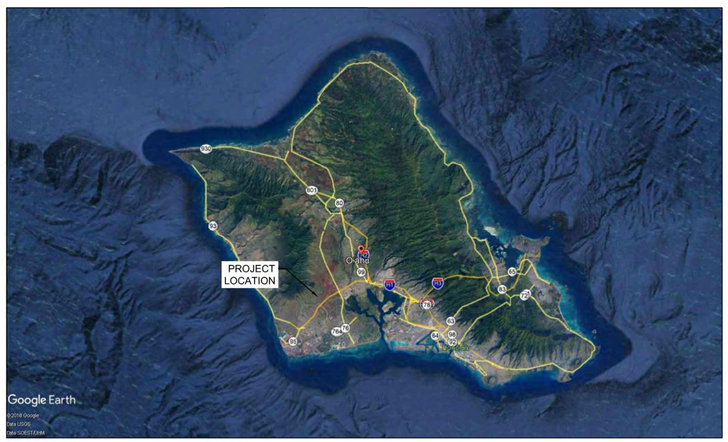
Attachment H
Site Plan and Drawings

WEST OAHU SOLAR PLUS STORAGE
12.5 MW AC COMBINED PV AND 50 MWh BESS

KAPOLEI, WEST OAHU, HAWAII

PREPARED FOR

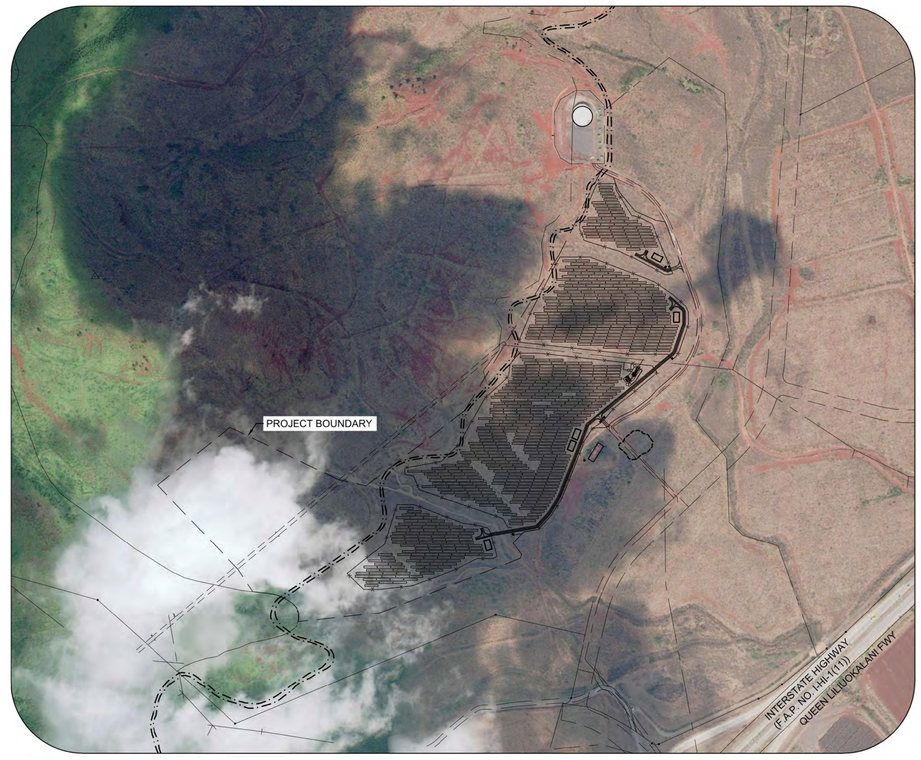
CITY AND COUNTY OF HONOLULU DEPARTMENT OF PLANNING AND PERMITTING



VICINITY MAP

NOT TO SCALE

N W E S



SITE MAP

1" = 500'

N W E S

SCOPE OF WORK

THIS PACKAGE PROVIDES DRAWINGS FOR THE INSTALLATION OF 17.42 MW DC, 12.5 MW AC AT POI COMBINED PHOTOVOLTAIC AND BATTERY ENERGY STORAGE SYSTEM NEAR KAPOLEI, WEST OAHU, HAWAII.

PROJECT DEVELOPER

AES WEST OAHU SOLAR
282 CENTURY PL, SUITE 2000
LOUISVILLE, CO 80027

NICK MOLINARI
BUSINESS DEVELOPMENT
(303) 524-4368

CAMERON HAUGHEY
PROJECT MANAGER
(720) 450-4360

CIVIL ENGINEER

AARON MURPHY
3J CONSULTING
9600 SW NIMBUS AVE
BEAVERTON, OR 97008

HI LICENSE - 18696-C
EXP. DATE - 04/30/22

STRUCTURAL ENGINEER

THOMAS HAMLIN
HDR, INC.
3200 EAST CAMELBACK ROAD
PHOENIX, AZ 85018
(602) 522-7737

HI LICENSE - 16088 - S
EXP. DATE - 04/30/20

ELECTRICAL ENGINEER

JAMES TRAN
HDR, INC.
1670 BROADWAY, SUITE 3400
DENVER, CO 80202
(303) 323-9796

HI LICENSE - 18163 - E
EXP. DATE - 04/30/2022

SHEET INDEX

C0	COVER SHEET
C1	TMK PLAN
C2	LSB SOIL UNDERLAY
C3	OVERALL SITE PLAN
C4	SITE PLAN SCHEMATICS
C9.1	CIVIL DETAIL 1
C9.2	CIVIL DETAIL 2
L1	LANDSCAPE PLAN AND SCHEMATIC IRRIGATION PLAN
L2	LANDSCAPE PLAN AND SCHEMATIC IRRIGATION PLAN
L3	LANDSCAPE DETAIL, SECTION, PLANT LIST, NOTES

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE: A. Murphy — Aug 31 2020 2:39 PM DocuSign — LIC. EXP. DATE: 4/30/2022

AES Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR 3J CONSULTING
CIVIL ENGINEERING WATER RESOURCES COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY — LICENSED PROFESSIONAL ENGINEER No. 18696-C — HAWAII U.S.A.

