VT01	GENERAL ELEVATOR INFORMATION
VT02	PLANS AND HOISTWAY SECTION ELEVATORS 1 AND 2
VT03	PLANS ELEVATORS 3 AND 4
VT04	HOISTWAY SECTIONS ELEVATORS 3 AND 4

1 VT01 INDEX OF DRAWINGS
SCALE: NTS

ELEVATORS 1 AND 2	3000# @ 350 FPM
ELEVATOR 3	5000# @ 350 FPM
ELEVATOR 4	6500# @ 350 FPM

2 VT01 SUMMARY OF ELEVATORS
SCALE: NTS

AFF	ABOVE FINISH FLOOR	DIM.	DIMENSION	HP	HORSEPOWER	O.A.	OVERALL
A.P.	ACCESS PANEL	DC	DIRECT CURRENT	HYDR.	HYDRAULIC	OPP.	OPPOSITE
A/C	AIR CONDITIONING	DISC.	DISCONNECT	IN.	INCH (INCHES)	OVHD	OVERHEAD
ALT.	ALTERNATE	DBG	DISTANCE BETWEEN	IGBT	INSULATED GATE	PL	PLATE
AC	ALTERNATING CURRENT		GUIDE RAILS		BIPOLAR TRANSDUCER	PLTFM	PLATFORM
ASME	AMERICAN SOCIETY OF	DN	DOWN	J/S	JOULES PER SECOND	#	POUNDS
	MECHANICAL ENGINEERS	DWG	DRAWING	KCAL	KILOCALORIE	PSI	POUNDS PER
AMP	AMPERE	EA.	EACH	KG	KILOGRAMS		SQUARE INCH
APPROX.	APPROXIMATE	ELEC.	ELECTRICAL	KN	KILONEWTONS	PRELIM.	PRELIMINARY
ARCH.	ARCHITECTURAL	EL.	ELEVATION	KVA	KILOVOLT-AMPERE	RAD.	RADIUS
AUX.	AUXILIARY	ELEV.	ELEVATOR	KW	KILOWATTS	R/O	REAR OPENING
BSMT	BASEMENT	ETS	EMERGENCY TERMINAL	K	KIPS	REQ.	REQUIRED
BOT.	BOTTOM		SLOWDOWN	LT	LIGHT	REV.	REVISION
BTUH	BRITISH THERMAL UNITS	EQ.	EQUAL	MPS	METERS PER SECOND	RM	ROOM
	PER HOUR	EQUIP.	EQUIPMENT	MACH.	MACHINE	R.O.	ROUGH OPENING
BM	BEAM	ESCL.	ESCALATOR	MRL	MACHINE-ROOM-LESS	SEC.	SECONDARY
BOCA	BUILDING OFFICIALS AND	(E)	EXISTING	MAX.	MAXIMUM	SECT.	SECTION
	CODE ADMINISTRATION	°F	FAHRENHEIT	MEZZ.	MEZZANINE	SHT	SHEET
CLG	CEILING	FPM	FEET PER MINUTE	M	METER	SCR	SILICON CONTROLLED
°C	CELSIUS	F.V.	FIELD VERIFY	MM	MILLIMETERS		RECTIFIER
℄	CENTERLINE	F.F.	FINISH FLOOR	MIN.	MINIMUM	SIM.	SIMILAR
CM	CENTIMETERS	FLR	FLOOR	MISC.	MISCELLANEOUS	SPEC.	SPECIFICATION
COL.	COLUMN	FT	FOOT (FEET)	MC	MOTOR-GENERATOR	SF	SQUARE FEET
CLR	CLEAR	FLUOR.	FLUORESCENT	MTD	MOUNTED	SM	SQUARE METERS
CONC.	CONCRETE	F/O	FRONT OPENING	NEC	NATIONAL ELECTRICAL	STD	STANDARD
CMU	CONCRETE MASONRY	FUT.	FUTURE		CODE	SBC	STANDARD BUILDING CODE
	UNITS	G	GRAVITY	NFPA	NATIONAL FIRE	STL	STEEL
CONT.	CONTINUOUS	GFCI	GROUND FAULT CIRCUIT		PROTECTION	STRUCT.	STRUCTURAL
CONTR.	CONTRACTOR		INTERRUPTER		ASSOCIATION	SW.	SWITCH
COORD	COORDINATE	GOV.	GOVERNOR	(N)	NEW	TBD	TO BE DETERMINED
CNTRL	CONTROLLER	GA.	GUAGE	NOM.	NOMINAL	T.O.	TOP OF
CWT	COUNTERWEIGHT	GYP. BD.	GYPSUM BOARD	N/A	NOT APPLICABLE	(TYP)	TYPICAL
CYL.	CYLINDER	HT	HEIGHT			UNO	UNLESS NOTED OTHERWISE
DEH	DEAD END HITCH	HZ	HERTZ			UBC	UNIFORM BUILDING CODE
D.	DEEP	H.	HIGH	NTS	NOT TO SCALE	VERT.	VERTICAL
°	DEGREES	HSTWY	HOISTWAY	NO.	NUMBER	V.	VOLT
DTL	DETAIL	HORIZ.	HORIZONTAL	O.C.	ON CENTER	W.	WIDE
ø	DIAMETER	HR	HOUR	OPNG	OPENING	W/	WITH
						WP	WORKPOINT

3 VT01 ABBREVIATIONS
SCALE: NTS

1. THESE DRAWINGS FOR GENERAL INFORMATION ONLY. REQUIREMENTS OF INDIVIDUAL VENDORS MAY VARY.
2. THESE DRAWINGS TO BE DISTRIBUTED TO APPROPRIATE CONSULTING AND ENGINEERING FIRMS, INCLUDING ARCHITECT, STRUCTURAL, ELECTRICAL AND MECHANICAL ENGINEERS.
3. FIELD VERIFY ALL EXISTING DIMENSIONS.
4. ROUGH OPENING DIMENSIONS FOR ELEVATOR ENTRANCES APPLY ONLY IN THE CASE OF MASONRY OR CONCRETE CONSTRUCTION.
5. VERTICAL STRUCTURAL SUPPORT FOR RAIL BRACKETING IS PROVIDED BY HOISTWAY WALLS IN THE CASE OF REINFORCED CONCRETE HOISTWAY CONSTRUCTION.

4 VT01 GENERAL NOTES
SCALE: NTS

POWER FEEDER REQUIREMENTS
(MAIN POWER SUPPLY: 480-3-60 ASSUMED)

ELEVATOR NUMBER	CAPACITY (POUNDS)	SPEED (FPM)	TRACTION HP RATING	HYDRO MOTOR HP	HYDRO STARTING AMPS			FULL LOAD AMPS		HEAT RELEASE	
					LOCKED ROTOR	SOLID STATE	WYE DELTA	RUNNING	ACCELERATING	MACHINE SPACE BTUH PER CAR	CONTROLLER SPACE BTUH PER CAR
1-2	3000	350	40	N/A	N/A	N/A	N/A	60	125	18,500	
3	5000	350	60	N/A	N/A	N/A	N/A	87	170	28,000	
4	6500	350	60	N/A	N/A	N/A	N/A	87	170	53,500	

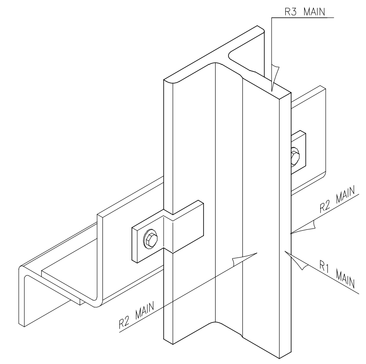
NOTES:

1. ELECTRIC POWER AND CURRENT ARE BASED ON THREE (3) PHASE A.C. POWER SUPPLY.
2. MAIN POWER TO BE PROVIDED AT EACH CONTROLLER THROUGH DISCONNECTING MEANS MEETING NEC REQUIREMENTS.
3. MAIN POWER SUPPLY FEEDERS TO LIMIT VOLTAGE DROP TO LESS THAN 5%.
4. USE COPPER CONDUCTORS ONLY.
5. FEEDER DEMAND FACTORS (NEC SECTION 430-26 AND 620-14)=
   (2) CARS= 95% (3) CARS= 90% (4) CARS= 85% (5) CARS= 82% (6) CARS= 79% (7) CARS= 77%
   (8) CARS= 75% (9) CARS= 73% (10) CARS= 72%
6. MACHINE SPACE TEMPERATURE TO BE MIN. 13° C (55° F.) (10° C /50° F. IN MASS.), MAX. 32° C (90° F). TO BE MEASURED 1838 MM (6'-0") ABOVE FINISH FLOOR AT APPROX. CENTER OF ROOM.
7. RELATIVE HUMIDITY MAX. 80% NON-CONDENSING.
8. THE SELECTION OF MAIN POWER SUPPLY DISCONNECTING MEANS OVERCURRENT PROTECTION TO BE SIZED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, SECTIONS 620-51 AND 430-52.
9. PROVIDE LOCAL TELEPHONE SERVICE LINE TO EACH CAR CONTROLLER (IF APPLICABLE).
10. PROVIDE GFCI CONVENIENCE OUTLETS PIT, MACHINE ROOM AND MACHINERY SPACES. IN PIT, PROVIDE ONE NON-GFCI OUTLET FOR SUMP PUMP AND/OR OIL RETURN PUMP.
11. PROVIDE HOIST MACHINE WITH VOLTAGE TO MATCH SUPPLY VOLTAGE INDICATED, U.N.O.

ADDITIONAL POWER AND DISCONNECT REQUIREMENTS IN MACHINE ROOM

AUXILIARY SYSTEM	SUPPLY TERMINAL	SUPPLY VOLTAGE	CIRCUIT CAPACITY
CAR LIGHT AND FAN WITH LOCKABLE DISCONNECT	EACH CONTROLLER	120-1-60	(25 AMP PER CAR)
INTERCOM SYSTEM (IF APPLICABLE)	AT AMPLIFIER	120-1-60	1600 WATTS (15 AMP PER CAR)

5 VT01 ELEVATOR ELECTRICAL AND MECHANICAL REQUIREMENTS
SCALE: NTS



RAIL FORCES MAXIMIUM ON EACH GUIDE RAIL
(FORCES ARE IN KIPS)

	ELEVATOR NUMBER	1 AND 2	3	4	OCCURING ON
NORMAL FORCES	R1	1.0	1.5	2.2	CAR NORMAL FACE OF MAIN RAIL
	R2	0.7	1.5	2.0	CAR NORMAL SIDE OF MAIN RAIL – LOADING OR RUNNING
	CAR R3	19.6	31.9	42.1	FORCE TRANSMITTED TO PIT STRUCTURE AT CAR SAFETY APPLICATION*
	CWT R3	16.0	N/A	N/A	FORCE TRANSMITTED TO PIT STRUCTURE AT CWT SAFETY APPLICATION*

ASME A17.1

BUILDING SUPPORTS TO RESIST HORIZONTAL FORCES WITH A TOTAL DEFLECTION AT POINT OF SUPPORT NOT IN EXCESS OF 1/8" (3 MM) DURING NORMAL CONDITIONS.

* THESE REACTIONS DO NOT OCCUR SIMULTANEOUSLY WITH PIT BUFFER REACTIONS

A17.1/UBC VARIABLES USED FOR SEISMIC CALCULATIONS:
SEISMIC ZONE = 0 OR 1 (NON-SEISMIC FOR ELEVATORS)

6 VT01 RAIL FORCES
SCALE: NTS

LEGAL MACHINE ROOMS AND CONTROLLER SPACES

1. REINFORCED MACHINE ROOM FLOOR CAPABLE OF SUPPORTING STATIC LOADS IMPOSED BY ELEVATOR EQUIPMENT, WITH THE EXCEPTION OF TRACTION ELEVATOR HOIST MACHINES. FLOORS SHALL SUSTAIN CONCENTRATED LOAD OF 1000 N (225#) ON ANY 2000 SQUARE MM (3 SQUARE INCH) AREA.
2. WALL ENCLOSURES ERECTED AT MACHINE ROOM LEVEL AFTER MACHINE OR PUMP UNIT IS SET IN PLACE. SOUND-ATTENUATION FOR WALLS ADJACENT TO TENANT SPACE.
3. BLOCK-OUTS THROUGH MACHINE ROOM FLOOR, SECONDARY FLOOR AND/OR WALLS FOR HOIST ROPES, HYDRAULIC OIL LINE, AND ELECTRICAL WIRING DUCTS. VERIFY LOCATION ON ELEVATOR CONTRACTOR SHOP DRAWINGS.
4. HOIST MACHINE CONCRETE HOLD-DOWN PAD, OR ADEQUATE STRUCTURAL SUPPORT, FOR BASEMENT MACHINE APPLICATION. VERIFY LOCATION AND SIZE OF HOLD-DOWN BOLTS ON ELEVATOR CONTRACTOR SHOP DRAWINGS. HOLD-DOWN BOLTS PROVIDED AND INSTALLED BY ELEVATOR CONTRACTOR.
5. SELF-CLOSING, SELF-LOCKING ACCESS DOOR OR GATE FOR MACHINE ROOM, CONTROLLER SPACE, AND MACHINERY SPACE. KEYING MUST BE INDEPENDENT OF ANY OTHER BUILDING LOCKS. DOOR OR GATE SHALL BE OPENABLE FROM INSIDE WITHOUT KEY. SOUND-ATTENUATING DOORS WHERE ACCESS IS FROM ADJACENT TENANT SPACE. RECOMMEND MINIMUM 900 MM X 2130 MM (3'-0" X 7'-0") DOOR.
6. LEGAL ACCESS TO MACHINE ROOMS / CONTROLLER SPACES BY MEANS OF A STAIR WITH 60 DEGREE MAXIMUM ANGLE FROM THE HORIZONTAL. FOR PASSAGE ACROSS ROOFS, A STAIRWAY WITH A SWINGING DOOR AND PLATFORM AT THE TOP LEVEL SHALL BE PROVIDED FROM THE TOP FLOOR OF THE BUILDING TO THE ROOF LEVEL.
7. MACHINE AND CONTROLLER SPACE VENTILATION AND HEATING. FOR IBC, INDEPENDENT VENTILATION OR AIR-CONDITIONING SYSTEM TO PREVENT OVERHEATING OF SOLID-STATE ELECTRICAL EQUIPMENT. MAINTAIN MINIMUM TEMPERATURE OF 13°C (55°F)(10°C/50°F IN MASS.) MAXIMUM 32°C (90°F). MAINTAIN MAXIMUM 80% RELATIVE HUMIDITY, NON-CONDENSING. HVAC UNIT MAY (MAY NOT, CITY OF L.A. JURISDICTION) BE LOCATED WITHIN THE BOUNDS OF THE MACHINE/CONTROLLER ROOM IF SOLELY FOR THE HEATING OR COOLING OF THAT MACHINE/CONTROLLER ROOM.
8. MINIMUM HEADROOM CLEARANCES: 2400 MM (8'-0") RECOMMENDED UNDER MACHINE ROOM / CONTROLLER SPACE CEILING AND 2275 MM (7'-6") UNDER ENCROACHING BEAMS (INCLUDING FIREPROOFING). CLEARANCE ABOVE HOIST MACHINE AS SHOWN ON LERCH BATES DRAWINGS. CODE MINIMUM CLEARANCE: 2130 MM (7'-0").
9. MACHINE ROOM AND CONTROLLER SPACE FIRE SPRINKLER RUNS MUST TERMINATE WITHIN THE BOUNDS OF THE MACHINE ROOM. SHUT OFF VALVES SHALL BE LOCATED OUTSIDE THE BOUNDS OF THE MACHINE ROOM. MAINTAIN MINIMUM 2130 MM (7'-0") CLEAR HEADROOM UNDER PIPE RUNS.
10. CLASS "ABC" FIRE EXTINGUISHER IN EACH ELEVATOR MACHINE ROOM / CONTROLLER SPACE.
11. MACHINE ROOM / CONTROLLER SPACE ENCLOSURES AND ACCESS DOORS SHALL HAVE A FIRE ENDURANCE AT LEAST EQUAL TO THAT REQUIRED FOR THE HOISTWAY ENCLOSURE AND THE HOISTWAY DOORS, RESPECTIVELY.
12. ONLY EQUIPMENT USED IN CONJUNCTION WITH THE FUNCTION OF THE ELEVATOR SHALL BE PERMITTED IN THE ELEVATOR MACHINE ROOM AND CONTROLLER SPACE. ACCESS THROUGH ELEVATOR MACHINE/CONTROLLER SPACES TO ADJACENT ROOMS OR AREAS SHALL NOT BE PERMITTED. PERMANENT AND UNOBSTRUCTED ACCESS TO MACHINE/CONTROLLER SPACES SHALL BE PROVIDED FOR AUTHORIZED PERSONNEL.

LEGAL HOISTWAY AND PIT

1. HOISTWAY, CLEAR, PLUMB, SUBSTANTIALLY FLUSH WITH VARIATIONS NOT TO EXCEED 25 MM (1") WITHIN 30 M (100") VERTICALLY AT ANY POINT.
2. BEVEL CANTS NOT LESS THAN 75° FROM THE HORIZONTAL ON ANY REAR OR SIDE WALL LEDGES AND BEAMS, INCLUDING BUILDING SUPPORT FOR TRACTION MACHINE BEAMS, THAT PROJECT OR RECESS 100 MM (4") OR MORE INTO THE HOISTWAY PER 2000 ASME CODE (50 MM (2") PER PREVIOUS ASME CODE). CANTS NOT REQUIRED ON DIVIDER BEAMS. ENCLOSE WEB OF HOISTWAY STEEL FRAMING.
3. GUIDE RAIL SUPPORT, ADEQUATE STRUCTURAL SUPPORT FOR ATTACHMENT OF ELEVATOR CAR AND/OR COUNTERWEIGHT GUIDE RAILS AT EACH FLOOR, PIT AND OVERHEAD.
4. DIVIDER BEAMS BETWEEN ADJACENT ELEVATORS AT EACH FLOOR, PIT AND OVERHEAD. DIVIDER BEAMS NEED NOT BE FIREPROOFED.
5. SUPPORTS AT EACH FLOOR FOR CAR AND CWT GUIDE RAIL FASTENING, AND INTERMEDIATE SUPPORTS WHERE FLOOR HEIGHTS EXCEED SPACING REQUIREMENTS SHOWN ON LBA DRAWINGS. BUILDING SUPPORTS NOT TO DEFLECT IN EXCESS OF 1/8" UNDER NORMAL CONDITIONS.
6. GUIDE RAIL BRACKET SUPPORTS IN CONCRETE. INSERTS OR IMBEDS, IF USED, WILL BE PROVIDED BY ELEVATOR CONTRACTOR AND INSTALLED BY GENERAL CONTRACTOR. VERIFY LOCATION ON ELEVATOR CONTRACTOR'S SHOP DRAWINGS.
7. CUTTING AND PATCHING WALLS, BEAMS AND FLOORS.
8. WALL BLOCK-OUTS AND FIRE-RATED CLOSURE FOR CONTROL AND SIGNAL FIXTURE BOXES WHICH PENETRATE WALLS.
9. STEEL BEAMS, CONCRETE WALL/BEAMS, OR STRUCTURAL SLAB FOR SUPPORT OF HOIST MACHINE, ROPE SHEAVES, AND DEAD-END HITCH BEAMS. SUPPORT BEAMS SHALL NOT EXCEED DEFLECTION OF L/1666 OF THE SPAN UNDER STATIC LOAD.
10. ERECT FRONT HOISTWAY WALL FOR SHAFTWALL CONSTRUCTION AFTER ELEVATOR ENTRANCE FRAMES HAVE BEEN INSTALLED.
11. ROUGH OPENINGS. IF FRONT HOISTWAY WALLS ARE CONCRETE OR MASONRY, FOR TRACTION AND HYDRAULIC APPLICATIONS, FORM ROUGH OPENINGS 300 MM (12") GREATER IN WIDTH AND 100 MM (4") GREATER IN HEIGHT THAN CLEAR OPENING. FOR MRL APPLICATIONS, FORM ROUGH OPENINGS 500 MM (20") GREATER IN WIDTH AND 250 MM (10") GREATER IN HEIGHT THAN CLEAR OPENING. GROUT ROUGH OPENING AFTER ELEVATOR ENTRANCE FRAMES HAVE BEEN INSTALLED.
12. SOUND-ATTENUATING ASSEMBLIES FOR WALLS OF MACHINE ROOM, CONTROLLER SPACE AND/OR HOISTWAY WHERE SOUND-SENSITIVE AREAS ARE ADJACENT.
13. PIT ACCESS LADDER FOR EACH ELEVATOR THAT DOES NOT HAVE A WALK-IN PIT.
14. STRUCTURAL PIT FLOOR FOR TRACTION CAR AND COUNTERWEIGHT BUFFER AND GUIDE RAIL IMPACT LOADS. INDIVIDUAL ELEVATOR BUFFER AND GUIDE RAIL IMPACT LOADS DO NOT OCCUR SIMULTANEOUSLY.
15. WATERPROOF PIT, INDIRECT WASTE DRAIN OR SUMP WITH FLUSH GRATE AND PUMP.
16. PROTECT OPEN HOISTWAYS AND ELEVATOR ENTRANCES DURING CONSTRUCTION PER O.S.H.A. REGULATIONS.
17. PROTECT CAR ENCLOSURE, ELEVATOR ENTRANCES AND SPECIAL METAL FINISHES FROM DAMAGE AFTER INSTALLATION.
18. SMOKE VENTING. IF HOISTWAYS OF ELEVATORS AND DUMBWAITERS PENETRATE MORE THAN THREE STORIES, SMOKE VENTING WITH AN AREA NOT LESS THAN 3.5% OF THE TOTAL HOISTWAY AREA NOR LESS THAN 0.3 SM (3 SF) FOR EACH ELEVATOR, AND NOT LESS THAN 3.5% NOR LESS THAN 0.05 SM (0.5 SF) FOR EACH DUMBWAITER (WHICHEVER IS GREATER). OF THE TOTAL VENT AREA, NOT LESS THAN 1/3 SHALL BE PERMANENTLY OPEN UNLESS ALL VENTS ACTIVATE ON THE DETECTION OF SMOKE FROM ANY OF THE ELEVATOR LOBBY SMOKE DETECTORS. RECOMMEND NORMALLY OPEN DAMPER, POWERED CLOSED WITH SMOKE DETECTOR ACTIVATED MOTORIZED DAMPER. PROVIDE ACCESS TO DAMPER MOTOR FROM OUTSIDE THE BOUNDS OF THE HOISTWAY AND ELEVATOR MACHINE/CONTROL ROOM. (REFER TO CODE EXCEPTIONS FOR BUILDINGS WITH AUTOMATIC SPRINKLER SYSTEMS).

