

APPLICATION FOR DESIGN REVIEW
KAILUA VILLAGE DESIGN COMMISSION
COUNTY OF HAWAII
PLANNING DEPARTMENT

APPLICANT: ProVision Solar Inc

APPLICANT'S SIGNATURE: [REDACTED] DATE: 11/17/2025

ADDRESS: 69 Railroad Ave Ste A7, Hilo HI 96720

TELEPHONE NUMBER: [REDACTED]

APPLICANT'S INTEREST, if not recorded owner: Electrical Contractor

RECORDED OWNER: ARTHURS,DAVID/RUTH FAMILY TRST

OWNER'S SIGNATURE: [REDACTED] DATE: 11/17/2025

ADDRESS: 75-5870 Walua Rd, Kailua Kona, HI, 96740

TELEPHONE NUMBER: [REDACTED]

PROPOSED USE: Pole mounted PV system.

TAX MAP KEY: 750180140000 LAND AREA: 10,717

STREET ADDRESS OF PROPERTY: 75-5870 Walua Rd, Kailua Kona, HI, 96740

STATE LAND USE DISTRICT: Village Commercial CV-10 COUNTY ZONING: CV-10

This application must be accompanied by one set of presentation size (recommended 24" x 36") and eleven sets of reduced size (recommended either 11" x 17" or 8-1/2" x 11") of the site plan drawings (same information as required for Plan Approval application; see attached). For presentation to the Kailua Village Design Commission, the applicants should make certain that the following are also clearly depicted in the submitted drawings:

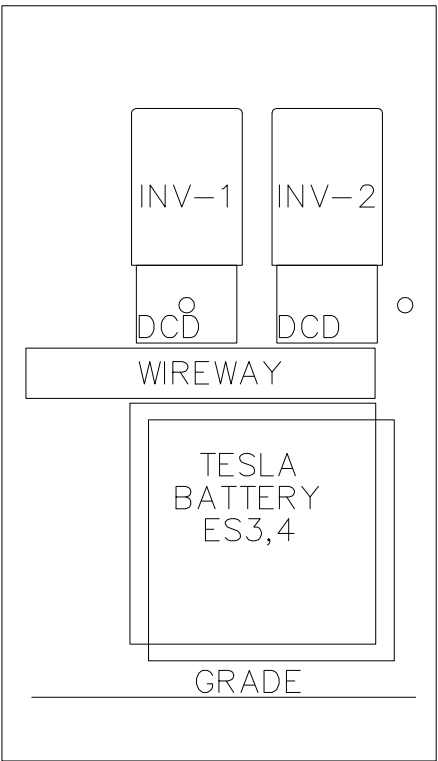
- (1) Site plan showing TMK parcel boundaries, and showing existing and proposed building locations;
- (2) Building elevations showing the architectural design of the building exteriors, depicting or describing proposed exterior colors and materials. Notation of ground elevation with contour lines or selected spot elevations is recommended. Earth tone colors are recommended. Color samples should be provided. If reasonable and appropriate, samples of exterior building materials may be provided; and
- (3) Location, design, and colors of proposed sign(s), if any.

All submitted drawings and samples of colors/materials will not be returned.

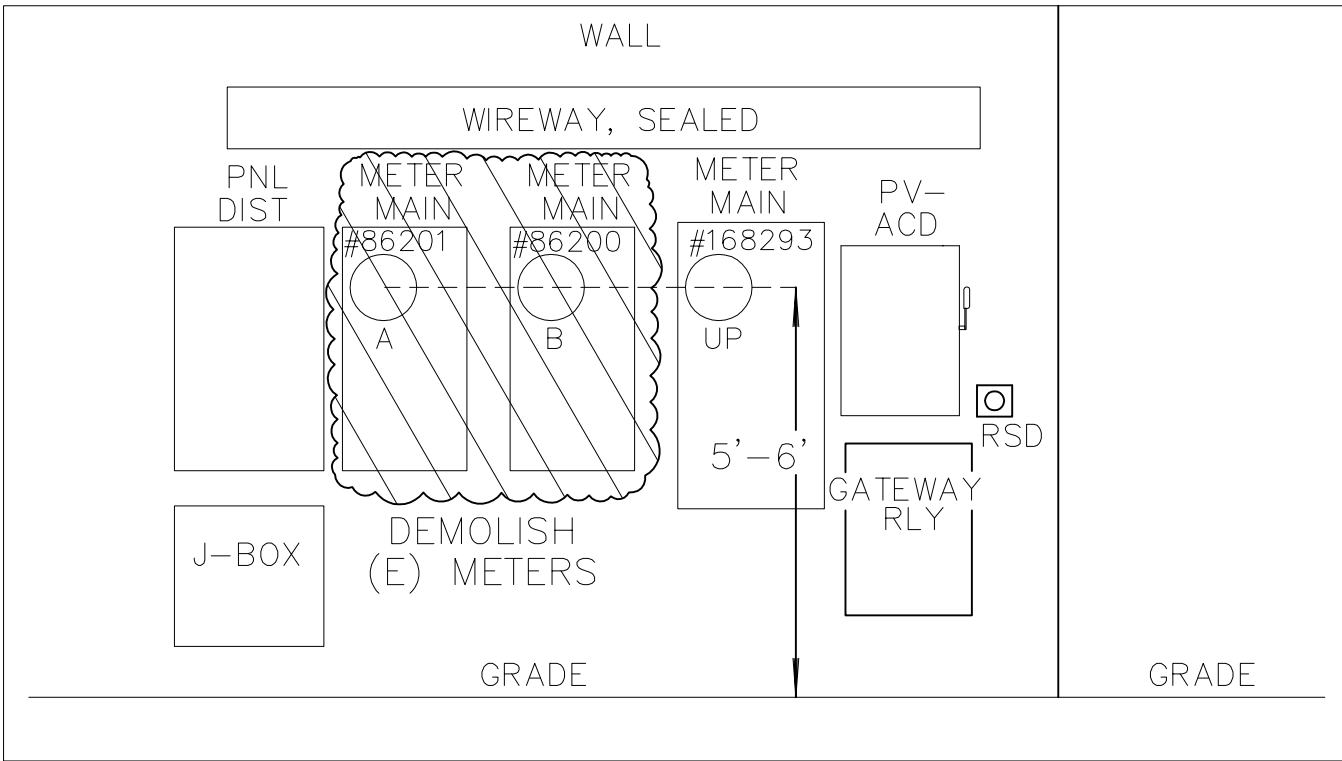
GENERAL NOTES - ELECTRICAL

- NEW SOLAR PHOTOVOLTAIC INSTALLATION – AN ACCESSORY TO EXISTING PROPERTY.
- THE DRAWINGS AND SPECIFICATIONS ARE NOT FABRICATION DRAWINGS OR STEP BY STEP INSTRUCTIONS. THEIR INTENT IS TO ESTABLISH THE MINIMUM STANDARD OF PERFORMANCE THAT IS ACCEPTABLE FOR THIS PROJECT. ALL THE WORK AND EVERY DEVICE IS NOT NECESSARILY DESCRIBED OR INDICATED. THE CONTRACTOR IS EXPECTED TO INCLUDE THESE ITEMS IN HIS BID BY HIS FORESIGHT FROM PREVIOUS EXPERIENCE OR WITH A DOLLAR CONTINGENCY AMOUNT FOR UNFORESEEN EXPENSES. THE CONTRACTOR SHOULD BE FAMILIAR WITH ARCHITECTURAL, STRUCTURAL, CIVIL, PLANS ETC. BEFORE MAKING A BID. IF THE CONTRACTOR NEEDS STEP BY STEP INSTRUCTIONS TO COMPLETE THIS WORK OR IF HE IS NOT FAMILIAR WITH THE LOCAL CODES OR THE TYPE OF SYSTEMS BEING INSTALLED, HE IS ADVISED NOT TO SUBMIT A BID OR TO WORK ON THIS PROJECT. FIELD MEASURING AND COORDINATING WITH OTHER TRADES IS MANDATORY. ALTHOUGH THEY SHOULD BE SIMILAR TO THE ACTUAL DIMENSIONS, THE ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THE DIMENSIONS OF THE WORK SHOWN. DO NOT SCALE DIMENSIONS OFF OF THE PLANS FOR FABRICATION. VERIFY WITH FIELD MEASUREMENT. COORDINATE EACH EQUIPMENT SIZE WITH THE LOCATION WHERE IT IS TO BE INSTALLED BEFORE ORDERING. NOTIFY ENGINEER IF SPACE DOES NOT ALLOW FOR EQUIPMENT SPECIFIED. ALL SUCH DIMENSIONS SHALL BE VERIFIED BY THE CONTRACTOR AND IT IS HIS RESPONSIBILITY TO FIT WORK INTO SPACE ALLOWED. ALL OFFSETS AND SMALL CHANGES IN ROUTING ARE CONSIDERED A PART OF THE SCOPE OF THE BASE BID FOR THIS PROJECT AND SHALL BE APPROVED BEFORE INSTALLATION.
- CONTRACTOR SHALL VERIFY EXACT LOCATION AND REQUIREMENTS FOR ALL EQUIPMENT BEFORE INSTALLING.
- INSTALL GROUND WIRE IN ALL POWER CIRCUITS.
- ELECTRICAL ITEMS INDICATED ON DRAWINGS ARE NEW AND SHALL BE PROVIDED BY CONTRACTOR UNLESS NOTED OTHERWISE.
- LOCATIONS SHOWN ARE APPROXIMATE AND CONTRACTOR SHALL SELECT LOCATIONS TO SUIT FIELD CONDITIONS SUBJECT TO APPROVAL. "(CTCR) CONFORMS TO CONSTRUCTION RECORDS" DRAWINGS SHALL BE SUBMITTED BY CONTRACTOR INDICATING ALL DEVIATIONS.
- EQUIPMENT SHALL BE MOUNTED, SUPPORTED, AND ANCHORED FOR 1.0 G SEISMIC RESTRAINT FORCES.
- ALL WIRE SHALL BE IN CONDUIT UNLESS OTHERWISE NOTED.
- PROVIDE NYLON PULL CORDS IN ALL EMPTY CONDUIT.
- VERIFY ALL DEVICE FINISHES WITH OWNER.
- MINIMUM CONDUIT BENDING RADIUS SHALL BE SIX TIMES INTERNAL DIAMETER FOR TRADE SIZE 2 INCH OR LESS.
- MINIMUM CONDUIT BENDING RADIUS SHALL BE TEN TIMES INTERNAL DIAMETER FOR TRADE SIZE GREATER THAN 2 INCH.
- LABEL ALL WIRE, BOXES, AND CONDUIT AS INDICATED ON DRAWINGS.
- ELECTRICAL INSTALLATION SHALL BE IN ACCORDANCE WITH THE LATEST ADOPTED NATIONAL ELECTRICAL CODE, NATIONAL ELECTRICAL SAFETY CODE, NFPA, AND ALL (LAHJ) LOCAL AUTHORITIES HAVING JURISDICTION.
- VERIFY EXISTING ELECTRICAL SYSTEMS AND CONDITIONS PRIOR TO SUBMITTING BIDS.
- DEVICE SHALL BE U.L. APPROVED OR TESTED AND LISTED BY THE NATIONALLY RECOGNIZED LAB.
- FURNISH ALL CONDUITS, RACEWAYS, CONDUCTORS, DISCONNECTS, COMBINER BOXES, PULL BOXES, HANDHOLES, JUNCTION BOXES, DEVICES, AND OTHER MATERIALS NECESSARY FOR COMPLETE OPERATIONAL ELECTRICAL SYSTEMS.
- ELECTRICAL SERVICE INSTALLATION COORDINATION IS THE RESPONSIBILITY OF THE CONTRACTOR. ALL PROVISIONS OF THE ELECTRIC SERVICE INSTALLATION MANUAL, UTILITY HAWAII ELECTRIC COMPANY, INC. AND EUSERC SHALL BE FOLLOWED AND ADHERED TO.
- WHEN A CIRCUIT EXCEEDS 75 FEET OF CONDUCTOR LENGTH THE WIRE SIZE SHALL BE INCREASED – CONSULT ENGINEER.
- ELECTRICAL CONTRACTOR SHALL NOTE ANY EXISTING ELECTRICAL CODE ISSUES AND REPORT THEM TO THE OWNER AND THE ELECTRICAL ENGINEER.
- PROPER KAIC BREAKERS, FUSES, AND EQUIPMENT SHALL BE INSTALLED – CONSULT ENGINEER.
- ENERGY SYSTEM POINT OF CONNECTION SHALL MEET REQUIREMENTS OF NEC 705
- PV MODULES AND EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER AND STRUCTURAL ENGINEER REQUIREMENTS (WHEN APPLICABLE).
- CONDUCTOR LISTING SHALL MATCH THE INTENDED USE.
- ISOLATING DEVICES/DISCONNECTS SHALL BE LOCATED AT EQUIPMENT OR WITHIN SIGHT AND WITHIN 10' OF EQUIPMENT. PER NEC 690.15(A). REMOTE OPERATION IS ACCEPTABLE WHEN REMOTE IS WITHIN 10' OF EQUIPMENT.
- INSTALL ALL EQUIPMENT IN ACCORDANCE WITH NEC ARTICLE 690.
- FOR SOME GFPD CIRCUITS TO FUNCTION, THE SOLAR ARRAY GROUND MUST NOT BE CONNECTED TO THE PV ARRAY POSITIVE OR NEGATIVE LEADS. BONDING OF THE SAFETY GROUND TO THE GROUNDED LEG OF THE ARRAY ANYWHERE BUT THE INVERTER WILL BYPASS THE GFPD.
- CAPACITY OF CONDUCTORS SHALL BE ADJUSTED FOR INSTANCES WHERE THERE WERE MORE THAN THREE CURRENT-CARRYING CONDUCTORS IN A RACEWAY. 80% FACTOR IS USED IF THE MAX # IS 6.
- PVC SHALL BE SCHEDULE 80 IN AREAS PRONE TO MECHANICAL STRESS. ALL OTHER AREA, PVC SHALL BE SCHEDULE 40.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH ALL LOCAL AUTHORITIES AND UTILITIES HAVING JURISDICTION PRIOR TO ORDERING EQUIPMENT AND PRIOR TO INSTALLATION/LOCATION OF EQUIPMENT.
- ALL GENERAL CONDUCTORS SHALL BE 90 DEGREE RATED AND WET RATED UNLESS OTHERWISE NOTED. ALL PV SOURCE AND PV OUTPUT CONDUCTORS SHALL COMPLY WITH NEC 690.31.
- ELECTRICAL CONTRACTOR SHALL TAKE THE NECESSARY SAFETY PRECAUTIONS TO ENSURE THAT NO PERSON IS EXPOSED TO DANGEROUS LEVELS OF VOLTAGE OF CURRENT WITHOUT THE NECESSARY SAFETY EQUIPMENT AND PROCEDURES IN PLACE. CONSTRUCTION AREAS SHALL BE SECURED AND PROPER SIGNAGE SHALL BE IN PLACE, OSHA REGULATIONS SHALL BE ADHERED TO.
- ELECTRICAL CONTRACTOR SHALL VERIFY THAT INVERTER WILL AUTOMATICALLY DISCONNECT FROM UTILITY WHEN UTILITY LINE POWER IS DEENERGIZED.
- ELECTRICAL CONTRACTOR SHALL CONFIRM AND TEST TO ASSURE THE GFPDs WORK PROPERLY.
- ELECTRICAL CONTRACTOR SHALL CONFIRM THAT THE INVERTER POWER GENERATION KW EXPECTED MATCHES ACTUAL KW PRODUCED.
- EQUIPMENT, AC DISCONNECTS, AND INVERTER AC DISCONNECTS SHALL BE LABELED PER LAHJ AND NEC 110, 690, 705, 706, 710.
- PVC CONDUIT IS NOT ALLOWED WHERE SUBJECT TO AMBIENT TEMPERATURES IN EXCESS OF 122 DEG F, UNLESS LISTED OTHERWISE AND PVC IS NOT ALLOWED FOR DC CIRCUITS INSIDE A BUILDING. REFERENCE: NEC 690.31(D) AND NEC 352.12(D). EMT OR RIGID IS ACCEPTABLE FOR AREAS INSIDE A BUILDING. BUILDING PENETRATIONS REQUIRE RIGID OR EMT.
- WHEN REQUIRED, INVERTERS SHALL BE CONFIGURED (SET) FOR SPECIFIC UTILITY TRIP FREQUENCY AND CLEARING TIME ACCORDING TO UTILITY REQUIREMENTS.
- PROPER GROUNDING/BONDING SHALL BE INSTALLED (WHETHER SPECIFICALLY SHOWN ON DRAWING OR NOT) ACCORDING TO NEC 690.41, 690.42, 690.43, 690.45, 690.47, AND 250.120(C).
- MINIMUM BONDING CONDUCTOR IN RACEWAY SHALL BE #8. DRAWING MAY REQUIRE LARGER SIZE. MINIMUM EXPOSED BONDING CONDUCTOR SHALL #6 COPPER.
- LIMITATION OF LIABILITY FOR THESE DRAWINGS APPLIES: STATE OF THE ART AND ART RUSSELL SHALL NOT BE LIABLE FOR ANY AMOUNT GREATER THAN THE ENGINEERING FEES PAID TO STATE OF THE ART AND ART RUSSELL FOR THIS PROJECT.
- PROJECT ELECTRICAL CONTRACTOR SHALL DELIVER TO OWNER – DETAILED STRING MAPS THAT SHOW INSTALLED: STRING NUMBER, MODULE SERIAL NUMBER, GROUNDING CONDUCTOR ROUTING, AND PHYSICAL LOCATION AS PART OF THE CTCR (CONFORMS TO CONSTRUCTION RECORDS) DRAWINGS. CTCR DRAWINGS OF ENTIRE PROJECT SHALL ALSO BE DELIVERED TO OWNER.
- HAWAII CERTIFIED ROOFING CONTRACTOR SHALL MAKE ROOF PENETRATIONS. STATE OF THE ART & ART RUSSELL SHALL HAVE NO LIABILITY CONCERNING ROOF LEAKS.
- ELECTRICAL CONTRACTOR SHALL FIELD VERIFY THAT EXISTING CONDUCTOR SIZE AND INSULATION TYPE MATCH THE DRAWING AND REPORT TO ENGINEER OF ANY DISCREPANCIES BEFORE COMMISSIONING ENERGY SYSTEM.
- THE PV SYSTEM WILL COMPLY WITH NEC 705.45 AND THE ELECTRICAL CONTRACTOR SHALL BALANCE ELECTRICAL SYSTEM PER NEC 705.45. THE INSTALLATION OF THE PV SYSTEM MUST ALSO BE APPROVED BY THE UTILITY REGARDING THE COMPLIANCE WITH 705.45.
- PENETRATIONS SHALL BE FIRE-STOPPED AND OPENINGS SHALL BE PROTECTED THROUGH FIRE-RATED WALLS, FLOOR, ROOF AND CEILING ASSEMBLIES AS REQUIRED BY THE 2018 IBC CHAPTER 7.
- JUNCTION BOXES / CONDUIT ENTRY BOXES SHALL BE WEGMANN NEMA3R SOLAR J-BOX, 6X6X4 OR EQUAL.
- TRANSFORMERLESS INVERTERS SHALL BE CONNECTED WITH EGC.
- IN THE EVENT THAT THE ENGINEER SPECIFIES SERVICE RATED DISCONNECTS, BREAKERS, AND OR MAINS – AND THE NEC DOES NOT REQUIRE THE EQUIPMENT TO BE SERVICE RATED, EC SHALL REMOVE THE NEUTRAL TO GROUND BONDING CONDUCTOR / STRAP.
- FOR MICROINVERTER SYSTEMS, PV SOURCE CONDUCTORS FROM THE PV MODULES TO THE MICROINVERTER SHALL BE INSTALLED EXPOSED. THE CONDUCTOR SHALL BE SECURED UNDER RACKING WITH APPROVED METHOD.
- THE GEC GROUNDING ELECTRODE CONDUCTOR SHALL BE CONTINUOUS / IRREVERSIBLY SPLICED IN ACCORDANCE WITH NEC 250.64(C).
- PV MODULES SHALL BE LOCATED IN A MANNER WHICH PROVIDES ACCESS PATHS. EQUIPMENT INSTALLATION SHALL MEET THE REQUIREMENTS OF EGRESS REQUIREMENTS AND WIDTHS. LAYOUT SHALL ALLOW FOR TRAVEL DISTANCES AND COMMON TRAVEL PATHS.
- ALL ELECTRICAL PANEL SCHEDULES SHALL BE UPDATED BY ELECTRICAL CONTRACTOR
- PV CONDUCTOR SHALL BE SECURED USING WILEY SS CABLE CLIPS OR EQUAL
- PVC EXPANSION CALCS: LOWEST RECORD TEMPERATURE = 60F, HIGHEST RECORDED TEMPERATURE = 95F, TEMP. ADDER FOR CONDUIT ON ROOF = 60F. PVC CONDUIT MAX DELTA T = 95F ON EXPOSED ROOF RUNS MOUNTED 3.5" ABOVE ROOF, 0.25" MAX EXPANSION / (0.0385"/FT@95F) = 6.5'. INSTALL CONDUIT EXPANSION JOINT(S) FOR CONDUIT RUNS OVER 6'. ALLOW 0.25" EXPANSION TRAVEL PER 6.5' OF CONDUIT RUN