AES WEST OAHU SOLAR
OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

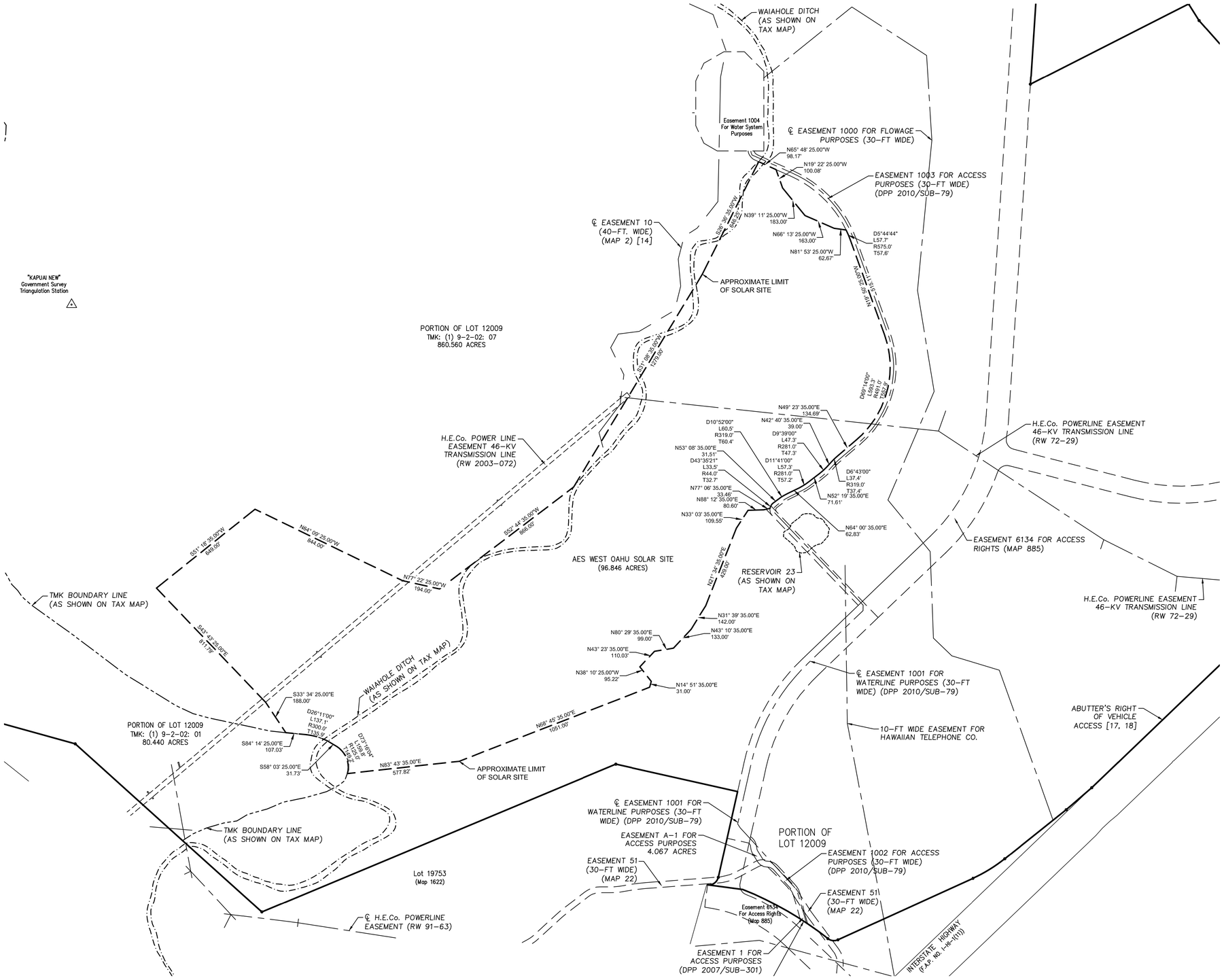
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

DATE 08-26-2020 | **SCALE** N/A

TITLE
COVER SHEET

DRAWING
C0



LEGEND

- BOUNDARY FOR LOT 12009
- TMK BOUNDARY
- WAIAHOLE DITCH (PER TAX MAP)
- RESERVOIR (PER TAX MAP)
- EXISTING ROW LINE
- EXISTING EASEMENT LINE
- EXISTING EASEMENT CENTER LINE
- APPROXIMATE LIMIT OF SOLAR SITE

N
W E
S

SCALE: 1" = 250'
0 250 500 FT

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE — Aug 31 2020 2:39 PM DocuSign — LIC. EXP. DATE 4/30/2022

AES
Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR
3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR

OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

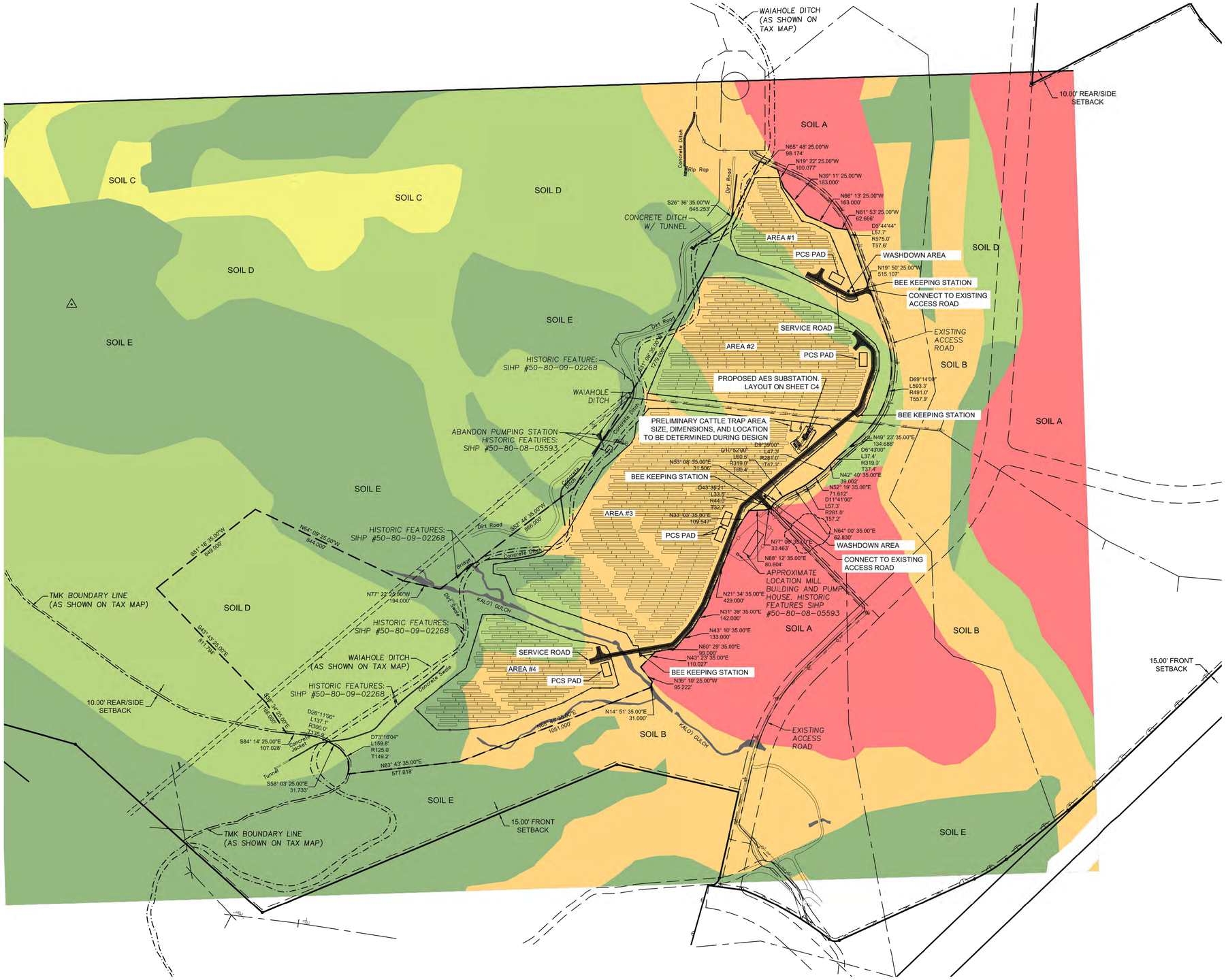
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

DATE 08-26-2020
SCALE 1" = 250'

TITLE
TMK PLAN

DRAWING
C1



LAND STUDY BUREAU (LSB) SOIL CLASSES

- LSB CLASS A
- LSB CLASS B
- LSB CLASS C
- LSB CLASS D
- LSB CLASS E

N
W E
S

SCALE: 1" = 250'
0 250 500 FT

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE — LIC. EXP. DATE 4/30/2022

Aug 31 2020 2:40 PM DocuSign

AES
Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR
3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR
OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