ELECTRICAL SERVICES

1. LIGHTING AND GFCI CONVENIENCE OUTLETS IN PIT, MACHINE ROOM, CONTROLLER SPACE, AND OVERHEAD MACHINERY SPACE. (NO GFCI PROTECTION REQUIRED FOR SUMP PUMP OUTLET. NO GFCI PROTECTION FOR SUMP PUMP IN MINNESOTA.) ADEQUATE LIGHTING TO MAINTAIN 100 LUX (10 FC) MINIMUM ILLUMINATION AT THE PIT FLOOR, AND 200 LUX (19 FC) AT THE MACHINE ROOM FLOOR, CONTROL ROOM FLOOR, AND OVERHEAD AND SECONDARY MACHINERY SPACES.
2. THREE-PHASE MAINLINE COPPER POWER FEEDER TO TERMINALS OF EACH ELEVATOR CONTROLLER WITH PROTECTED, LOCKABLE "OPEN", DISCONNECTING MEANS MEETING NEC REQUIREMENTS. LOCATE DISCONNECTING MEANS IN THE MACHINE ROOM / CONTROLLER SPACE. VERIFY CONTROLLER LOCATION ON ELEVATOR SHOP DRAWINGS. PROVIDE CLEARANCES AROUND DISCONNECTING MEANS AS REQUIRED BY CODE. AUXILIARY FEEDERS AND DISCONNECTING MEANS FOR MACHINE/CONTROLLER ROOMS WITH MULTIPLE LEVELS. AUXILIARY CONTACTS FOR HYDRAULIC ELEVATORS FOR BATTERY LOWERING DEVICE ELECTRICAL INTERLOCK. IN MASS. LOCATE DISCONNECTING MEANS WITHIN 18" OF LOCK JAMB SIDE OF MACHINE ROOM DOOR WITH THE CENTER OF THE HANDLE LOCATED 66" ABOVE THE FINISH FLOOR.
3. SINGLE-PHASE COPPER POWER FEEDER TO EACH CONTROLLER FOR CAR LIGHTING, EXHAUST BLOWER AND CONVENIENCE OUTLET WITH PROTECTED, LOCKABLE "OPEN", DISCONNECTING MEANS MEETING NEC REQUIREMENTS. LOCATE DISCONNECTING MEANS IN THE MACHINE/CONTROLLER ROOM. VERIFY CONTROLLER LOCATION ON ELEVATOR SHOP DRAWINGS.
4. FIRE ALARM INITIATING DEVICES IN EACH ELEVATOR LOBBY, FOR EACH MULTIPLE HOISTWAY OR SINGLE HOISTWAY AND EACH MACHINE ROOM, TO INITIATE FIREFIGHTER'S RETURN FEATURE. DEVICE AT TOP OF HOISTWAY IF SPRINKLERED (SPRINKLERING NOT ALLOWED IN MASS). PROVIDE A DISCRETE SIGNAL FROM EACH OF THE FOLLOWING ZONES OR DETECTORS: MAIN LOBBY, ALL OTHER LOBBIES, EACH HOISTWAY, AND EACH MACHINE ROOM. WHERE A GROUP OF ELEVATORS INCLUDES MULTIPLE HOISTWAYS, PROVIDE A DISCRETE SIGNAL FROM EACH HOISTWAY. SUPPLY TWO DRY CONTACTS AND DETECTOR WIRES TO EACH ELEVATOR GROUP CONTROLLER IN EACH ELEVATOR MACHINE ROOM.
5. MEANS TO AUTOMATICALLY DISCONNECT POWER TO AFFECTED ELEVATOR DRIVE UNIT AND CONTROLLER PRIOR TO ACTIVATION OF MACHINE ROOM, OVERHEAD FIRE SPRINKLER SYSTEMS, AND/OR OF HOISTWAY OVERHEAD FIRE SPRINKLER SYSTEMS. MANUAL SHUT-OFF MEANS SHALL BE LOCATED OUTSIDE THE BOUNDS OF THE MACHINE/CONTROLLER ROOM.
6. TEMPORARY POWER AND ILLUMINATION TO INSTALL, TEST AND ADJUST ELEVATOR EQUIPMENT.
7. EMERGENCY TELEPHONE LINE TO EACH INDIVIDUAL OR DESIGNATED ELEVATOR CONTROL PANEL IN ELEVATOR MACHINE/CONTROLLER ROOM.
8. SINGLE-PHASE POWER FEEDERS TO MACHINE ROOM ELEVATOR MONITORING PANEL/DISPLAY UNIT WITH SINGLE-PHASE, PROTECTED, LOCKABLE "OPEN", DISCONNECTING MEANS MEETING NEC REQUIREMENTS.
9. SINGLE-PHASE POWER FEEDERS TO CONTROLLER(S) FOR CCTV WITH LOCKABLE "OPEN", DISCONNECTING MEANS MEETING NEC REQUIREMENTS.

EMERGENCY POWER PROVISIONS

1. EMERGENCY POWER OF NORMAL VOLTAGE CHARACTERISTICS VIA NORMAL ELECTRICAL FEEDERS TO RUN ONE ELEVATOR AT A TIME IN EACH ELEVATOR GROUP AND/OR SINGLE ELEVATOR UNIT AT FULL RATED CAR SPEED AND CAPACITY.

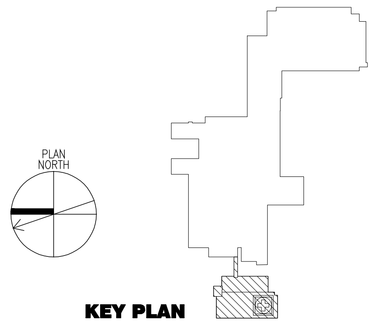
   CONDUCTOR FROM AUXILIARY FORM "C" DRY CONTACTS, LOCATED IN THE EMERGENCY POWER TRANSFER SWITCH TO A DESIGNATED ELEVATOR CONTROL PANEL IN EACH ELEVATOR GROUP AND/OR SINGLE ELEVATOR UNIT. PROVIDE TIME DELAY OF 30-45 SECONDS FOR PRE-TRANSFER SIGNAL IN EITHER DIRECTION.

   EMERGENCY SINGLE-PHASE POWER TO GROUP CONTROLLER, AND EACH ELEVATOR CONTROLLER FOR CAR LIGHTING, EXHAUST BLOWER, EMERGENCY SIGNALING DEVICE, INTERCOM AMPLIFIER, HOIST MACHINE COOLING FAN, CAR HEATING AND AIR CONDITIONING UNIT, AND MACHINE ROOM VENTILATION OR AIR CONDITIONING.
2. MEANS FOR ABSORBING REGENERATIVE POWER DURING AN OVERHAULING LOAD (SUCH AS FULL LOAD DOWN).

   NOTE: ELEVATOR DRIVES MAY EMPLOY IGBT POWER CONVERSION UNITS.

   NOTE: ELEVATORS REQUIRED FOR USE DURING CONSTRUCTION MUST COMPLY WITH ALL ELEVATOR AND FIRE/LIFE SAFETY CODES.

7 VT01 RELATED WORK NOT PROVIDED IN ELEVATOR CONTRACT
SCALE: NTS
(BASED ON ASME A17.1 SAFETY CODE FOR ELEVATORS AND ESCALATORS. CONSULT LOCAL CODES FOR ADDITIONAL REQUIREMENTS.)



KEY PLAN

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

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ARCHITECT/ENGINEERS:

ARCHITECTURE
ENGINEERING
INTERIOR DESIGN
DESIGN/BUILD

ASTORINO

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Drawing Title	GENERAL ELEVATOR INFORMATION
Approved: Project Director	
Project Title	VA CARES CONSOLIDATION VAMC, PITTSBURGH, PA RESEARCH OFFICE BLDG.
Location	VAPHS UNIVERSITY DRIVE
Date	08-18-10
Checked	SM
Drawn	BD
Project Number	646CA2500R
Building Number	30
Drawing Number	VT01
Dwg. of	

Office of Facilities Management
Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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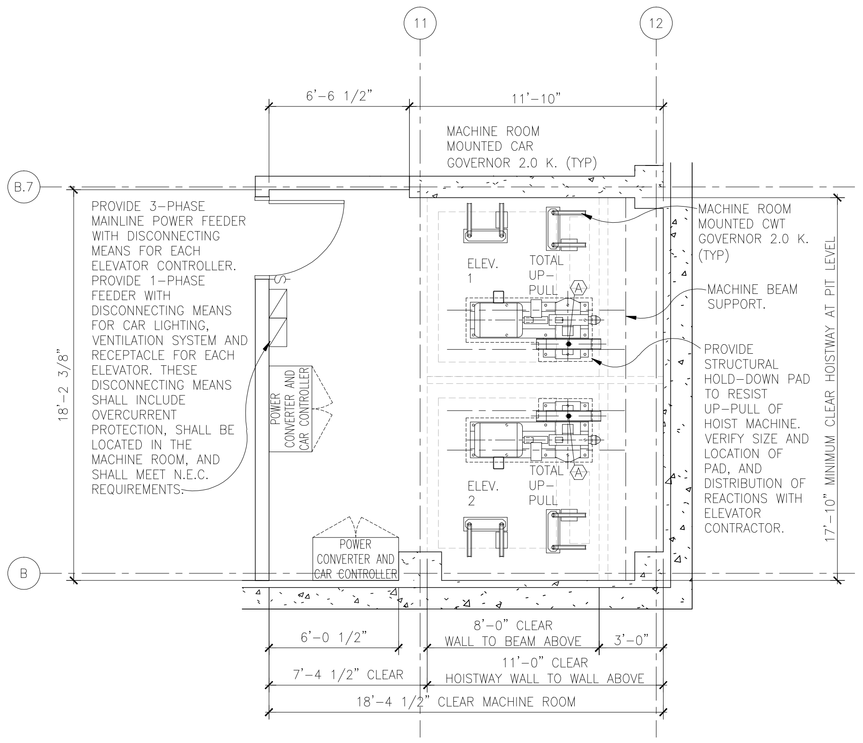


1 VT02 BASEMENT LEVEL MACHINE ROOM PLAN ELEVATORS 1 AND 2
SCALE: 1/4" = 1'-0"
DUTY: 3000# @ 350 FPM

MACH RM REACTION TABLE	
DUTY: 3000# @ 350 FPM	
KEY	REACTION
A	31.9 K TOTAL UP-PULL

REACTIONS HAVE BEEN DOUBLED FOR IMPACT

REACTIONS DO NOT INCLUDE DEAD OR LIVE LOADS OF MACHINE ROOM FLOOR

PROVIDE SELF-CLOSING, SELF-LOCKING MACHINE ROOM ACCESS DOOR

PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 200 LUX (19 FC) ILLUMINATION AT MACHINE ROOM FLOOR

PROVIDE LIGHTS, LIGHT SWITCHES AND GFCI-PROTECTED UTILITY OUTLETS. COORDINATE LOCATIONS WITH ELEVATOR CONTRACTOR .

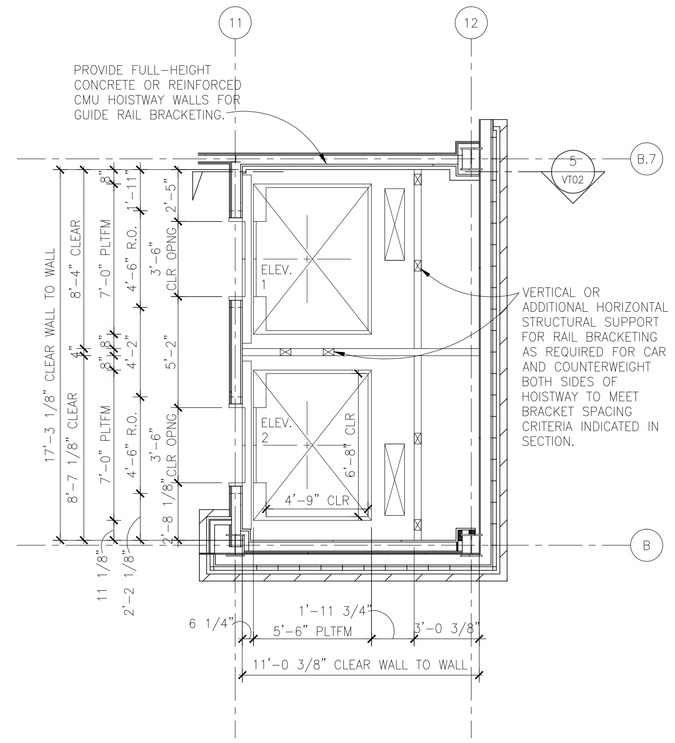
MACHINE ROOM HEAT EMISSION 37,000 BTUH TOTAL

PROVIDE STRUCTURAL SUPPORT TO SUSTAIN REACTIONS INDICATED

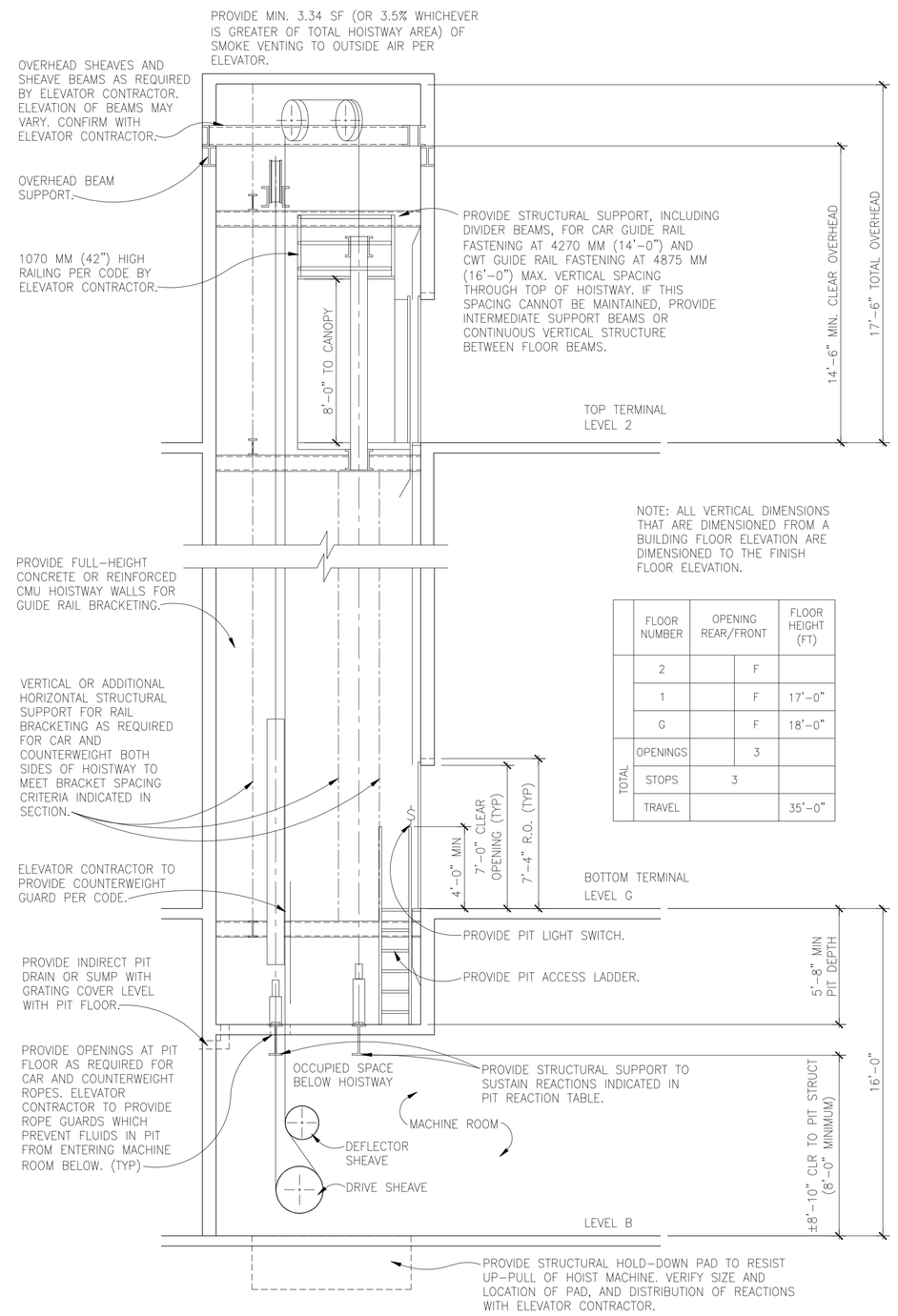
DASHED LINE INDICATES HOISTWAY BELOW

FOR EQUIPMENT IN THE MACHINE ROOM, A CLEARANCE OF NOT LESS THAN 450 MM (18") SHALL BE PROVIDED IN THE DIRECTION(S) REQUIRED FOR MAINTENANCE, AND A CLEAR PATH OF NOT LESS THAN 450 MM (18") SHALL BE PROVIDED TO ALL COMPONENTS THAT REQUIRE MAINTENANCE

IF A STRUCTURAL CONCRETE SLAB IS USED TO SUPPORT THE HOIST MACHINE(S), THE STRUCTURAL ENGINEER SHALL COORDINATE THE SLAB DESIGN AND ASSOCIATED DETAILS WITH THE DESIGNATED ELEVATOR CONTRACTOR. THE SLAB DESIGN SHALL MEET ALL APPLICABLE REQUIREMENTS OF ASME A17.1 .



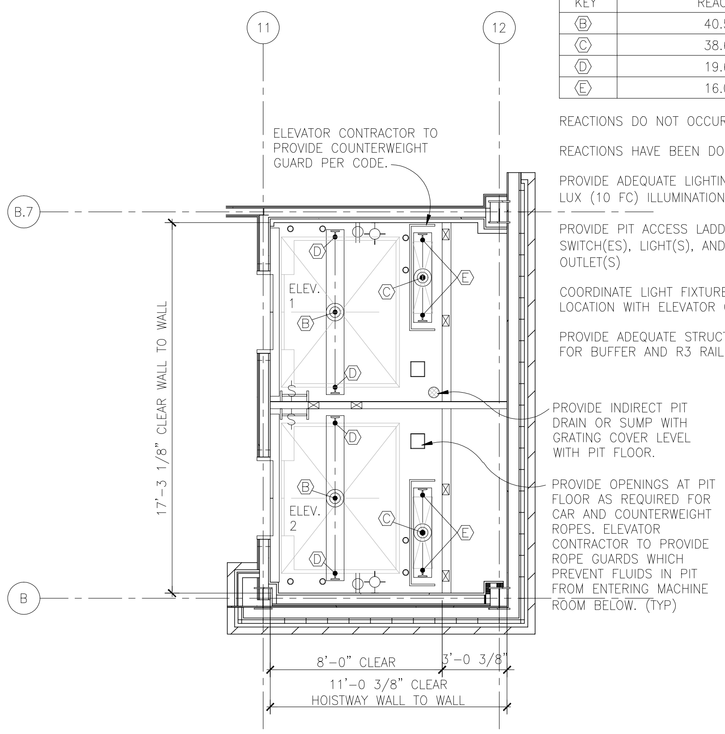
3 VT02 HOISTWAY PLAN ELEVATORS 1 AND 2
SCALE: 1/4" = 1'-0"
DUTY: 3000# @ 350 FPM



NOTE: ALL VERTICAL DIMENSIONS THAT ARE DIMENSIONED FROM A BUILDING FLOOR ELEVATION ARE DIMENSIONED TO THE FINISH FLOOR ELEVATION.