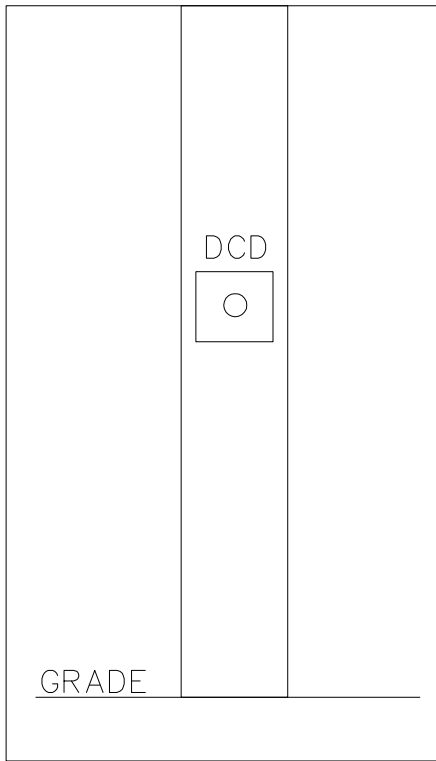
RENEWABLE ENERGY SYSTEM



2 ELEVATION
OUTDOORS



3 ELEVATION, DEMO
OUTDOORS

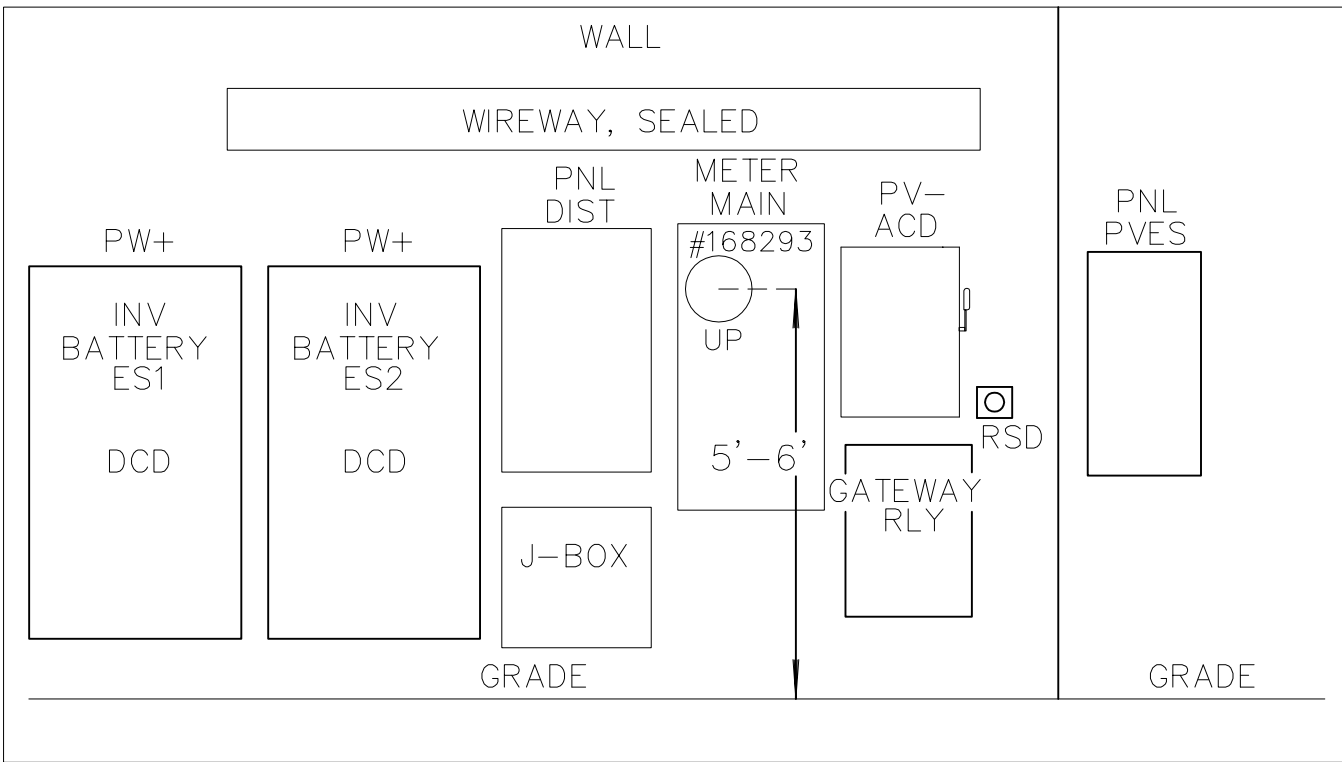


4 ELEVATION
OUTDOORS, AT ARRAY

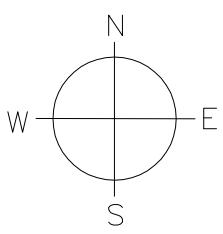
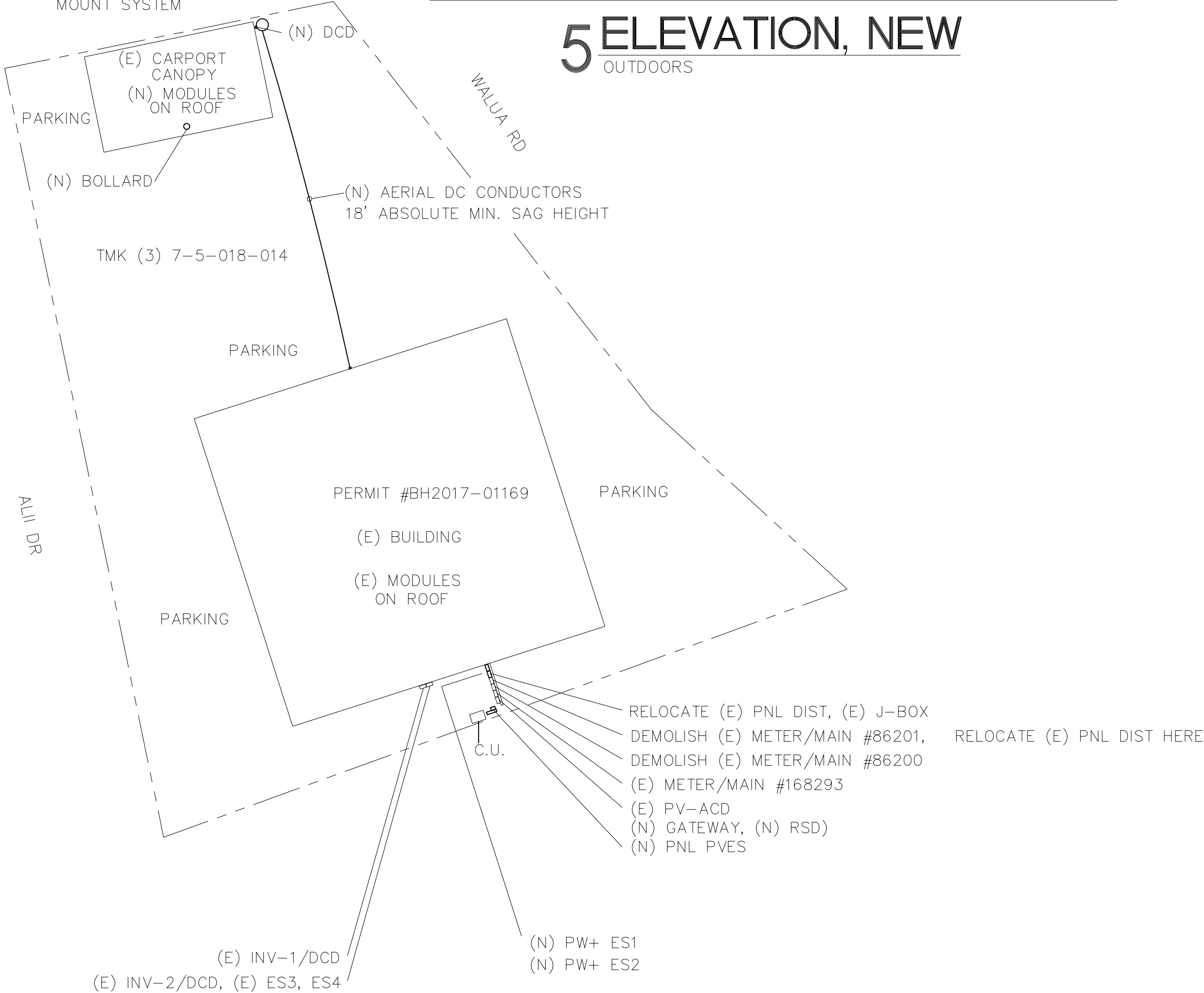
UTILITY/ESIM REQUIREMENTS:
METER/DISCONNECT CLEARANCES:
HORIZONTAL: 6"-12"
ALL SIDES: 6" MINIMUM
VERTICAL, METER CENTER: 5'-6"
FRONT: 4'X4'X7' (REMOVE ALL OBSTRUCTIONS)

BATTERY AND PV EQUIPMENT SHALL BE PROTECTED FROM PHYSICAL / THERMAL DAMAGE PER NEC 110, AND MANUFACTURER REQUIREMENTS. THIS MAY INVOLVE INSTALLATION OF BOLLARDS, BARRIERS, OR OTHER.

RAPID DC SHUTDOWN NOT REQUIRED ON GROUND MOUNT SYSTEM



5 ELEVATION, NEW
OUTDOORS



1 PV EQUIP. LOC.

GRAPHIC SCALE
0 15'
scale feet

— (E) = EXISTING
— (N) = NEW

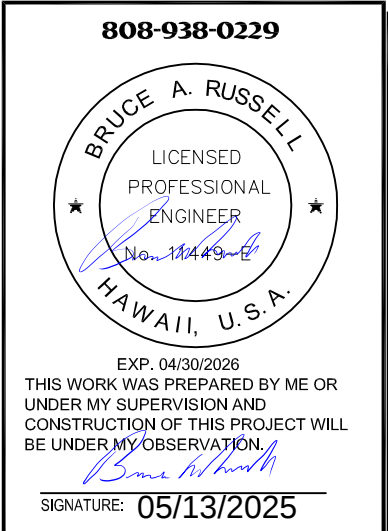


FOR UTILITY
REMOVE ALL OBSTRUCTIONS

ELECTRICAL SHEETS

SHEET DESCRIPTION

- | | |
|-----|----------------------------|
| E01 | TITLE SHEET, ENERGY SYSTEM |
| E02 | ONE-LINE, ENERGY SYSTEM |
| E03 | THREE-LINE, ENERGY SYSTEM |
| E04 | LABELS, ENERGY SYSTEM |



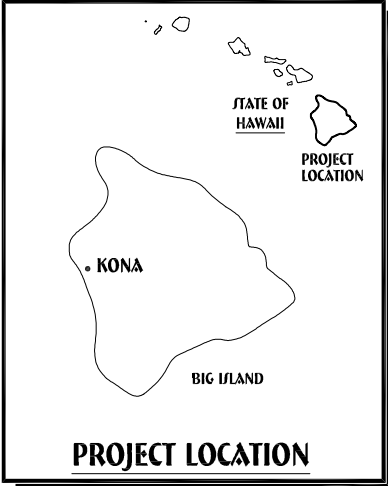
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STATE OF THE ART
808-938-0229

CONTRACTOR

PROVISION SOLAR
69 RAILROAD AVENUE A-7
HILO, HAWAII 96720
LIC. NUMBER: C-26351
ELECTRICAL CONTRACTOR
808-909-3261



RENEWABLE ENERGY SYSTEM

ARTHUR/DAVID/RUTH FAMILY TRST
75-5870 WALLUA ROAD

TMK (3) 7-5-018-014

REVISIONS

04/22/2025

CONTENTS

TITLE SHEET

NOTE

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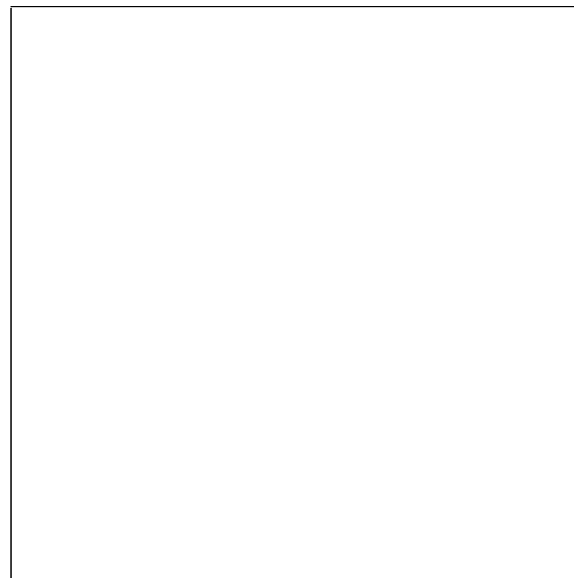
SITE DIAGRAM

DESIGNED BY: AR

DRAWN BY: AR

SHEET NO. 1

E01
OF 4 SHEETS



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A map of the Hawaiian Islands. The main island, Big Island, is shown in outline. A small rectangle on the northern coast of Big Island is labeled 'PROJECT LOCATION'. The word 'KONA' is written near the western coast of Big Island. Above the main map, a smaller map of the entire Hawaiian archipelago is shown, with a rectangle on the Big Island corresponding to the project location. The text 'STATE OF HAWAII' is written above the main map, and 'BIG ISLAND' is written below it.

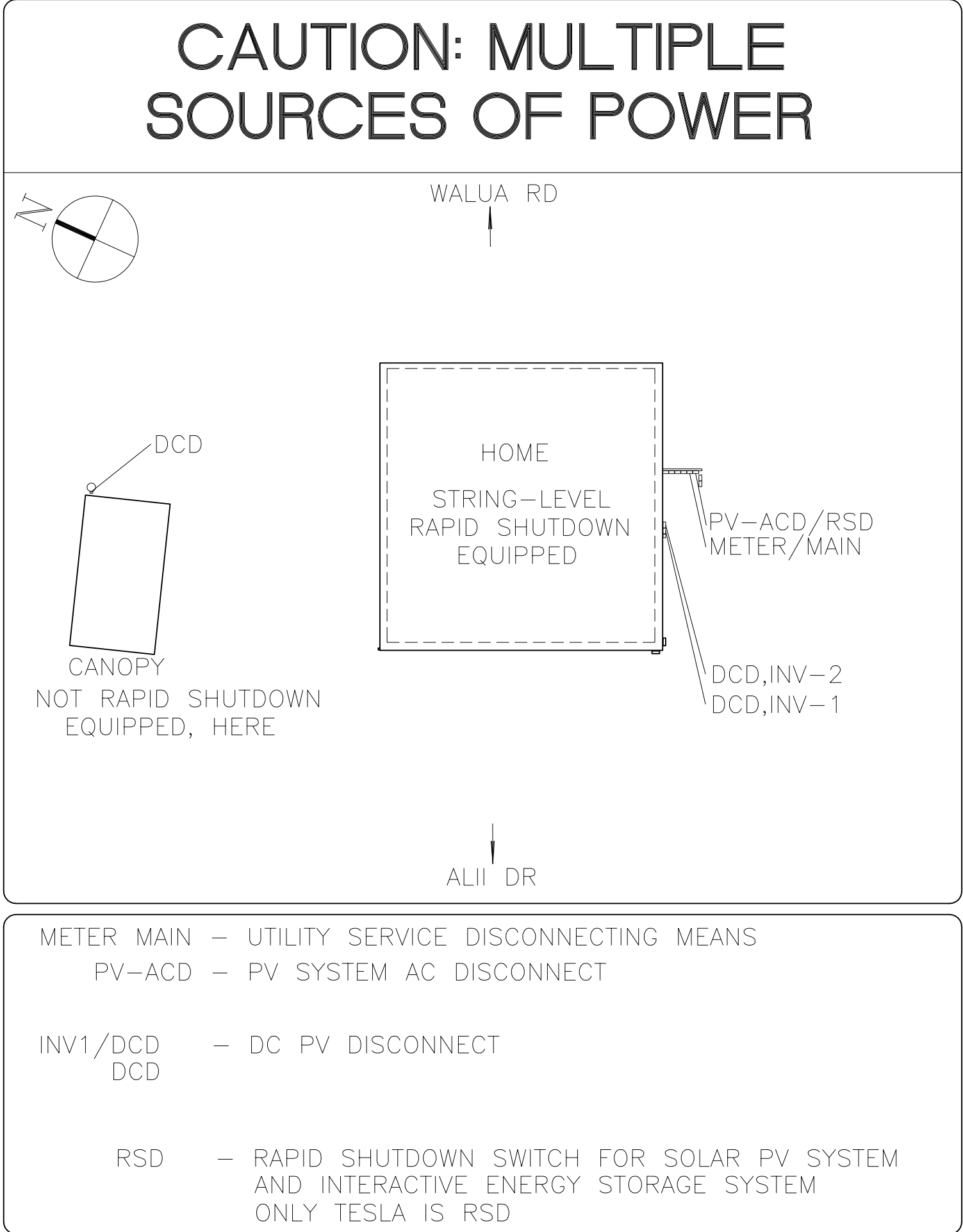
TMK (3) 7-5-018-014

E03
OF 4 SHEETS

— (E) = EXISTING
— (N) = NEW

LABEL NOTES

- 1) LABELS SHALL COMPLY WITH NEC 2020: 110.21(B), 110.22(A), 110.24(A)
- 2) LABELS SHALL COMPLY WITH ANSI Z535.4–2011, PRODUCT SAFETY SIGNS AND LABELS.
- 3) LABELS SHALL COMPLY WITH APPLICABLE ARTICLES OF NEC 2020: 110, 690, 705, 706, & 710.
- 4) LABEL FONTS SHALL BE 3/8" UNLESS SPECIFICALLY STATED AS 3/16" BY NEC.
- 5) LABEL TEXT SHALL BE CAPITALIZED.
- 6) LABEL TEXT COLOR AND BACKGROUND COLOR SHALL BE AS STATED BELOW EACH LABEL.
- 7) LABEL MATERIAL SHALL BE ENGRAVED ON OUTDOOR–RATED PLASTIC LAMINATE.
- 8) LABEL SHALL BE WEATHER RESISTANT SUITABLE FOR THE ENVIRONMENT.
- 9) ATTACH LABEL WITH ADHESIVE TRANSFER TAPE: (3M VHB 5952 OR 3M VHB F9460PC, OAE) OR EQUAL.
- 10) LABEL DIMENSIONS SHALL BE LARGE ENOUGH TO CONTAIN THE TEXT AT THE DESIGNATED HEIGHT.
- 11) LABEL SHALL NOT CONTAIN MORE THAN 30% WHITE SPACE.
- 12) NOTES BELOW LABEL MAY REQUIRE LABEL TO BE REFLECTIVE.
- 13) DEVICES WHICH REQUIRE THE LABEL ARE PER THE NOTES AND OR THE DEVICE ID ON THE LABEL.
- 14) MANUFACTURERS ARE REQUIRED TO PROVIDE NAMEPLATES PER NEC 2020: 706.4, 706.30(1)
- 15) NFPA 70E PROVIDES GUIDANCE FOR INDUSTRY EQUIPMENT LABELING
- 16) PV SYSTEM OUTPUT CONDUCTORS SHALL BE MARKED TO INDICATE POLARITY, PER NEC 690.55



NEC 2020: 110.21(B), 690.56(A), 690.56(B), 705.10, 706.21(B), 710.10, 712.10
1. WHITE LETTERS, RED BACKGROUND.
APPLICATION: DIRECTORY (PV-ACD, INV-1, ESI, UTILITY METER)

WARNING:

THIS EQUIPMENT FED BY MULTIPLE SOURCES.
TOTAL RATINGS OF ALL OVERCURRENT DEVICES
EXCLUDING MAIN SUPPLY OVERCURRENT DEVICE
SHALL NOT EXCEED AMPACITY OF BUSBAR.