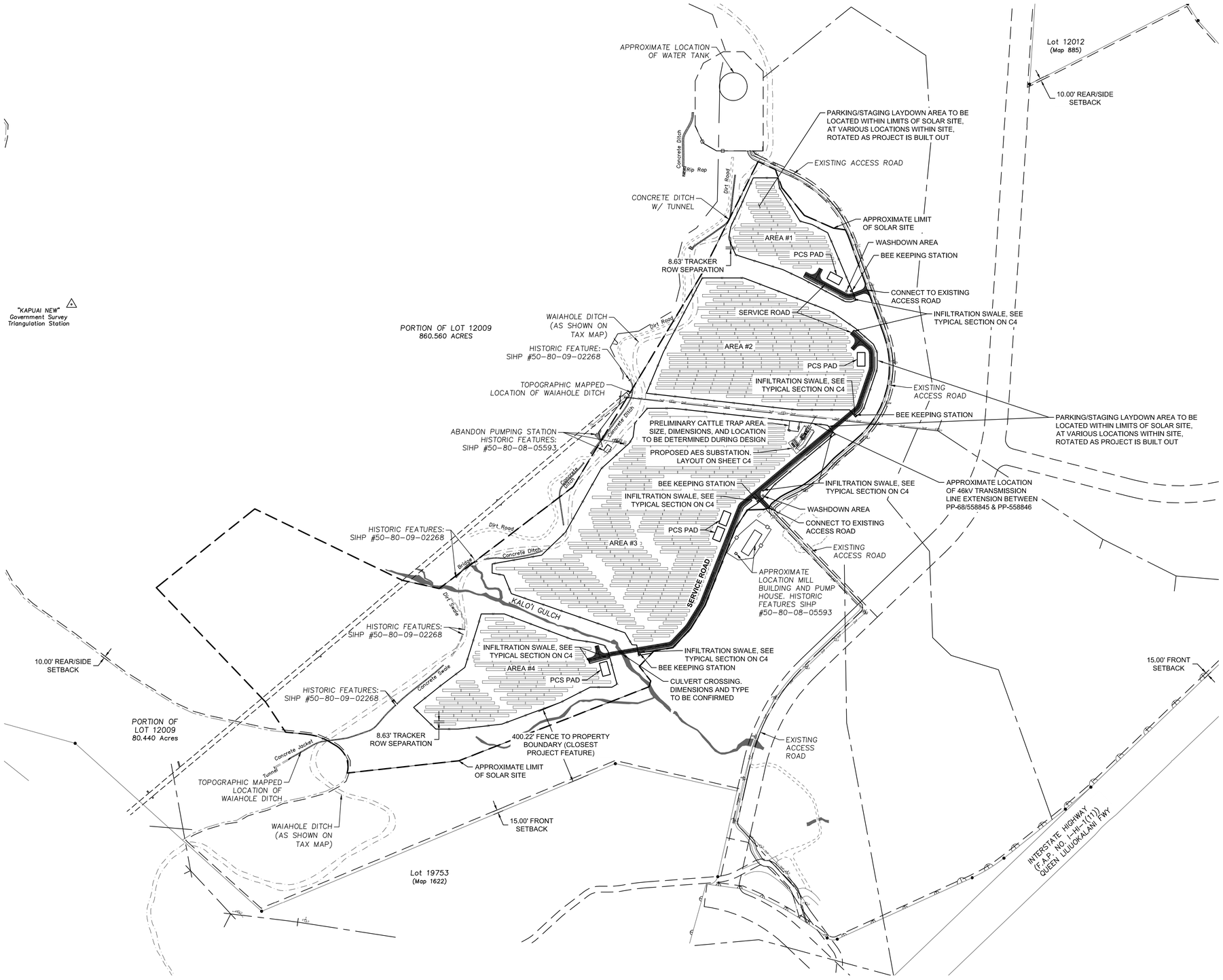
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

DATE 08-26-2020
SCALE 1" = 250'

TITLE
LSB SOIL UNDERLAY

DRAWING
C2



LEGEND

- BOUNDARY FOR LOT 12009
- TMK BOUNDARY
- WAIAHOLE DITCH (PER TAX MAP)
- RESERVOIR (PER TAX MAP)
- EXISTING ROW LINE
- EXISTING EASEMENT CENTER LINE
- EXISTING EASEMENT LINE
- EXISTING ASPHALT
- EXISTING DIRT ROAD
- EXISTING CONCRETE DITCH
- EXISTING FENCE
- OHP — EXISTING OVERHEAD POWER
- EXISTING TRANSMISSION LINE POLE
- PROPOSED ACCESS ROAD, SEE TYPICAL SECTION ON SHEET C4
- PROPOSED PROPERTY BOUNDARY SETBACK
- PROPOSED 7' TALL STEEL FABRIC MESH SECURITY FENCE. SEE DETAIL ON SHEET C9.1
- PROPOSED PCS (POWER CONVERSION STATION) FOUNDATION AND EQUIPMENT PAD. SEE SCHEMATIC ON C4
- PROPOSED WASHDOWN AREA
- APPROXIMATE LIMIT OF SOLAR SITE

N
W E
S

SCALE: 1" = 250'
0 250 500 FT

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE — Aug 31 2020 2:40 PM DocuSign — 4/30/2022 LIC. EXP. DATE

AES Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR
3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR

OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

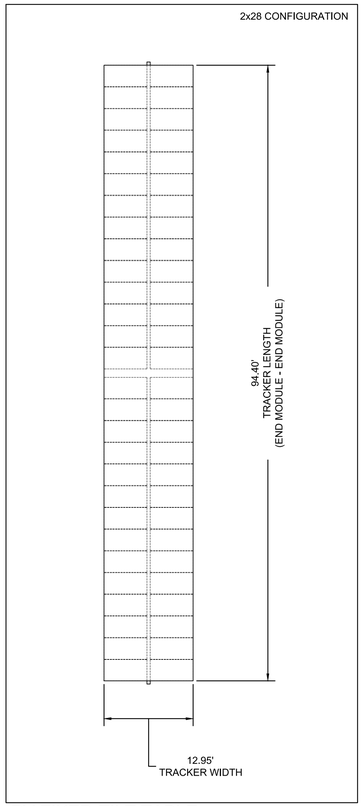
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