	FLOOR NUMBER	OPENING REAR/FRONT		FLOOR HEIGHT (FT)
	2		F	
	1		F	17'-0"
	G		F	18'-0"
TOTAL	OPENINGS	3		
	STOPS	3		
	TRAVEL			35'-0"

5 VT02 HOISTWAY SECTION ELEVATORS 1 AND 2
SCALE: 1/4" = 1'-0"
DUTY: 3000# @ 350 FPM



2 VT02 GROUND LEVEL MACHINE ROOM PLAN ELEVATORS 1 AND 2
SCALE: 1/4" = 1'-0"
DUTY: 3000# @ 350 FPM

PIT REACTION TABLE		
DUTY: 3000# @ 350 FPM		
KEY	REACTION	
B	40.5 K	
C	38.6 K	
D	19.6 K EACH	(SEE CAR R3 RAIL FORCE)
E	16.0 K EACH	(SEE CWT R3 RAIL FORCE)

REACTIONS DO NOT OCCUR SIMULTANEOUSLY

REACTIONS HAVE BEEN DOUBLED FOR IMPACT

PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 100 LUX (10 FC) ILLUMINATION AT PIT FLOOR

PROVIDE PIT ACCESS LADDER(S) OR DOOR(S), LIGHT SWITCH(ES), LIGHT(S), AND GFCI-PROTECTED UTILITY OUTLET(S)

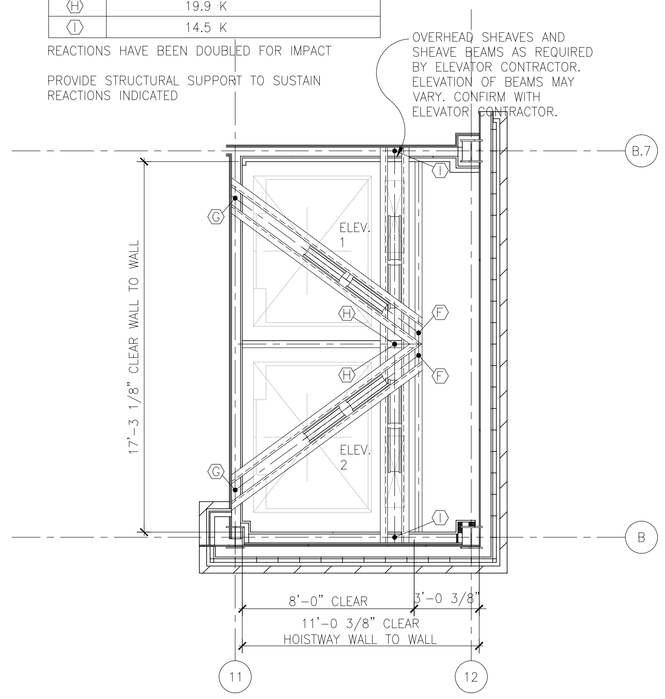
COORDINATE LIGHT FIXTURES AND UTILITY OUTLETS LOCATION WITH ELEVATOR CONTRACTOR.

PROVIDE ADEQUATE STRUCTURAL SUPPORT REQUIRED FOR BUFFER AND R3 RAIL FORCE REACTIONS

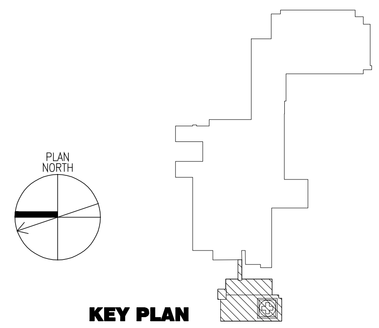
OVERHEAD REACTION TABLE	
DUTY: 3000# @ 350 FPM	
KEY	REACTION
F	27.4 K
G	16.6 K
H	19.9 K
I	14.5 K

REACTIONS HAVE BEEN DOUBLED FOR IMPACT

PROVIDE STRUCTURAL SUPPORT TO SUSTAIN REACTIONS INDICATED



4 VT02 OVERHEAD PLAN ELEVATORS 1 AND 2
SCALE: 1/4" = 1'-0"
DUTY: 3000# @ 350 FPM



KEY PLAN

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

HDR

HDR Architecture, Inc.

1101 King Street | Suite 400 | Alexandria, Virginia 22314-2944 | 703.518.8500

ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

ASTORINO

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Drawing Title: **PLANS AND HOISTWAY SECTION ELEVATORS 1 AND 2**

Approved: Project Director

Project Title: **VA CARES CONSOLIDATION VAMC, PITTSBURGH, PA RESEARCH OFFICE BLDG.**

Location: **VAPHS UNIVERSITY DRIVE**

Date: **08-18-10** | Checked: **SM** | Drawn: **BD**

Project Number: **646CA2500R**

Building Number: **30**

Drawing Number: **VT02**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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PIT REACTION TABLE		
DUTY ELEV. 3: 5000# @ 350 FPM		
KEY	REACTION	
A	51.9 K	
B	48.6 K	
C	31.9 K EACH	(SEE CAR R3 RAIL FORCE)
DUTY ELEV. 4: 6500# @ 350 FPM		
KEY	REACTION	
D	63.6 K	
E	60.1 K	
F	42.1 K EACH	(SEE CAR R3 RAIL FORCE)

REACTIONS DO NOT OCCUR SIMULTANEOUSLY

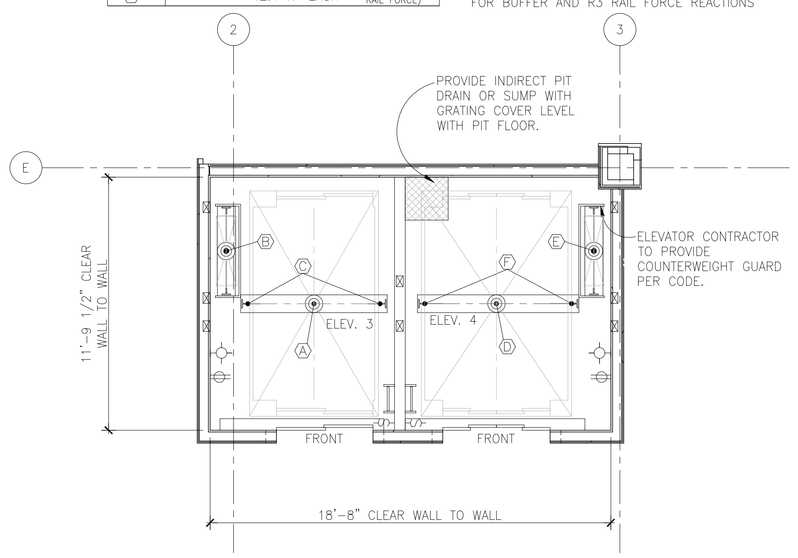
REACTIONS HAVE BEEN DOUBLED FOR IMPACT

PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 100 LUX (10 FC) ILLUMINATION AT PIT FLOOR

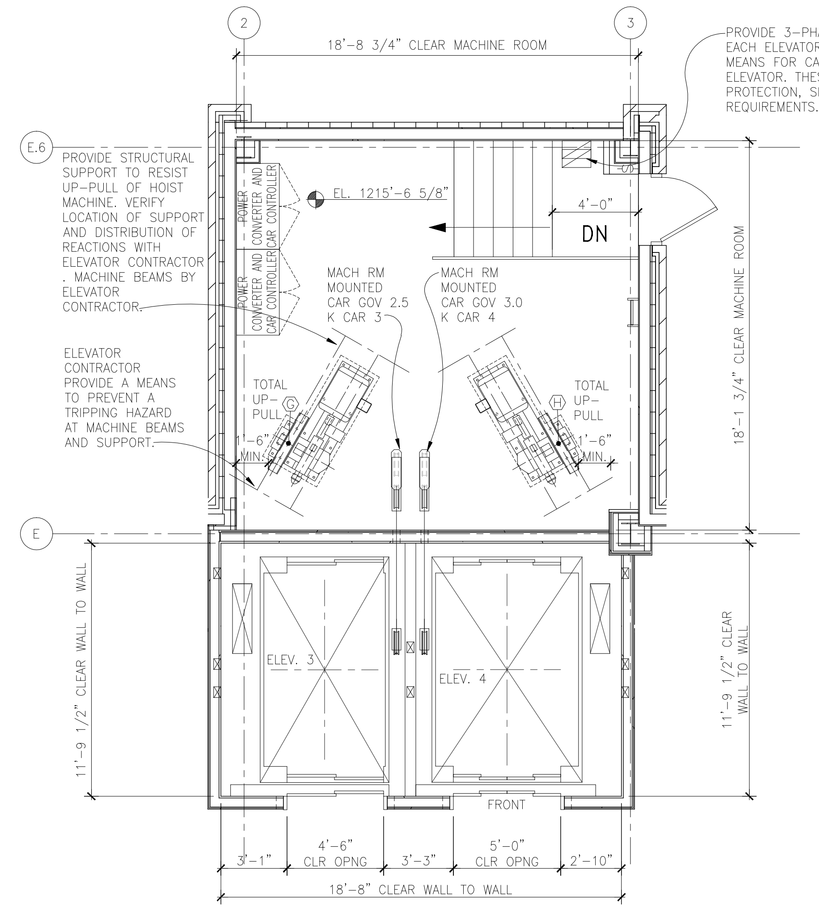
PROVIDE PIT ACCESS LADDER(S) OR DOOR(S), LIGHT SWITCH(ES), LIGHT(S), AND GFCI-PROTECTED UTILITY OUTLET(S)

COORDINATE LIGHT FIXTURES AND UTILITY OUTLETS LOCATION WITH ELEVATOR CONTRACTOR .

PROVIDE ADEQUATE STRUCTURAL SUPPORT REQUIRED FOR BUFFER AND R3 RAIL FORCE REACTIONS



1 VT03 PIT PLAN ELEVATORS 3 AND 4
SCALE: 1/4" = 1'-0"
DUTY ELEV. 3: 5000# @ 350 FPM
DUTY ELEV. 4: 6500# @ 350 FPM



MACH RM REACTION TABLE		
DUTY: ELEV. 3: 5000# @ 350 FPM		
KEY	REACTION	
G	52.3 K	TOTAL UP-PULL
DUTY: ELEV. 4: 6500# @ 350 FPM		
KEY	REACTION	
H	70.9 K	TOTAL UP-PULL

REACTIONS HAVE BEEN DOUBLED FOR IMPACT

REACTIONS DO NOT INCLUDE DEAD OR LIVE LOADS OF MACHINE ROOM FLOOR

PROVIDE SELF-CLOSING, SELF-LOCKING MACHINE ROOM ACCESS DOOR

PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 200 LUX (19 FC) ILLUMINATION AT MACHINE ROOM FLOOR

PROVIDE LIGHTS, LIGHT SWITCHES AND GFCI-PROTECTED UTILITY OUTLETS. COORDINATE LOCATIONS WITH ELEVATOR CONTRACTOR.

MACHINE ROOM HEAT EMISSION 81,500 BTUH TOTAL

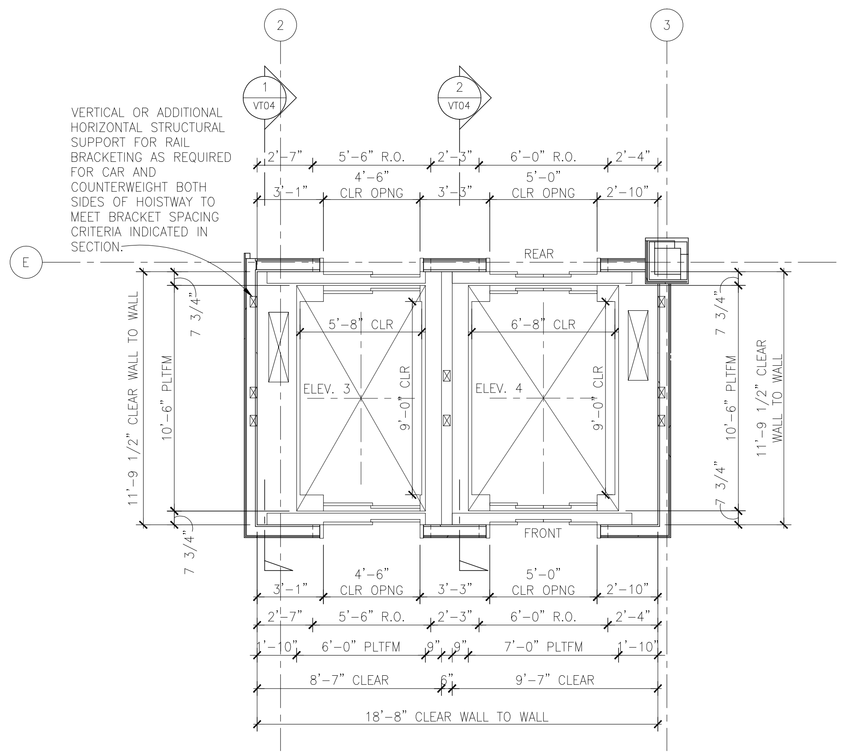
PROVIDE STRUCTURAL SUPPORT TO SUSTAIN REACTIONS INDICATED

DASHED LINE INDICATES HOISTWAY BELOW

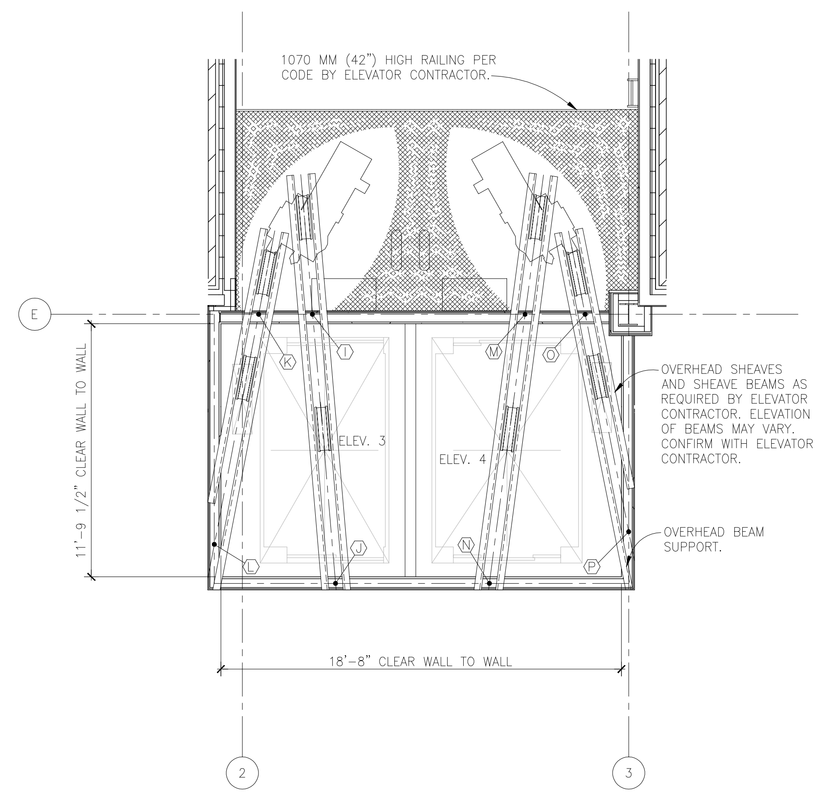
FOR EQUIPMENT IN THE MACHINE ROOM, A CLEARANCE OF NOT LESS THAN 450 MM (18") SHALL BE PROVIDED IN THE DIRECTION(S) REQUIRED FOR MAINTENANCE, AND A CLEAR PATH OF NOT LESS THAN 450 MM (18") SHALL BE PROVIDED TO ALL COMPONENTS THAT REQUIRE MAINTENANCE

IF A STRUCTURAL CONCRETE SLAB IS USED TO SUPPORT THE HOIST MACHINE(S), THE STRUCTURAL ENGINEER SHALL COORDINATE THE SLAB DESIGN AND ASSOCIATED DETAILS WITH THE DESIGNATED ELEVATOR CONTRACTOR. THE SLAB DESIGN SHALL MEET ALL APPLICABLE REQUIREMENTS OF ASME A17.1.

3 VT03 ROOF LEVEL MACHINE ROOM AND HOISTWAY PLAN ELEVATORS 3 AND 4
SCALE: 1/4" = 1'-0"
DUTY ELEV. 3: 5000# @ 350 FPM
DUTY ELEV. 4: 6500# @ 350 FPM



2 VT03 HOISTWAY PLAN ELEVATORS 3 AND 4
SCALE: 1/4" = 1'-0"
DUTY ELEV. 3: 5000# @ 350 FPM
DUTY ELEV. 4: 6500# @ 350 FPM



OVERHEAD REACTION TABLE	
DUTY: ELEV. 3: 5000# @ 350 FPM	
KEY	REACTION
I	63.0 K
J	3.4 K
K	51.4 K
L	3.3 K
DUTY: ELEV. 4: 6500# @ 350 FPM	
KEY	REACTION
M	83.4 K
N	3.4 K
O	68.0 K
P	3.6 K

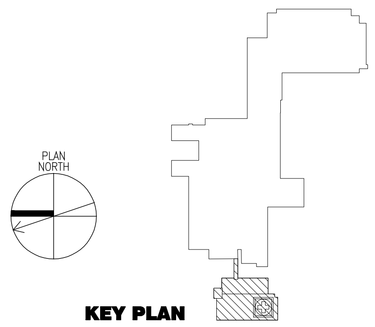
REACTIONS HAVE BEEN DOUBLED FOR IMPACT

PROVIDE STRUCTURAL SUPPORT TO SUSTAIN REACTIONS INDICATED

PROVIDE LADDER AND BAR-TYPE FLOOR GRATING AND SUPPORT. OPENINGS BETWEEN GRATING BARS SHALL REJECT A 20 MM (0.8") Ø BALL. GRATING SHALL SUSTAIN A LOAD OF 1000 N (225#) ON ANY 2000 SQ. MM (3 SQ. INCH) AREA AND A LIVE LOAD OF NOT LESS THAN 6 KPA (125# PER SF) BY ELEVATOR CONTRACTOR.

PROVIDE ADEQUATE LIGHTING TO MAINTAIN MIN. 200 LUX (19 FC) ILLUMINATION AT OVERHEAD GRATING

4 VT03 OVERHEAD PLAN ELEVATORS 3 AND 4
SCALE: 1/4" = 1'-0"
DUTY ELEV. 3: 5000# @ 350 FPM
DUTY ELEV. 4: 6500# @ 350 FPM



KEY PLAN

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

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ARCHITECT/ENGINEERS:

ARCHITECTURE ENGINEERING INTERIOR DESIGN DESIGN/BUILD

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Drawing Title: PLANS ELEVATORS 3 AND 4

Approved: Project Director

Project Title: VA CARES CONSOLIDATION VAMC, PITTSBURGH, PA RESEARCH OFFICE BLDG.