- NEC 2020: 705.12(B)(3)(3)
1. PLACE LABEL ADJACENT TO THE BACK–FED BREAKER
 2. WHITE LETTERS, RED BACKGROUND.
- APPLICATIONS: (DISTRIBUTION EQUIPMENT)

PHOTOVOLTAIC
POWER SOURCE

- NEC 2020: 690.31(D)(2)
1. PLACE LABEL EVERY 10FT ON DC CONDUITS, RACEWAYS AND J–BOXES.
 2. WHITE LETTERS, RED BACKGROUND.
- APPLICATIONS: DC CONDUITS, COMBINER, RACEWAYS, ENCLOSURES, JUNCTION BOXES

PHOTOVOLTAIC
AC DISCONNECT

RATED AC OUTPUT CURRENT 147 A
NOMINAL OPERATING AC VOLTAGE 240VAC

- NEC 2020: 690.54
1. WHITE LETTERS, RED BACKGROUND.
- APPLICATION: POINT OF INTERCONNECTION PV AC DISCONNECT (PV-ACD)

WARNING: POWER SOURCE OUTPUT CONNECTION –
DO NOT RELOCATE THIS OVERCURRENT DEVICE

- NEC 2020: 705.12(B)(3)(2)
1. PLACE LABEL ADJACENT TO THE BACK–FED BREAKER
 2. WHITE LETTERS, RED BACKGROUND.
- APPLICATIONS: (GATEWAY)

DC PV DISCONNECT

WARNING:
ELECTRIC SHOCK HAZARD
TERMINALS ON LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

450_VDC MAXIMUM VOLTAGE

NEC 2020: 690.15, 690.53
APPLICATION: MULTIPLE SOURCES
EACH DC DISCONNECTING MEANS (INV-1)
EACH PV SYSTEM ELECTRONIC POWER CONVERSION EQUIPMENT
ASSOCIATED PV DISTRIBUTION EQUIPMENT

CUSTOMER–
GENERATOR
SYSTEM
DISCONNECT

- UTILITY REQUIRED LABEL
1. WHITE LETTERS, RED BACKGROUND, 3/8"
- APPLICATION: UTILITY METER
(PV-ACD)

WARNING !
CUSTOMER
GENERATING
FACILITY

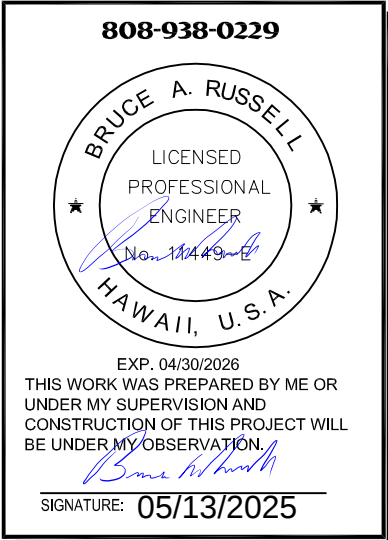
- UTILITY REQUIRED LABEL
1. BLACK LETTERS, ORANGE BACKGROUND, TOP SECTION.
 2. BLACK LETTERS, WHITE BACKGROUND, BOTTOM SECTION
- APPLICATION: UTILITY METER
(UTILITY METER-CAN)

PV SYSTEM DISCONNECT

WARNING:
ELECTRIC SHOCK HAZARD
TERMINALS ON LINE AND
LOAD SIDES MAY BE ENERGIZED
IN THE OPEN POSITION

- NEC 2020: 690.13(B)
1. BLACK LETTERS, WHITE BACKGROUND.
 2. "WARNING" SHALL HAVE ORANGE BACKGROUND
- APPLICATION: PHOTOVOLTAIC SYSTEM DISCONNECTING MEANS (PV-ACD)

1 ENERGY – LABELS



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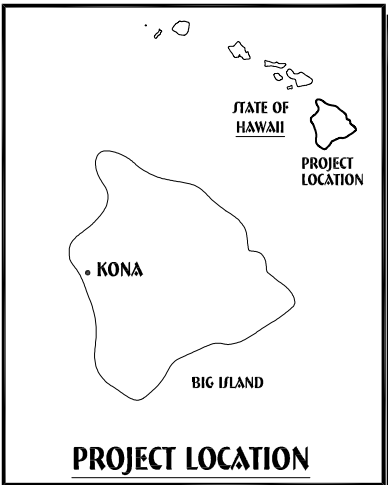


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REVISIONS

04/22/2025

CONTENTS

LABELS

DESIGNED BY: AR

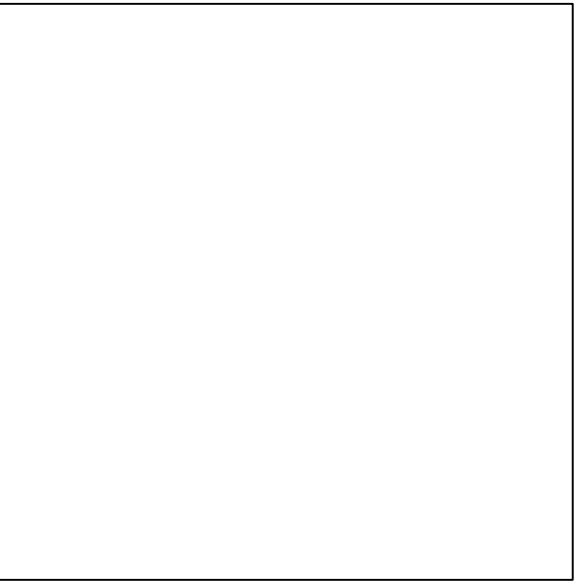
DRAWN BY: AR

SHEET NO. 4

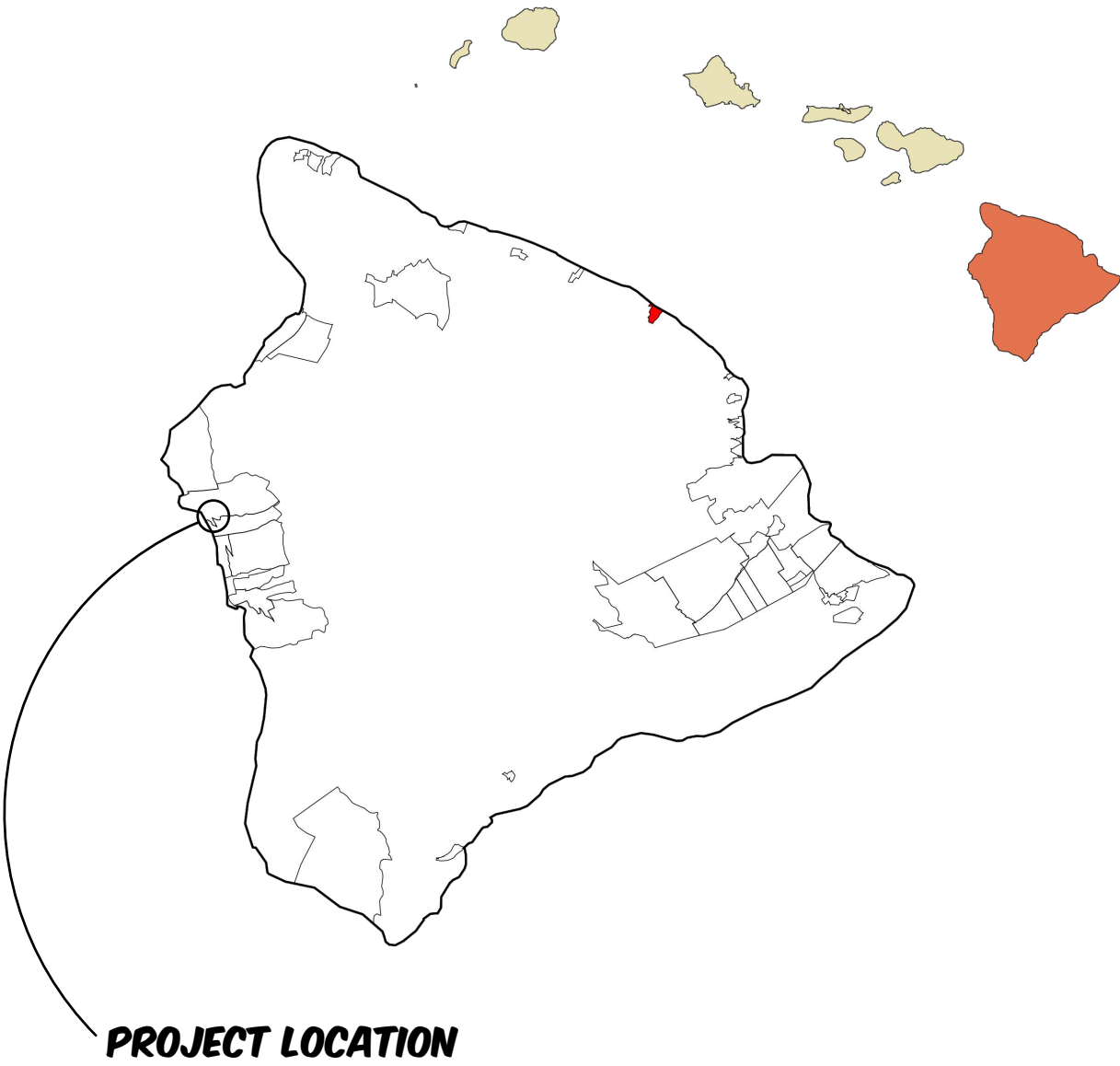
E04
OF 4 SHEETS

75-5870 WALUA RD. KAILUA-KONA, HI 96740

SHEET INDEX	
SHEET	DESCRIPTION
S000	SITE PLAN
S001	STRUCTURAL COVER SHEET
S002	GENERAL STRUCTURAL NOTES, SPECIAL INSTRUCTIONS
S003	GENERAL STRUCTURAL NOTES 2
S100	CP1 STRUCTURAL VIEWS & BOM
S101	CP1 COLUMN & COVERS
S102	CP1 BATTERY BOX
S103	CP1 BATTERY DRAWER 1
S104	CP1 BATTERY DRAWER 2
S200	FOUNDATION DETAILS, 36" CIDH PILE



FOR DPW USE ONLY



PROJECT LOCATION



WORLD4SOLAR

PROPRIETARY NOTICE:
THIS DRAWING CONTAINS CONFIDENTIAL
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STAMP

THIS WORK WAS PREPARED BY ME OR UNDER MY
SUPERVISION AND CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION



EXPIRATION: 04/30/26

Signed 5/14/2025

HELIOING 7

STANDARD EDITION

World4Solar

Job site location acc. site specific approval memo.

STRUCTURAL COVER SHEET

REVISIONS						
	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB		
No.						

DRAWN BY:

M. HUFNAGL

PROJECT ENGINEER:

S.WYSSLING

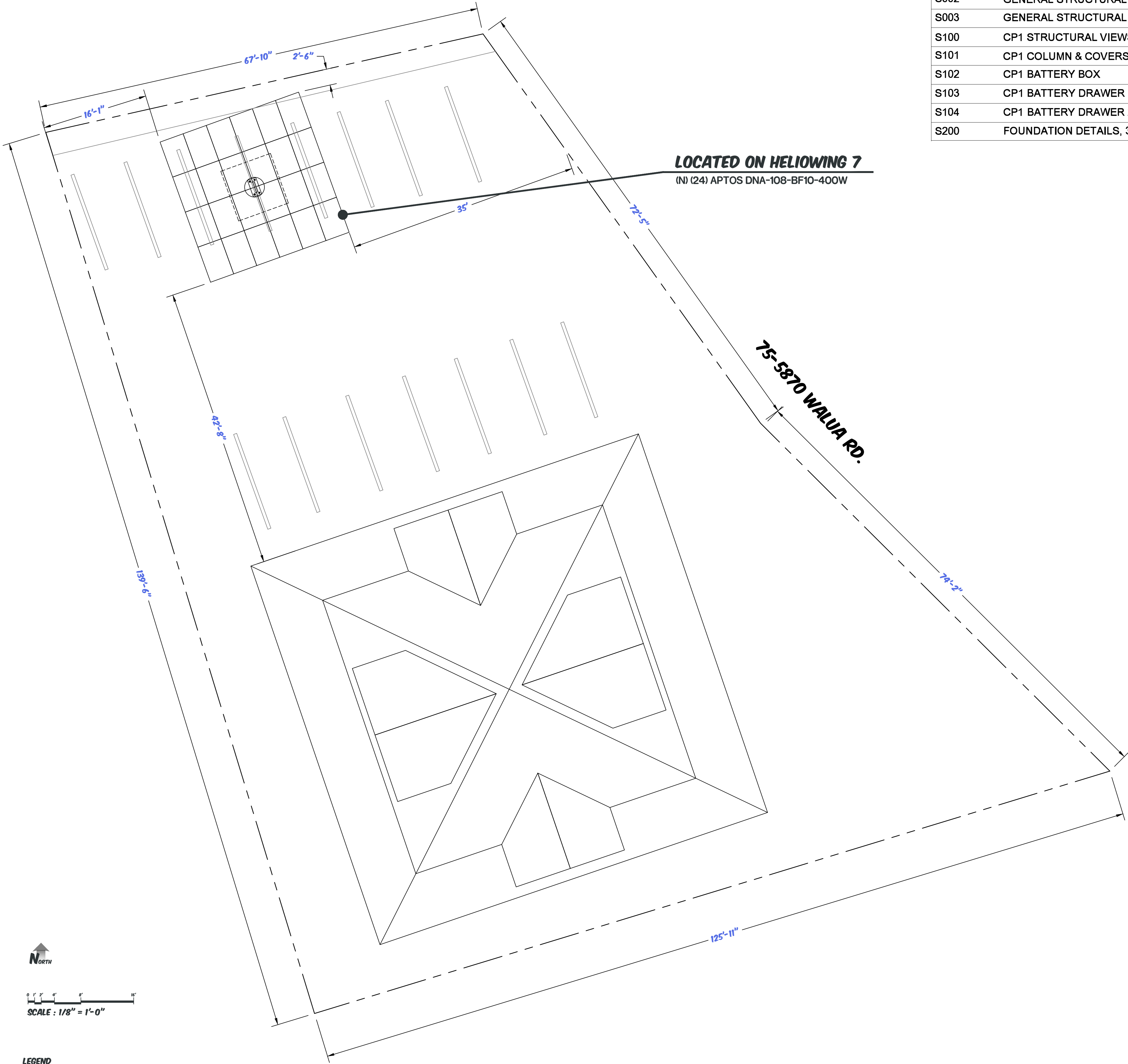
DRAWING FILE:

PROJECT STEEL FINISH SPEC:

POWDER COATED acc. W4S 01.06.01

SHEET:

S000



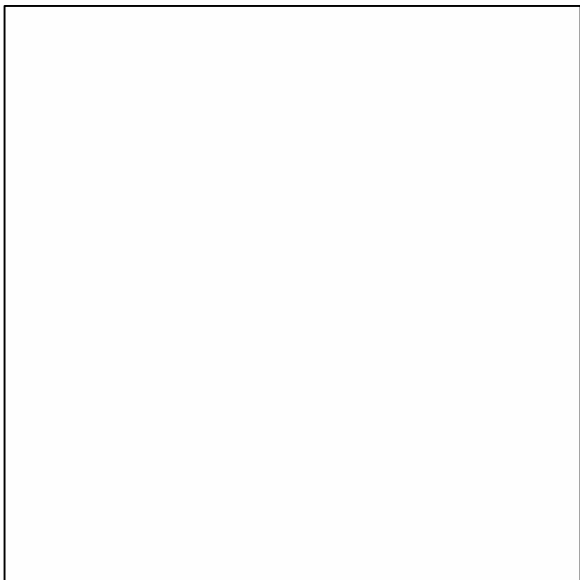
SCALE : 1/8" = 1'-0"

LEGEND	
	MODULES - 44.6 x 67.7 20.975QFT, 48.5LBS EACH
	PROPERTY LINES
	CONDUIT THROUGH TRENCH

75-5870 Walua Rd. Kailua-Kona, HI 96740

HelioWing 7

World4Solar
9.8kW System



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World4Solar Inc.

401 RYLAND ST STE 200-A,
RENO, NV 89502, USA

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STAMP

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Signed 5/14/2025

HelioWing 7

World4Solar

9.8 kW System

Job site location acc. site specific approval memo.

COVER SHEET - STRUCTURAL

REVISIONS

DESCRIPTION / CHANGE NOTICE	DATE	DB	CB				
No.							

DRAWN BY:

M. HUFNAGL

PROJECT ENGINEER:

S.WYSSLING

DRAWING FILE:

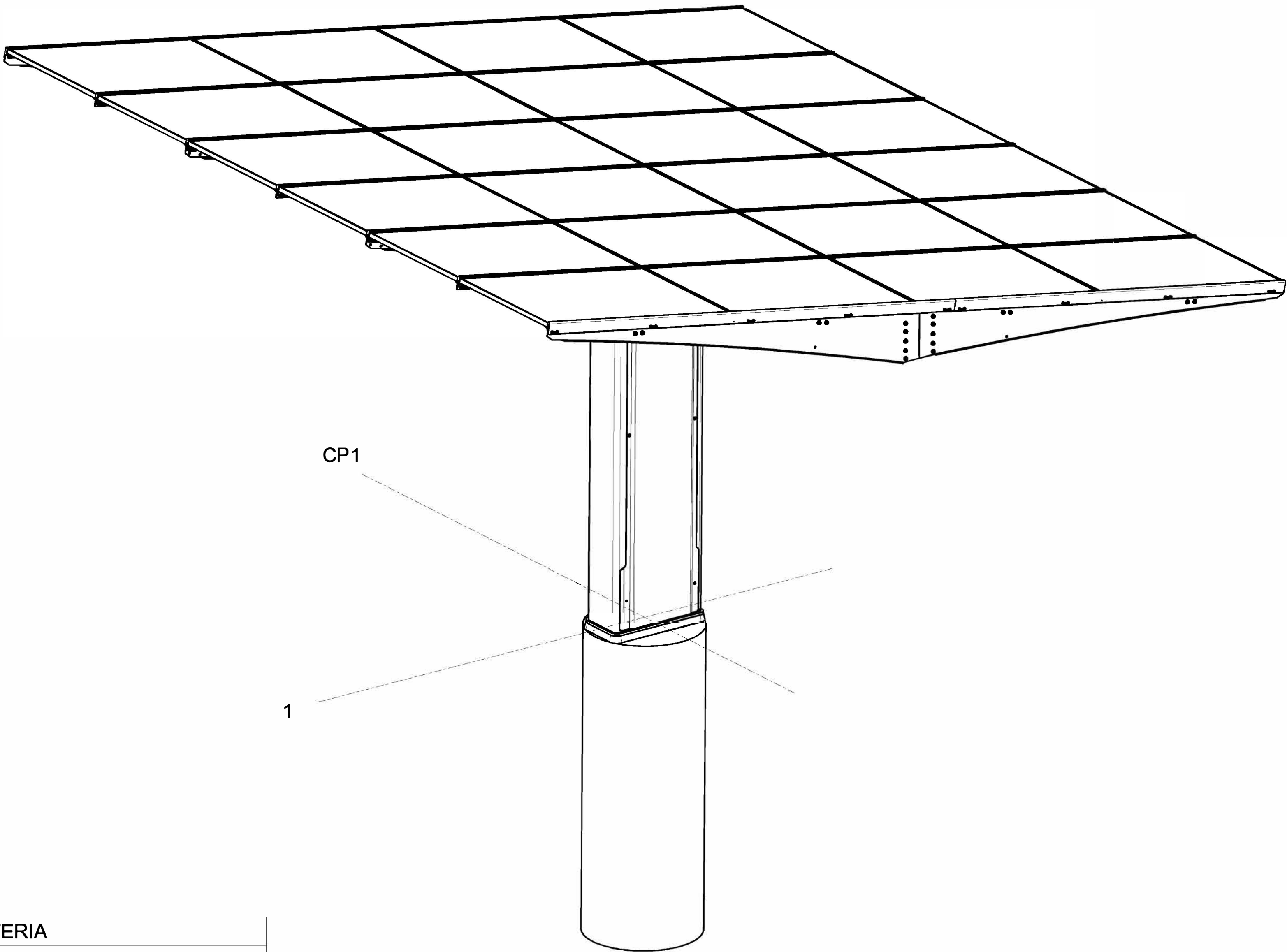
S001 - COVER SHEET

PROJECT STEEL FINISH SPEC:

POWDER COATED acc. W4S 01.06.01

SHEET:

S001



DESIGN CRITERIA

GOVERNING CODES	IBC 2018 / ASCE 7-16
OCCUPANCY TYPE	U
PROJECT ADDRESS	75-5870 Walua Rd. Kailua-Kona, HI 96740
LATITUDE / LONGITUDE	19.630548438717085, -155.98819374447194
PV MODULE	108 half-cell (400W - 450W)
SIZE (L x W x H)	67.7" x 44.6" x 1.3"
ORIENTATION	PORTRAIT
PV ARRAY SIZE	CP1 4x6 / 9.8 kW
LOADING CONDITIONS	
WIND SPEED MAX*	130 MPH
SNOW LOAD MAX*	0 LBS/SQFT
OCCUPATIONAL RISK CATEGORY	CATEGORY II
SURFACE ROUGHNESS CATEGORY	CATEGORY C
EXPOSURE CATEGORY	CATEGORY C
* Values in site specific approval memo prevail	

GEOTECHNICAL DESIGN CRITERIA

GEOTECHNICAL REPORT BY	Ref. site specific approval memo			
GEOTECHNICAL REPORT DATE	Ref. site specific approval memo			
SEISMIC SITE CLASSIFICATION	Ref. site specific approval memo			
SEISMIC RISK CATEGORY	CATEGORY II			
SEISMIC DESIGN CLASSIFICATION	CATEGORY E			
SEISMIC COEFFICIENTS	SS = 2.31	g	SDS = 1.85	g
	S1 = 1.05	g	SD1 = 1.19	g
	SMS = 2.77	g	SM1 = 1.79	g

SHEET INDEX

SHEET	DESCRIPTION
S000	SITE PLAN
S001	STRUCTURAL COVER SHEET
S002	GENERAL STRUCTURAL NOTES, SPECIAL INSTRUCTIONS
S003	GENERAL STRUCTURAL NOTES 2
S100	CP1 STRUCTURAL VIEWS & BOM
S101	CP1 COLUMN & COVERS
S102	CP1 BATTERY BOX
S103	CP1 BATTERY DRAWER 1
S104	CP1 BATTERY DRAWER 2
S200	FOUNDATION DETAILS, 36" CIDH PILE

GENERAL STRUCTURAL NOTES

World4Solar Inc.

