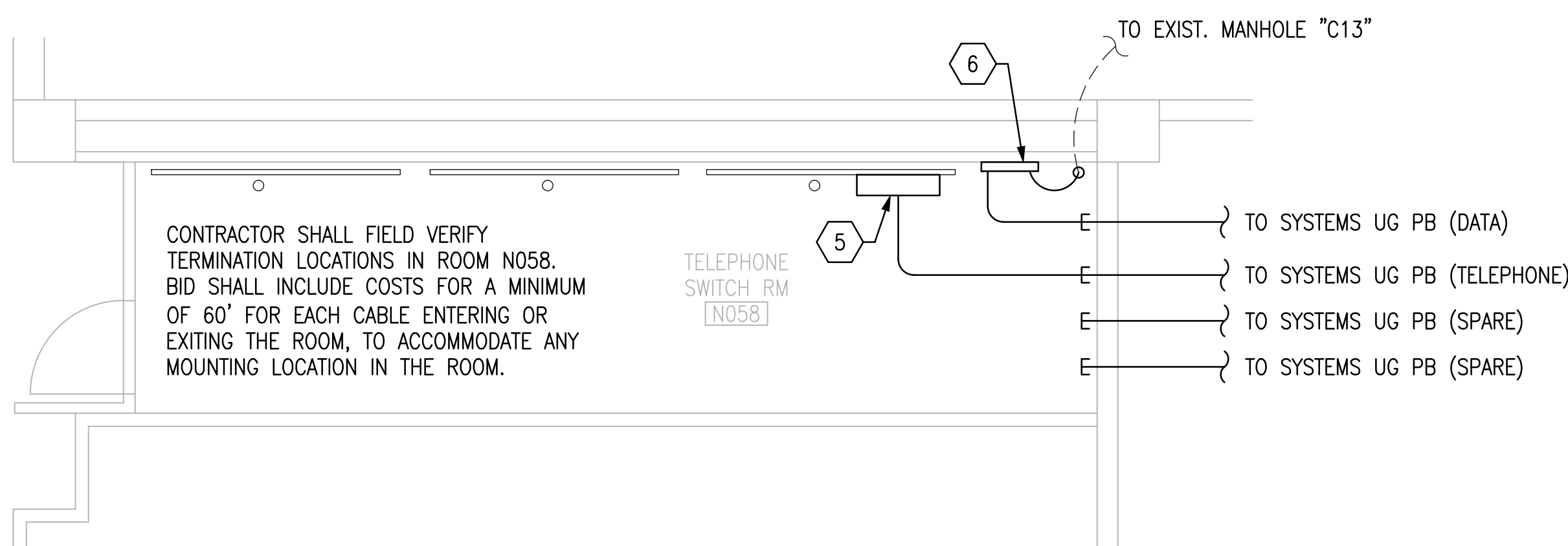
1. PROVIDE BREAKER AND FEEDER FOR GARAGE NORMAL POWER. SEE RISER SHEET E300.
2. PROVIDE NEW BREAKER AND FEEDER FOR GARAGE EMERGENCY POWER. SEE RISER DIAGRAM ON SHEET E300.
3. PROVIDE CONDUIT WITH ATS CONTROL CONDUCTORS FROM GARAGE ATS'S TO GENERATOR CONTROL PANEL.
4. BUILDING 160 EXISTING FACP. CONNECT TO EXISTING F/A NETWORK AT THIS LOCATION.
5. PROVIDE LINE PROTECTION MODULES AT CONNECTION LOCATION IN BUILDING 160. COORDINATE LOCATION AND CONDUIT ROUTING WITH VA. SEE RISER ON SHEET E302.
6. PROVIDE WALL-MOUNTED FIBER OPTIC CABINET FOR PATCHING. SEE RISER ON SHEET E302.
7. PROPOSED LOCATION FOR GARAGE ATS REMOTE ANUNCIATOR DISPLAY. REFER TO SHEET E300.
8. PROVIDE NEW 20A/1P BREAKER IN EXISTING 208Y/120V 3PH 4W PANEL TO PROVIDE POWER TO REMOTE ANUNCIATOR AND ASSOCIATED COMMUNICATION MODULE POWER SUPPLY. BREAKER SHALL MATCH BRAND, TYPE, INTERRUPT RATING, ETC. OF EXISTING BREAKERS IN PANEL.