Location: VAPHS UNIVERSITY DRIVE

Date: 08-18-10 | Checked: SM | Drawn: BD

Project Number: 646CA2500R

Building Number: 30

Drawing Number: VT03

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Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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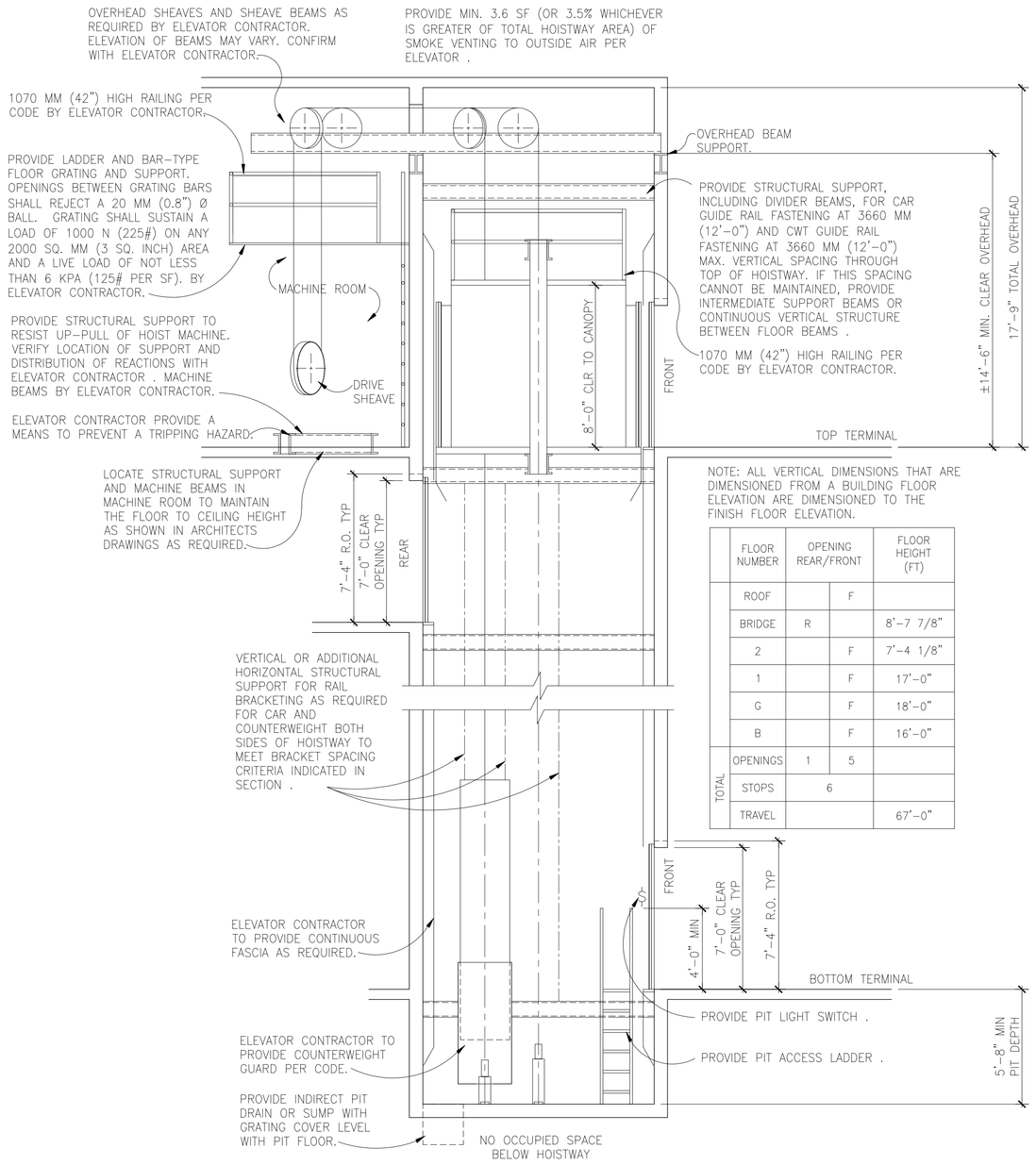
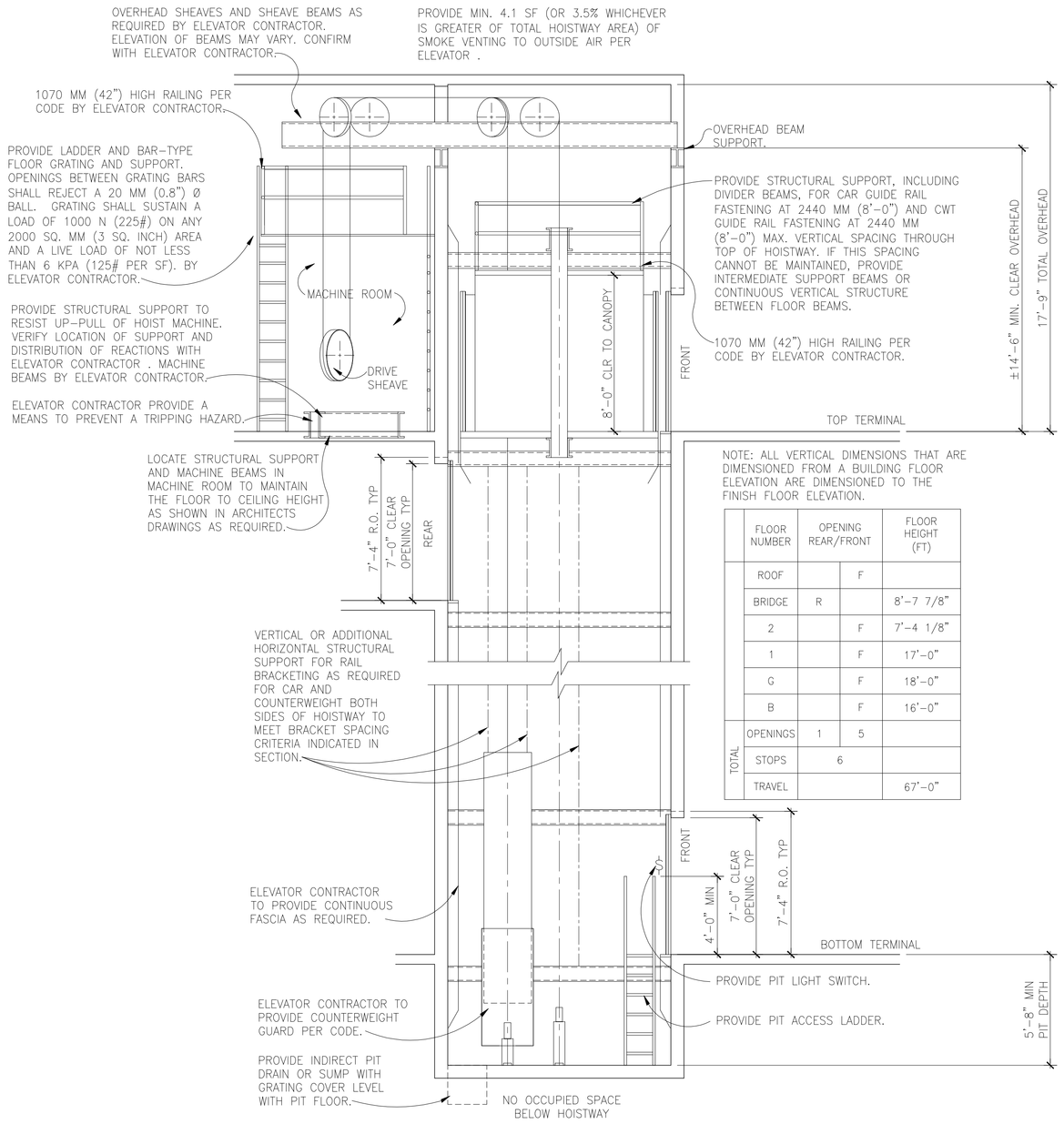


NOTE: ALL VERTICAL DIMENSIONS THAT ARE DIMENSIONED FROM A BUILDING FLOOR ELEVATION ARE DIMENSIONED TO THE FINISH FLOOR ELEVATION.

	FLOOR NUMBER	OPENING REAR/FRONT		FLOOR HEIGHT (FT)
	ROOF		F	
	BRIDGE	R		8'-7 7/8"
	2		F	7'-4 1/8"
	1		F	17'-0"
	G		F	18'-0"
	B		F	16'-0"
TOTAL	OPENINGS	1	5	
	STOPS	6		
	TRAVEL			67'-0"

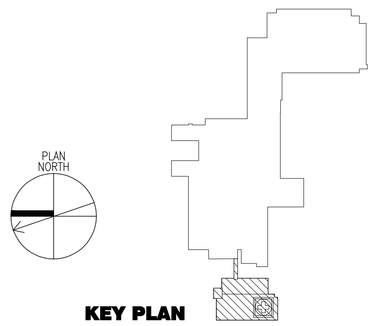
1 VT04 HOISTWAY SECTION
ELEVATOR 3
SCALE: 1/4" = 1'-0"
DUTY: 5000# @ 350 FPM



NOTE: ALL VERTICAL DIMENSIONS THAT ARE DIMENSIONED FROM A BUILDING FLOOR ELEVATION ARE DIMENSIONED TO THE FINISH FLOOR ELEVATION.

	FLOOR NUMBER	OPENING REAR/FRONT		FLOOR HEIGHT (FT)
	ROOF		F	
	BRIDGE	R		8'-7 7/8"
	2		F	7'-4 1/8"
	1		F	17'-0"
	G		F	18'-0"
	B		F	16'-0"
TOTAL	OPENINGS	1	5	
	STOPS	6		
	TRAVEL			67'-0"

3 VT04 HOISTWAY SECTION
ELEVATOR 4
SCALE: 1/4" = 1'-0"
DUTY 4: 6500# @ 350 FPM



KEY PLAN

FOR CONSTRUCTION
FULLY SPRINKLERED

Revisions:	Date

CONSULTANTS:

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ARCHITECT/ENGINEERS:

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Drawing Title: **HOISTWAY SECTIONS ELEVATORS 3 AND 4**

Approved: Project Director

Project Title: **VA CARES CONSOLIDATION VAMC, PITTSBURGH, PA RESEARCH OFFICE BLDG.**

Location: **VAPHS UNIVERSITY DRIVE**

Date: 08-18-10 | Checked: SM | Drawn: BD

Project Number: **646CA2500R**

Building Number: **30**

Drawing Number: **VT04**

Dwg. of

Office of Facilities Management

Department of Veterans Affairs

VA FORM 08-6231, OCT 1978

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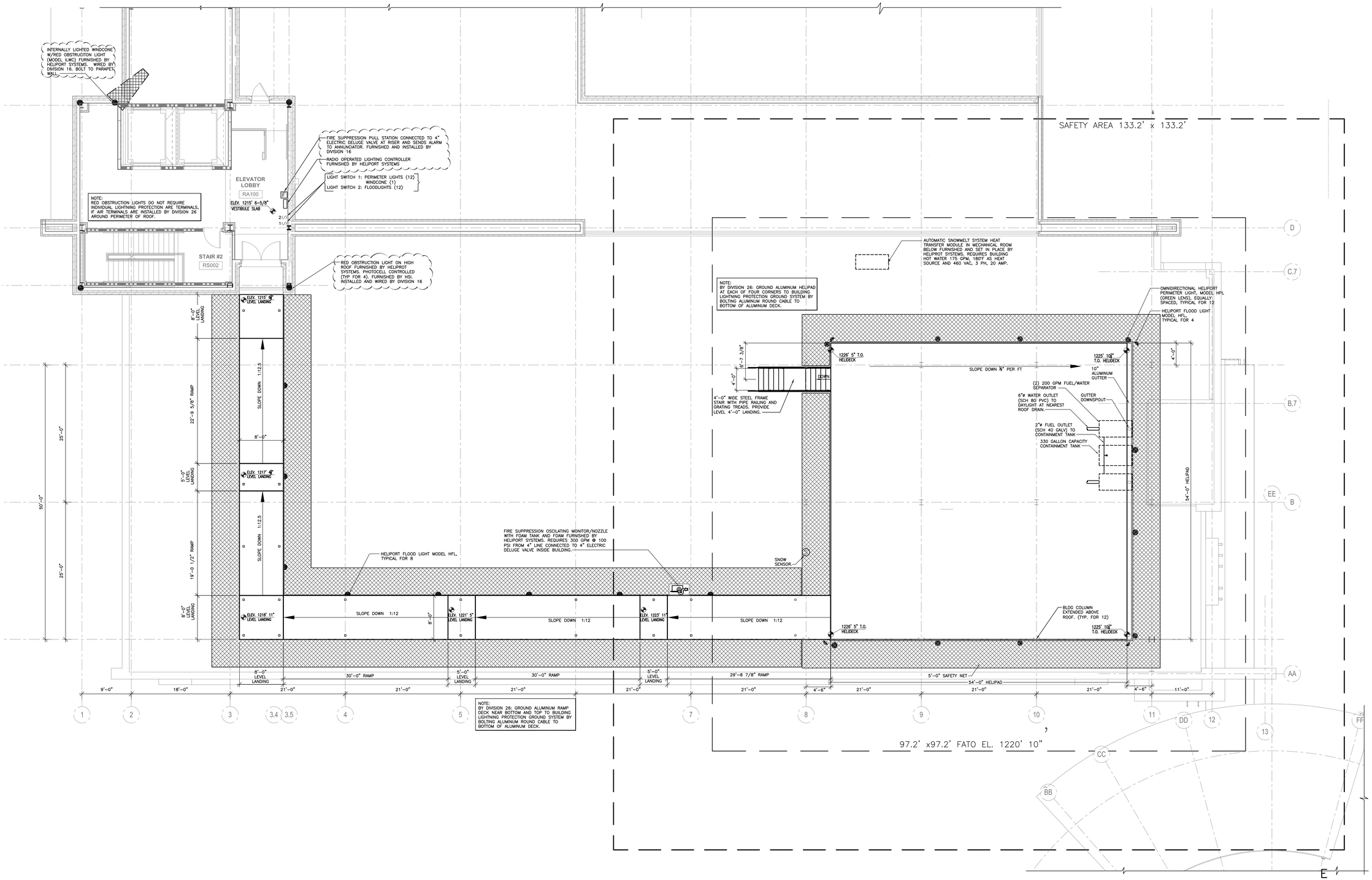

1 / G-1 HELIPORT GENERAL ARRANGEMENT PLAN

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

GENERAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT WORK, INCLUDING HELIPORT SUBCONTRACTOR AND COORDINATION BETWEEN DISCIPLINES.
2. REFER TO SPECIFICATION SECTION 34 75 26 HELICOPTER LANDING SYSTEMS FOR RELATED WORK.
3. UNLESS INDICATED OTHERWISE, ALL HORIZONTAL STEEL FRAMING, ALUMINUM HELIPORT DECKING, SAFETY NET, AND INDICATED HELIPORT EQUIPMENT SHALL BE BY HELIPORT SYSTEMS.
4. ALL RQUIRED ROOF/WALL PENETRATIONS AND SEALING SHALL BE BY GENERAL CONTRACTOR.
5. FOR HELIPORT STRUCTURAL DETAILS, SEE DRAWINGS S-1, AND S-2.
6. FOR HELIPORT ELECTRICAL PLAN, NOTES AND DETAILS, SEE DRAWING E-1.
7. FOR HELIPORT AFFF FIRE SUPPRESSION SYSTEM DETAILS, SEE DRAWING M-1.
8. FOR HELIPORT FUEL/WATER SEPARATOR PIPING DETAILS, SEE DRAWING M-1.

APPLICABLE STANDARDS:

1. FEDERAL AVIATION ADMINISTRATION; HELIPORT DESIGN GUIDE, AC 150/5390-2B.
   CLASSIFICATION: VFR, DAY & NIGHT, ROOFTOP, HOSPITAL.
   DESIGN HELICOPTER: UH-60 BLACKHAWK
   MAX GROSS WT = 22,000 LBS.
   OVERALL LENGTH = 64.8 FT.
   MAIN ROTOR DIAMETER = 53.8 FT.
2. NFPA 418; STANDARD FOR HELIPORTS, 2006 EDITION.
   CLASSIFICATION: ELEVATED, CATEGORY H-2.
3. NFPA 101, LIFE SAFETY CODE, LATEST EDITION.
4. 2009 EDITION INTERNATIONAL BUILDING CODE WITH LOCAL REVISIONS.

FOR CONSTRUCTION

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55 Madison Avenue
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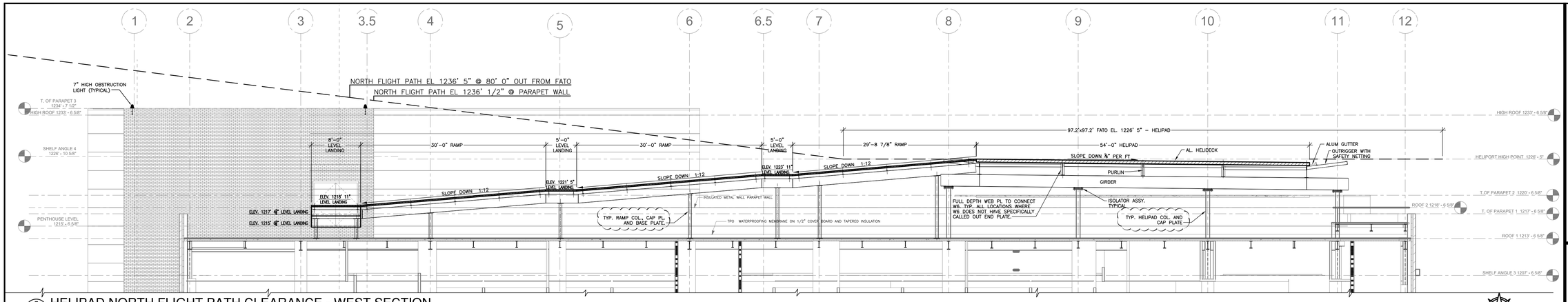
NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

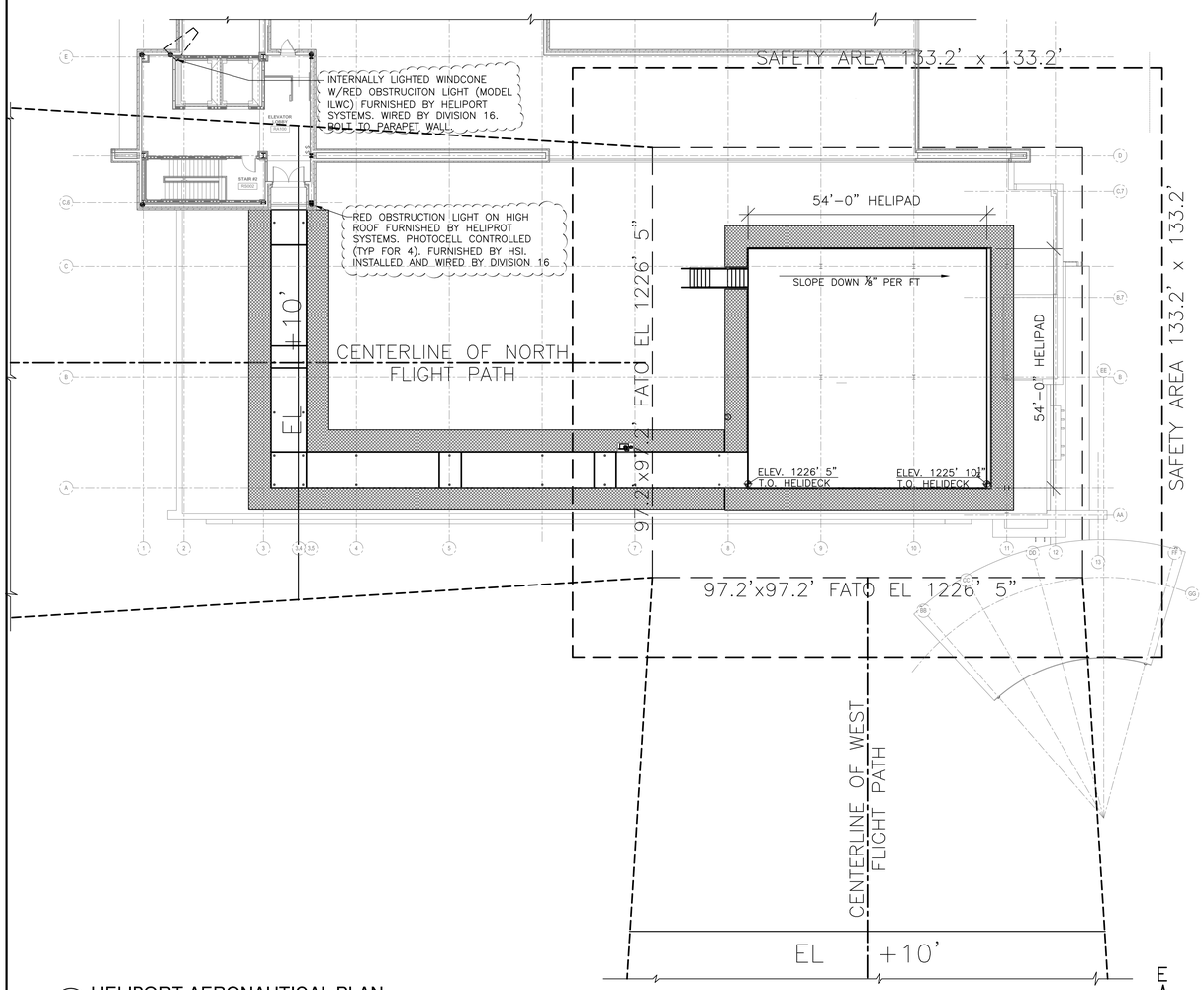
REVISIONS:
21 MAY 2009
16 JULY 2009
03 AUG 2009
05 AUG 2009
14 AUG 2009
20 MAY 2010

DRAWN: JH

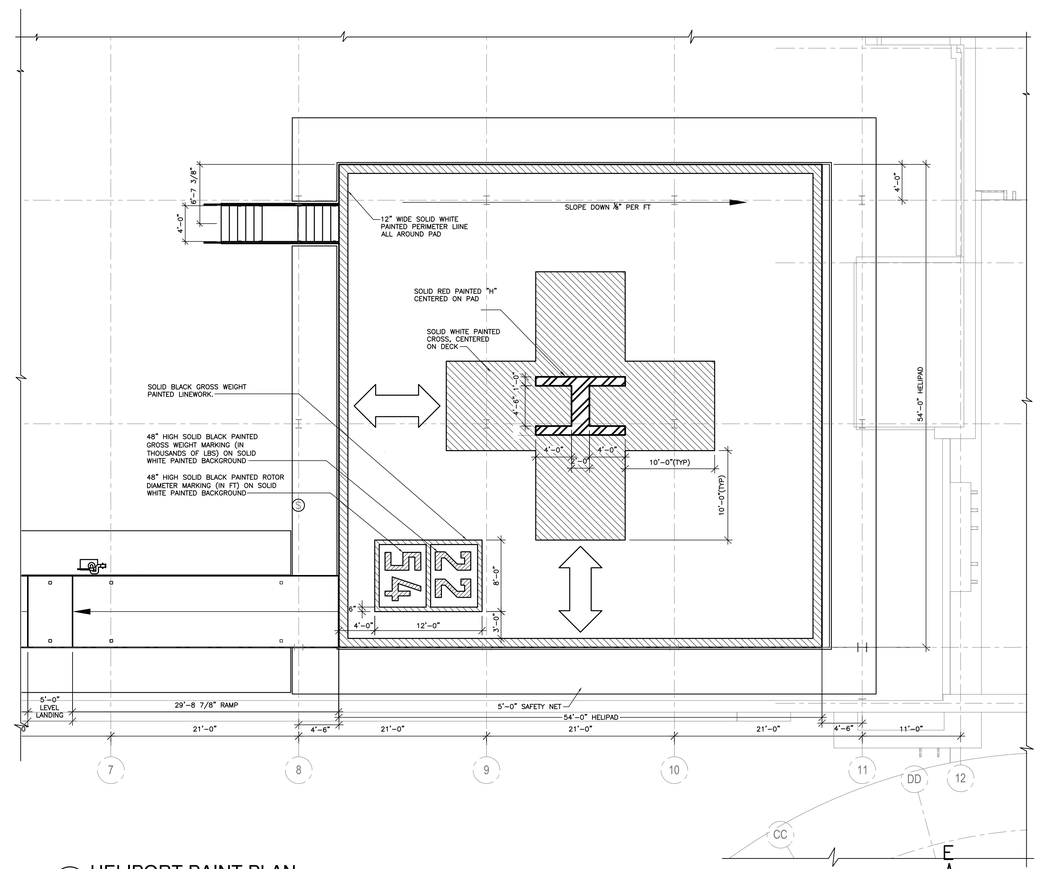
SHEET NO.
HP-G-1



3 G-2 HELIPAD NORTH FLIGHT PATH CLEARANCE - WEST SECTION
SCALE: 1/8"=1'-0"



2 G-2 HELIPORT AERONAUTICAL PLAN
SCALE: 1/16"=1'-0"



1 G-2 HELIPORT PAINT PLAN
SCALE: 1/8"=1'-0"

AERONAUTICAL STANDARDS:

1. FEDERAL AVIATION ADMINISTRATION; HELIPORT DESIGN GUIDE, AC 150/5390-2B.
   CLASSIFICATION: VFR, DAY & NIGHT, ROOFTOP, HOSPITAL.
   DESIGN HELICOPTER: UH-60 BLACKHAWK
   MAX GROSS WT = 22,000 LBS.
   OVERALL LENGTH = 64.8 FT.
   MAIN ROTOR DIAMETER = 53.8 FT.