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GENERAL STRUCTURAL NOTES

REVISIONS

OB

DB

DATE

DESCRIPTION / CHANGE NOTICE

No.

DRAWN BY:

M. HUFNAGL

PROJECT ENGINEER:

S.WYSSLING

DRAWING FILE:

S002 - GENERAL STRUCTURAL NOTES

PROJECT STEEL FINISH SPEC:

POWDER COATED acc. W4S 01.06.01

SHEET:

S002

GENERAL

- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO STARTING, CONSTRUCTION, DO NOT SCALE DRAWINGS.
- THE STRUCTURAL ERECTION DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE METHODS OF CONSTRUCTION THE CONTRACTOR SHALL PROVIDE WHICH ARE REQUIRED, TO PROTECT THE STRUCTURE DURING CONSTRUCTION, SUCH MEASURES MIGHT INCLUDE, BUT ARE NOT LIMITED TO BRACING AND SHORING.
- ALL REQUESTS FOR CLARIFICATION (RFC) MUST BE SUBMITTED IN WRITING PRIOR TO PROCEEDING WITH WORK.
- THE ENGINEER OF RECORD SHALL BE NOTIFIED OF ANY DISCREPANCIES OR INCONSISTENCIES.
- ALL DRAWINGS ARE CONSIDERED CONTRACT DOCUMENTS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REVIEW, CONTROL AND COORDINATION OF ALL DRAWINGS AND SPECIACATIONS IN CONNECTION WITH PRE-CONSTRUCTION AND CONSTRUCTION ACTIMITIES.
- ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF WORL4SOLAR AND THE ENGINEER OF RECORD IN WRITING PRIOR TO THE INITIATION OF WORK. ALL DISCREPANCIES SHALL BE CLARIFIED IN WRITING, BY WORLDASOLAR AND THE ENGINEER OF RECORD PRIOR TO THE CONTINUATION OF WORK.
- ANY WORK PERFORMED IN CONFLICT WITH THE CONTRACT DOCUMENTS OR ANY CODE OR STANDARD REQUIREMENTS SHALL BE CORRECTED BY THE CONTRACTOR AT THEIR EXPENSE.
- NOTES AND DETAILS ON APPLICATION/ PROJECT SPECIFIC DRAWINGS, SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND DETAILS.
- WHEN MULTIPLE STANDARDS AND/OR REQUIREMENTS ARE IN CONFLICT WITH EACH OTHER, THE MORE STRINGENT OF THE TWO SHALL BE USED.
- ALL WORK SHALL CONFORM TO THE MINIMUM STANDARDS INCLUDING THE FOLLOWING CODES: LOCAL BUILDING CODE, REGULATING AGENCIES, AUTHORITY HAVING JURISDICTION (AHJ)

CONTRACTOR SUBMITTALS AND SHOP DRAWINGS

- THE CONTRACTOR SUBMITTALS AND SHOP DRAWING ARE INTENDED TO HELP THE STRUCTURAL ENGINEER OF RECORD VERIFY THE DESIGN CONCEPT. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CHECK THEIR OWN SHOP DRAWINGS.
- THE STRUCTURAL SHOP DRAWINGS WILL BE RETURNED FOR RESUBMITTAL IF A CURSORY REVIEW SHOWS MAJOR ERRORS WHICH SHOULD HAVE BEEN ADDRESSED BY THE CONTRACTOR.
- THE FOLLOWING SUBMITTALS (ALONG WITH SUPPORTING CALCULATIONS) ARE REQUIRED FOR STRUCTURAL REVIEW:
 - REINFORCING STEEL DESIGN INCLUDING FABRICATION DRAWINGS
 - CONCRETE MIX DESIGN INCLUDING STRENGTH TEST RESULTS
 - STRUCTURAL STEEL FABRICATION DRAWINGS.
- THE FOLLOWING SUBMITTALS TYPICALLY ARE NOT REQUIRED FOR: STRUCTURAL REVIEW:
 - FORMWORK
 - STRUCTURAL STEEL MILL REPORTS
 - SHORING AND BRACING
- SHOP DRAWINGS AND CALCULATIONS SHALL CLEARLY REFERENCE THE DESIGN ASSUMPTIONS USED TO PRODUCE THE SUBMITTAL.
- ALL SUBMITTALS WILL BE PROVIDED IN A DIGITAL FORMAT FOR REVIEW (PREFERABLY PDF) BY THE STRUCTURAL ENGINEER OF RECORD.

STATEMENT OF STRUCTURAL TESTS AND SPECIAL INSPECTIONS

THE FOLLOWING ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER CHAPTER 17 OF THE CURRENT BUILDING CODE UNLESS NOTED OTHERWISE SPECIAL INSPECTIONS AND TESTING SHALL BE PROVIDED BY AN INSPECTION AGENCY, EMPLOYED BY THE OWNER, AND, QUALIFIED BY THE BUILDING OFFICIAL TO INSPECT THE PARTICULAR TYPE OF CONSTRUCTION, TESTS AND INSPECTIONS, AS REQUIRED BY SECTIONS 110 & 1705 OF THE CURRENT IBC, SHALL BE PERFORMED DURING CONSTRUCTION ON THE TYPESOF WORK LISTED BELOW:

CATEGORY	INSPECTION	TESTING
STRUCTURAL STEEL CONSTRUCTION	SECTION 1705.2	SECTION 1705.13
CONCRETE CONSTRUCTION	SECTION 1705.3 / TABLE 1705.3	SECTION 1705.3
SOILS	SECTION 1705.6 / TABLE 1705.6	
CAST-IN-PLACE DEEP FOUNDATIONS	SECTION 1705.8 / TABLE 1705.8	

- THE SPECIAL INSPECTIONS IDENTIFIED ON PLANS ARE, IN ADDITION TO, AND NOT A SUBSTITUTE FOR, THOSE INSPECTIONS REQUIRETDO BE PERFORMED BY THE GOVERNING JURISDICTION, SPECIALLY INSPECTED WORK WHICH IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF AN INSPECTOR FROM THE GOVERNING JURISDICTION IS SUBJECT TO REMOVAL OR EXPOSURE.
- FOR CONTINUOUS INSPECTION, WHEN WORK IN MORE THAN ONE CATEGORY OF WORK REQUIRING SPECIAL INSPECTION IS TO BE PERFORMED SIMULTANEOUSLY, OR THE GEOGRAPHIC LOCATION OF THE WORK IS SUCH THAT IT CANNOT BE CONTINUOUSLY OBSERVED IN ACCORDANCE WITH THE PROVISIONS OF THE CODE, IT IS THE CONTRACTOR'S RESPONSIBILITY TO EMPLOY A SUFFICIENT NUMBER OF INSPECTORS TO ASSURE THAT ALL WORK IS INSPECTED IN ACCORDANCE WITH THOSE PROVISIONS.
- THE SPECIAL INSPECTORS MUST BE CERTIFIED BY THE GOVERNING JURISDICTION IN THE CATEGORY OF WORK REQUIRED TO HAVE SPECIAL INSPECTION.
EXCEPTIONS:
 - SOILS INSPECTIONS BY THE SOILS ENGINEER OF RECORD OR THE PROJECT INSPECTOR
 - WHEN WAIVED BY THE GOVERNING JURISDICTION
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY AT LEAST TWO WORKING DAYS PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ALL WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.
- PROVIDE SPECIAL INSPECTION FOR CONNECTIONS BOLTED WITH A325 AND A490 BOLTS. INSPECTIONS SHALL BE DONE, PER APPROVED NATIONALLY RECOGNIZED STANDARDS AND THE REQUIREMENTS OF THE CODE AND THE GOVERNING JURISDICTION. WHILE THE WORK IS IN PROGRESS, THE SPECIAL INSPECTOR SHALL DETERMINE THE BOLTS, NUTS, WASHERS AND PAINT: BOLTED PARTS: AND INSTALLATION AND TIGHTENING MEET THE STANDARDS REQUIREMENTS
- THE SPECIAL INSPECTOR FOR HIGH STRENGTH BOLTED CONNECTIONS SHALL:
 - OBSERVE THE CALIBRATION PROCEDURES WHEN SUCH PROCEDURES ARE REQUIRED BY THE PLANS OR SPECIFICATIONS.
 - MONITOR THE INSTALLATION OF BOLTS TO DETERMINE THAT ALL PLIES OF CONNECTED MATERIALS HAVE BEEN DRAWN TOGETHER.
 - MONITOR THAT THE SELECTED PROCEDURE IS PROPERLY USED TO TIGHTEN ALL BOLTS.
- THE CONSTRUCTION MATERIALS TESTING LABORATORY MUST BE APPROVED BY THE GOVERNING JURISDICTION, FOR TESTING OF MATERIALS, SYSTEMS, COMPONENTS AND, EQUIPMENT
- PERIODIC INSPECTION SHALL OCCUR FREQUENTLY ENOUGH TO INSPECT ALL OF THE INSTALLED ITEMS AND TO PERIODICALLY WITNESS THE INSTALLATION OF THE ITEMS.
- THE SPECIAL INSPECTOR SHALL PROVIDE WEEKLY REPORTS AND A FINAL REPORT TO THE STRUCTURAL ENGINEER IN ADDITION TO REPORTING REQUIREMENTS OUTLINED IN SECTION 1704.2.4.
- A CERTIFICATE OF SATISFACTORY COMPLETION OF WORK REQUIRING SPECIAL INSPECTION MUST BE COMPLETED AND SUBMITTED TO THE GOVERNING JURISDICTION AND THE STRUCTURAL ENGINEER OF RECORD FOR THE PROJECT.
- THE SPECIAL INSPECTOR SHALL ENSURE THAT ALL DEFICIENCIES NOTED BY THE STRUCTURAL ENGINEER IN STRUCTURAL OBSERVATION REPORTS ARE CORRECTED. SUCH COMPLIANCE SHALL BE REFERENCED IN SPECIAL INSPECTOR REPORT.

STRUCTURAL STEEL

- STRUCTURAL STEEL DESIGN SHALL BE APPROVED AND FABRICATED BY AN AISC APPROVED CONTRACTOR,
- ALL STRUCTURAL STEEL SHALL CONFORM TO THE ASTM DESIGNATION INDICATED BELOW UNLESS OTHERWISE NOTED:

DESCRIPTION	DESIGNATION
W-SHAPES - COLUMNS, GIRDERS AND BEAMS	STEEL PLATE, GRADE 50
BASE PLATES AND CAP PLATES	STEEL PLATE, GRADE 50
STIFFNERS AND MISC. PLATES	STEEL PLATE, GRADE 50 OR A36
ANGLES, CHANNELS AND MISC.	A36
HSS SECTIONS	A500, GRADE C
'C' AND 'Z' PURLINS	STEEL PLATE, GRADE 50
HIGH STRENGTH BOLTED CONNECTIONS	CAT 1. - SOCKET HEAD BOLTS: ASTM A574, 170KSI, TS CAT 2. - HEX BOLTS: ASME B18.2.1, SAE J429, GR 8 NUTS: ASME B18.2.2 WASHERS: ASME B18.21.1
ANCHOR RODS	HEAVY HEX HEAD, F1554, GR. 55 (UNO IN SITE SPECIFIC MEMO)

- THE STRUCTURAL STEEL FABRICATOR SHALL MAINTAIN ALL MANUFACTURERS MATERIAL TEST REPORTS (MTR) FOR ALL STRUCTURAL STEEL MEMBERS.
- THE APPROVED STRUCTURAL STEEL FABRICATOR SHALL EMPLOY DETAILED FABRICATION AND QUALITY CONTROL PROCEDURES THAT PROVIDE A BASIS FOR INSPECTION CONTROL OF THE WORKMANSHIP AND MATERIALS USED IN FABRICATION. AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE BUILDING OFFICIAL STATING THAT THE WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- ALL STRUCTURAL STEEL MEMBERS SHALL BE CLASSIFIED AS ARCHITECTURALLY EXPOSED STRUCTURAL STEEL - TYPE 3 (AESS 3) AND SHALL BE FABRICATED, FINISHED AND HANDLED PER ANSI/ AISC 303-16, CHAPTER 10-AESS 3.
- ALL WELDING TO BE PERFORMED BY WELDERS CERTIFIED TO AWS D1.1 STRUCTURAL WELDING CODE, PER AISC 380 LATEST EDITIONS AND APPROVED WELD PROCEDURES.
- ALL WELDING FILLER MATERIALS SHALL BE APPROVED TO AWS A5.20 AND CLASSIFIED TO AWS E71T-1 OR ALL WELDING FILLER MATERIALS SHALL BE APPROVED TO AWS A.5.18 AND CLASSIFIED TO ER70S-6
- STRUCTURAL OBSERVATIONS SPECIFIED IN SECTIONS 1, 2 AND 3 OF THE ADJACENT TABLE (STEEL, TESTS AND SPECIAL INSPECTIONS) ARE NOT REQUIRED FOR THIS PROJECT PER BUILDING CODE IF FABRICATION IS COMPLETED BY A FABRICATOR APPROVED TO PERFORM SUCH WORK WITHOUT SPECIAL INSPECTION.
- AT COMPLETION OF FABRICATION, THE APPROVED FABRICATOR SHALL SUBMIT A CERTIFICATE OF COMPLIANCE TO THE OWNER OR OWNER'S AUTHORIZED AGENT FOR SUBMITTAL TO THE BUILDING OFFICIAL STATING THAT WORK WAS PERFORMED IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- ALL HIGH STRENGTH BOLTS SHALL BE TIGHTENED TO "PRETENSIONED" CONDITION PER AISC 360 SECTION J3.2b AND RCSC SPECIFICATION SECTION 8.2, UNLESS OTHERWISE NOTED.
- ALL EXPOSED STEEL MEMBERS, HARDWARE AND BOLTS SHALL BE GALVANIZED OR OTHERWISE TREATED PER APPROVED. LOCAL STANDARDS TO RESIST CORROSION.

STEEL: TESTS AND SPECIAL INSPECTIONS

VERIFICATION AND INSPECTION	TYPE	RESP.	REFERENCING STANDARD
1. VERIFICATION OF STRUCTURAL STEEL MATERIAL			
A. STRUCTURAL STEEL MARKINGS CONFORMING TO AISC 360, CURRENT EDITION	P	SI	AISC 360: M5.5
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS	P	SI	AISC 360: M5.5
2. VERIFICATION OF WELD FILLER MATERIALS AND PROCEEDURES			
A. VERIFY MARKINGS TO CONFIRM TO INDICATED AWS SPECIFICATIONS	P	SI	AISC 360: M3.5 AWS A5.20
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS OR CERTIFICATE OF COMPLIANCE	P	SI	AISC 360: M3.5 AWS A5.20
C. VERIFY WELD PROCEDURE (WPS), WELDER QUALIFICATION AND EQUIPMENT	P	SI	AISC 360: M3.5 AWS A5.20
3. VERIFICATION OF WELDING			
A. MULTIPASS WELDS	C	SI	AWS D1.1
B. SINGLE PASS WELDS > 5/16"	C	SI	AWS D1.1
C. SINGLE PASS WELDS = 5/16"	P	SI	AWS D1.1
4. MATERIAL VERIFICATION OF HIGH-STRENGTH BOLTS, NUTS AND WASHERS			
A. IDENTIFICATION MARKINGS TO CONFIRM TO ASTM STANDARDS	P	SI	AISC 360: A3.3, N5.6-1 RCSC 2.3
B. VERIFY MANUFACTURERS MATERIAL TEST REPORTS OR CERTIFICATE OF COMPLIANCE	P	SI	AISC 360: N5.6-1 RCSC 2.1
C. VERIFY "PRETENSIONED" CONNECTIONS	P	SI	AISC 360: M2.5, N5.6-2 RCSC 8.1, 9.1

TEST AND SPECIAL INSPECTIONS KEY.

- TYPE
- P (PERIODIC) = INDICATES THAT A PERIODIC SPECIAL INSPECTION IS REQUIRED.
 - C (CONTINUOUS) = INDICATES THAT A CONTINUOUS SPECIAL INSPECTION IS REQUIRED
 - T (TEST) = INDICATES THAT A TEST IS REQUIRED

RESPONSIBILITY (PERFORMED BY)

- SI (SPECIAL INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION ISTO BE PERFORMED BY QUALIFIED SPECIAL INSPECTOR.
- PI (PROJECT INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY THE QUALIFIED PROJECT INSPECTOR
- GE (GEOTECHNICAL ENGINEER) - INDICATES THAT THE SPECIAL INSPECTION IS TO BE PERFORMED BY A REGISTERED GEOTECHNICAL ENGINEER OR HIS/ HER AUTHORIZED REPRESENTATIVE

1

2

3

4

5

FOUNDATION

1. CONTRACTOR SHALL INVESTIGATE SITE DURING CLEARING AND EARTHWORK OPERATIONS FOR FILLED EXCAVATIONS OR BURIED STRUCTURES, SUCH AS CESSPOOLS, CISTERNS, FOUNDATIONS, ETC. IF ANY SUCH STRUCTURES ARE FOUND, STRUCTURAL ENGINEER SHALL BE NOTIFIED IMMEDIATELY.

2. CONTRACTOR SHALL REMOVE CONTAMINATED SOILS (WHERE OCCUR) PER THE SOILS REPORT. SOIL REMOVAL AND RECOMPACTION SHALL BE PER THE SOILS REPORT AND APPROVED CONTRACT DOCUMENTS.