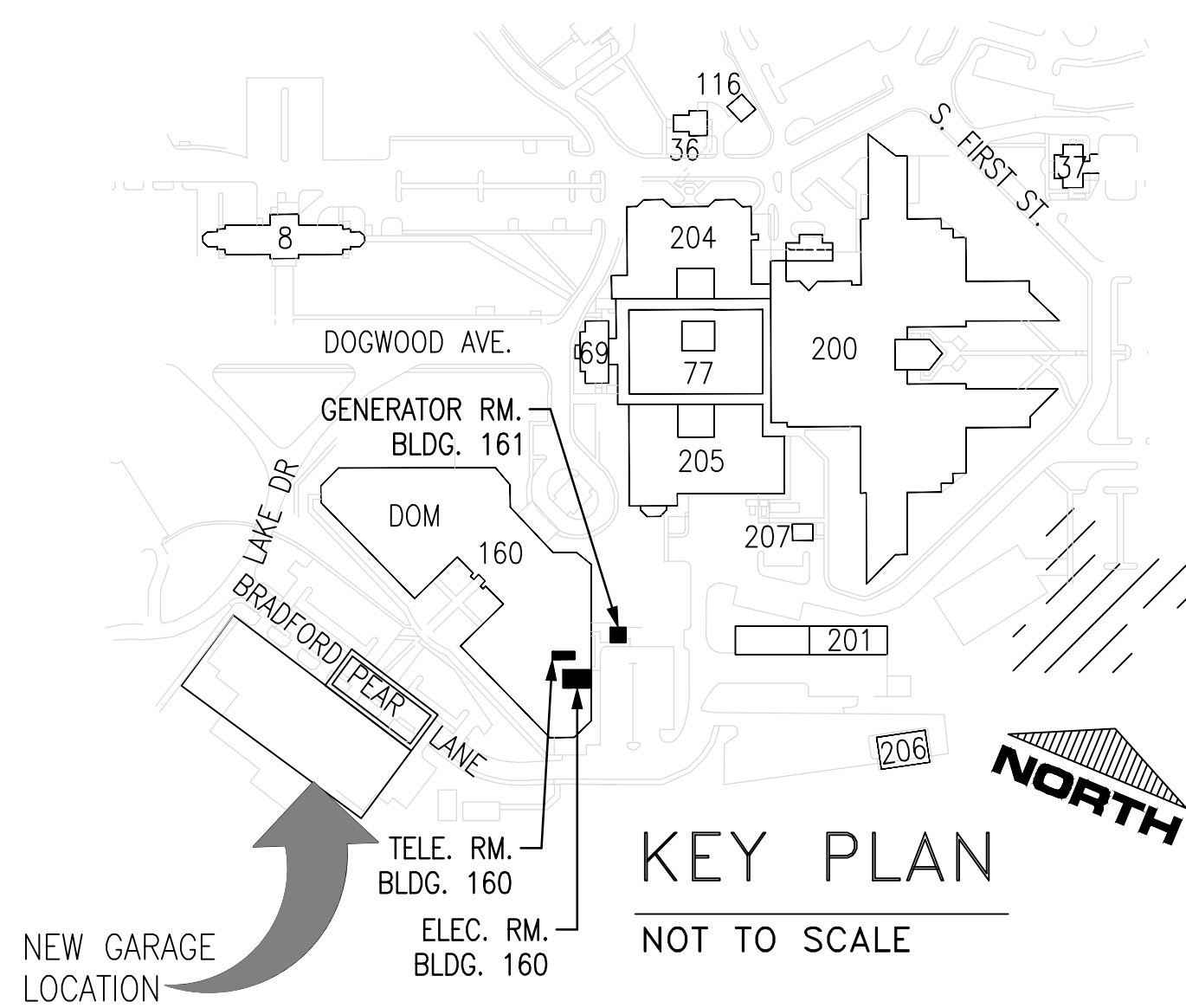
1 BUILDING 160 ELECTRICAL ROOM  
SCALE: 1/4" = 1' - 0"



2 BUILDING 161 GENERATOR ROOM  
SCALE: 1/4" = 1' - 0"



3 BUILDING 160 MAIN TELEPHONE ROOM  
SCALE: 1/4" = 1' - 0"



FINAL CONSTRUCTION DRAWINGS  
APPROVED FOR CONSTRUCTION

Dwg. File	ARCHITECT/ENGINEERS:	Chad J. Frelick, PE Florida Reg. 73811	CONSULTANTS:	Approved:	Drawing Title	Project Title	Date
	<b>AKEA INC.</b>		<b>WALKER PARKING CONSULTANTS</b>	Asst. Chief, Engineering Service	<b>BUILDINGS 160 &amp; 161 ELECTRICAL ROOM PLANS - NEW WORK</b>	<b>CONSTRUCT 525 SPACE PARKING GARAGE</b>	MARCH 26, 2015
	3603 NW 98TH ST., SUITE B GAINESVILLE, FLORIDA 32606 PH: (352) 474-6124 FAX: (352) 474-6324 CERT OF AUTH: FL #26693 EXPIRES: 02/28/2017		4904 Eisenhower Blvd Suite 150 Tampa, FL 33634 813.888.5900 Ph 813.888.5822 Fax BE-0003840 www.walkerparking.com	Engineering Bldg. Maint. Foreman	Approved: Chief, Engineering Service	CONTRACT No. VA249-14-C-0150 P.O. No. 621C40254	Project No. 621-330
			FRANK DAUGHTRY architect	Engineering Operation Foreman	10	Building Number 160	DRAWING NO. E102
			200 E. Government Street Suite 240-A Pensacola, FL 32502 Voice 850-433-3023 Fax 850-433-3025 Email frank@frankda.com	Engineering Health & Safety	Approved: Service Chief	Checked CJF	Page 108 of 131
				Engineering Planning & Analysis		Drawn KLL	
Revisions	Date			C.O.T.R.		Location VAMC MOUNTAIN HOME, TENNESSEE	