AERONAUTICAL STANDARDS (Continued):

2. NFPA 418; STANDARD FOR HELIPORTS, 2006 EDITION.
   CLASSIFICATION: ELEVATED, CATEGORY H-2.
3. NFPA 101, LIFE SAFETY CODE, LATEST EDITION.
4. 2009 EDITION INTERNATIONAL BUILDING CODE WITH LOCAL REVISIONS.

FOR CONSTRUCTION

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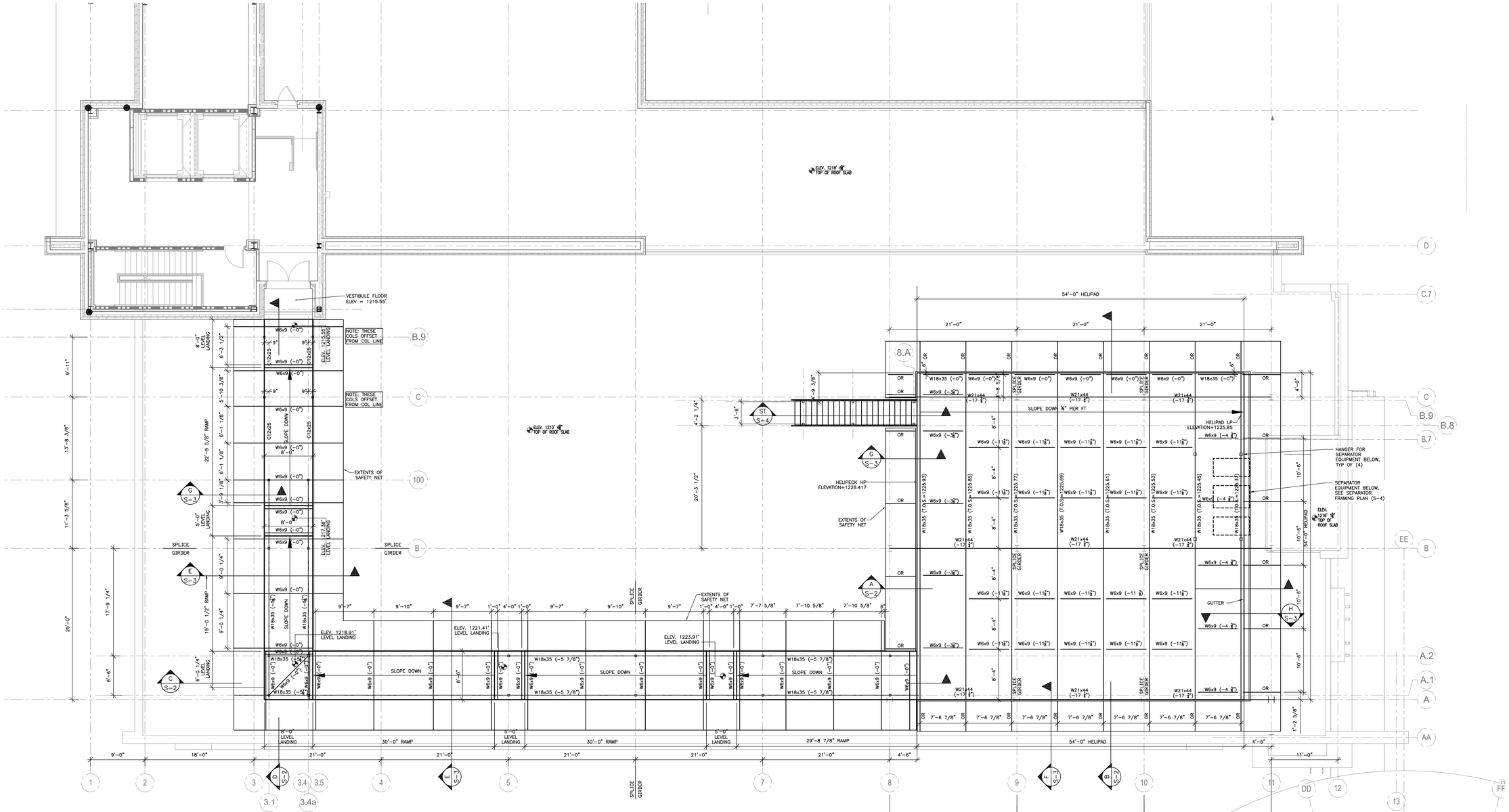
NEW ROOFTOP HELIPORT FOR VA MEDICAL CENTER

Pittsburgh, PA

REVISIONS:
21 MAY 2009
16 JULY 2009
03 AUGUST 2009
05 AUGUST 2009
14 AUGUST 2009

DRAWN: JH

SHEET NO.
HP-G-2



HELIPORT FRAMING PLAN

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

FRAMING PLAN GENERAL NOTES:

1. FIELD VERIFY ALL EXISTING/PROPOSED ELEVATIONS, DIMENSIONS, AND CONDITIONS PRIOR TO FABRICATION.

2. SEE SPECIFICATION 34 75 26 HELICOPTER LANDING SYSTEMS FOR RELATED WORK.

3. WORK INDICATED AS BEING BY GENERAL CONTRACTOR DENOTES REQUIRED PROJECT WORK WHICH WILL NOT BE PERFORMED BY HELIPORT SYSTEMS OR ITS DESIGNATED SUBCONTRACTORS. RESPONSIBILITY FOR COORDINATION AND COMPLETION OF WORK BY GENERAL CONTRACTOR.

4. INDICATED STRUCTURAL STEEL, ALUMINUM, AND SAFETY NETTING PROVIDED BY HELIPORT SYSTEMS. HELIPORT COLUMNS (AND THEIR CAP AND BASE PLATES), STAIR AND WALKWAY COLUMNS (AND THEIR CAP AND BASE PLATES), LATERAL LOAD RESISTING SYSTEM/BRACING, ROOF AND WALL PENETRATIONS, AND ROOFING WORK SHALL BE BY GENERAL CONTRACTOR. VERIFICATION OF STRENGTH OF EXISTING BUILDING MEMBERS FOR NEW COLUMN LOADS BY BUILDING ENGINEER.

5. PROVIDE FOUR BOLT CONNECTION AT EACH PURLIN CONNECTION TO GIRDER. BOLTS TO BE ¾"ø A325 U.O.N.

6. PROVIDE ⅜" STIFFENER PLATES EACH SIDE OF WEBS AT ALL BEARING CONDITIONS WHETHER SHOWN ON PLAN OR NOT. OMIT AT LOCATIONS WHERE A FULL DEPTH CONNECTION PLATE OR END PLATE EXISTS AT THE LOCATION OF STIFFENER PLATE.

7. "OR" INDICATES W6x9 OUTRIGGER. SEE SECTIONS AND TYP. DETAIL FOR MORE INFORMATION.

8. S-DRAWINGS ARE FOR STRUCTURAL STEEL FRAMING ONLY. SEE G, E, AND M DRAWINGS FOR ADDITIONAL HELIPORT ITEMS.

PRELIMINARY
FOR REVIEW ONLY
NOT FOR CONSTRUCTION

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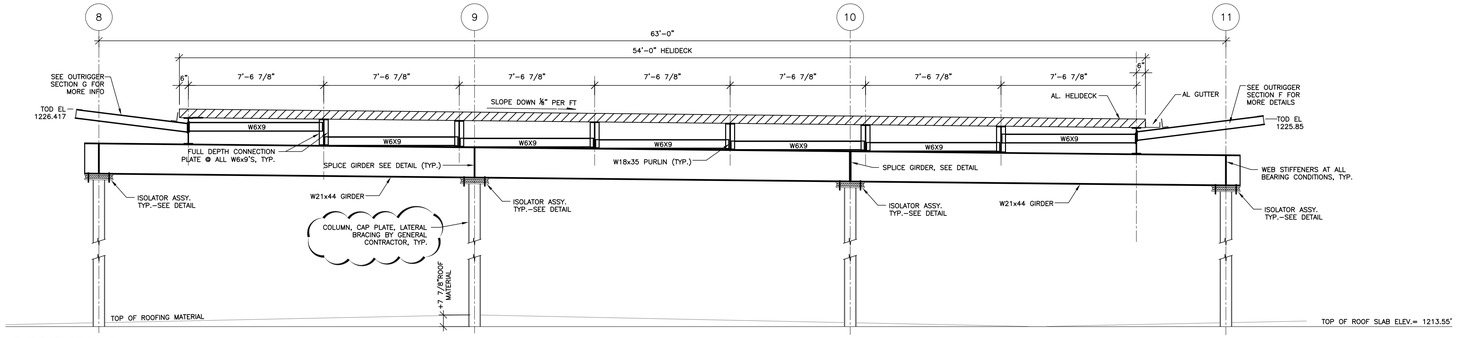
Web www.heliport.com

NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

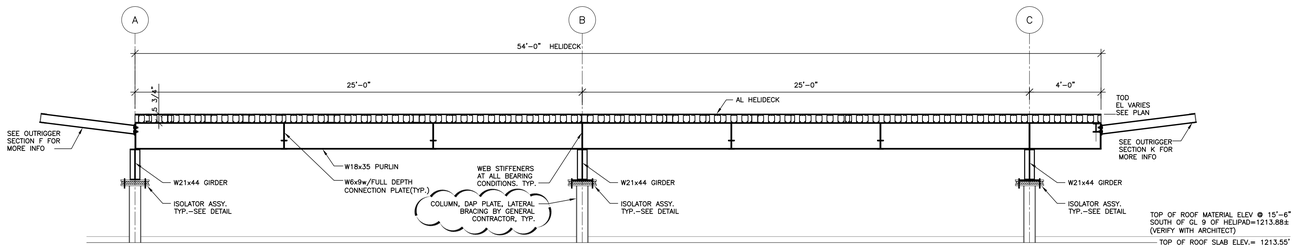
REVISIONS:
24 AUG 2009
01 SEPT 2009
26 MAR 2010
20 MAY 2010

DRAWN: IDS/JGD

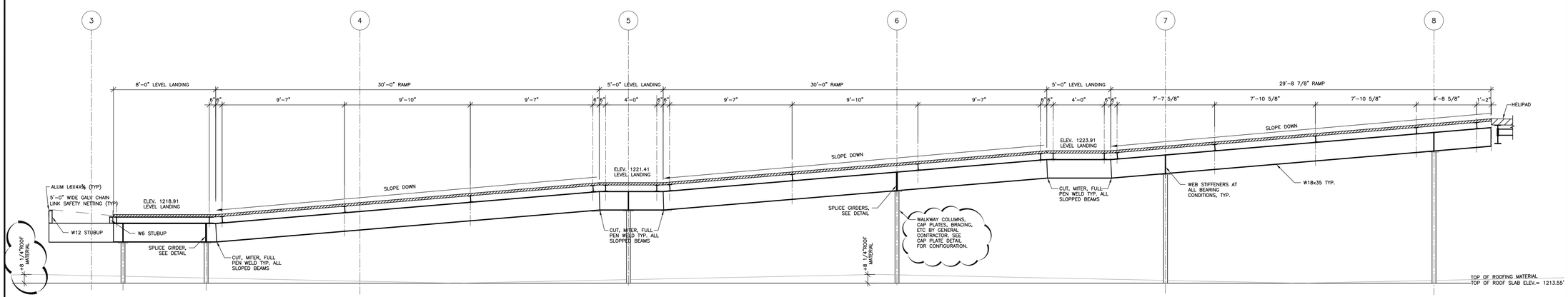
SHEET NO.
HP-S-1



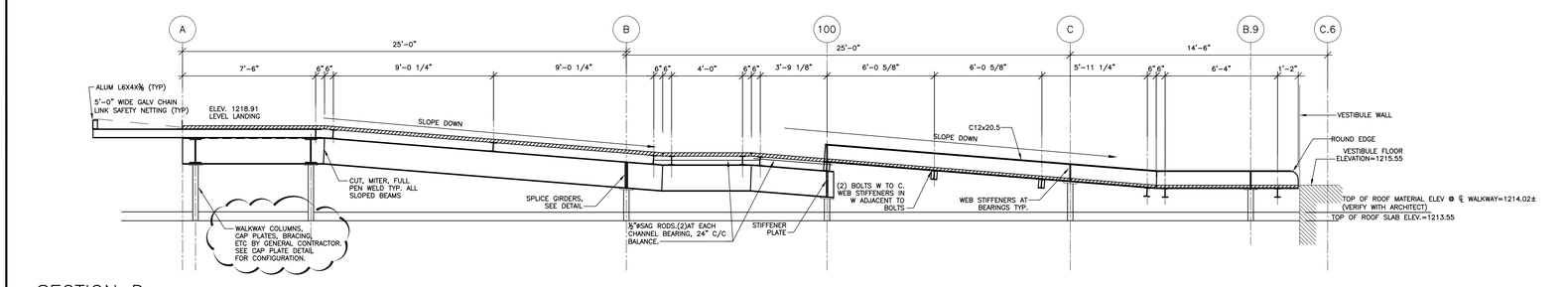
SECTION A
SCALE: 1/4" = 1'-0"



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



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



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

PRELIMINARY
NOT FOR
CONSTRUCTION

HELIPORT SYSTEMS INC.
55 Madison Avenue
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Morristown, NJ 07960
USA
Voice 1-973-540-0011
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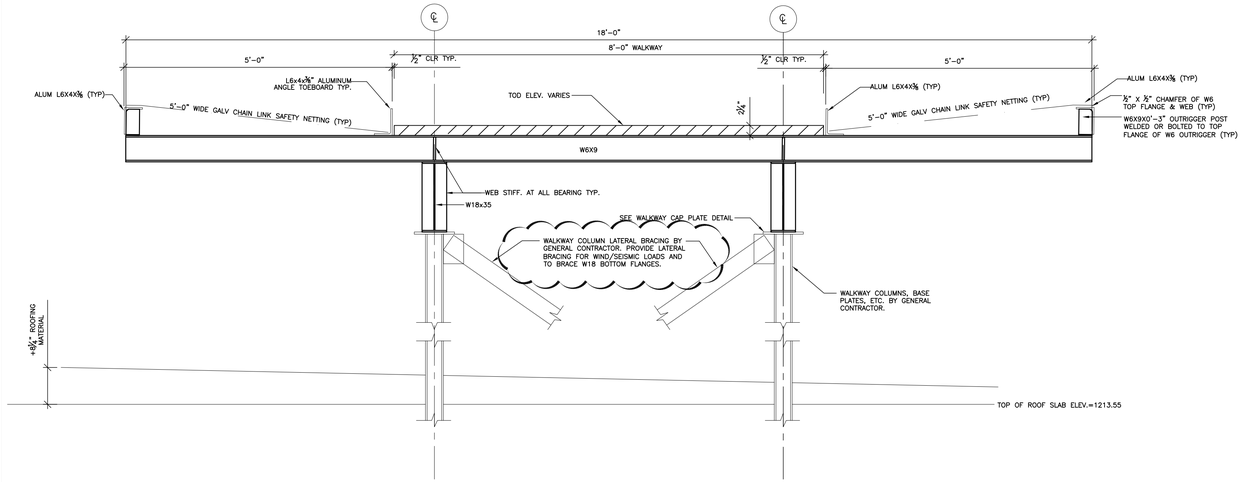
E-mail info@heliport.com
Web www.heliport.com

NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

REVISIONS:
24 AUG 2009
01 SEPT 2009
26 MAR 2010
20 MAY 2010

DRAWN: IDS/JGD

SHEET NO.
HP-S-2



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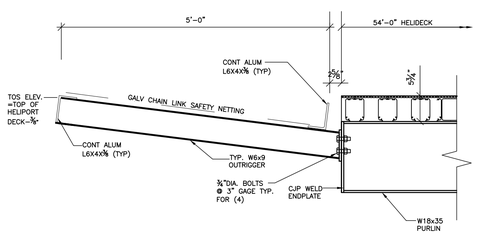

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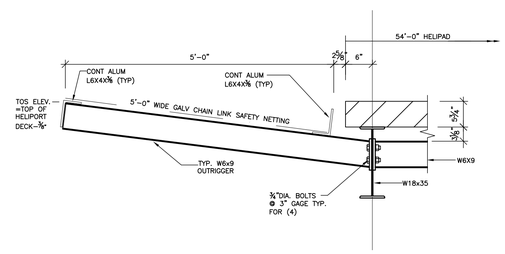

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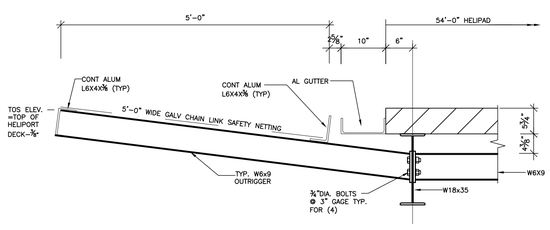

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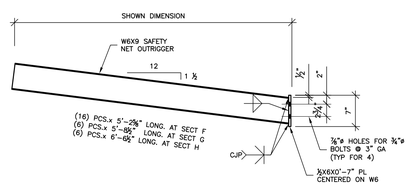

TYP. OUTRIGGER SECTION
SCALE: 3/4" = 1'-0"

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NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

REVISIONS:
24 AUG 2009
01 SEPT 2009
26 MAR 2010
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DRAWN: IDS/JGD

SHEET NO.
HP-S-3

NOTES AND SPECIFICATIONS

GENERAL NOTES:

1. WORK INDICATED HEREIN IS RELATED TO INSTALLATION OF A NEW OR MODIFICATION OF AN EXISTING HELIPORT STRUCTURE. THE DESIGN PRESENTED IS BASED UPON AS MUCH INFORMATION AS WAS PROVIDED TO HELIPORT SYSTEMS. ASSUMPTIONS HAVE BEEN MADE BASED ON HELIPORT SYSTEMS' INTERPRETATION OF EXISTING SITE CONDITIONS AND THE ADAPTATION OF HELIPORT SYSTEMS' SPECIFIC MATERIALS AND INSTALLATION PROCEDURES TO THESE CONDITIONS. IF THE WORK INDICATED HEREIN IS PERFORMED BY SOMEONE OTHER THAN HELIPORT SYSTEMS OR WITHOUT THE DIRECT SUPERVISION OF A REPRESENTATIVE OF HELIPORT SYSTEMS, HELIPORT SYSTEMS WILL NOT BE RESPONSIBLE FOR ANY FAILURES, DAMAGE, INJURY, DELAY, LOSS OF INCOME, EXTRA COST, OR SIMILAR LOSSES.

2. ALL WORK SHALL CONFORM WITH APPLICABLE CODES AND REGULATIONS OF THE STATE OF PENNSYLVANIA AND WITH ALL LOCAL LAWS AND REGULATIONS. THE LATEST EDITION OF ALL CODES AND STANDARDS SHALL APPLY. SPECIFICALLY APPLICABLE STANDARDS:
A. IBC 2006
B. AISC CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS AND BRIDGES.
C. AISC SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS. IN THE EVENT OF A CONFLICT BETWEEN APPLICABLE STANDARDS, THE MORE STRINGENT REQUIREMENTS SHALL APPLY.

3. REFER TO SPECIFICATION SECTION 34 75 26 HELICOPTER LANDING SYSTEM FOR RELATED WORK.

4. MATERIALS INSTALLED IN THE WORK SHALL MEET THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. NO SUBSTITUTIONS ALLOWED.