3. FOUNDATIONS SHALL BE PLACED AND ESTIMATED ACCORDING TO DEPTHS SHOWN ON DRAWINGS. SHOULD SOIL ENCOUNTERED AT THESE DEPTHS NOT BE APPROVED BY THE INSPECTOR OR SOILS ENGINEER, FOUNDATION ELEVATIONS WILL BE ALTERED.

4. KEEP EXCAVATIONS FREE OF WATER BEFORE PLACING CONCRETE UNLESS OTHERWISE APPROVED BY THE SOILS ENGINEER. IF UNABLE TO SEAL OFF WATER FLOW, PER THE APPROVAL OF THE SOILS ENGINEER, ALLOW WATER LEVEL TO ATTAIN ITS NORMAL LEVEL AND PLACE CONCRETE BY THE TREME METHOD OR OTHER APPROVED METHOD. CONTRACTOR TO PROVIDE FOR DE-WATERING OF EXCAVATIONS FROM EITHER SURFACE WATER, GROUND WATER, OR SEEPAGE, IF REQUIRED.

5. EACH BORING FOR THE DRILLED PIER MUST BE INSPECTED BY THE SOILS ENGINEER PRIOR TO PLACING CONCRETE AND REINFORCING STEEL, ADJUST SHAFT LENGTHS UNDER DIRECTION OF THE SOILS ENGINEER AND THE OWNER'S REPRESENTATIVE BASED ON SOIL CONDITIONS AT TIME OF DRILLING.

6. PRECAUTIONS SHOULD BE TAKEN DURING THE INSTALLATION OF PIERS TO MINIMIZE THE POSSIBILITY OF CAVING. CLOSELY SPACED PIERS SHOULD BE DRILLED AND FILLED ALTERNATELY, ALLOWING THE CONCRETE TO SET AT LEAST EIGHT HOURS BEFORE DRILLING AN ADJACENT HOLE. PIER EXCAVATIONS SHOULD BE FILLED WITH CONCRETE AS SOON AFTER DRILLING AND INSPECTION AS POSSIBLE.

7. PLACE REINFORCING STEEL IN ONE CONTINUOUS UNIT AND ACCURATELY HOLD SECURELY IN FINAL POSITION USING CHAIRS OR SPACERS DURING CONCRETE PLACEMENT

8. AN UNREINFORCED HEIGHT OF 12 INCHES AT THE BOTTOM OF THE SHAFT IS ACCEPTABLE.

9. CONSTRUCTION SHALL COMPLY WITH THE REQUIREMENTS OF ACI 336.3R, LATEST EDITION.

10. ASSUME CLASS 5 SOIL TYPE WITH LATERAL BRG PRESSURE EQUAL TO 100psf / ft. INCREASED TO 200psf / ft PER IBC SECTION 1806.3.4

REINFORCING STEEL

1. REINFORCING BARS SHALL CONFORM TO THE REQUIREMENTS OF CHAPTER 19 OF THE CODE, ASTM A615 (A706 WHERE NOTED ON PLANS), GRADE 60 UNLESS OTHERWISE NOTED. DEFORMATIONS SHALL BE IN ACCORDANCE WITH ASTM A-305.

2. BARS SHALL BE CLEAN OF RUST, GREASE, OR OTHER MATERIALS LIKELY TO IMPAIR BOND. ALL REINFORCING BAR BENDS SHALL BE MADE COLD.

3. REINFORCING BARS SHALL NOT BE SPLICED UNLESS SPECIFICALLY NOTED ON PLAN AND SHALL CONFORM TO THE PROVISIONS OF ACI 318. LAP ALL HORIZONTAL BARS AT CORNERS AND INTERSECTIONS.

4. ALL BARS SHALL BE MARKED SO THEIR IDENTIFICATION CAN BE MADE WHEN THE FINAL-IN-PLACE INSPECTION IS MADE.

5. REINFORCING STEEL SHALL BE DETAILED IN ACCORDANCE WITH ACI 315. COMPLETE AND DETAILED REINFORCING PLACEMENT DRAWINGS SHALL BE PREPARED AND SUBMITTED FOR REVIEW BY THE STRUCTURAL ENGINEER PRIOR TO FABRICATION IN ACCORDANCE WITH SPECIFICATIONS AND APPLICABLE CODES. THESE APPROVED DRAWINGS SHALL BE AVAILABLE ON THE JOB SITE PRIOR TO PLACING OF CONCRETE.

7. REBAR SPACINGS GIVEN ARE MAXIMUM ON CENTER WHETHER STATED AS "O.C." OR NOT. UNLESS A SPECIFIED LENGTH IS GIVEN. ALL REBAR IS CONTINUOUS WHETHER STATED AS "CONT." OR NOT.

8. MILL TEST REPORTS FOR GRADE 60 BARDS SHALL BE SUBMITTED PRIOR TO PLACEMENT OF CONCRETE.

9. MECHANICAL BAR SPLICES (COUPLERS) SHALL BE USED WHERE SPECIFIED ON PLANS. THEY MAY ALSO BE USED AT THE CONTRACTOR'S OPTION IN LIEU OF LAP SPLICES AND WHERE REINFORCING IS SHOWN CONTINUOUS THROUGH BY ACI318 AND BE ONE OF THOSE LISTED BELOW AND INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS:
A. HRC 500 SERIES MECHANICAL COUPLERS (ICC ESR-2764)
B. LENTON A2 SERIES MECHANICAL SPLICES (IAPMO ER-0129)

CONCRETE

1. ALL CONCRETE CONSTRUCTION SHALL CONFORM WITH THE CODE AND WITH THE PROVISIONS OF ACI 318 AND ACI301

2. CONCRETE MIXES SHALL BE DESIGNED BY A QUALIFIED TESTING LABORATORY AND APPROVED BY THE STRUCTURAL ENGINEER.
A. MIX DESIGN METHODS (TEST HISTORY OR TRIAL BATCH METHOD) PER THE CODE SHALL BE USED TO. PROPORTION CONCRETE, SUBMIT MIX DESIGN METHOD DATA.
B. MIX DESIGNS SHALL SATISFY EITHER THE SHRINKAGE CRITERIA OR THE W/ C RATIO AND TOTAL WATER CRITERIA.

3. PORTLAND CEMENT SHALL CONFORM TO ASTM C-150 TYPE II

4. AGGREGATE FOR HARD ROCK CONCRETE SHALL CONFORM TO ALL REQUIREMENTS AND TESTS OF ASTM C33 AND PROJECT SPECIFICATIONS. CONCRETE SHALL BE DESIGNED TO FACILITATE PLACEMENT BY PUMP. EXCEPTIONS MAY BE USED ONLY WITH PERMISSION OF THE STRUCTURAL ENGINEER.

5. CONCRETE MIXING OPERATION, ETC. SHALL CONFORM TO ASTM C94.

6. SCHEDULE OF STRUCTURAL CONCRETE PERFORMANCE REQUIREMENTS:

MEMBER	fc / 28 DAY	MAX W/C	MAX DENSITY
ALL FOOTINGS AND FOUNDATIONS	6000 PSI	0.50	150 PCF

7. PLACEMENT OF CONCRETE SHALL CONFORM TO ACI 301 AND PROJECT SPECIFICATIONS. CLEAN AND ROUGHEN TO 1/4" AMPLITUDE ALL CONCRETE SURFACES AGAINST WHICH NEW CONCRETE IS TO BE PLACED.

8. CONTINUOUS INSPECTION OF CONCRETE SHALL INCLUDE INSPECTION DURING INSTALLATION OF REINFORCING STEEL. INSPECTION SHALL BE SCHEDULED SO THAT PLACEMENT OF REINFORCING STEEL, CONDUIT, SLEEVES, AND EMBEDDED ITEMS MAY BE CORRECTED PRIOR TO PLACEMENT OF OVERLYING GRIDS OF REINFORCING STEEL.

9. FOR CAST-IN-PLACE CONCRETE, THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCEMENT:

DESCRIPTION	MINIMUM COVER
CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH	3" (±3/8")
CONCRETE EXPOSED TO EARTH OR WEATHER NO. 6 THROUGH NO. 18 BAR	2" (±3/8")
CONCRETE EXPOSED TO EARTH OR WEATHER NO. 5 BAR, W31 OR D31 WIRE OR SMALLER	1 1/2" (±3/8")
CONCRETE NOT EXPOSED TO WEATHER OR IN CONTACT WITH THE GROUND	3/4" (±1/4")

10. ALL REINFORCING BARS, ANCHOR BOLTS, AND OTHER CONCRETE INSERTS SHALL BE WELL SECURED IN POSITION PRIOR TO PLACING CONCRETE.

11. CONCRETE SHALL BE PUMPED IN PLACE IN 18" TO 24" LIFTS PER ACI RECOMMENDATIONS.

12. PIPES OR CONDUITS LARGER THAN 4" DIAMETER SHALL NOT BE EMBEDDED IN STRUCTURAL CONCRETE EXCEPT WHERE SPECIFICALLY APPROVED BY STRUCTURAL ENGINEER. PIPES OR CONDUITS SHALL NOT DISPLACE OR INTERRUPT REINFORCING BARS. SPACE THE PIPES OR CONDUITS SUCH THAT PROPER CONCRETE PLACEMENT AND CONSOLIDATION IS ACHIEVED.

13. FOAM USED AS STAY-IN-PLACE FORMS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 5.8 PSI AT 1%. DEFORMATION AND A MINIMUM MODULUS OF 580 PSI PER ASTM D6817.

14. PROVIDE MIN 1/4 CHAMFER ON ALL EXPOSED CORNERS UNLESS INDICATED OTHERWISE.

15. THE SoLFast™ SHORING SYSTEM MUST REMAIN INSTALLED 48 HOURS AFTER THE FOUNDATIONS HAVE BEEN CAST OR AFTER CONCRETE REACHES A MINIMUM COMPRESSIVE STRENGTH OF 2000-PSI, WHICHEVER COMES FIRST. BREAK TESTS NOT REQUIRED IF WAITING UNTIL 48 HOURS TO REMOVE SoLFast™ SHORING SYSTEM

FOUNDATION TESTS AND SPECIAL INSPECTIONS

VERIFICATION AND INSPECTION	TYPE	RESP	REFERENCING STANDARD
1. SOILS (TABLE 1705.6)			
A. VERIFY MATERIALS BELOW FOOTINGS ARE ADEQUATE TO ACHIEVE THE DESIGN BEARING CAPACITY	P	GE	-
B. VERIFY EXCAVATIONS ARE EXTENDED TO PROPER DEPTH AND HAVE REACHED PROPER MATERIAL	P	GE	-
C. PRIOR TO PLACEMENT OF COMPACTED FILL, INSPECTSUBGRADE AND VERIFY THAT SITE HAS BEEN PREPARED PROPERLY	P	GE	-
2. CAST-IN-PLACE DEEP FOUNDATIONS (TABLE 1705.8)			
A. INSPECT DRILLING OPERATIONS AND MAINTAIN COMPLETE AND ACCURATE RECORDS FOR EACH ELEMENT.	C	SI	-
B. VERIFY PLACEMENT LOCATIONS, PLUMBNESS, DIAMETER AND DEPTH. VERIFY ADEQUATE END-BEARING STRATA CAPACITY AND PROPER MATERIAL AT DEPTH.	C	SI	-
3. REINFORCING STEEL (TABLE 1705.3)			
A. INSPECT REINFORCING STEEL, PRESTRESSING TENDONS, SHEAR STUDS AND PLACEMENT	P	SI	ACI 318: 20, 25.2, 25.3, 26.6.1 - 26.6.3
B. INSPECT WELDABILITY OF REINFORCING STEEL OTHER THAN ASTM A706	P	SI	ACI 318: 20, 25.2, 25.3, 26.6.1 - 26.6.3
C. INSPECT ANCHOR BOLTS AND EMBEDED PLATES TO BE INSTALLED IN CONCRETE PRIOR TO AND DURING PLACEMENT OF CONCRETE	C	SI	ACI 318: 17.8.2

TEST AND SPECIAL INSPECTIONS KEY.

TYPE:
P (PERIODIC) = INDICATES THAT A PERIODIC SPECIAL INSPECTION IS REQUIRED.
C (CONTINUOUS) = INDICATES THAT A CONTINUOUS SPECIAL INSPECTION IS REQUIRED
T (TEST) = INDICATES THAT A TEST IS REQUIRED

RESPONSIBILITY (PERFORMED BY)
SI (SPECIAL INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION ISTO BE PERFORMED BY QUALIFIED SPECIAL INSPECTOR
PI (PROJECT INSPECTOR) - INDICATES THAT A SPECIAL INSPECTION IS TO BE PERFORMED BY THE QUALIFIED PROJECT INSPECTOR
GE (GEOTECHNICAL ENGINEER) - INDICATES THAT THE SPECIAL INSPECTION IS TO BE PERFORMED BY A REGISTERED GEOTECHNICAL ENGINEER OR HIS/ HER AUTHORIZED REPRESENTATIVE

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HelioWing 7

World4Solar

9.8 kW System

Job site location acc. site specific approval memo.

GENERAL STRUCTURAL NOTES 2

REVISIONS

No.	DESCRIPTION / CHANGE NOTICE	DATE			
		DB	CB		

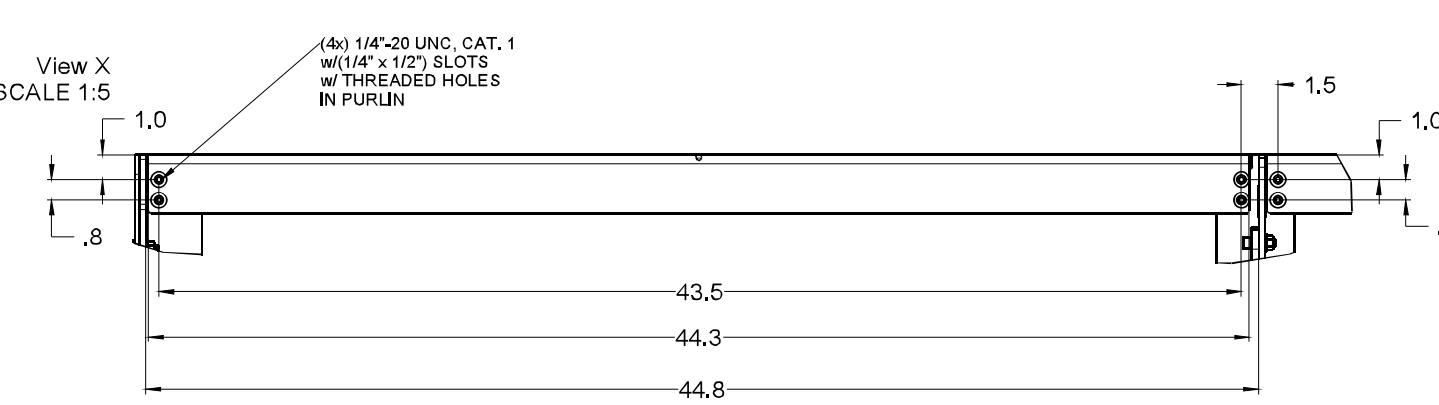
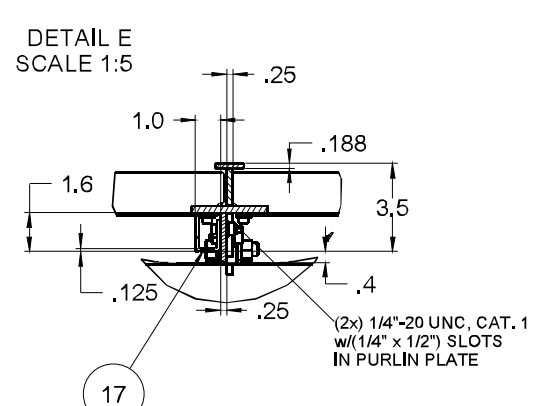
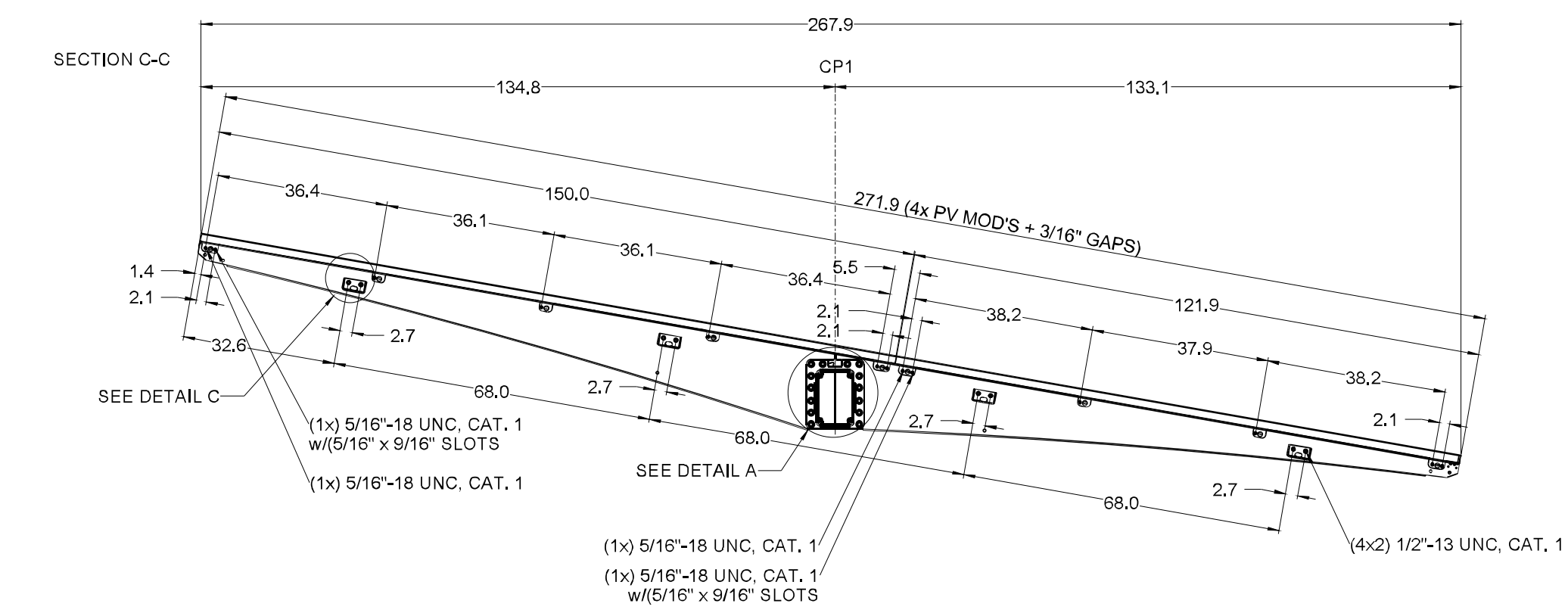
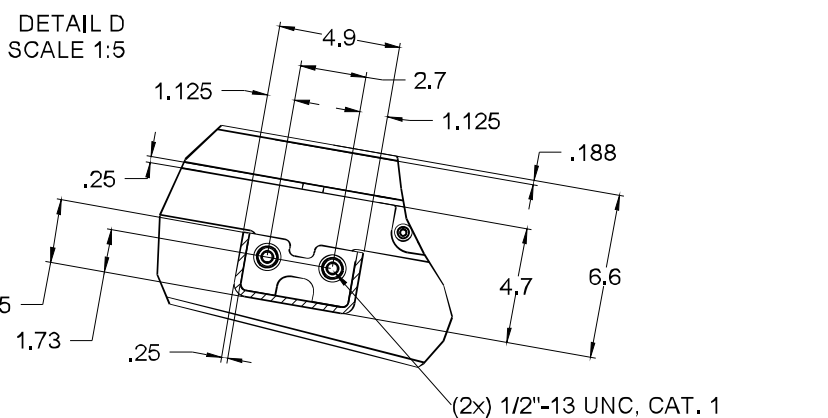
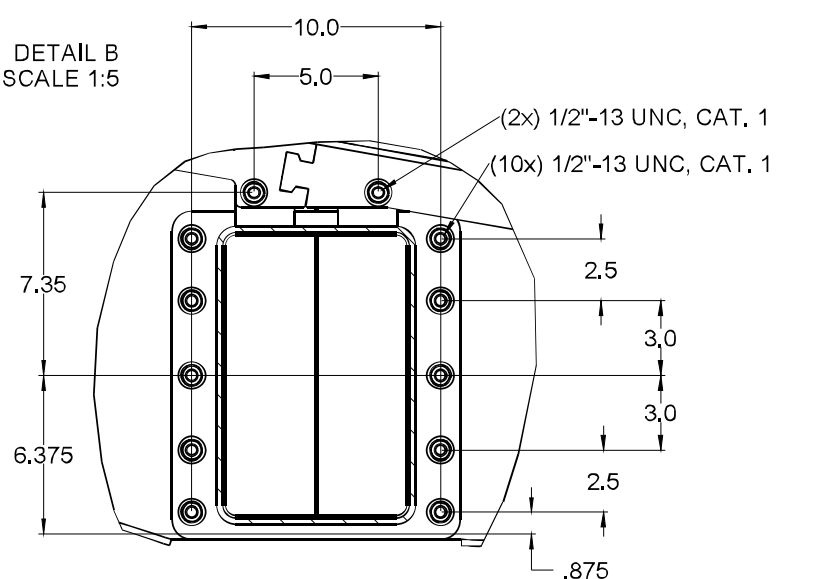
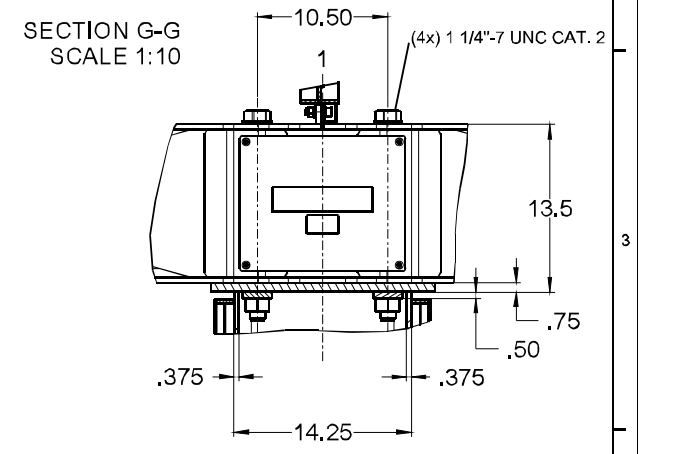
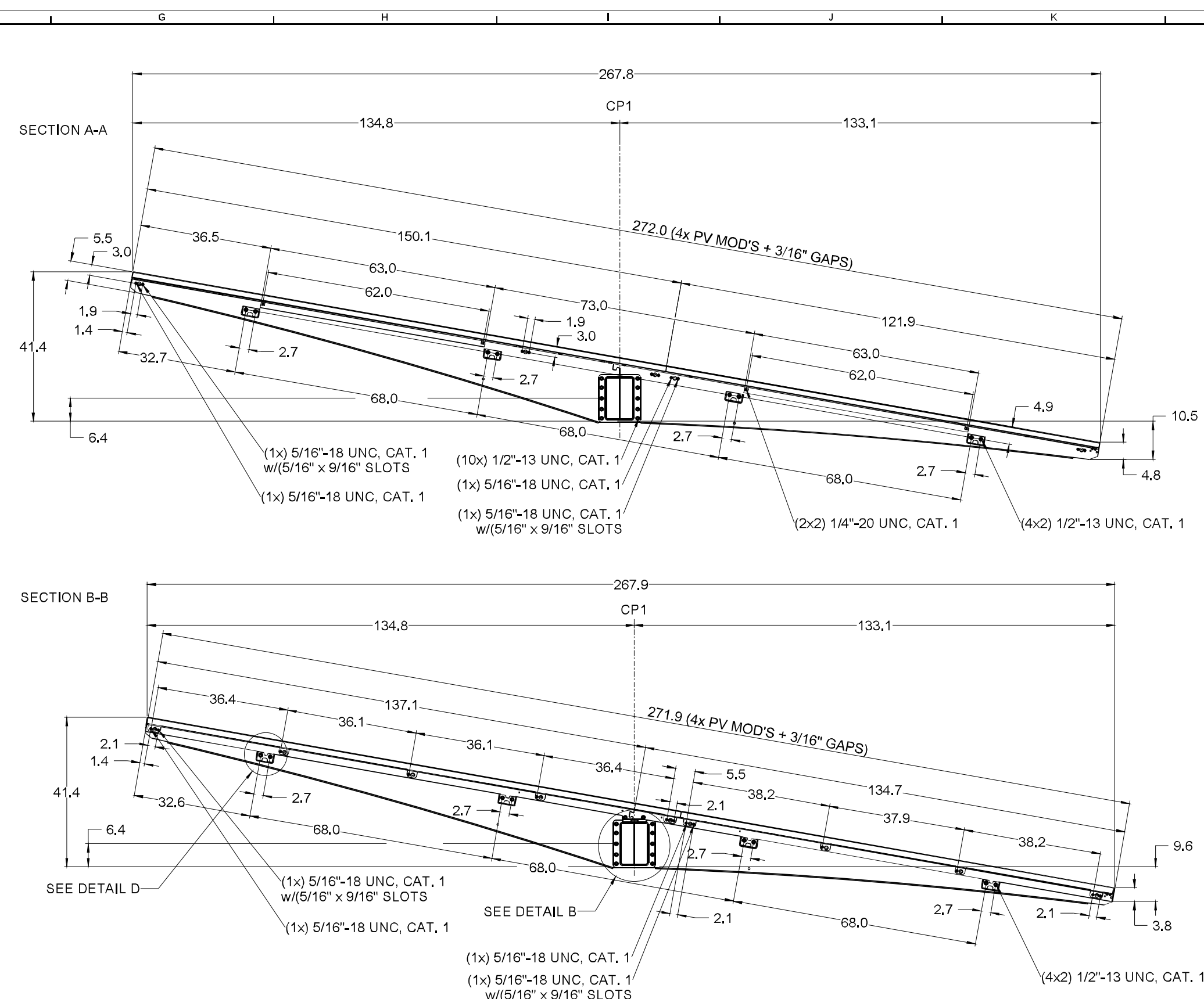
DRAWN BY:
M. HUFNAGL