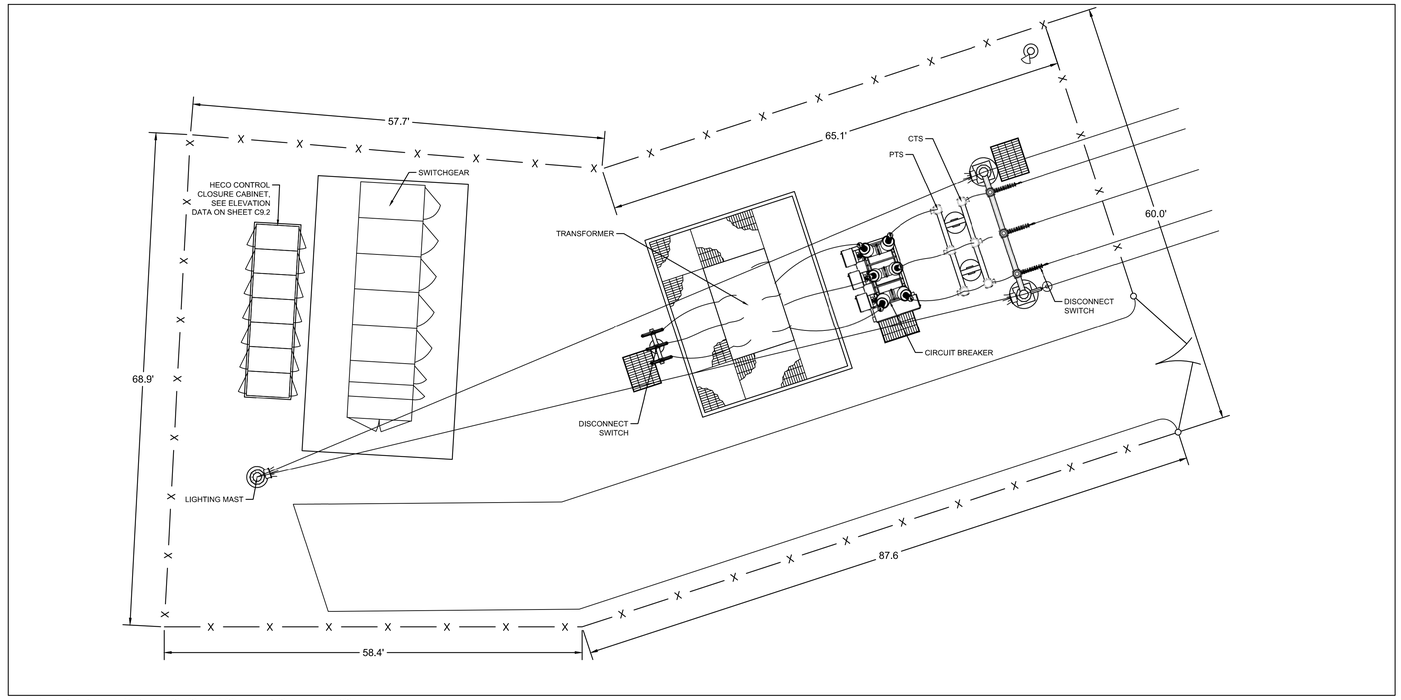
DATE	SCALE
08-26-2020	1" = 250'

TITLE
OVERALL SITE PLAN

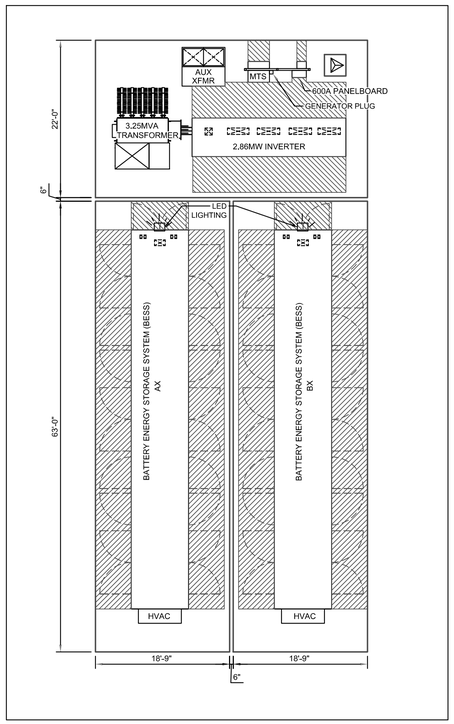
DRAWING
C3



PV FIXED-TILT TABLE -
SEE ELEVATION DATA ON SHEET C9.2

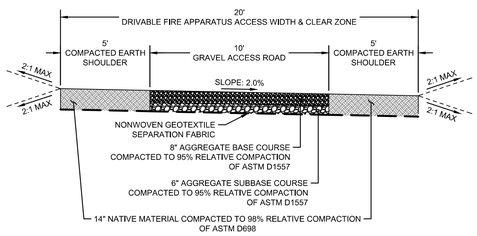


PRELIMINARY AES SUBSTATION LAYOUT -
SEE ELEVATION DATA ON SHEET C9.2

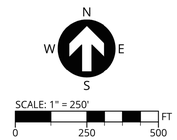


POWER CONVERSION STATION (PCS) PAD LAYOUT -
SEE ELEVATION DATA ON SHEET C9.2

INFILTRATION SWALE (1)
NOT TO SCALE



TYPICAL SECTION
GRAVEL SERVICE ROAD (1)
NOT TO SCALE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE Aug 31 2020 2:40 PM DocuSign 4/30/2022 LIC. EXP. DATE

AES Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR 3J CONSULTING
CIVIL ENGINEERING
WATER RESOURCES
COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR
OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

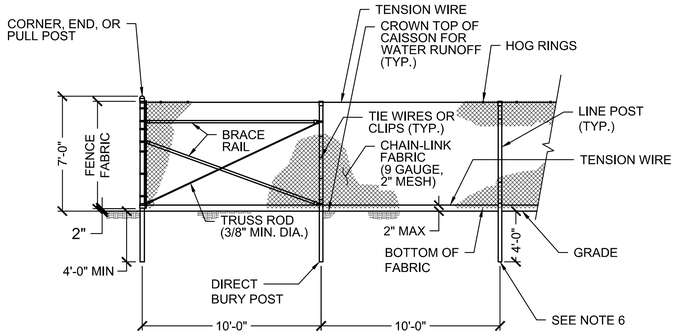
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