5. BEFORE SUBMITTING A BID FOR THE WORK TO BE DONE, CONTRACTORS AND FABRICATORS SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, AND LOCATIONS OF EXISTING STRUCTURES. NO ADDITIONAL PAYMENTS BEYOND THE CONTRACT PRICE WILL BE ISSUED FOR COMPLETION OF THE WORK IN ACCORDANCE WITH THE TERMS OF THE CONTRACT.

6. THE CONTRACTOR SHALL FURNISH ALL MATERIALS, LABOR, EQUIPMENT, AND SUPERVISION REQUIRED IN ACCORDANCE WITH THE TERMS OF THIS CONTRACT, INCLUDING ALL GENERAL AND DETAILED SPECIFICATIONS. THE WORK TO BE DONE UNDER ANY ITEM SHALL NOT BE LIMITED TO THE EXACT EXTENT OF THE WORK SHOWN OR DESCRIBED, BUT SHALL INCLUDE ALL INCIDENTAL WORK NECESSARY OR CUSTOMARILY DONE FOR THE COMPLETION OF THAT ITEM.

7. BEFORE FINAL ACCEPTANCE OF THE WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT, TEMPORARY WORKS, UNUSED AND USELESS MATERIALS, RUBBISH, AND TEMPORARY BUILDINGS.

8. THE CONTRACTOR SHALL GUARANTEE HIS WORK TO BE FREE FROM DEFECTS FOR A PERIOD OF ONE YEAR AFTER THE DATE OF COMPLETION.

9. THE CONTRACTOR SHALL PROVIDE SHORING AND BARRIERS AS REQUIRED TO PROTECT WORKMEN, MATERIALS, OTHER PROPERTIES, AND THE PUBLIC.

10. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE MEANS AND METHODS OF CONSTRUCTION AND FOR THE CONSTRUCTION SEQUENCES AND PROCEDURES TO BE USED.

11. THE STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH CIVIL, ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COORDINATION OF ALL REQUIREMENTS INTO THE SHOP DRAWINGS AND CONSTRUCTION.

12. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL SAFETY ASPECTS OF THE WORK.

13. UNLESS BRACING AND SHORING IS SPECIFICALLY DETAILED ON THESE DRAWINGS, CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ADEQUATE TEMPORARY SHORING, BRACING, AND OTHER SUPPORTS REQUIRED TO SAFELY EXECUTE THE WORK AND SHALL BE SOLELY RESPONSIBLE FOR THE SAME.

14. BY THE ACT OF SUBMITTING A BID PROSPECTIVE FABRICATORS, ERECTORS, AND OTHER SUBCONTRACTORS WARRANT THE FOLLOWING:
A. THE BIDDER AND ALL PROSPECTIVE SUBCONTRACTORS HAVE CAREFULLY AND THOROUGHLY REVIEWED THE PROJECT DRAWINGS, SPECIFICATIONS, AND OTHER APPLICABLE CONSTRUCTION DOCUMENTS AND HAVE FOUND THEM TO BE COMPLETE, FREE FROM AMBIGUITY, AND ADEQUATE FOR THE COMPLETION OF THE WORK IN QUESTION WITHIN THE PROPOSED SCHEDULE.
B. THE BIDDER AND ALL PROSPECTIVE SUBCONTRACTORS HAVE CAREFULLY EXAMINED THE PROJECT SITE AND THAT SAID EXAMINATIONS HAVE FOUND EXISTING CONDITIONS BE SUBSTANTIALLY AS INDICATED IN THE CONTRACT DOCUMENTS WITH NO DISCREPANCIES SUBJECT TO NEGATIVELY IMPACT THE INSTALLATION OR TIMELY COMPLETION OF THE WORK IN QUESTION. THE BIDDER FURTHER WARRANTS THAT ADEQUATE ACCESS IS AVAILABLE FOR ALL REQUIRED EQUIPMENT INCLUDING GROUND BASED CRANES AND DELIVERY VEHICLES.
C. THE BIDDER AND ALL EMPLOYEES AND SUBCONTRACTORS TO PROPOSED FOR THE SUBJECT WORK ARE SKILLED AND EXPERIENCED IN THE APPLICABLE TYPE(S) OF CONSTRUCTION PRESENTED IN THE CONTRACT DOCUMENTS.
D. THE BIDDER AND ALL EMPLOYEES, AGENTS, SUPPLIERS, AND SUBCONTRACTORS HAVE NOT RELIED UPON ANY VERBAL REPRESENTATIONS, REGARDLESS OF ALLEGED AUTHORIZATIONS, FROM THE OWNER HIS EMPLOYEES OR AGENTS INCLUDING, ARCHITECTS, ENGINEERS, AND CONTRACTORS.
E. THE SUBMITTED BID IS BASED SOLELY UPON THE CONSTRUCTION CONTRACT DOCUMENTS AND PROPERLY ISSUED WRITTEN ADDENDA.

15. THE ENGINEER WILL REVIEW CONTRACTOR'S SHOP DRAWINGS AND RELATED SUBMITTAL WITH RESPECT TO CONFORMANCE WITH THE CONTRACT DOCUMENTS. PRIOR TO MAKING SUCH SUBMITTALS, THE CONTRACTOR SHALL: REVIEW EACH SUCH SUBMISSION FOR COMPLETENESS CORRECTNESS AND CONFORMANCE WITH THE MEANS, METHODS, TECHNIQUES, AND SEQUENCING OF CONSTRUCTION. CONTRACTOR SHALL ALSO REVIEW SUCH SUBMISSIONS IN REGARD TO SAFETY PRECAUTIONS AND PROGRAMS APPLICABLE TO THE WORK. RESPONSIBILITY FOR COORDINATING THESE REQUIREMENTS WITH EXISTING SITE DIMENSIONS AND CONDITIONS IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR. REVIEW OF SUBMITTALS FOR THE INFORMATION OUTLINED ABOVE SHALL BE INDICATED BY AN APPROPRIATE STAMP AND SIGNATURE AFFIXED TO THE SUBMITTAL. THE ENGINEER WILL ASSUME THAT NO SHOP DRAWING OR RELATED SUBMITTAL COMPRISES A VARIATION FROM THE CONTRACT UNLESS CONTRACTOR ADVISES THE ENGINEER OTHERWISE VIA A WRITTEN INSTRUMENT WHICH IS ACKNOWLEDGED BY THE ENGINEER IN WRITING. IN THE EVENT THAT THE ENGINEER WILL REQUIRE MORE THAN TEN (10) WORKING DAYS TO PERFORM REVIEW, THE ENGINEER WILL SO NOTIFY THE CONTRACTOR.

DESIGN LOADS:

1. HELIPORT, TAXIWAY, AND PARKING PAD
   A. ALUMINUM DECK DEAD LOAD: 12 PSF
   B. UNIFORM LIVE LOAD: 100 PSF
   C. HELICOPTER GROSS WEIGHT: 22,000 LBS
   D. HARD LANDING IMPACT FACTOR: 1.50

DESIGN LOADS CONTINUED:

2. STAIRS
   A. UNIFORM LIVE LOAD: 100 PSF

3. SAFETY NET
   A. NET DEAD LOAD: 2 PSF
   B. UNIFORM LIVE LOAD: 25 PSF OR 400 LBS CONCENTRATED LOAD

4. FUEL WATER SEPARATOR
   A. SEPARATOR (FULL WT): 3,500 LBS
   B. CONTAINMENT TANK (FULL WT): 2,500 LBS

STRUCTURAL STEEL NOTES:

1. FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS, AND THE AISC CODE OF STANDARD PRACTICE, LATEST EDITIONS.

2. UNLESS SPECIFICALLY INDICATED OTHERWISE, ALL STEEL SHAPES SHALL SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 992 GRADE 50 (MIN Fy = 50 KSI).

3. ALL STEEL PLATES AND ANGLES SHALL CONFORM TO THE EQUIREMENTS OF ASTM A 36.

4. ALL STEEL TUBES AND PIPES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A 500 GRADE B (MIN Fy = 46 KSI).

5. ALL STEEL SHALL BE HOT DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A 123, WITH THE EXCEPTION OF STRUCTURAL PIPES, WHICH SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A 153.

6. PROVIDE FINAL TOUCHUP OF HOT DIPPED GALVANIZED COATINGS, PARTICUALRLY AREAS SUBJECT TO FIELD WELDING, WITH SPRAY APPLICATION OF ZINC-RICH PAINT.

7. UNLESS INDICATED OTHERWISE, ALL BOLTS SHALL BE ¾"ø ASTM 325.

8. ALL BOLTED CONNECTIONS SHALL CONTAIN A MINIMUM OF TWO (2) BOLTS.

9. ALL BOLTS SHALL BE HOT DIP GALVANIZED IN ACCORDANCE WITH ASTM A 123.

10. UNLESS INDICATED OTHERWISE, ARC-WELDING ELECTRODES SHALL BE AWS 5.1 SERIES E70 FOR MANUAL ARC WELDING.

11. UNLESS INDICATED OTHERWISE, BOLT HOLES SHALL BE 1/16 INCH LARGER IN DIAMETER THAN THE INDICATED BOLT DIAMETER. BOLT HOLES IN GALVANIZED MEMBERS SHALL BE 1/8" LARGER IN DIAMETER THAN THE INDICATED BOLT DIAMETER.

12. ALL WELDING SHALL BE PERFORMED BY QUALIFIED WELDERS AND SHALL CONFORM TO THE REQUIREMENTS OF THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE, AWS D1.1.

13. ALL WELDS SHALL BE UNIFORM IN SIZE AND APPEARANCE AND FREE FROM ALL PINHOLES, POROSITY, UNDERCUTTING, OR OTHER DEFECTS.

14. ALL COLUMNS SHALL BE MILLED TO BEAR AT CAP AND BASE PLATES.

15. DIMENSIONS SHOWN ARE TO CENTERLINES OF COLUMNS, BEAMS, AND PIPES; BACKS OF CHANNELS AND ANGLES; AND TOP SURFACES OF BEAMS AND TUBES, UNLESS INDICATED OTHERWISE.

17. ELEVATIONS SHOWN REFER TO TOP SURFACE OF MEMBER FLANGE OR CENTERLINE OF COLUMN UNLESS INDICATED OTHERWISE.

18. (–XX") FOLLOWING A FRAMING MEMBER DESIGNATION INDICATES TOP OF STEEL ELEVATION FOR THAT PARTICULAR MEMBER SHALL BE OFFSET A DISTANCE XX FROM TOP OF STEEL ELEVATIONS OF SURROUNDING FRAMING WITH "

5. PROVIDE MINIMUM SIZE IN ACCORDANCE WITH AWS D1.1. ALL WELDS SHALL DEVELOP FULL STRENGTH OF CONNECTED MEMBERS.

21. DRAWINGS MAY NOT DISTINGUISH BETWEEN SHOP AND FIELD WELDS. CONTRACTOR SHALL PROVIDE AS MUCH WELDING AS PRACTICAL IN THE SHOP.

ALUMINUM NOTES:

1. FABRICATION AND ERECTION OF STRUCTURAL ALUMINUM SHALL CONFORM TO THE LATEST EDITION OF THE ALUMINUM ASSOCIATION SPECIFICATIONS.

2. UNLESS INDICATED OTHERWISE, ALL ALUMINUM STRUCTURAL SHAPES SHALL CONFORM TO ASTM B 221 ALLOY 6061-T6.

3. ALUMINUM HELIPORT AND RAMP DECK SECTIONS SHALL CONFORM TO ASTM B 221 ALLOY 6005-T5.

4. ALUMINUM HELIPORT DECK SECTIONS SHALL HAVE THE FOLLOWING MINIMUM SECTION PROPERTIES:
D = 5.75 IN, A = 6.46 IN^2, I = 33.65 IN^4, S = 10.06 IN^3.

5. ALUMINUM RAMP DECK SECTIONS SHALL HAVE THE FOLLOWING MINIMUM SECTION PROPERTIES: D = 2.25 IN, A = 2.06 IN^2, I = 1.35 IN^4, S = 0.90 IN^3.

6. ALL WELDING SHALL BE CONDUCTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN WELDING SOCIETY STRUCTURAL WELDING CODE – ALUMINUM, AWS D1.2.

7. ALUMINUM MEMBERS SHALL BE PREVENTED FROM BEARING DIRECTLY ON STEEL SURFACES BY PLACING A CONTINUOUS NEOPRENE SHEET BETWEEN THE TWO MATERIALS.

SAFETY NET NOTES:

1. SAFETY NET FABRIC SHALL CONSIST OF 9 GA 1 1/4" WEAVE GALVANIZED CHAIN LINK FENCE.

2. SECURE CHAIN LINK FENCE FABRIC TO ALUMINUM ANGLE FRAME WITH ALUMINUM CLIPS AND POWDER ACTUATED STAINLESS STEEL FASTENERS SPACED AT 24" ON-CENTER MAXIMUM.

COLUMN SCHEDULE

COLUMN DESIGNATION	TOP OF COL. ELEVATION (FT.)	VERT. LOAD	LAT LOAD	COL. SIZE	CAP PLATE	ISO LOAD
3.1–B.9**	1215.36	7	BRACED (BY OTHERS)	BY OTHERS	4"x4"x1" MIN. BY OTHERS	NA
3.1–C**	1215.74	10	BRACED (BY OTHERS)	BY OTHERS	4"x4"x1" MIN. BY OTHERS	NA
3.4a–B.9**	1215.36	7	BRACED (BY OTHERS)	BY OTHERS	4"x4"x1" MIN. BY OTHERS	NA
3.4a–C**	1215.74	10	BRACED (BY OTHERS)	BY OTHERS	4"x4"x1" MIN. BY OTHERS	NA
3.1–100	1214.86	10	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.4a–100	1214.86	10	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.1–B	1215.37	12	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.4a–B	1215.37	12	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.1–A.2	1216.76	12	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.1–A.1	1216.76	5	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.4a–A.2	1216.76	20	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
3.4a–A.1	1216.76	15	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
5–A.2	1219.26	22	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
5–A.1	1219.26	22	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
6–A.2	1220.77	17	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
6–A.1	1220.77	17	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
7–A.2	1222.11	17	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
7–A.1	1222.11	17	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
8–A.2	1223.88	14	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
8–A.1	1223.88	14	BRACED (BY OTHERS)	BY OTHERS	7"x12"x1"	NA
8–A	1222.53	41	3	BY OTHERS	19"x19"x1"	28
9–A	1222.31	45	3	BY OTHERS	19"x19"x1"	30
10–A	1222.09	45	3	BY OTHERS	19"x19"x1"	30
11–A	1221.87	42	3	BY OTHERS	19"x19"x1"	28
8–B	1222.53	41	3	BY OTHERS	19"x19"x1"	26
9–B	1222.31	41	3	BY OTHERS	19"x19"x1"	26
10–B	1222.09	41	3	BY OTHERS	19"x19"x1"	26
11–B	1221.87	41	3	BY OTHERS	19"x19"x1"	26
8–C	1222.53	43	3	BY OTHERS	19"x19"x1"	28
9–C	1222.31	54	3	BY OTHERS	19"x19"x1"	31
11–C	1221.87	43	3	BY OTHERS	19"x19"x1"	30
10–C	1222.09	54	3	BY OTHERS	19"x19"x1"	30
ST	SEE PLAN AND SECTION	3	BRACED (BY OTHERS)	HSS4x4 BY OTHERS	4x4	NA

COLUMN SCHEDULE NOTES

1. COLUMNS INCLUDE CAP PLATES, BASE PLATES, FASTENERS TO BUILDING, AND VERIFICATION OF STRENGTH OF BUILDING TO SUPPORT LOADS SHOWN IN THE SCHEDULE.

2. ELEVATION DENOTES TOP OF COLUMN CAP PLATE AT CENTERLINE OF COLUMN. ALL COLUMN CAP PLATES SHALL BE FABRICATED TO MATCH SLOPE OF SUPPORTED FRAMING UNLESS INDICATED OTHERWISE.

3. COLUMN DESIGN LOADS ARE MAXIMUM SERVICE LOADS APPLIED AT TOP OF COLUMN CAP PLATE AND ARE POSITIVE IN THE DOWNWARD DIRECTION. COLUMN DESIGN LOADS INCLUDE DEAD WEIGHT OF ALL STRUCTURAL ELEMENTS AND MAXIMUM APPLICABLE LIVE LOADS. [illegible]

4. COLUMNS, CAP PLATES, BASE PLATES, ATTACHMENT TO BUILDING BY GENERAL CONTRACTOR. BUILDING ENGINEER TO VERIFY COLUMN DESIGN ADEQUATE FOR SHOWN LOADINGS.

5. COLUMNS TO BE DESIGNED FOR OR BRACED FOR LATERAL LOADS SHOWN IN ANY DIRECTION.

6.**–COLUMNS ARE OFFSET FROM COL LINE. SEE PLAN AND SECTION. CAP PLATE SIZES AND BOLT HOLES TO BE COORDINATED WITH EOR.

VIBRATION ISOLATOR NOTES

1. VIBRATION ISOLATORS TO BE PROVIDED BY HELIPORT SYSTEMS.

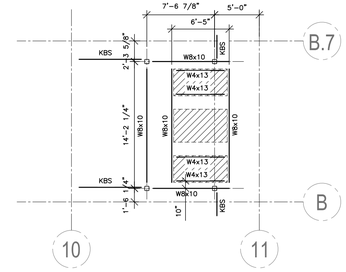
2. VIBRATION ISOLATORS TO BE DESIGNED TO DAMP VIBRATIONS TO OWNERS REQUIREMENTS FROM "ISOLATOR DYNAMIC LOAD" AS SHOWN ON COLUMN SCHEDULE. VIBRATION ISOLATOR LOAD IS DEAD LOAD AT COLUMN PLUS GROSS WEIGHT OF HELICOPTER.

3. VIBRATION ISOLATOR TO BE CAPABLE OF STATICALLY RESISTING FULL COLUMN DESIGN LOAD VERTICALLY.

4. VIBRATION ISOLATORS TO BE SUITABLE FOR PERMANENT EXTERIOR EXPOSURE.

5. VIBRATION ISOLATORS TO BE 18"x18"x2" DEEP "FABCELL" BY FABREEKA. ISOLATOR MANUFACTURER/PROVIDER TO COORDINATE ISOLATOR BOLT SIZES AND PATTERNS WITH DETAILS SHOWN ON THIS PLAN. ISOLATOR MANUFACTURER TO PROVIDE VIBRATION ISOLATING BUSHINGS FOR BOLTS.

6. ISOLATOR MANUFACTURER TO PROVIDE ASSEMBLY DRAWINGS, DESIGN CALCULATIONS, INSTALLATION INSTRUCTIONS, AND SPECIFICATIONS. ISOLATORS TO BE INSTALLED IN STRICT ACCORDANCE WITH ALL MANUFACTURERS SUBMISSIONS.



SEPARATOR FRAMING PLAN
SCALE: 1/8" = 1'–0"

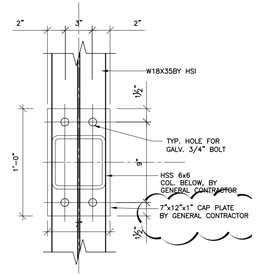
SEP. FRAMING PLAN GENERAL NOTES:

1. BOT OF STEEL TO BE MIN 1'–0" ABOVE FINISHED ROOF. COORD. w/MECH PLAN, AND ROOF ELEVATIONS.

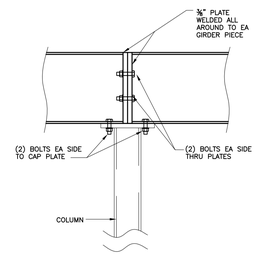
2. W4x13 TO BE AT –3½" FROM W8x10.

3. HANGERS TO BE HSS3x3x⅜" w/⅜" PLATE SHOP FAB T&B. (4) BOLT CONNECTION TO FRAMING T&B.

4. "KBS"=L4x4x⅜" BRACE@45°± UP TO HELIPORT FRAMING. ATT. w/⅜" PLATES T&B.