PROJECT ENGINEER:
S.WYSSLING

DRAWING FILE:
S003 - GENERAL STRUCTURAL NOTES 2

PROJECT STEEL FINISH SPEC:
POWDER COATED acc. W4S 01.06.01

SHEET:
S003



Description				Changes	
Date	Name	Material	Weight	Scale	
created 1/14/2018				1:20	
modified			1:1		
Dimensional Tolerance 1st 0.125" 2nd 0.100" 3rd 0.075" 4th 0.050" Angular Tolerance 1st 0.1° 2nd 0.05°				H7-A Structural Views and BOM Drawings Revision A	

A circular professional engineer seal for Coleman D. Larsen. The outer ring contains the name "COLEMAN D. LARSEN" at the top and "HAWAII, U.S.A." at the bottom, separated by two stars. The inner circle contains the text "LICENSED PROFESSIONAL ENGINEER" and "No. 19330-S".

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SHEET
S100

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CP1 COLUMN AND COVERS

REVISIONS	DESCRIPTION / CHANGE NOTICE				
	DATE				
	DB				
	CB				
	No.				

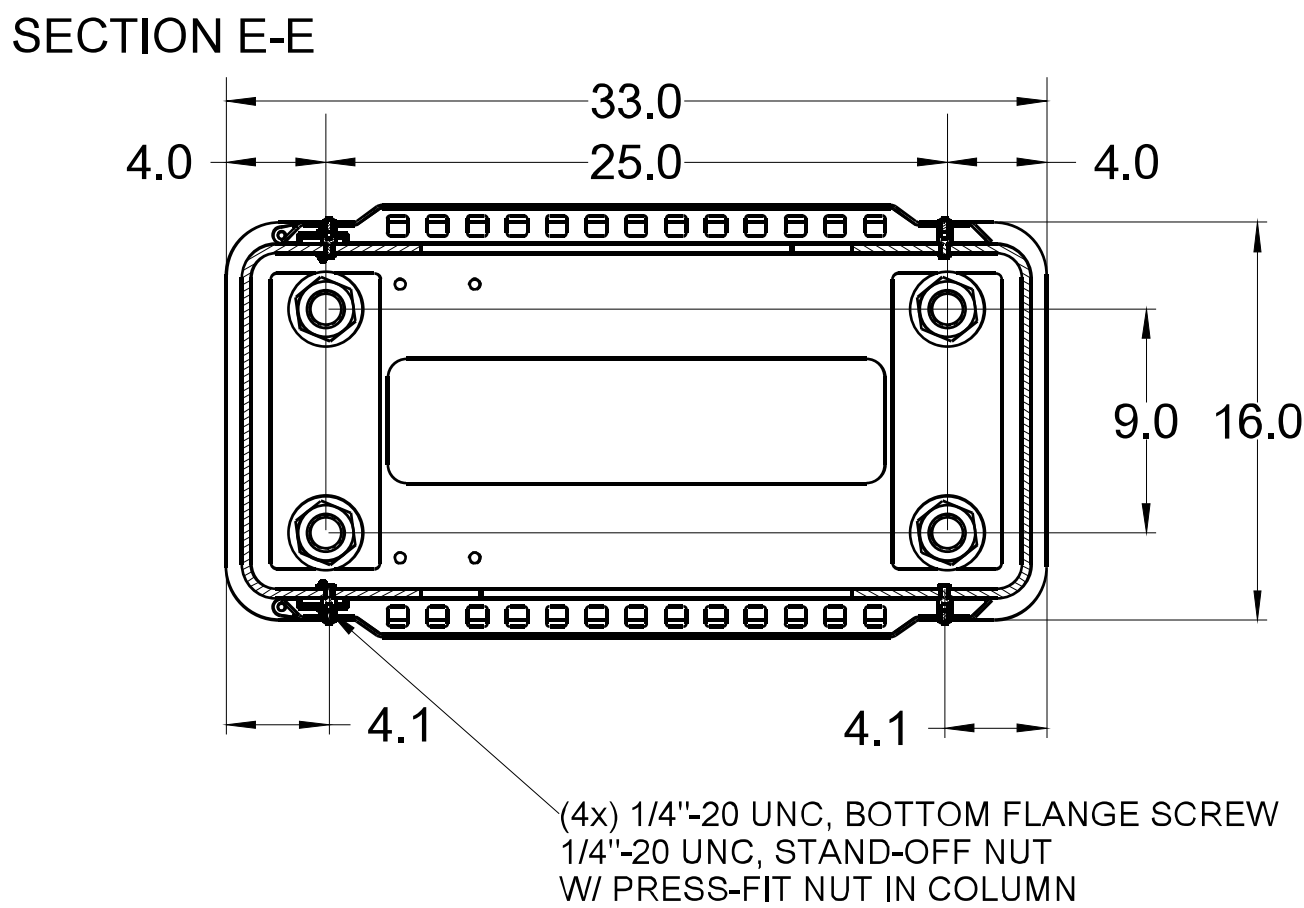
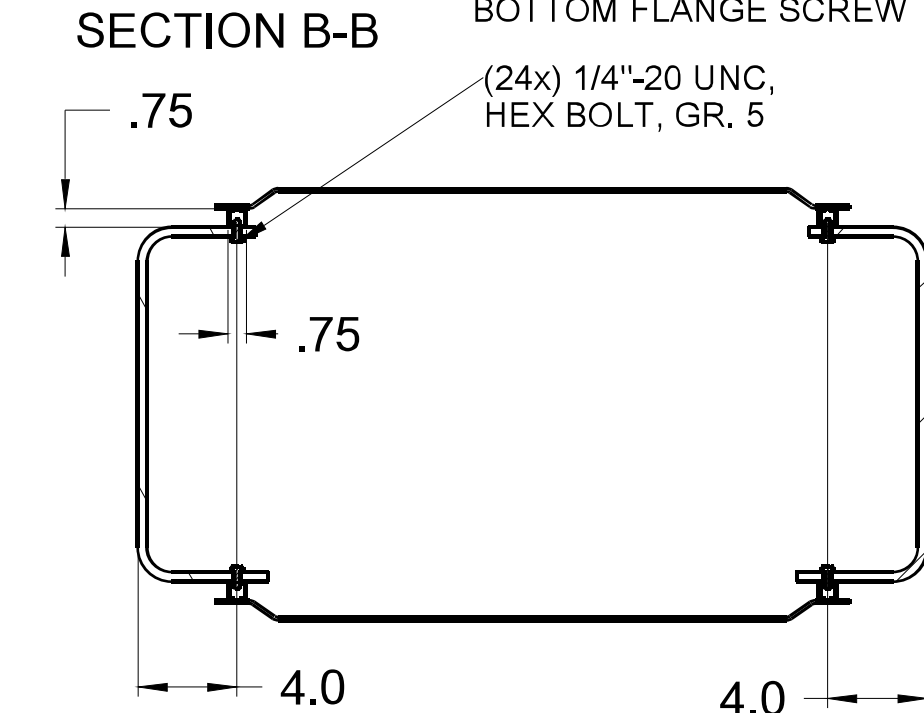
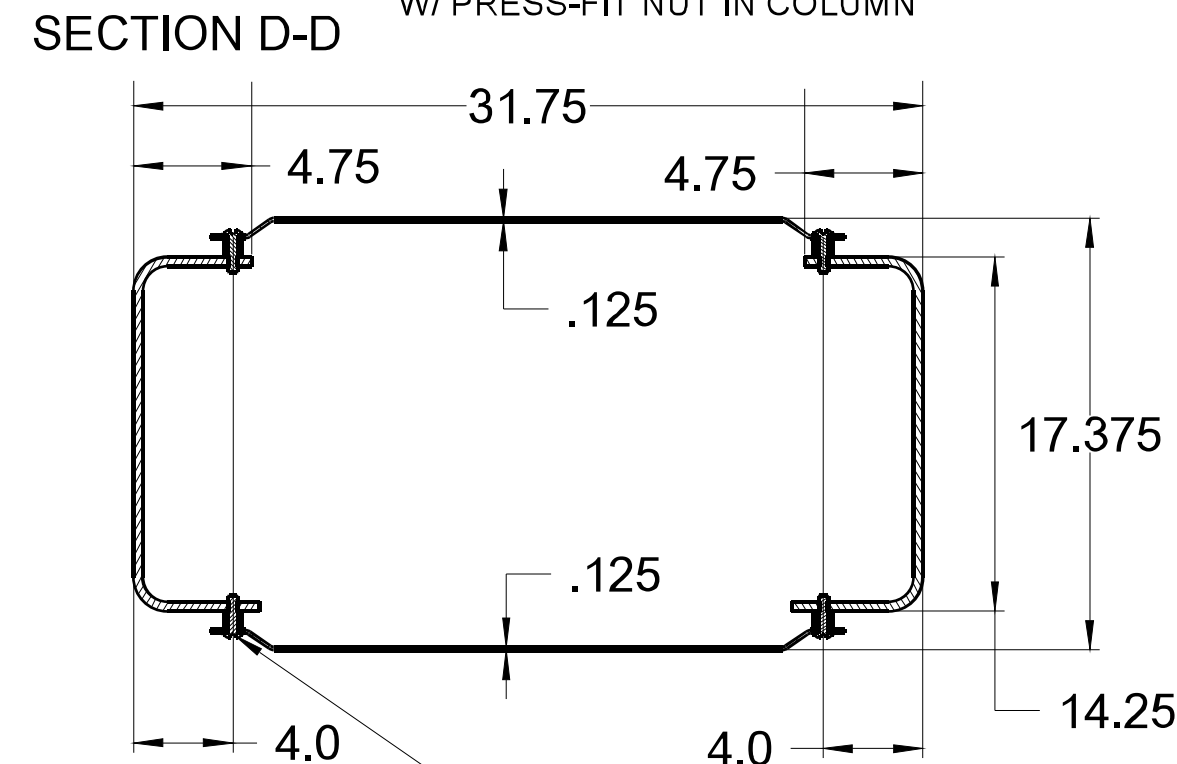
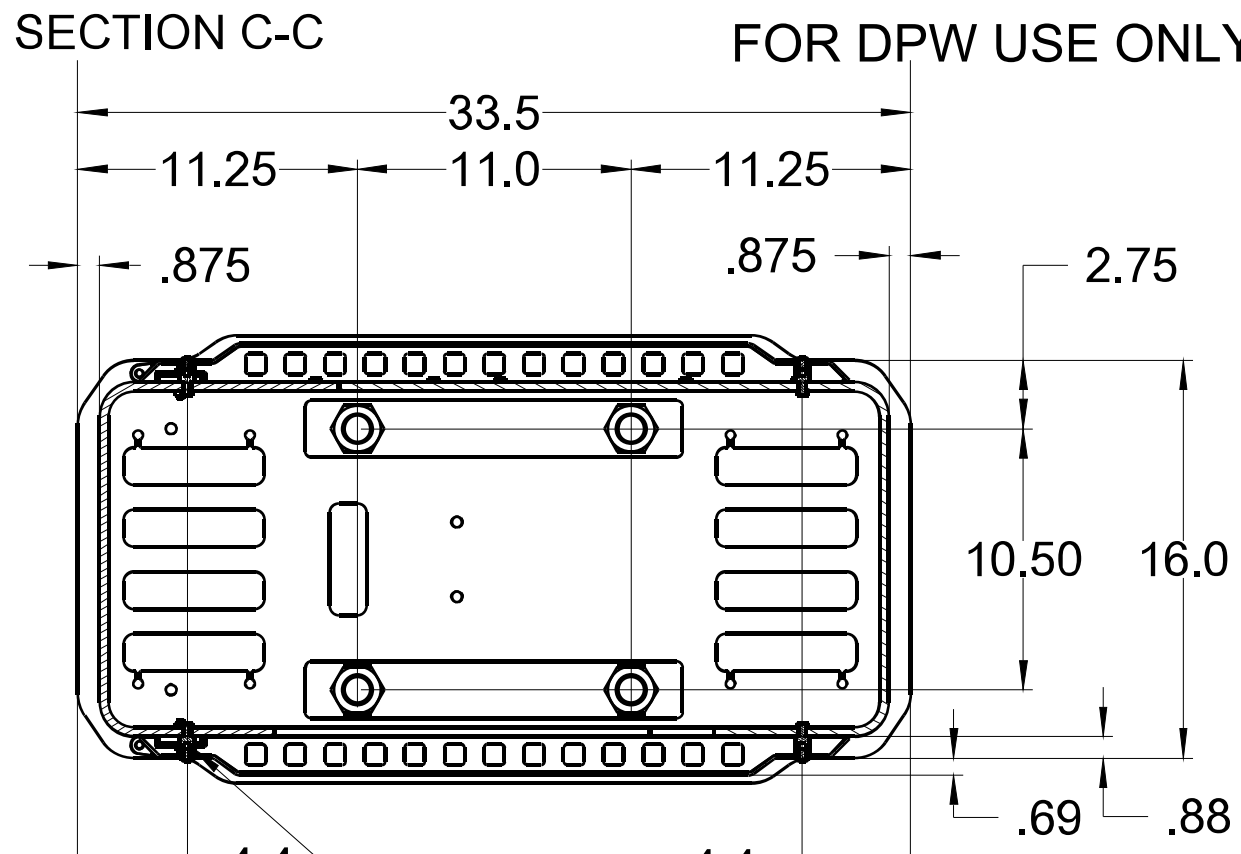
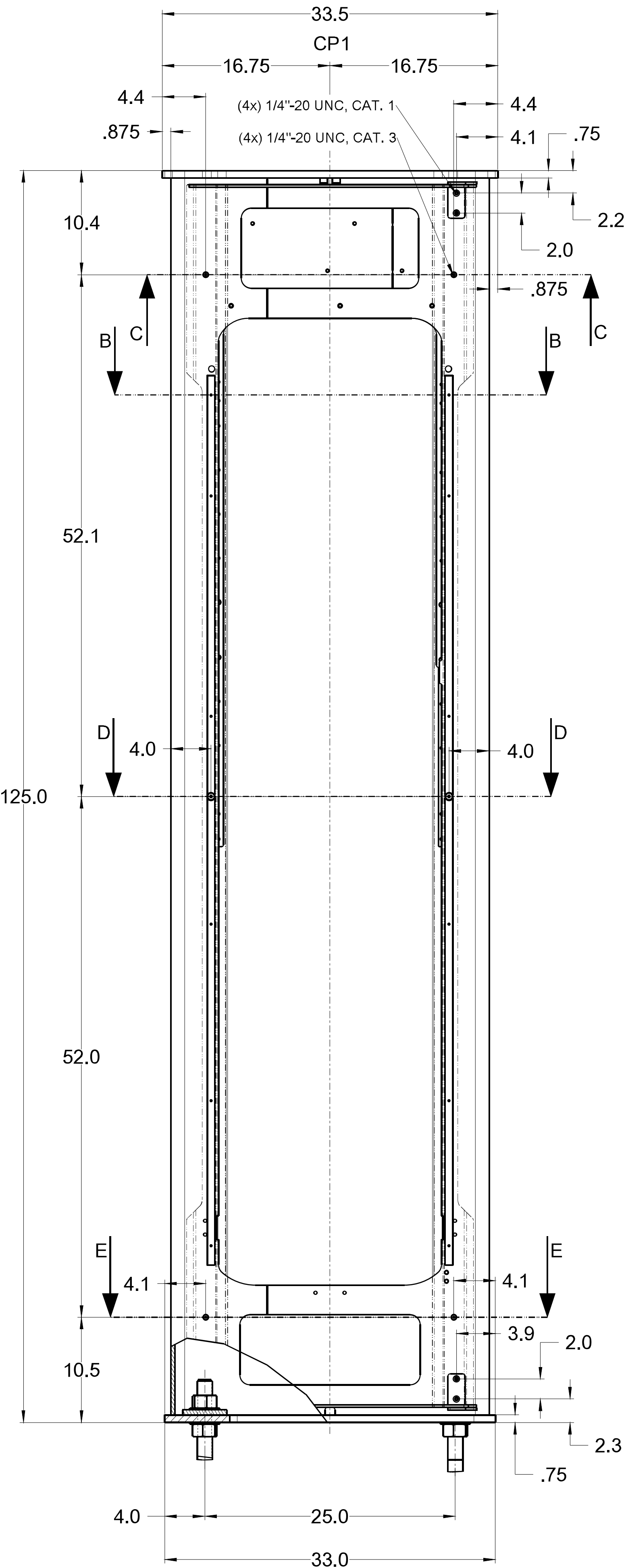
DRAWN BY:
M. HUFNAGL

PROJECT ENGINEER:
S.WYSSLING

DRAWING FILE:
S101- CP1 COLUMN AND COVERS

PROJECT STEEL FINISH SPEC:
POWDER COATED acc. W4S 01.06.01

SHEET:
S101



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CP 1 BATTERY BOX

REVISIONS	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB	No.