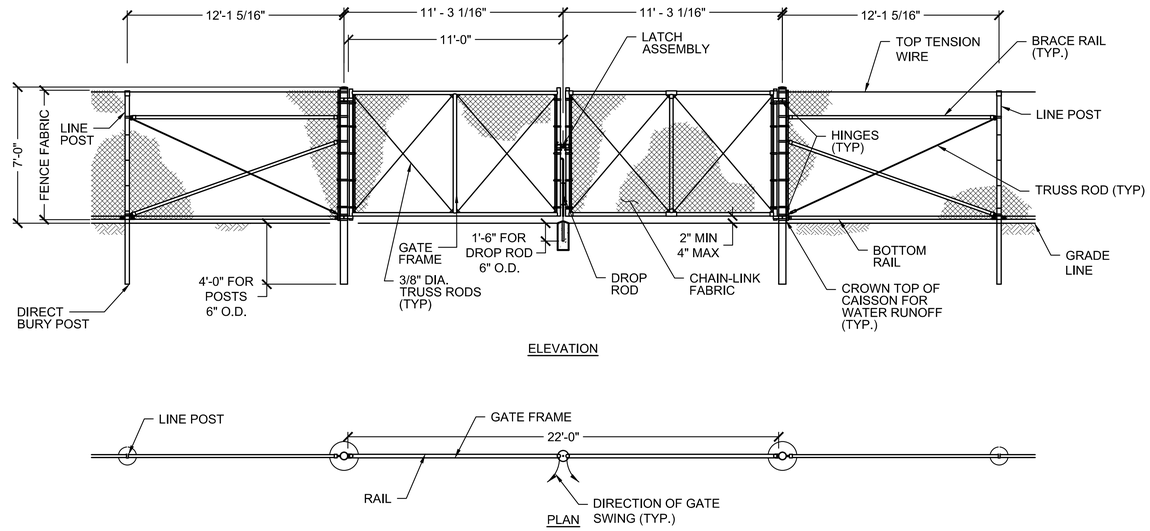
DATE 08-26-2020
SCALE N/A

TITLE
SITE PLAN SCHEMATICS

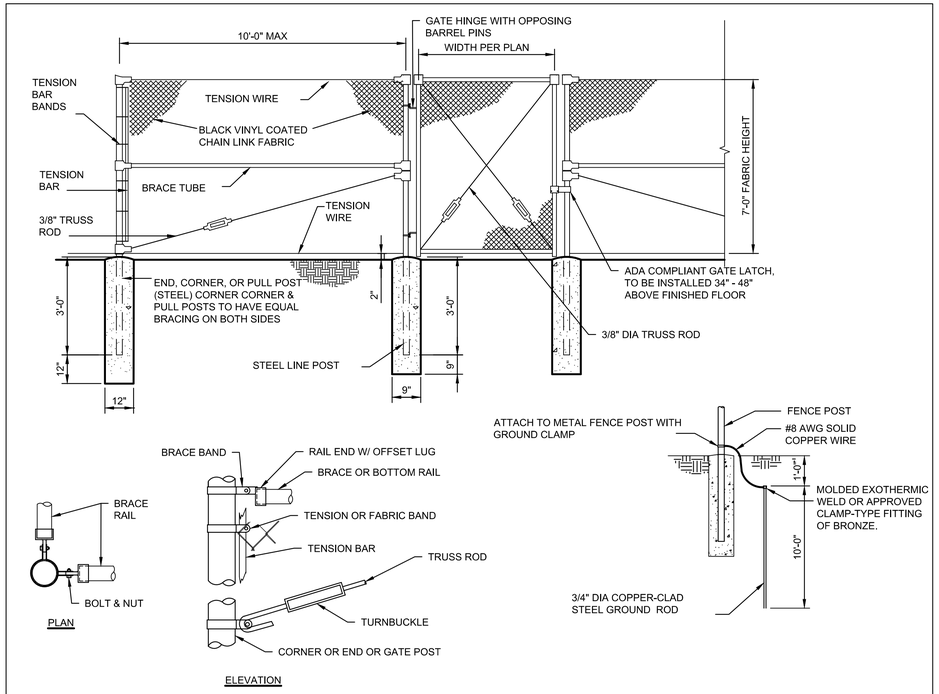
DRAWING
C4



1 / C9.1 PERIMETER FENCE ELEVATION



2 / C9.1 TYPICAL ACCESS GATE



3 / C9.1 SECURITY FENCE WITH GATE
NO SCALE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE Aug 31 2020 2:40 PM DocuSign 4/30/2022 LIC. EXP. DATE

AES Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR 3J CONSULTING
CIVIL ENGINEERING WATER RESOURCES COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100 BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR
OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

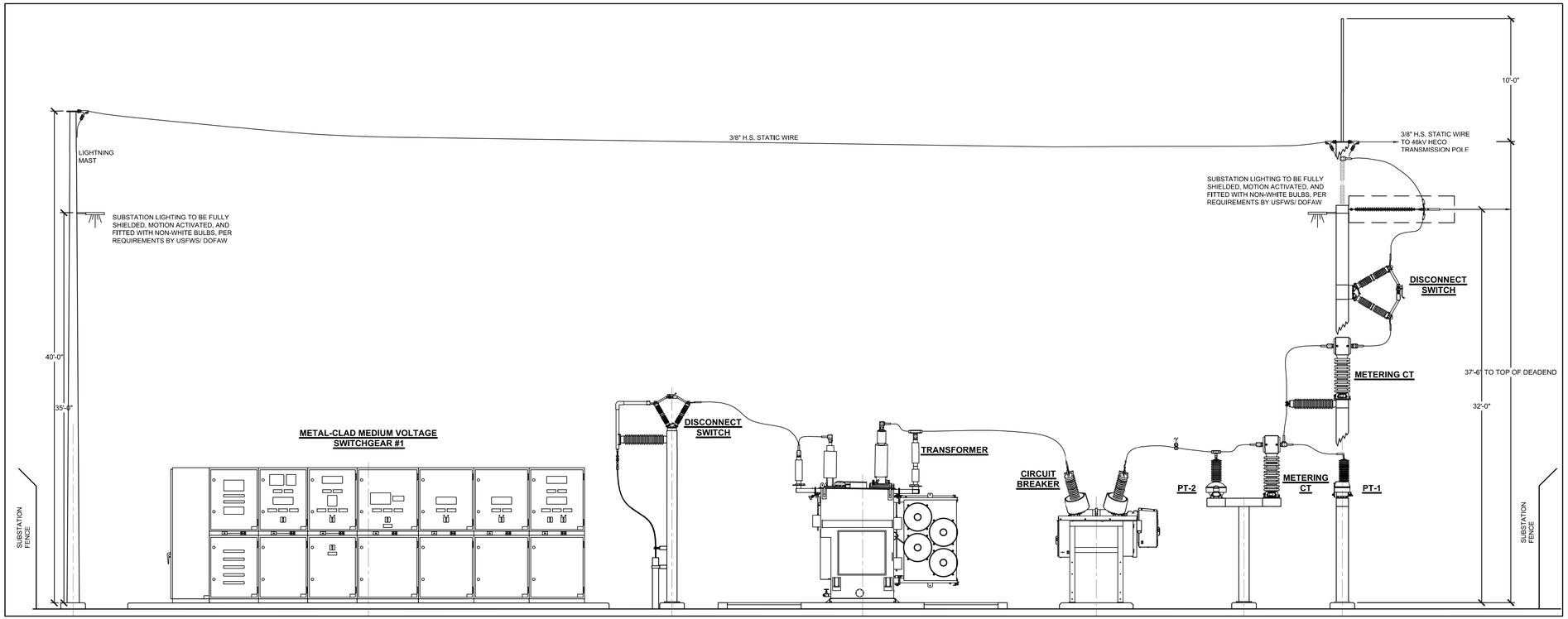
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