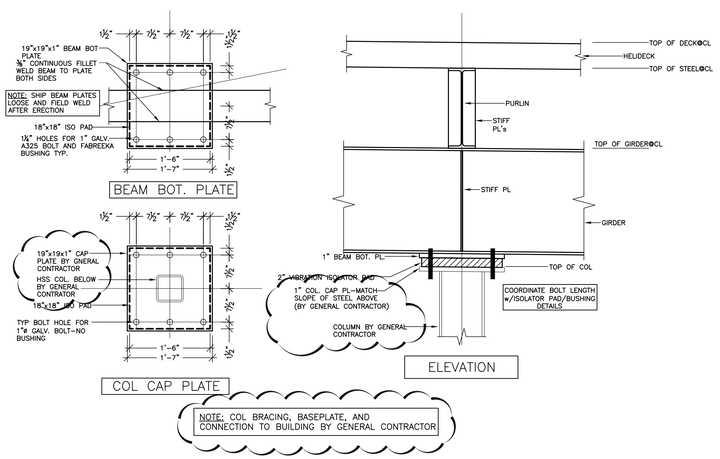


WALKWAY COLUMN DETAIL
SCALE: 1–1/2"=1'–0"

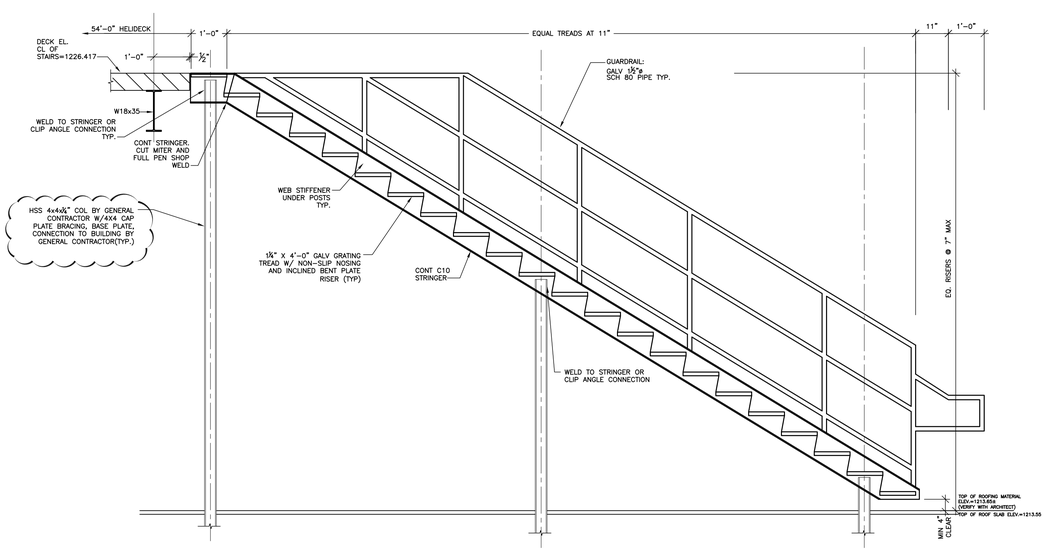


NOTE:– SEE PLAN FOR LOCATIONS

GIRDER/BEAM SPLICE DETAIL
SCALE: 3/4" = 1'–0"



HELIPAD COLUMN DETAILS
SCALE: 3/4"=1'–0"



SECTION ST–1
SCALE: 1/2" = 1'–0"

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FOR
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REVISIONS:
24 AUG 2009
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26 MAR 2010
20 MAY 2010

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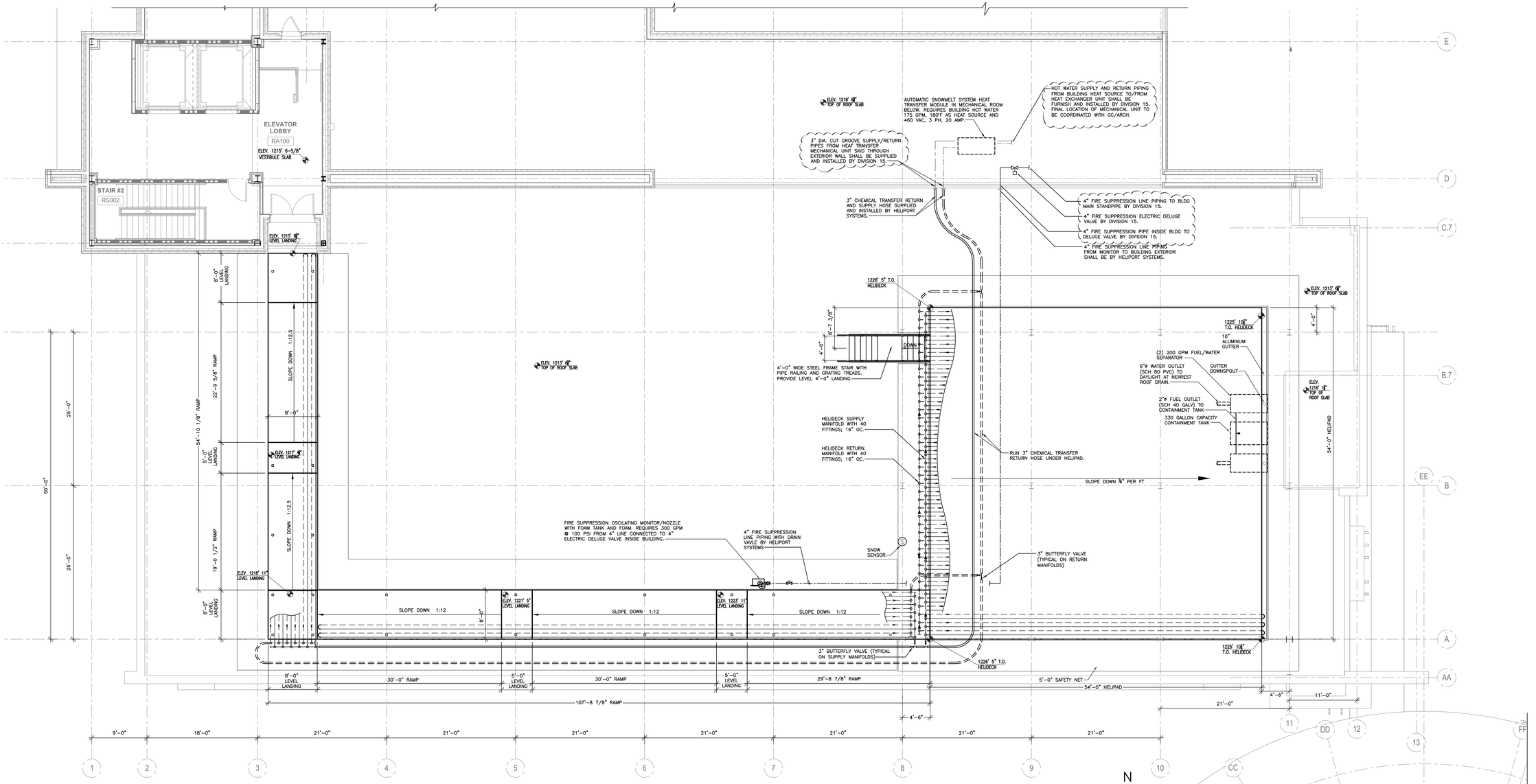
SHEET NO.
HP-S-4



1 HELIPORT GENERAL ARRANGEMENT PLAN
M-1 SCALE: 1/8"=1'-0"

GENERAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT WORK, INCLUDING HELIPORT SUBCONTRACTOR AND COORDINATION BETWEEN DISCIPLINES.
2. REFER TO SPECIFICATION SECTION 34 75 26 HELICOPTER LANDING SYSTEM FOR RELATED WORK.
3. ALL REQUIRED ROOF AND WALL PENETRATIONS AND SEALING SHALL BE BY GENERAL CONTRACTOR.
4. FIRE SUPPRESSION PIPING FROM HELIPORT MONITOR BUILDING EXTERIOR SHALL BE BY HELIPORT SYSTEMS.
5. HELIPORT UTILITY SNOWMELT PIPING FROM BUILIDING EXTERIOR TO THE HELIDECK AND RAMP MANIFOLDS SHALL BE BY HELIPORT SYSTEMS.

SNOW MELT HEATING SYSTEM NOTES:

1. HELIPORT HYDRONIC SNOW MELT HEATING SYSTEM SHALL BE HYDRONIC WATER/GLYCOL TYPE WITH BUILDING HOT WATER 180°F AT 175 GPM AS THE BUILDING HEAT SOURCE.
2. SNOW MELT HEATING SYSTEM MECHANICAL UNIT SHALL BE A COMPLETE FUNCTIONAL SKID MOUNTED UNIT FURNISHED AND SET IN PLACE BY HELIPORT SYSTEMS. APPROXIMATE SKID DIMENSIONS: 2'-8"W x 6'-0"L x 6'-0"H.
3. GLYCOL SUPPLY AND RETURN LINES OUTSIDE OF BUILDING SHALL BE BY HELIPORT SYSTEMS, SUSPENDED FROM HELIPORT STRUCTURAL FRAMING TO THE MAXIMUM EXTENT POSSIBLE USING HOT DIPPED GALVANIZED BEAM CLAMPS AND THREADED ROD HANGERS. WHERE PIPING IS REQUIRED TO BE RUN ACROSS ROOF, IT SHALL BE SECURELY STRAPPED TO PILLOW BLOCKS OR TREATED WOOD BLOCKING AND RUN BY MOST DIRECT ROUTE POSSIBLE. INSTALLATION METHODS FOR PIPING TO BE RUN ACROSS ROOF SHALL BE APPROVED BY ROOFING MANUFACTURER PRIOR TO INSTALLATION. EXTERIOR GLYCOL SUPPLY/RETURN LINES SHALL BE UN-INSULATED UHMW CHEMICAL TRANSFER HOSE.
4. SNOW MELT TUBING IN HELIPORT DECK, RAMP, MANIFOLDS, SPECIALTY VALVES AND FITTINGS AND GLYCOL SUPPLY AND RETURN PIPING (FROM MAINFOLD TO BUILDING EXTERIOR) SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS.
5. ALL ELEMENTS OF HELIPORT SNOW MELT HEATING SYSTEM SHALL BE RATED FOR 125 PSI MINIMUM. COMPLETED SYSTEM SHALL BE PRESSURE TESTED WITH WATER TO 1.5 TIMES THE RATED PRESSURE AND ANY LEAKS CORRECTED PRIOR TO SYSTEM FILL AND START UP.
6. HELIPORT SNOW MELT HEATING SYSTEM MECHANICAL UNIT SHALL BE DESIGNED TO PROVIDE A 160° F SOLUTION OF 50% WATER AND 50% PROPYLENE GLYCOL. SYSTEM SHALL BE FILLED BY HELIPORT SYSTEMS. HELIPORT SNOW MELT HEATING SYSTEM WATER GLYCOL SOLUTION SHALL BE FURNISHED BY HELIPORT SYSTEMS.

AFFF FIRE SUPPRESSION SYSTEM NOTES:

1. HELIPORT AFFF FIRE SUPPRESSION SYSTEM SHALL BE A "NORMALLY DRY" SYSTEM OUTSIDE THE BUILDING.
2. ELECTRONICALLY ACTUATED DELUGE VALVE FOR FIRE SUPPRESSION SYSTEM SHALL BE LOCATED WITHIN THE BUILDING SHELL.
3. FIRE SUPPRESSION SYSTEM OSCILLATING MONITOR, NOZZLE, FOAM CONCENTRATE STORAGE TANK, AND AFFF FOAM CONCENTRATE SHALL BE FURNISHED, INSTALLED, AND FLOW TESTED BY HELIPORT SYSTEMS.
4. HELIPORT FIRE SUPPRESSION SYSTEM SUPPLY PIPING SHALL BE 4" DIAMETER, HOT DIPPED GALVANIZED, AND A MINIMUM OF 296 GPM FLOW AT 100 PSI MINIMUM.
5. FIRE SUPPRESSION LINE PIPING SHALL BE FURNISHED WITH DRAIN VALVE(S) AS NECESSARY TO ALLOW COMPLETE DRAIN DOWN OF "NORMALLY DRY" EXTERIOR PIPING FOLLOWING SYSTEM OPERATION. ALL PIPING OUTSIDE THE BUILDING SHALL BE BY HELIPORT SYSTEMS.
6. OSCILLATING MONITOR SHALL BE HELIPORT SYSTEMS MODEL HFPOM, UL LISTED.
7. AFFF FOAM CONCENTRATE SHALL BE 1% LOW EXPANSION AFFF, FREEZE PROTECTED, INSULATE PN 415301, UL LISTED.

HELIPORT AFFF FIRE SUPPRESSION SYSTEM DESIGN CALCULATIONS:

1. DESIGN STANDARD: NFPA 418 STANDARD FOR HELIPORTS. HELIPORT CLASSIFICATION: H-2 (HELICOPTERS 50 TO 80 FEET LONG).
2. NFPA 418 RECOMMENDS AFFF APPLICATION RATE OF 0.10 GPM/SF OF LANDING PAD SURFACE AREA.
3. OSCILLATING MONITOR: LANDING PAD SURFACE AREA = 54'-0" x 54"-0" = 2916 SF. 2916 SF x 0.10 GPM/SF = 291.6 GPM MINIMUM, + 4 GPM FOR MONITOR DRIVE MECHANISM = 295.6 GPM. MINIMUM WATER PRESSURE AT 295.6 GPM AT 100 PSI MINIMUM
4. NFPA 418 RECOMMENDS FIXED FOAM SYSTEMS HAVE A 5 MINUTE DURATION OF AFFF FLOW.
5. 295.6 GPM FLOW RATE X 1% AFFF CONCENTRATE = 2.95 GPM CONCENTRATE FLOW. 2.95 GPM X 5 MINUTES = 14.75 GALLONS OF FOAM CONCENTRATE REQUIRED. AFFF CONCENTRATE STORAGE TANK CAPACITY = 25 GALLONS. 25 GALLON CAPACITY DIVIDED BY 2.95 GPM = OVER 8.47 MINUTES OF FOAM AVAILABLE WHEN FLOWING 295.6 GPM FROM FULL CONCENTRATE STORAGE TANK.

FUEL/WATER SEPARATOR NOTES:

1. HELIPORT FUEL/WATER SEPARATOR AND FUEL CONTAINMENT TANK SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS, COMPLETE WITH INDICATED PIPING.
2. FUEL/WATER SEPARATOR PIPING SHALL BE SUSPENDED FROM HELIPORT STRUCTURAL FRAMING TO THE MAXIMUM EXTENT POSSIBLE USING GALVANIZED BEAM CLAMPS AND THREADED ROD HANGERS. WHERE PIPING IS REQUIRED TO BE RUN ACROSS ROOF, IT SHALL BE SECURELY STRAPPED TO PILLOW BLOCKS OR TREATED WOOD BLOCKING AND RUN BY THE MOST DIRECT ROUTE POSSIBLE. INSTALLATION METHODS FOR PIPING TO BE RUN ACROSS ROOF SHALL BE APPROVED BY ROOFING MANUFACTURER PRIOR TO INSTALLATION.
3. PROVIDE FERNCO OR SIMILAR ADJUSTABLE TYPE COUPLING FOR TRANSITION FROM NOMINAL 6"ø GUTTER DOWN SPOUT(S) TO 6"ø CAST IRON PIPING AND FROM 6"ø CAST IRON PIPING TO NOMINAL 6"ø SEPARATOR INLET CONNECTION(S). ALSO, FROM NOMINAL 6"ø SEPARATOR OUTLET CONNECTION(S) TO 6"ø PVC PIPING. SIX (6) FLEXIBLE COUPLINGS REQUIRED. FLEXIBLE COUPLINGS SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS.
4. SEPARATOR FUEL OUTLET AND CONTAINMENT TANK FUEL INLET PIPING CONNECTIONS ARE 2"ø NPT.

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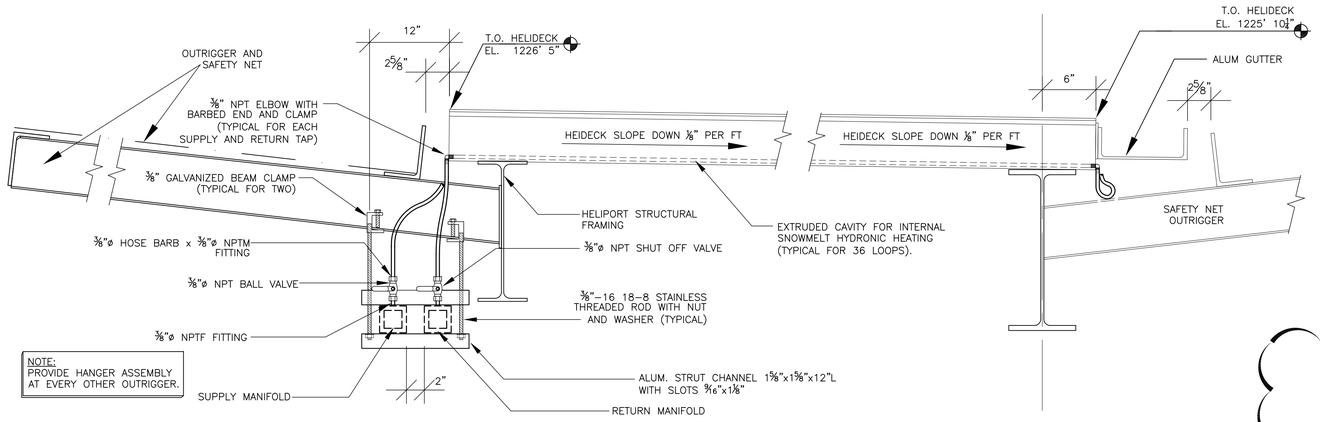
NEW ROOFTOP HELIPORT
FOR
VA MEDICAL CENTER
Pittsburgh, PA

REVISIONS:
21 AUG 2009
27 JAN 2010
29 JAN 2010
20 MAY 2010

DRAWN: JH

SHEET NO.
HP-M-1



1 M-2 SNOW MELT SUPPLY AND RETURN MANIFOLD SECTION
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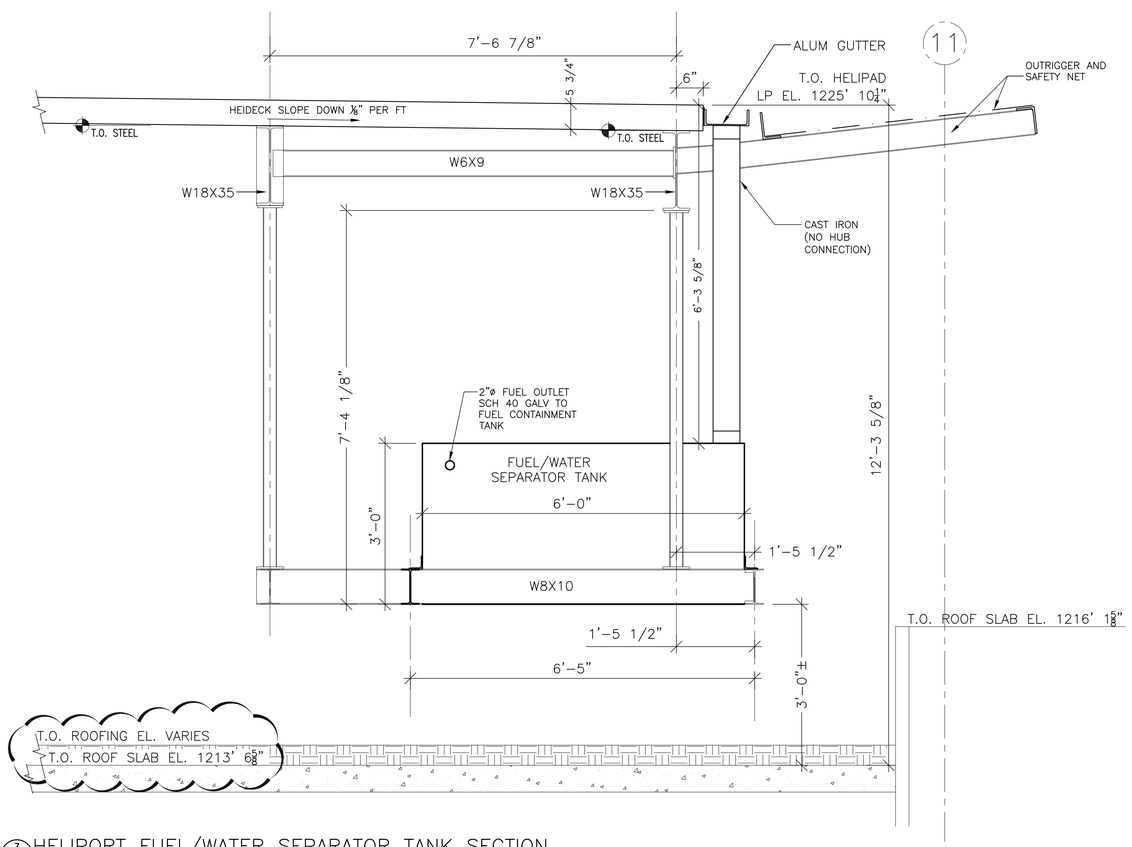
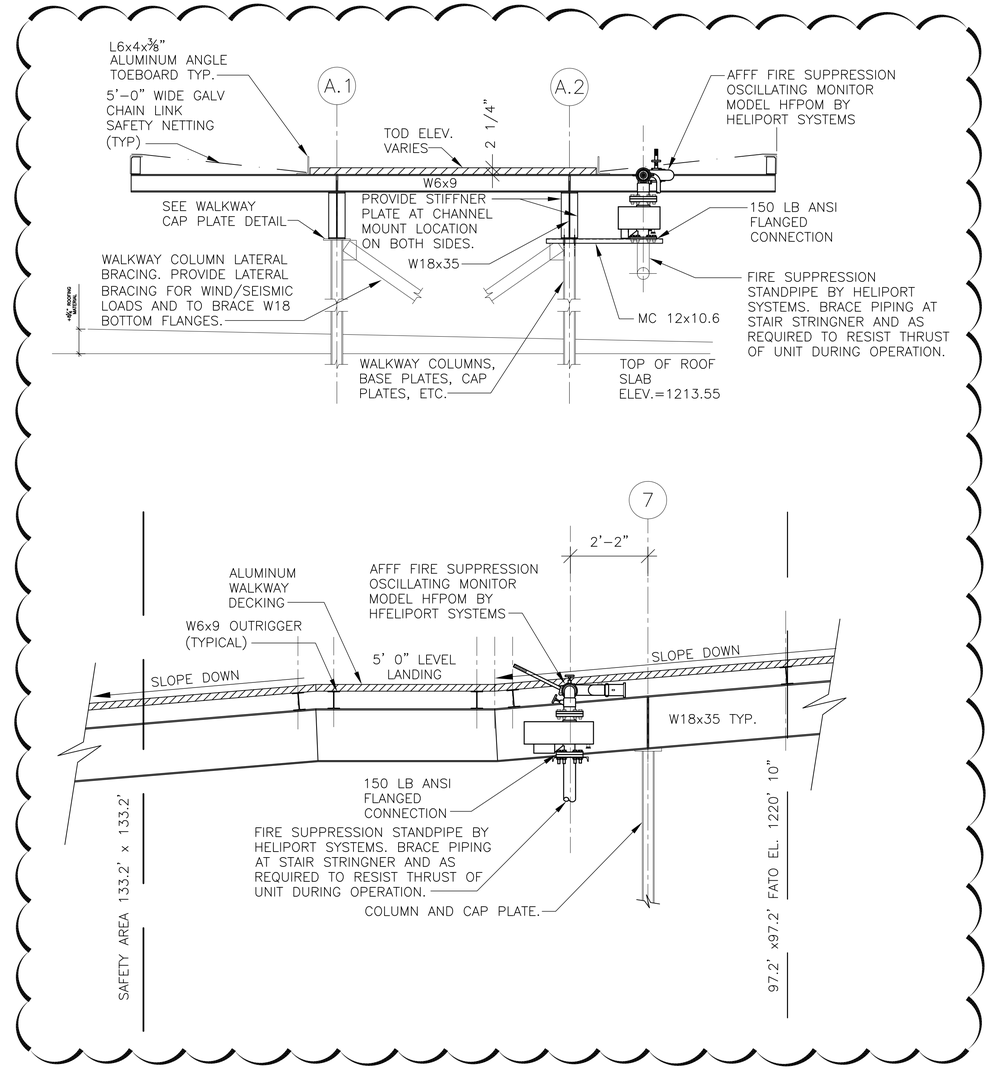