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M. HUFNAGL

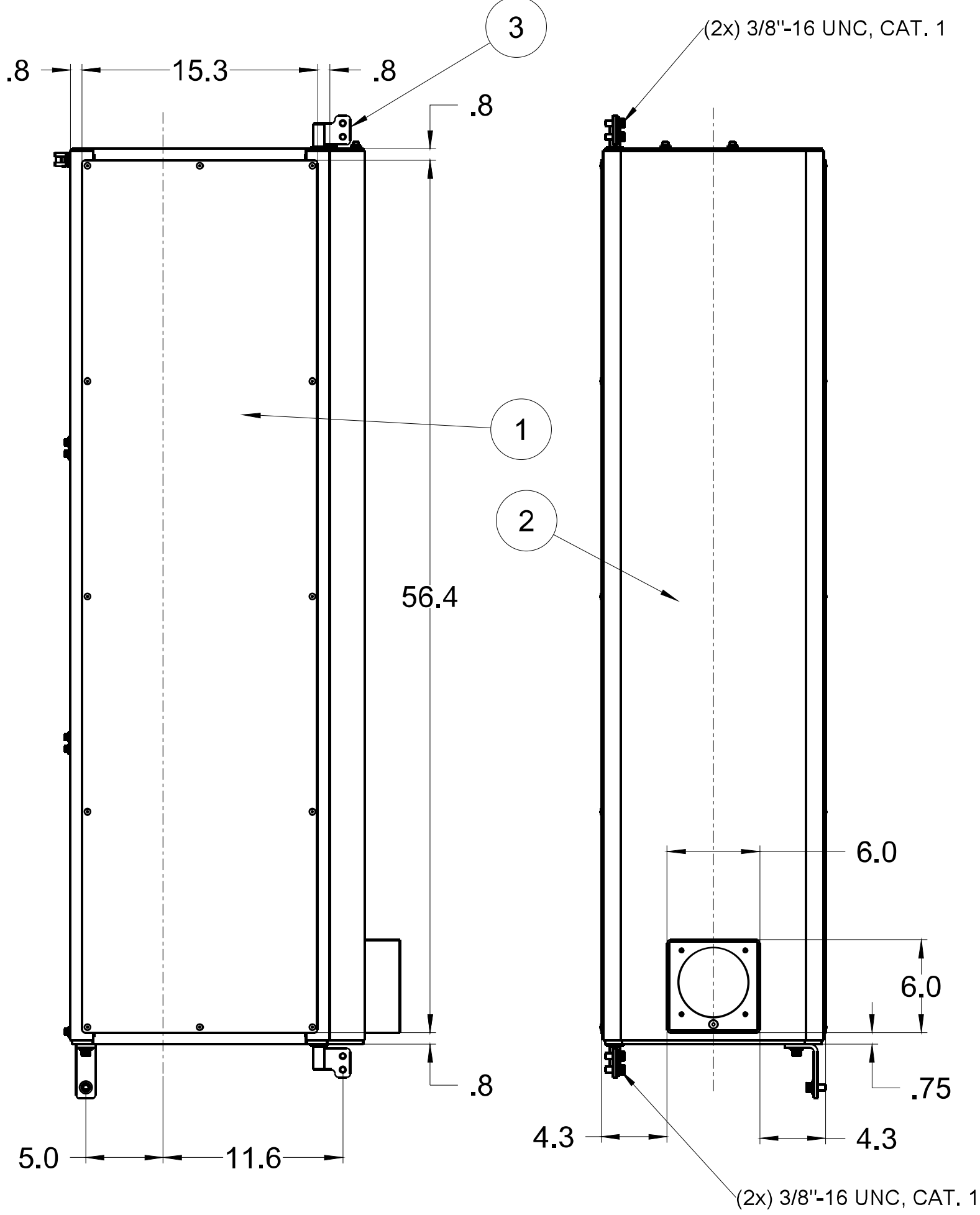
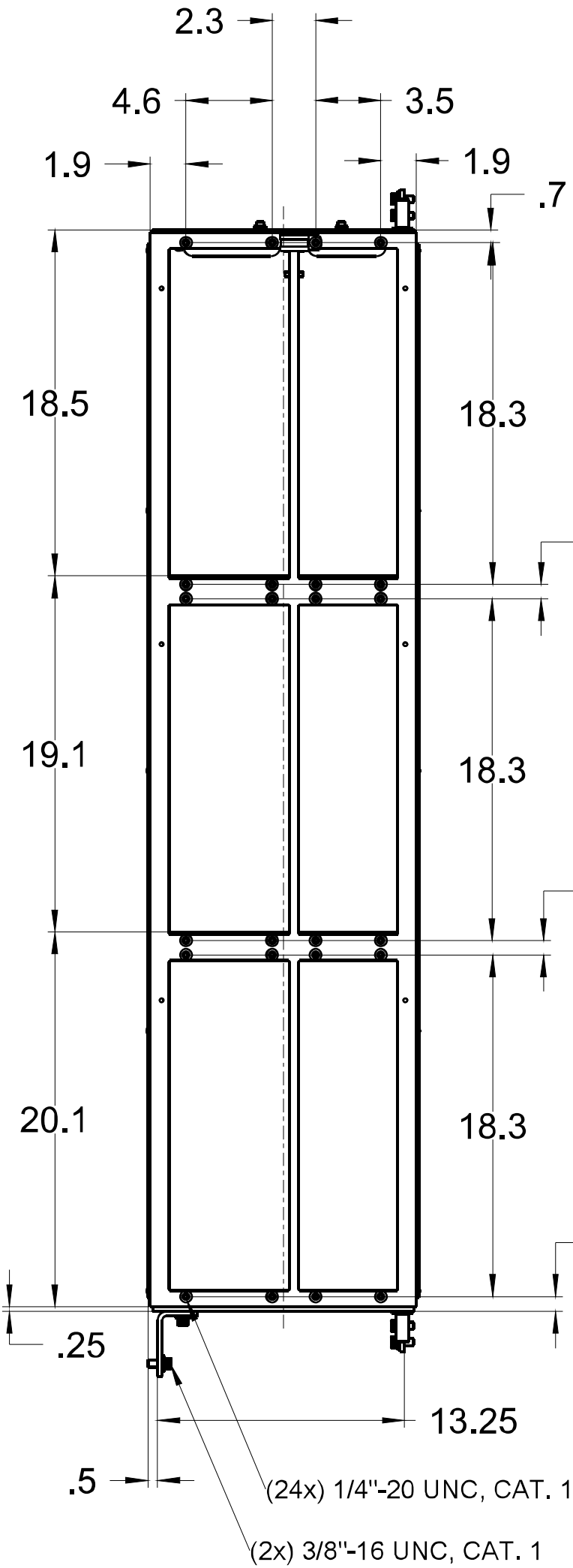
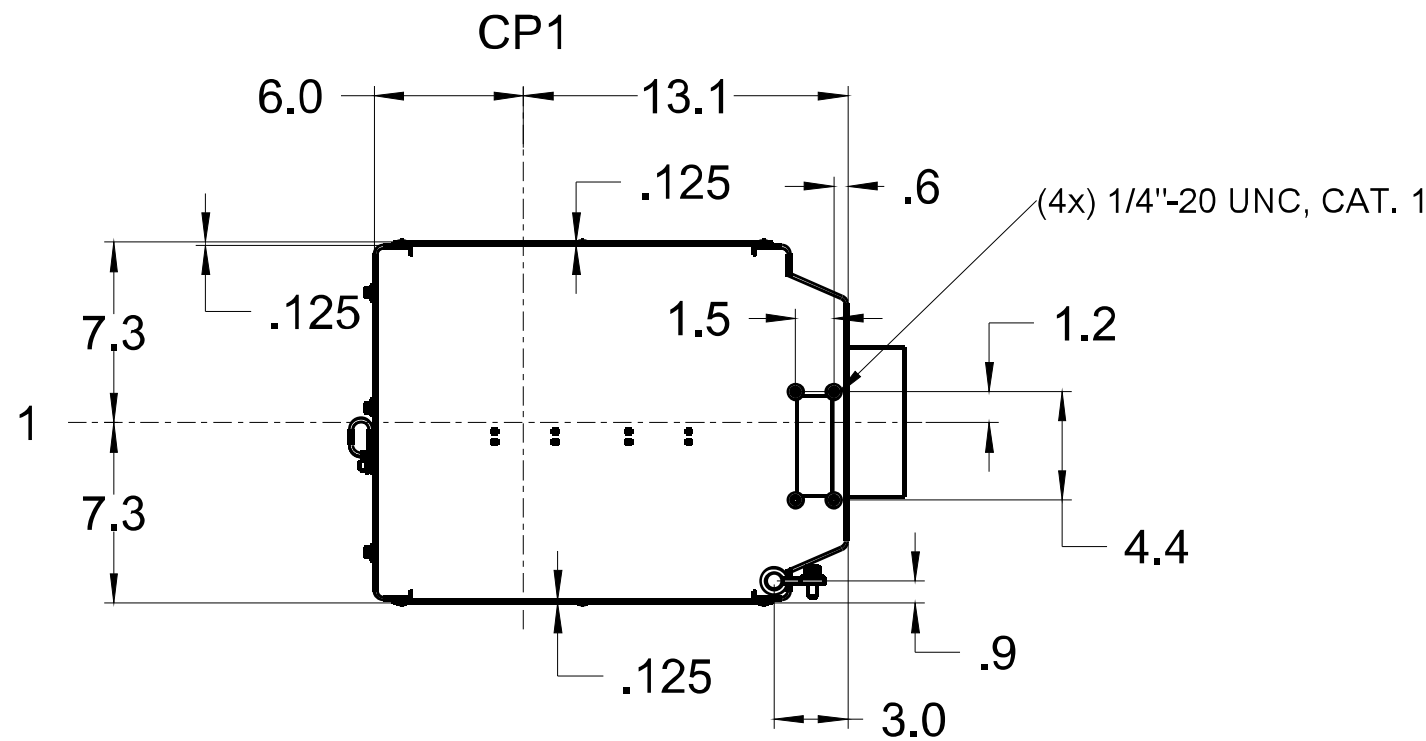
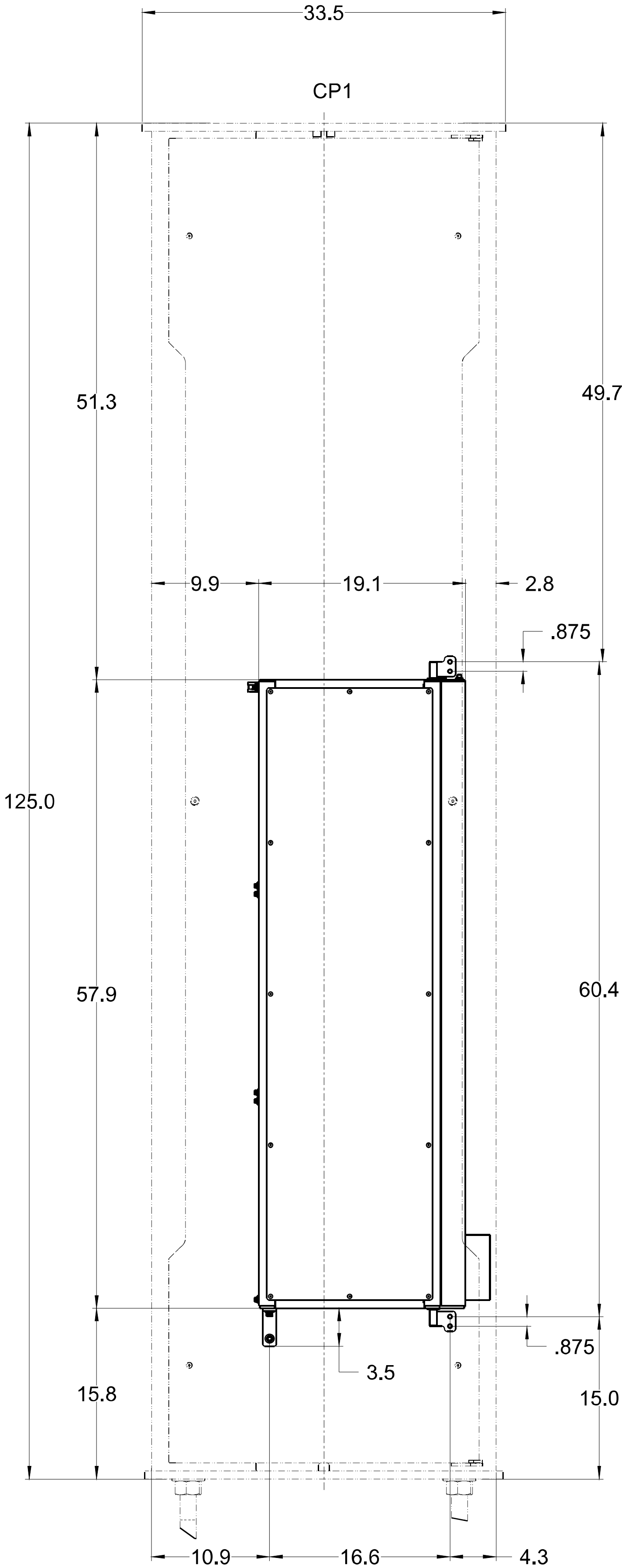
PROJECT ENGINEER:
S.WYSSLING

DRAWING FILE:
S102- CP1 BATTERY BOX

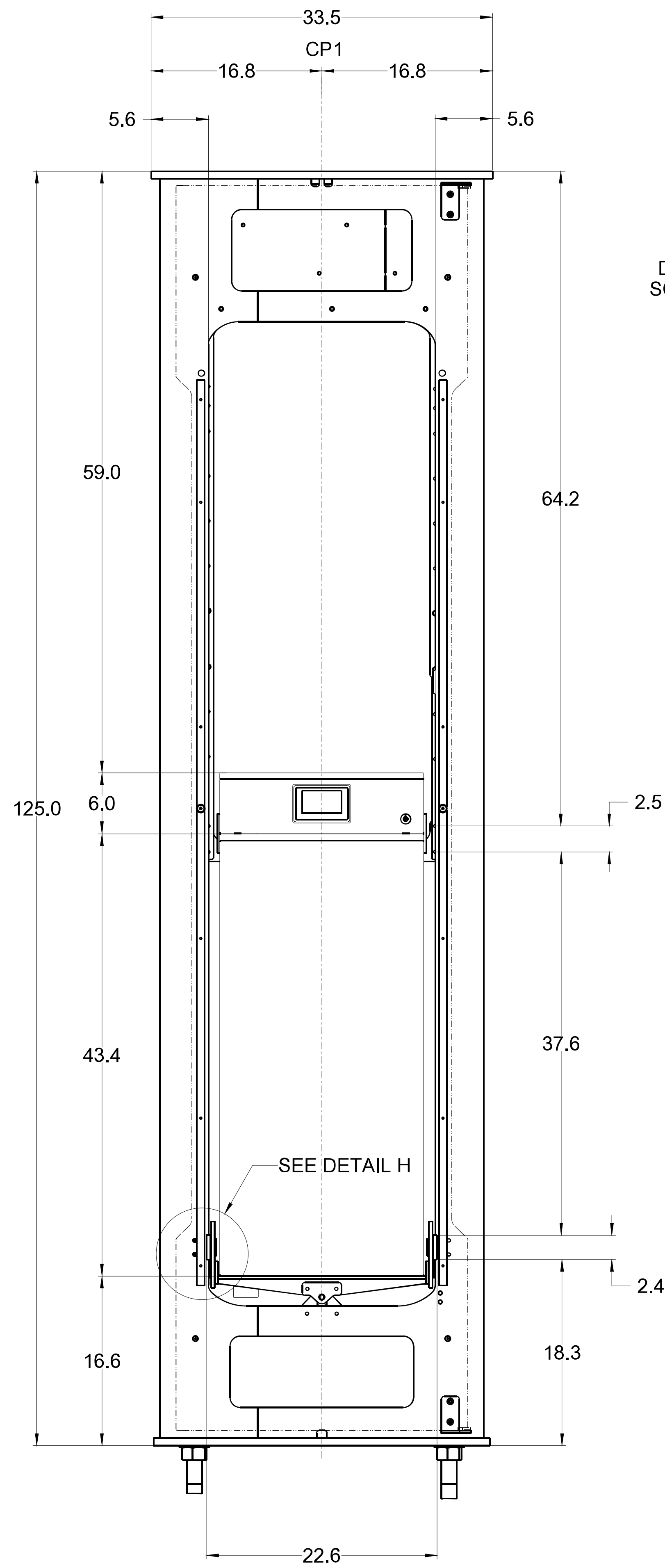
PROJECT STEEL FINISH SPEC:
POWDER COATED acc. W4S 01.06.01