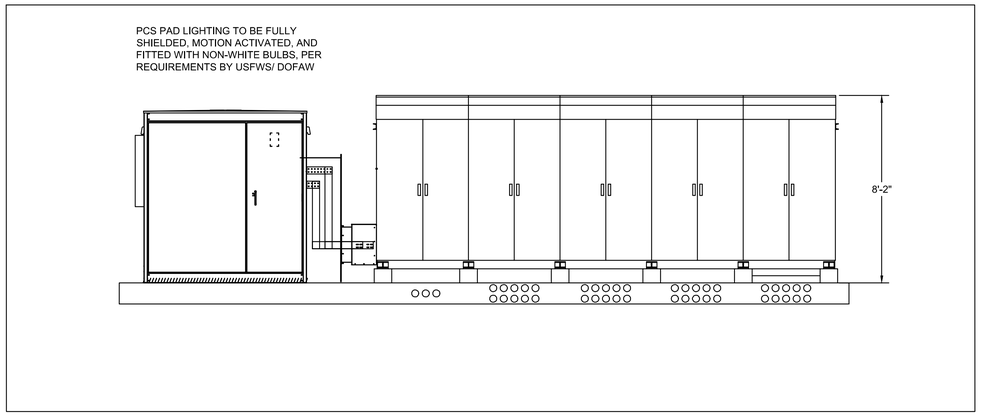
DATE 08-26-2020
SCALE N/A

TITLE
CIVIL DETAIL 1

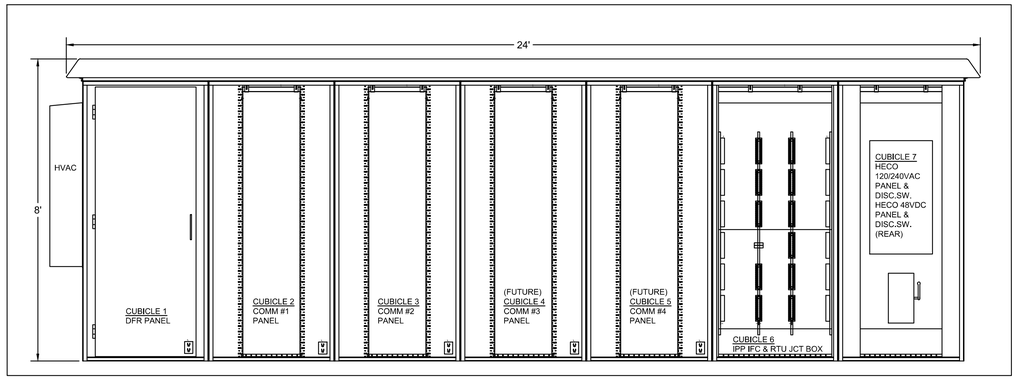
DRAWING
C9.1



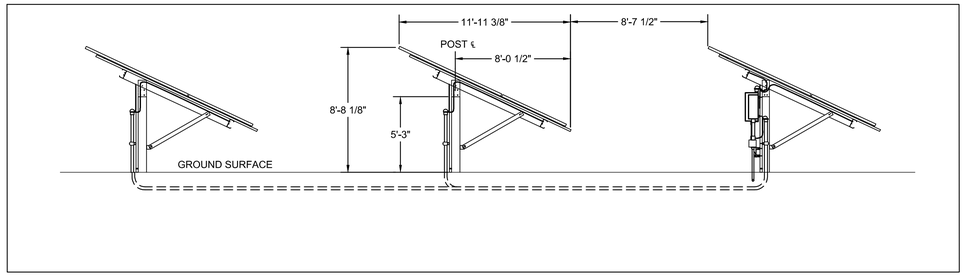
1 C9.2 PRELIMINARY SUBSTATION ELEVATION
N.T.S.



2 C9.2 POWER CONVERSION STATION (PCS) PAD INVERTER AND TRANSFORMER FRONT ELEVATION
N.T.S.



3 C9.2 HECO CONTROL CLOSURE CABINET ELEVATION
N.T.S.



4 C9.2 PV FIXED-TILT TABLE ELEVATION
N.T.S.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE Aug 31 2020 2:40 PM DocuSign 4/30/2022 LIC. EXP. DATE

AES Distributed Energy

AES Distributed Energy
282 Century Pl. Suite 2000
Louisville, CO 80027 USA

HDR 3J CONSULTING
CIVIL ENGINEERING WATER RESOURCES COMMUNITY PLANNING
9600 SW NIMBUS AVE, SUITE 100, BEAVERTON, OR 97008

SYSTEM DESCRIPTION

REVISIONS

REV	BY	DATE	DESCRIPTION

PE STAMP

AARON J MURPHY
LICENSED PROFESSIONAL ENGINEER
No. 18696-C
HAWAII U.S.A.

AES WEST OAHU SOLAR
OAHU, HI

PROJECT NUMBER
19537
PHASE
LAND USE
MILESTONE
60% DESIGN

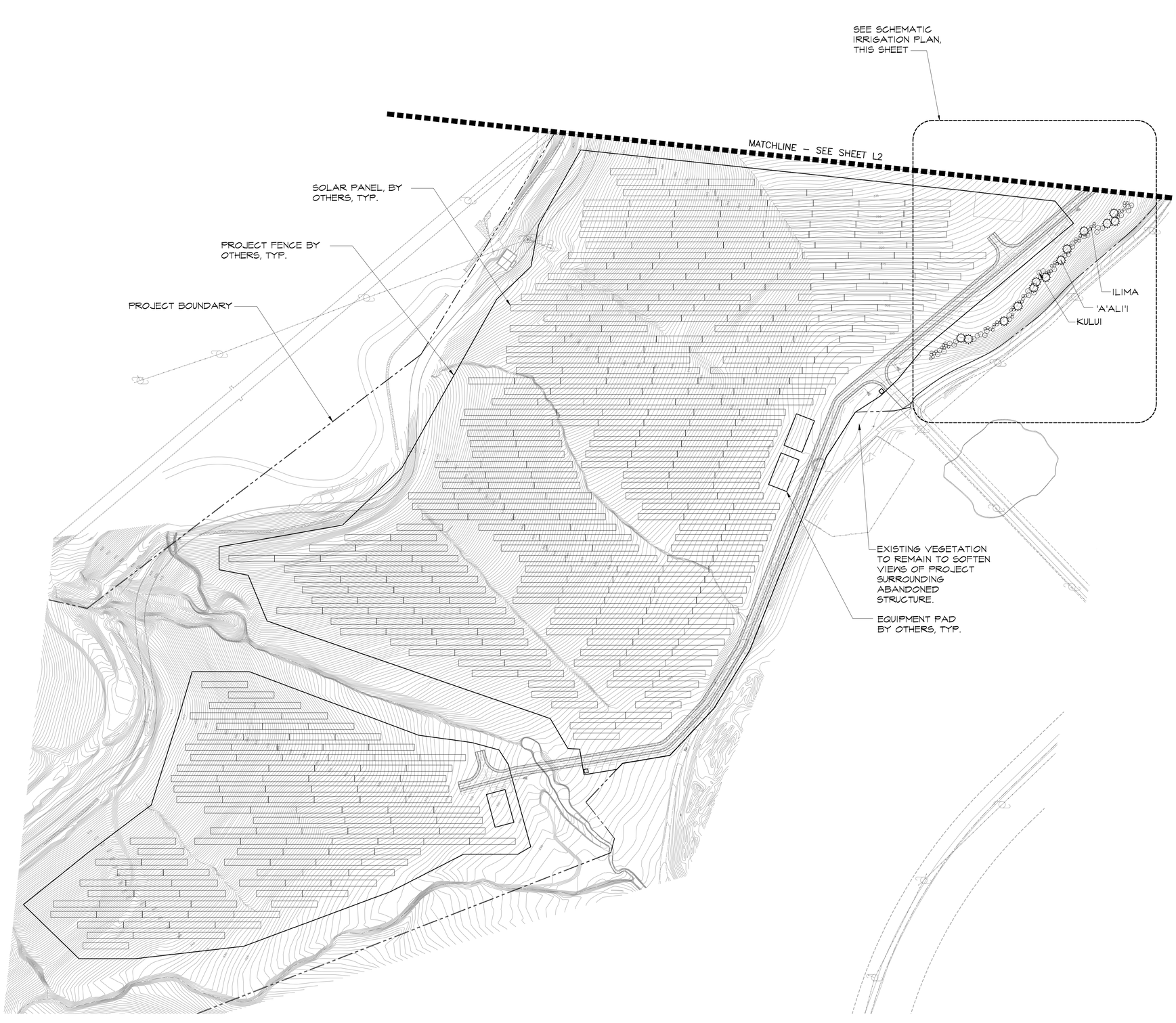
ELECTRICAL DESIGNER

STRUCTURAL DESIGNER

DATE 08-26-2020
SCALE N/A

TITLE
CIVIL DETAIL 2

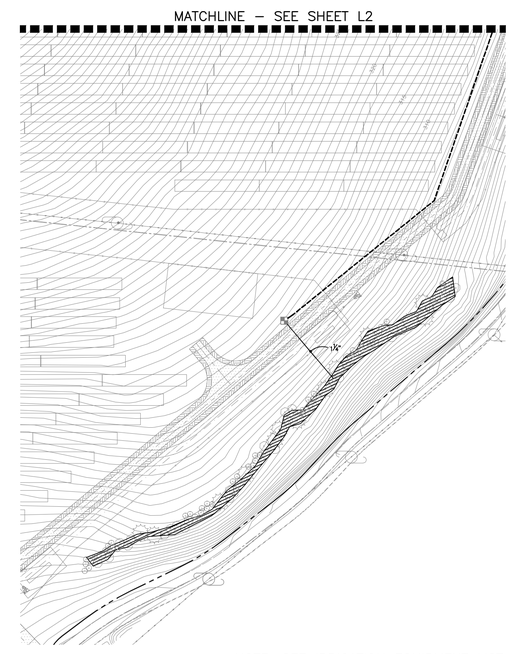
DRAWING
C9.2



NORTH **LANDSCAPE PLAN**
SCALE: 1" = 100'-0"

100' 0 100'

NOTE: SEE PLANT LEGEND ON SHEET L3 FOR PLANT NAMES, SIZES, QUANTITIES AND OTHER INFORMATION.