3 M-2 HELIPORT FUEL/WATER SEPARATOR TANK SECTION
N.T.S.



2 M-2 AFFF OSCILLATING MONITOR MOUNTING DETAIL
N.T.S.

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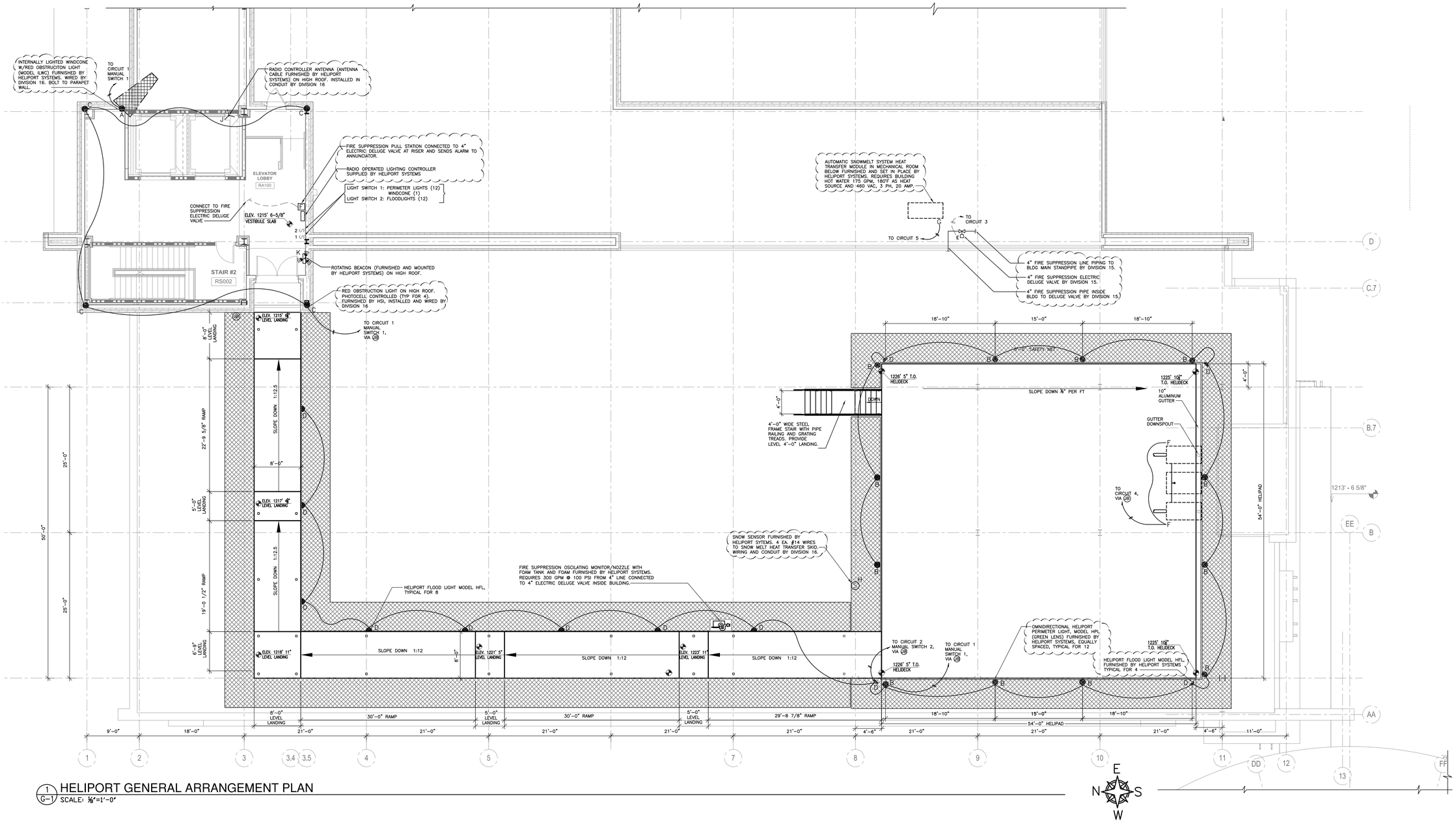

1 G-1 HELIPORT GENERAL ARRANGEMENT PLAN

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

ELECTRICAL NOTES:

1. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ALL PROJECT WORK, INCLUDING HELIPORT SUBCONTRACTOR AND COORDINATION BETWEEN DISCIPLINES.
2. REFER TO SPECIFICATION SECTION 34 75 26 HELICOPTER LANDING SYSTEMS FOR RELATED WORK.
3. ALL HELIPORT FIXTURES SHALL BE FURNISHED, MOUNTED AND WIRED IN CONDUIT BACK TO A CENTRAL JUNCTION BOX OUTSIDE THE ELEVATOR VESTIBULE.
4. ALL ELECTRICAL CONDUIT SHALL BE RIGID STEEL UNLESS INDICATED OTHERWISE. ELECTRICAL CONDUIT SHALL BE MOUNTED/SUSPENDED TO/FROM HELIPAD STRUCTURAL STEEL BENEATH ALUMINUM DECKING USING GALVANIZED CLAMPS AND HANGERS (WHERE HELIPAD ELEVATION IS EXCESSIVE ELECTRICAL CONDUIT SHALL BE RUN ALONG SAFETY NETTING ALUMINUM SUPPORT ANGLES). NO ELECTRICAL CONDUIT SHALL BE MOUNTED TO ALUMINUM HELIPORT DECKING.
5. ALL ELECTRICAL WORK SHALL CONFORM TO LATEST EDITIONS OF NEC AND APPLICABLE STATE/LOCAL CODES.
6. MINIMUM WIRE SIZE 12 GA., STRANDED COPPER, THHN/THWN INSULATION.
7. HELIPORT LIGHTING AND FIRE SUPPRESSION CONTROL SWITCHES SHALL BE LOCATED IN ELEVATOR LOBBY AS INDICATED. LOCATIONS INDICATED ARE SCHEMATIC, FINAL LOCATIONS SHALL BE COORDINATED IN FIELD.
8. HELIPORT SNOW MELT HEATING SYSTEM SNOW SENSOR SHALL BE FURNISHED, MOUNTED BY HELIPORT SYSTEMS. WIRING, IN CONDUIT, TO CENTRAL CONNECTION POINT (EXTERIOR JUNCTION BOX) SHALL BE BY HELIPORT SYSTEMS.
9. HELIPORT SNOW MELT HEATING SYSTEM MECHANICAL UNIT SHALL BE FURNISHED AND SET IN PLACE BY HELIPORT SYSTEMS. SKID MOUNTED UNIT SHALL BE FURNISHED FULLY WIRED.
10. HELIPORT FUEL/WATER SEPARATOR SHALL BE FURNISHED AND INSTALLED BY HELIPORT SYSTEMS INCLUDING WIRING BACK TO JUNCTION BOX AT ELEVATOR.
11. WINDCONE SHALL BE FURNISHED AND MOUNTED BY HELIPORT SYSTEMS. WINDCONE SHALL BE MOUNTED AT HIGH ROOF LEVEL AS INDICATED. LOCATE WINDCONE CLEAR OF ANY ROOF VENTILATORS OR EXHAUSTS AND TO ALLOW SAFE ACCESS TO LOWERED WINDSOCK FROM ROOF. FINAL LOCATION OF WINDCONE TO BE COORDINATED IN FIELD.
12. ELECTRICALLY ACTUATED HELIPORT AFFF FIRE SUPPRESSION SYSTEM DELUGE VALVE SHALL BE LOCATED WITHIN THE BUILDING ENVELOPE AND SHALL REQUIRE POWER TO OPEN. PULL STATION CONTROL SWITCH SHALL CAUSE "NORMALLY CLOSED" VALVE TO OPEN WHEN SWITCHED TO "ON" POSITION AND SHALL CAUSE VALVE TO CLOSE WHEN SWITCHED TO "OFF" POSITION. VALVE SHALL FAIL IN CLOSED POSITION AND SHALL BE FURNISHED WITH A MANUAL ACTUATOR TO ALLOW OPERATION OF THE VALVE IN THE EVENT OF POWER FAILURE.

ELECTRICAL CIRCUIT SCHEDULE

FIXTURE	DESCRIPTION	ELECTRICAL REQUIREMENTS	CIRCUIT
A B C	INTERNALLY LIGHTED WINDCONE, MODEL ILWC-18 HELIPORT PERIMETER LIGHT, MODEL HPL (GREEN LENS) HELIPORT OBSTRUCTION LIGHT, MODEL HOL (RED LENS)	1 @ 296 WATTS/120 VAC = 296 WATTS/120 VAC 12 @ 67 WATTS/120 VAC = 804 WATTS/120 VAC 4 @ 116 WATTS/120 VAC = 464 WATTS/120 VACTOTAL TOTAL = 1564 WATTS/120 VAC	CIRCUIT 1, 20 AMP/EMERGENCY POWER, SWITCH 1
D	HELIPORT FLOODLIGHT, MODEL HFL	12 @ 75 WATTS/120 VAC = 900 WATTS/120 VAC	CIRCUIT 2, 20 AMP/EMERGENCY POWER, SWITCH 2
E	HELIPORT FIRE SUPPRESSION ELECTRIC DELUGE VALVE (BY OTHERS)	100 WATTS/120 VAC	CIRCUIT 3, 20 AMP/EMERGENCY POWER
F	HELIPORT FUEL WATER SEPARATOR, MODEL H-200	720 WATTS/120 VAC	CIRCUIT 4, 20 AMP/EMERGENCY POWER
G	SNOW MELT HEAT TRANSFER UNIT	460 VOLT 3Ø	CIRCUIT 5, 20 AMP/EMERGENCY POWER
H	SNOW MELTING SENSOR	DERIVES POWER FROM SNOW MELTING SYSTEM	
J	ROLC (RADIO OPERATED LIGHT CONTROLLER)	175 WATTS/120 VAC	CIRCUIT 6, 30 AMP/EMERGENCY POWER
K	ROTATING HELIPORT BEACON	1500 WATTS/120 VAC	CIRCUIT 7, 30 AMP/EMERGENCY POWER

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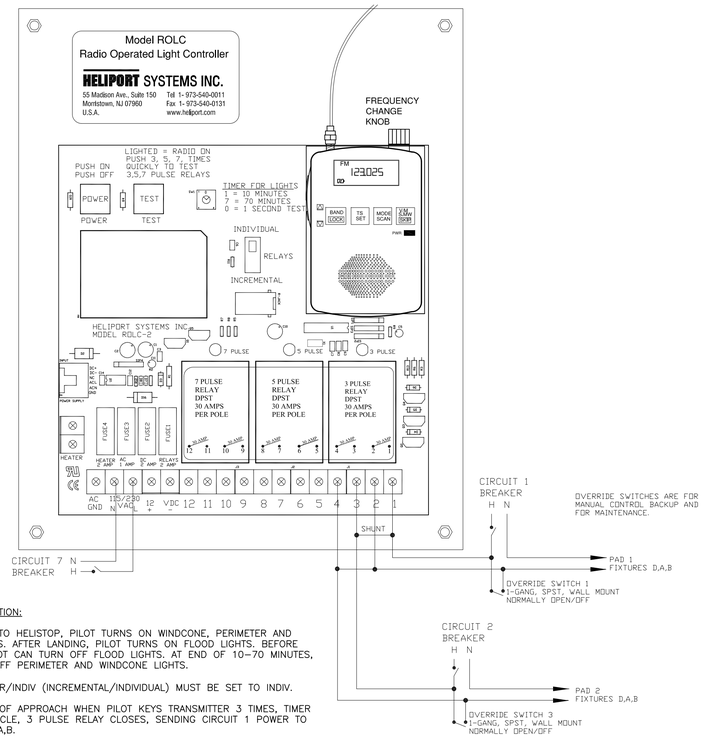


DESIRED OPERATION:

ON APPROACH TO HELISTOP, PILOT TURNS ON WINDCONE, PERIMETER AND WALKWAY LIGHTS. AFTER LANDING, PILOT TURNS ON FLOOD LIGHTS. BEFORE DEPARTING, PILOT CAN TURN OFF FLOOD LIGHTS. AT END OF 10–70 MINUTES, TIMER TURNS OFF PERIMETER AND WINDCONE LIGHTS.

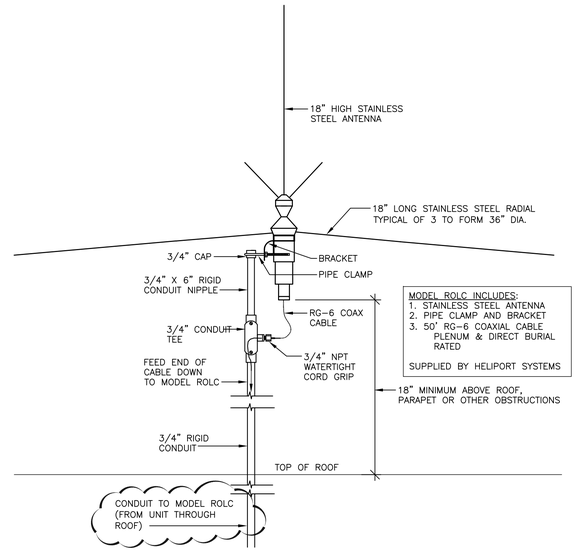
DIP SWITCH INCR/INDIV (INCREMENTAL/INDIVIDUAL) MUST BE SET TO INDIV.

1. AT START OF APPROACH WHEN PILOT KEYS TRANSMITTER 3 TIMES, TIMER STARTS CYCLE, 3 PULSE RELAY CLOSES, SENDING CIRCUIT 1 POWER TO FIXTURES A,B.

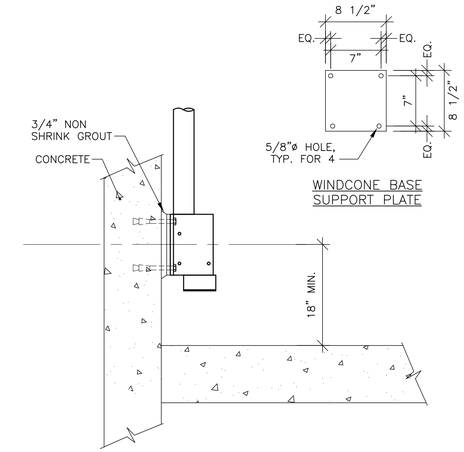
2. AFTER LANDING WHEN PILOT KEYS TRANSMITTER 5 TIMES, TIMER STARTS CYCLE AGAIN, 3 PULSE RELAY OPENS, 5 PULSE RELAY CLOSES, SENDING CIRCUIT 2 POWER TO FIXTURES D. SHUNTS KEEP CIRCUIT 1 FIXTURES D,A,B ON.

3. JUST BEFORE DEPARTING WHEN PILOT KEYS TRANSMITTER 3 TIMES, TIMER STARTS AGAIN, 5 PULSE RELAY OPENS, TURNING OFF FIXTURE D LIGHTS. 3 PULSE RELAY CLOSES, KEEPING ON FIXTURES A,B UNTIL END OF TIMER CYCLE WHEN TIMER OPENS ALL CLOSED RELAYS, TURNING OFF ALL LIGHTS.

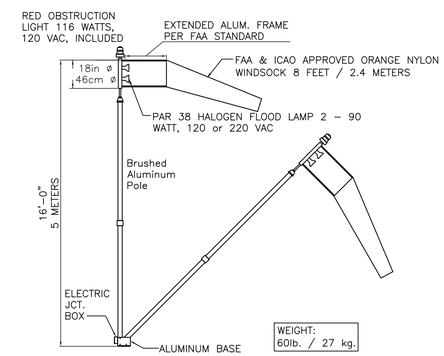
1 E-2 ROLC WIRING DIAGRAM
N.T.S.



2 E-2 ROLC ANTENNA MOUNTING DETAIL
N.T.S.



3 E-2 WINDCONE MOUNTING DETAIL
N.T.S.



4 E-2 WINDCONE DETAIL
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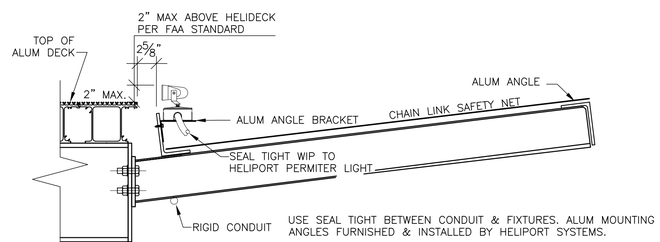
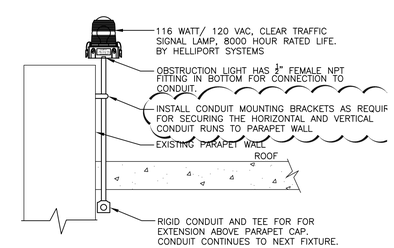


5 E-2 HFL MOUNTING DETAIL
N.T.S.



6 E-2 OBSTRUCTION LIGHT MOUNTING DETAIL
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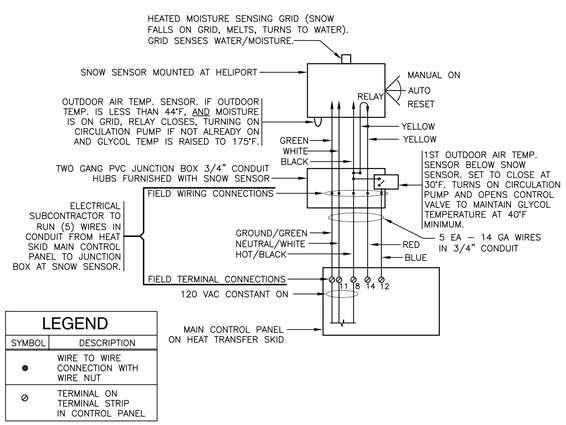
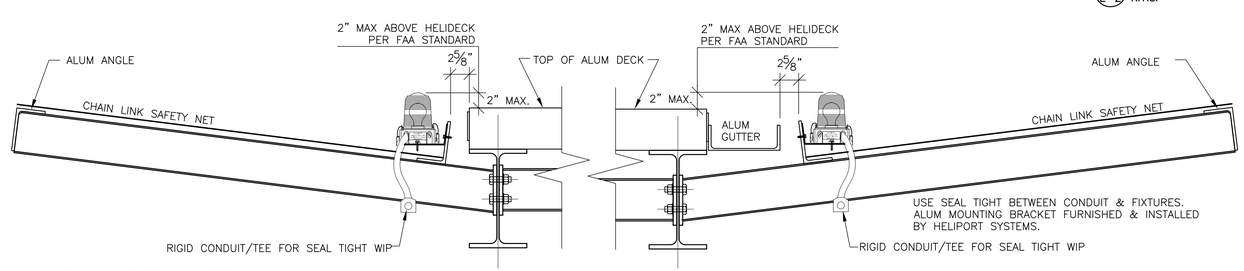


LEGEND	
SYMBOL	DESCRIPTION
●	WIRE TO WIRE CONNECTION WITH WIRE NUT
⊘	TERMINAL ON TERMINAL STRIP IN CONTROL PANEL

7 E-2 SNOW MELT WIRING SCHEMATIC
N.T.S.



8 E-2 HPL MOUNTING DETAIL
N.T.S.

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