SHEET:
S102

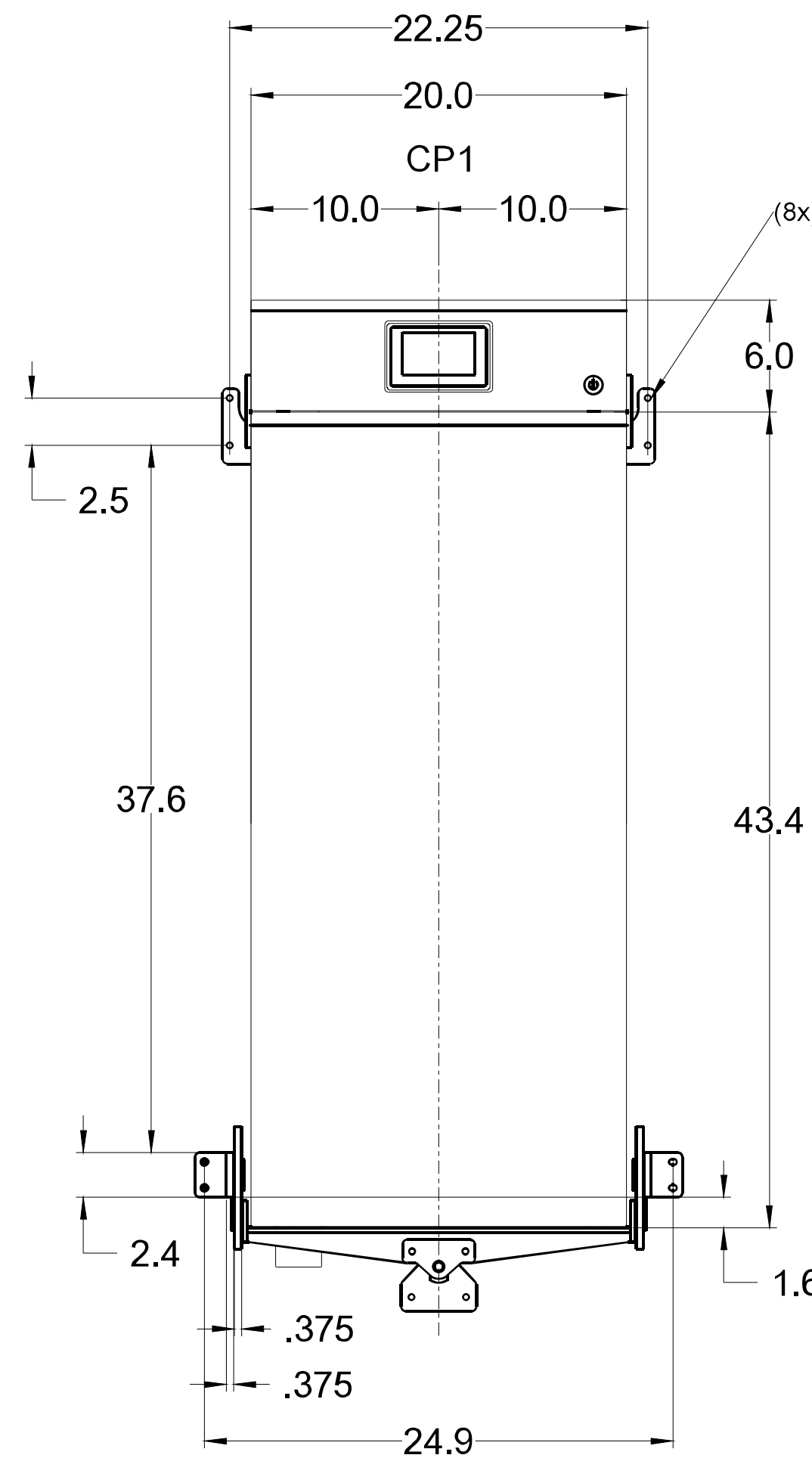
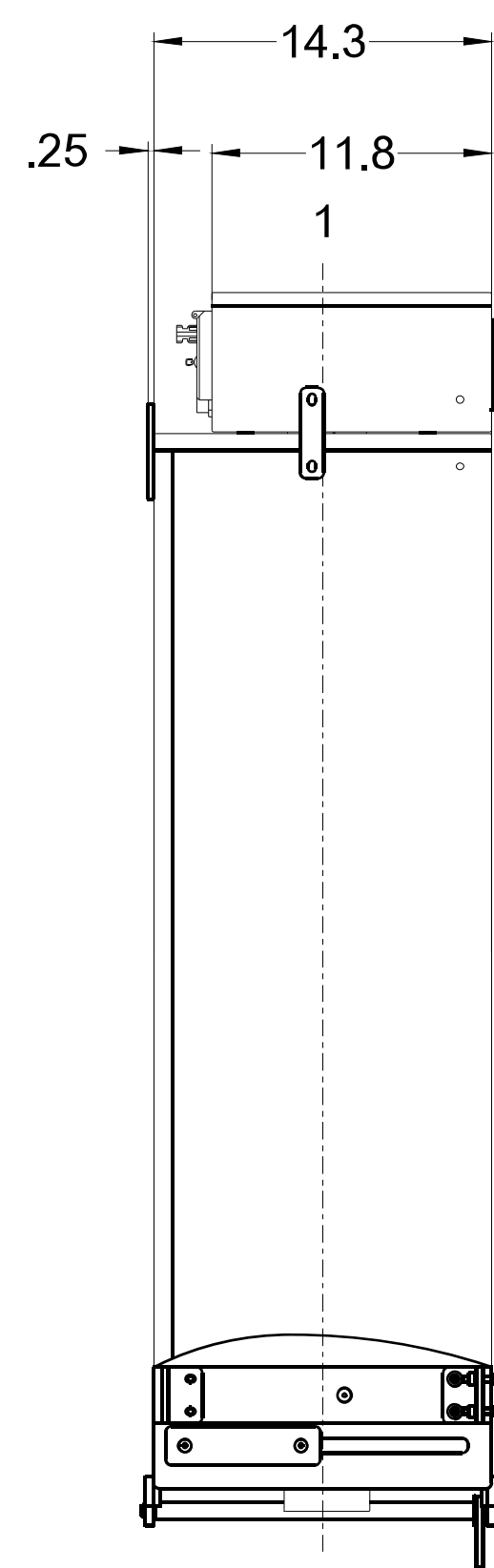
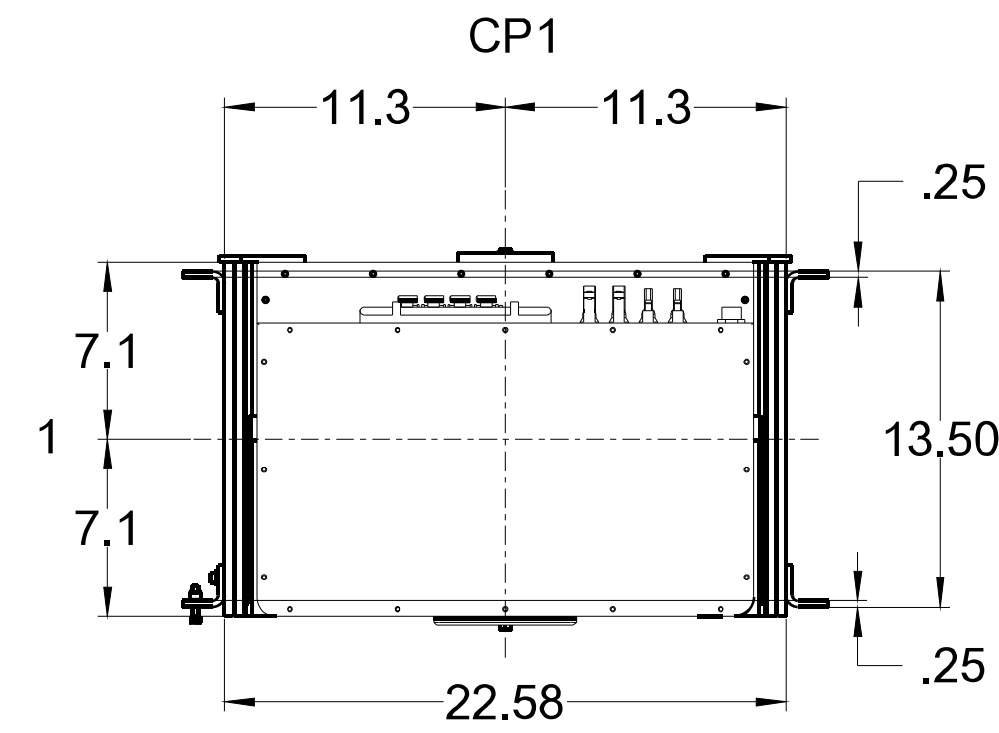
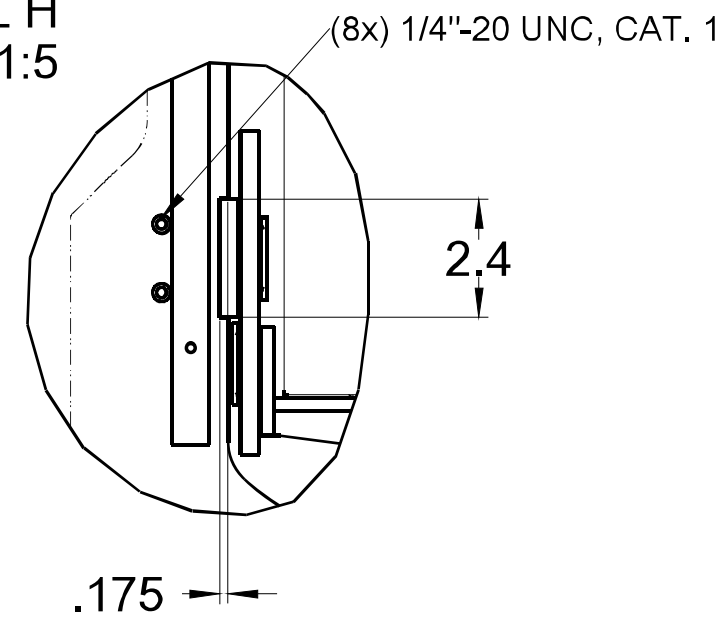
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3	2	Battery box hinge	-	HXC06-A	0.365	
2	1	Battery box weldment	-	HXC04-A	125.530	
1	2	Battery box cover	ASTM A-36	DT-0008	30.492	
Idx	Qty	Unit	Description	Material	Name	Weight



DETAIL H
SCALE 1:5



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HelioWing 7

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9.8 kW System

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CP 1 BATTERY DRAWER 1

REVISIONS	No.	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB

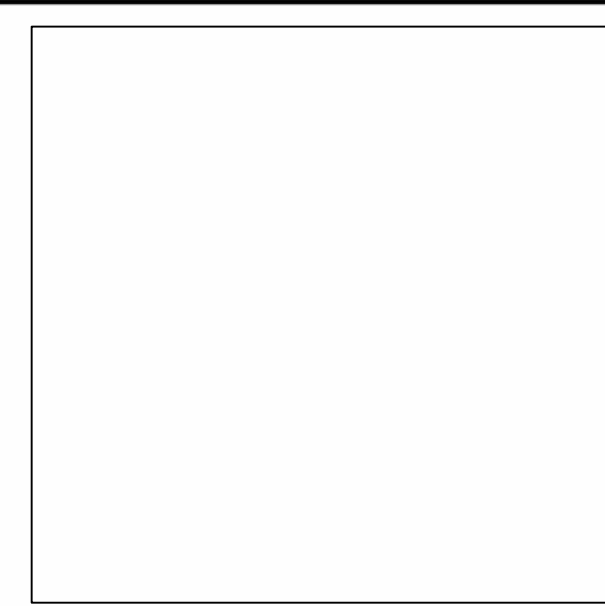
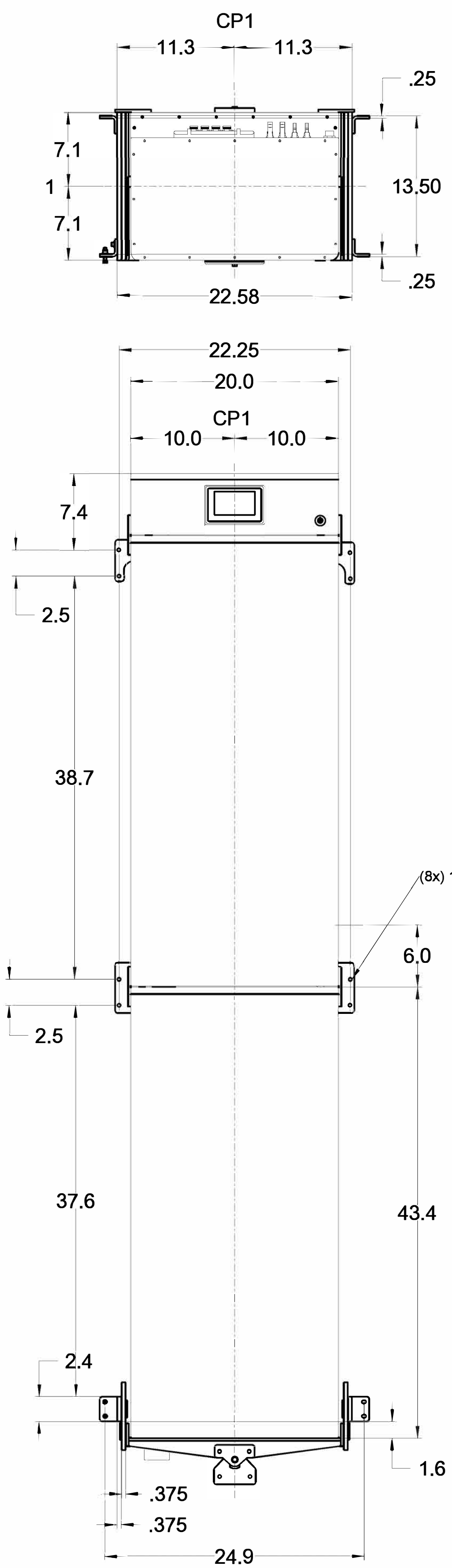
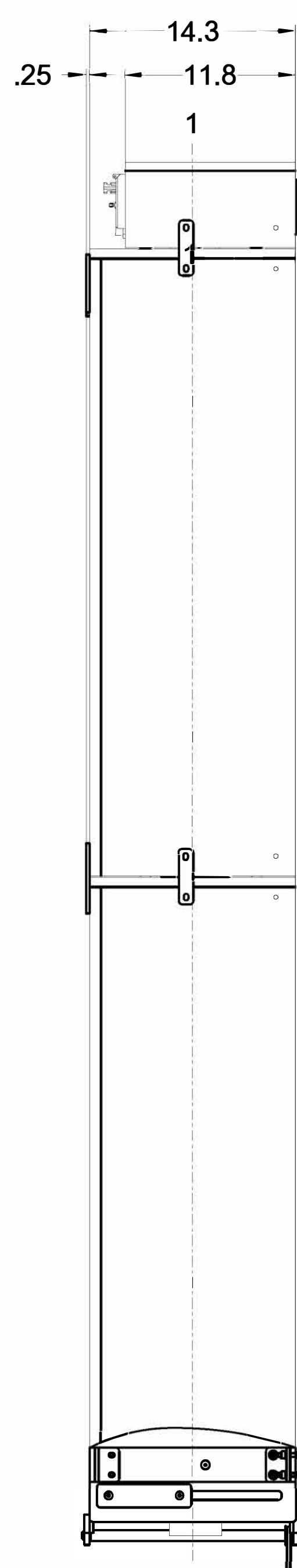
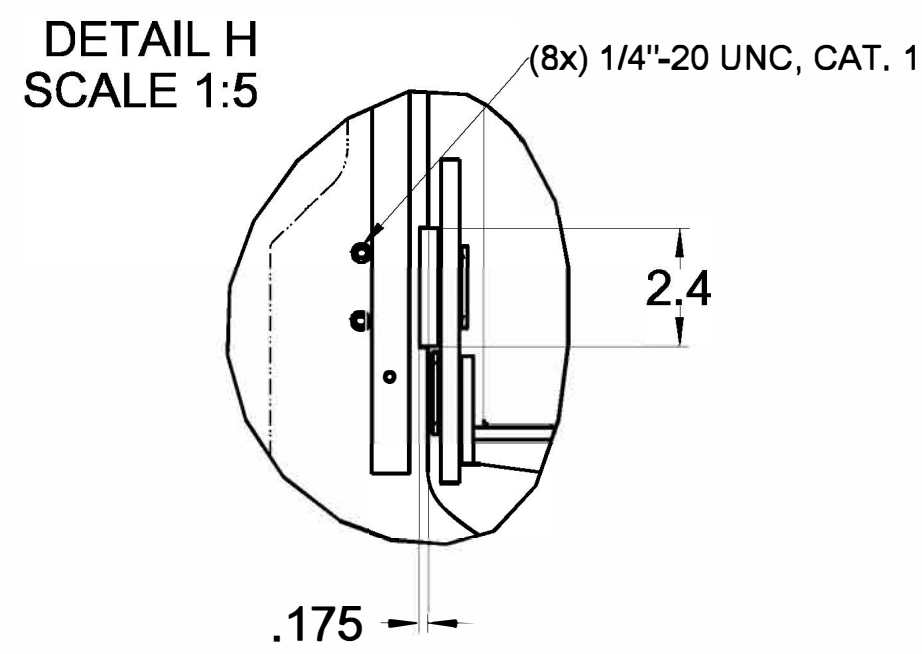
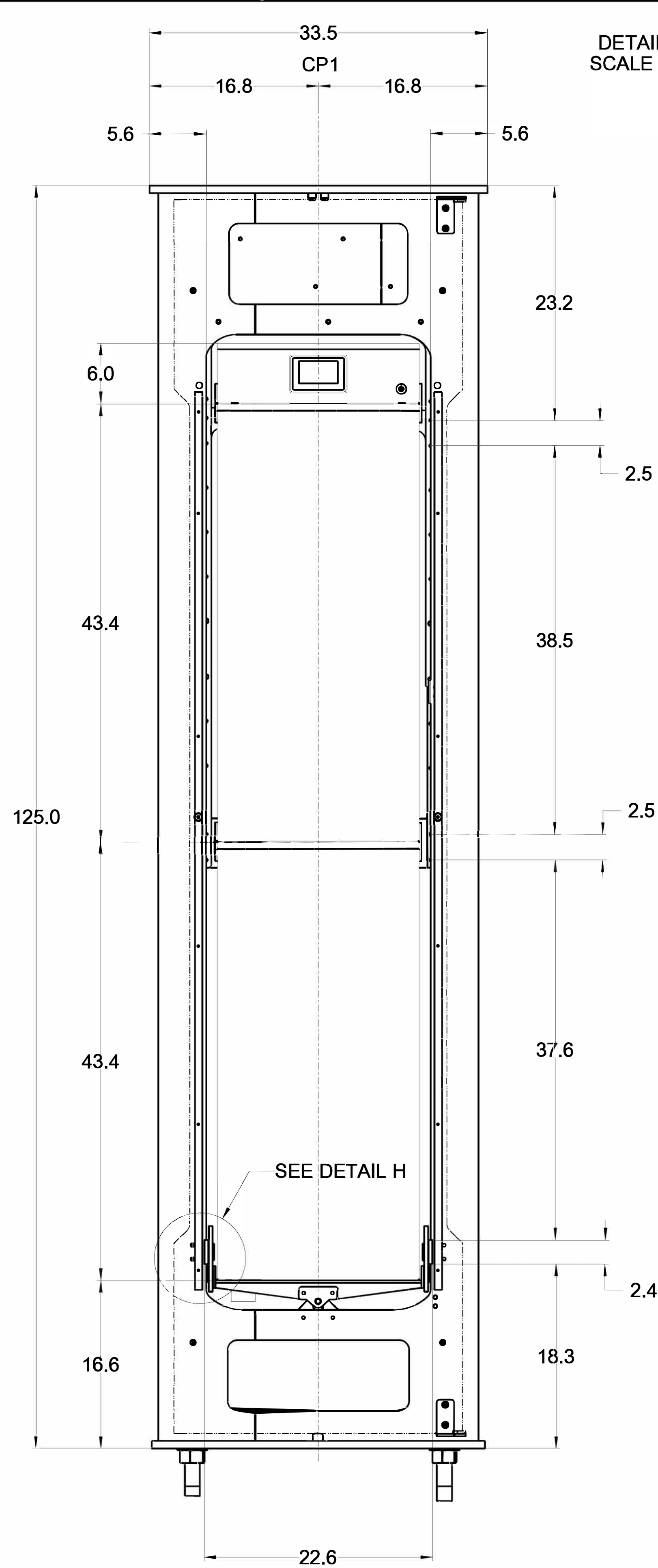
DRAWN BY:
M. HUFNAGL

PROJECT ENGINEER:
S.WYSSLING

DRAWING FILE:
S102- CP1 BATTERY DRAWER 1

PROJECT STEEL FINISH SPEC:
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SHEET:
S103



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CP 1 BATTERY DRAWER 2

REVISIONS	No.	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB

DRAWN BY:
M. HUFNAGL

PROJECT ENGINEER:
WYSSLING

DRAWING FILE:
S102- CP1 BATTERY DRAWER 2

PROJECT STEEL FINISH SPEC:
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SHEET:
S104

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FOUNDATION DETAILS, CIDH PILE

REVISIONS	No.	DESCRIPTION / CHANGE NOTICE	DATE	DB	CB

DRAWN BY:
M. HUFNAGL

PROJECT ENGINEER:

DRAWING FILE:
S300- FOUNDATION DETAILS, CIDH PILE

PROJECT STEEL FINISH SPEC:

POWDER COATED acc. W4S 01.06.01

SHEET:
S300

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