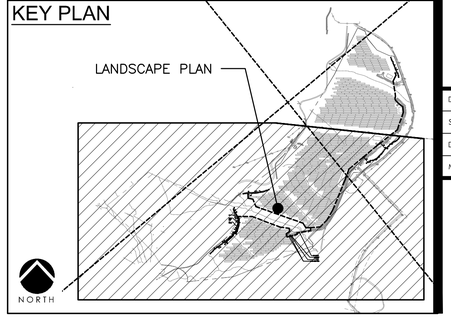


NOTE: SEE IRRIGATION EQUIPMENT LIST ON SHEET L3 FOR MORE INFORMATION.

NORTH **SCHEMATIC IRRIGATION PLAN**
SCALE: 1" = 80'-0"

80' 0 80'

KEY PLAN



REVISION	DATE	BY
REVISION 1		
REVISION 2		
REVISION 3		
REVISION 4		
REVISION 5		
REVISION 6		

1241 ALA AMOAMO ST
HONOLULU, HI 96819

VIVIAN L. ARITA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 18181
HAWAII, U.S.A.

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

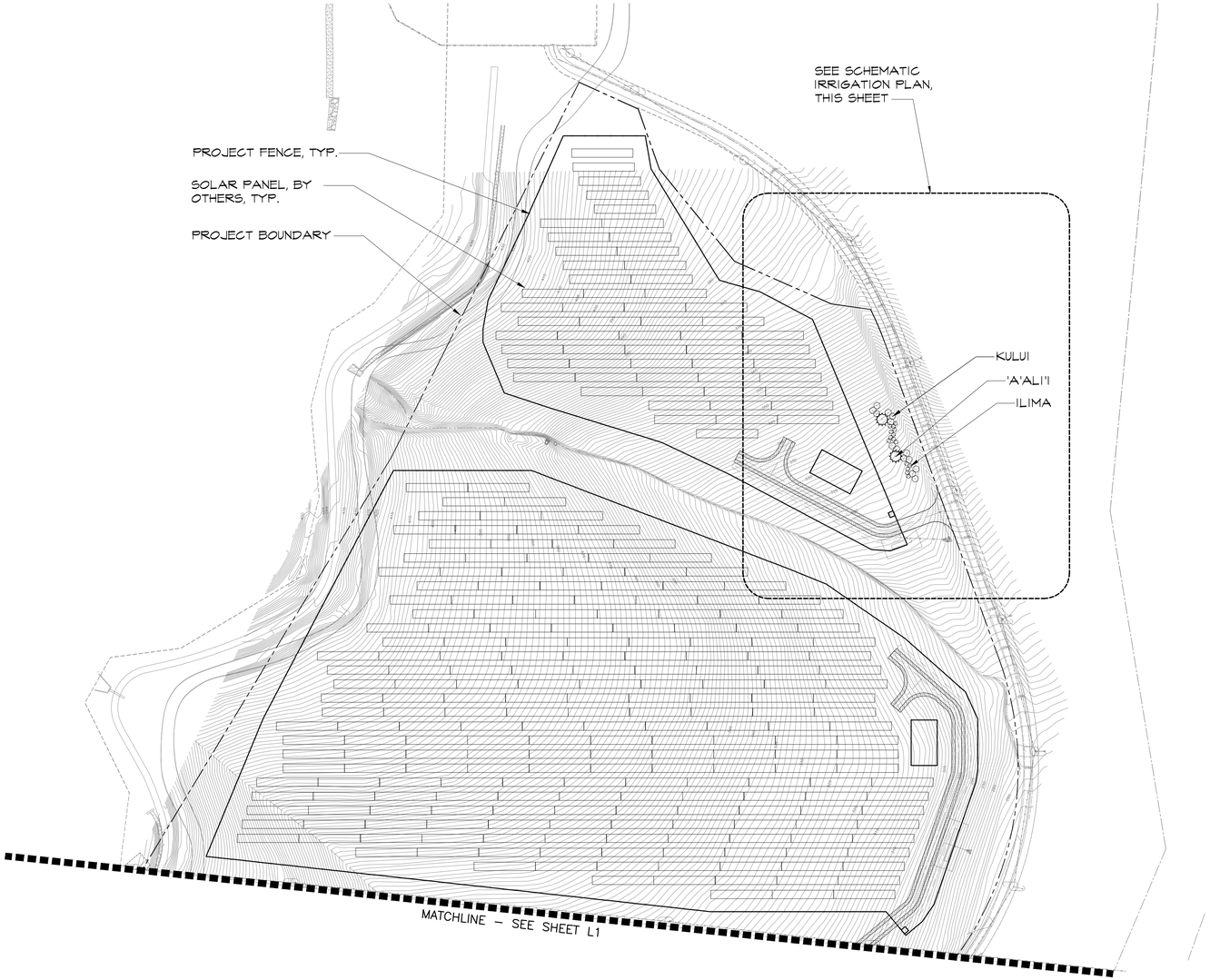
SIGNATURE — EXPIRATION DATE 4/30/22

AES WEST O'AHU SOLAR PLUS STORAGE PROJECT
TMK: 9-2-002:007, Hono'uli'uli, 'Ewa, O'ahu, Hawai'i

LANDSCAPE PLAN AND SCHEMATIC IRRIGATION PLAN

DATE:	JUNE 2019
SCALE:	AS NOTED
DRAWN BY:	VA
MD JOB NO.:	2007

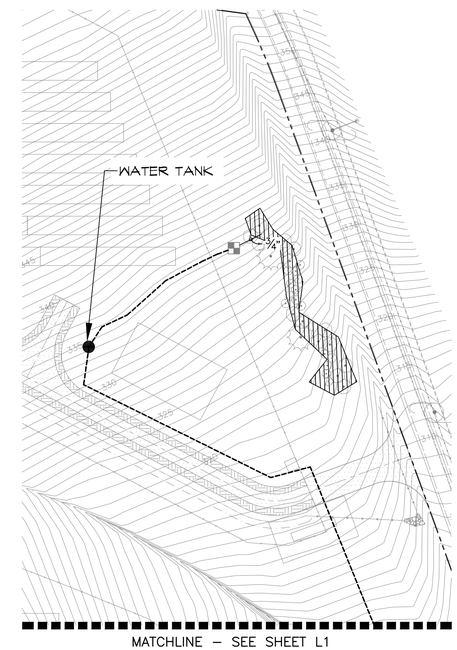
L1



NORTH **LANDSCAPE PLAN**
SCALE: 1" = 100'-0"

100' 0 100'

NOTE: SEE PLANT LEGEND ON SHEET L3 FOR PLANT NAMES, SIZES, QUANTITIES AND OTHER INFORMATION.

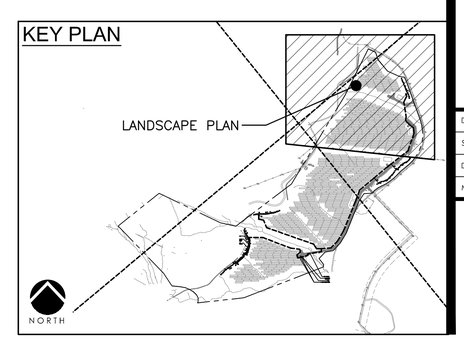


NOTE: SEE IRRIGATION EQUIPMENT LIST ON SHEET L3 FOR MORE INFORMATION.

NORTH **SCHEMATIC IRRIGATION PLAN**
SCALE: 1" = 50'-0"

50' 0 50'

KEY PLAN



REVISION	DATE	BY
REVISION 1		
REVISION 2		
REVISION 3		
REVISION 4		
REVISION 5		
REVISION 6		

1241 ALA AMOAMO ST
HONOLULU, HI 96819

VIVIAN L. ARITA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 18181
HAWAII, U.S.A.

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

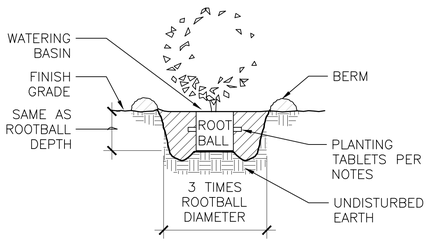
SIGNATURE EXPIRATION DATE 4/30/22

AES WEST O'AHU SOLAR PLUS STORAGE PROJECT
TMK: 9-2-002:007, Hono'uli'uli, 'Ewa, O'ahu, Hawai'i

LANDSCAPE PLAN AND SCHEMATIC IRRIGATION PLAN

DATE:	JUNE 2019
SCALE:	AS NOTED
DRAWN BY:	VA
MD JOB NO.:	2007

L2



1 SHRUB PLANTING DETAIL

NOT TO SCALE

PLANTING NOTES:

1. THE LANDSCAPE CONTRACTOR SHALL VERIFY ALL EXISTING UTILITY LOCATIONS WITHIN THE PROJECT SITE PRIOR TO BEGINNING LANDSCAPE CONSTRUCTION ACTIVITIES.
2. PRIOR TO THE INSTALLATION OF ALL NEW SHRUBS, THE CONTRACTOR SHALL CLEAR AND GRUB EXISTING VEGETATION WITHIN A 10' DIAMETER FOR EACH NEW PLANTING.
3. ANY DAMAGE DONE TO UTILITIES BY THE LANDSCAPE CONTRACTOR DURING LANDSCAPE INSTALLATION ACTIVITIES SHALL BE REPAIRED/RESTORED TO ORIGINAL CONDITION AT NO EXPENSE TO THE OWNER
4. REFER TO "LANDSCAPE SPECIFICATIONS" SECTION 02480 PRIOR TO THE START OF WORK. CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ALL MATERIALS, SCHEDULING, PRODUCTS, WARRANTIES AND METHODS FOR EXECUTION OF WORK WHICH MAY NOT BE INDICATED WITHIN THE DRAWINGS.
5. BACKFILL MIX SHALL CONSIST OF THREE (3) PARTS AMENDED IMPORTED PLANTING SOIL TO ONE (1) PART ORGANIC SOIL CONDITIONER (SEE SPECIFICATIONS). ADD ONE (1) POUND OF 10–30–10 FERTILIZER TO ONE (1) CUBIC YARD OF BACKFILL MIX. MIX THOROUGHLY ON PROJECT SITE PRIOR TO ANY PLANTING OPERATIONS.
6. PLANTING TABLETS FOR SHRUBS SHALL BE AS FOLLOWS:

   A) 5 GALLON 3 TABLETS
   B) 3 GALLON 2 TABLETS

   USE SLOW RELEASE FERTILIZER TABLETS 20–10–5, 21 GRAM SIZE.
7. QUANTITIES SHOWN ON PLANT SCHEDULE ARE FOR REFERENCE ONLY. VERIFY ACTUAL QUANTITIES AS SHOWN ON PLAN TO PROVIDE FULL AND EVEN COVERAGE OF PLANTING AREAS.

PLANT SCHEDULE

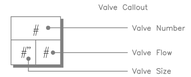
SHRUBS	QTY	COMMON NAME	BOTANICAL NAME	SIZE	HEIGHT	SPREAD	REMARKS
	48	KULU'I	NOTOTRICHIUM SANDWICENSE	5 GAL	3'–4'	2'–3'	MATURE HT: 6'
	15	'A'ALI'I	DODONAEA VISCOSA	5 GAL	3'–4'	2'–3'	MATURE HT: 20'
	69	'ILIMA	SIDA FALLAX	3 GAL	2'–3'	1'–2'	MATURE HT: 6'–8'

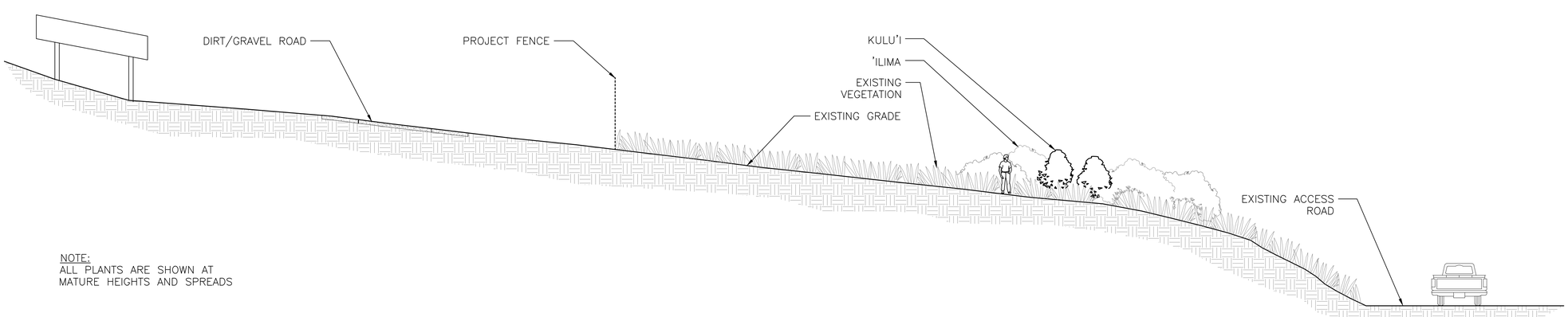
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	HUNTER ICZ–101–25 DRIP CONTROL ZONE KIT. 1" ICV GLOBE VALVE WITH 1" HY100 FILTER SYSTEM. PRESSURE REGULATION: 25PSI. FLOW RANGE: 2 GPM TO 20 GPM. 150 MESH STAINLESS STEEL SCREEN. CONTROLLERS SHALL HAVE SOLAR TIMERS.
	AREA TO RECEIVE DRIPLINE NETAFIM TLCV–04–18 TECHLINE PRESSURE COMPENSATING LANDSCAPE DRIPLINE WITH CHECK VALVE. 0.4 GPH EMITTERS AT 18" O.C. DRIPLINE LATERALS SPACED AT 18" APART, WITH EMITTERS OFFSET FOR TRIANGULAR PATTERN. 17MM.
	1000 GALLON ABOVE GROUND VERTICAL WATER STORAGE TANK. FDA APPROVED HIGH DENSITY LINEAR POLYETHYLENE, IMPACT, UV AND CORROSION RESISTANT.

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	IRRIGATION LATERAL LINE: PVC SCHEDULE 40–NP
	IRRIGATION MAINLINE: HDPE PE3408 DR 11–NP

Valve Callout





NOTE:
ALL PLANTS ARE SHOWN AT MATURE HEIGHTS AND SPREADS

2 SECTION THROUGH EAST SLOPE, SHRUBS AND EXISTING ACCESS ROAD

NOT TO SCALE

REVISION	DATE	BY
REVISION 1		
REVISION 2		
REVISION 3		
REVISION 4		
REVISION 5		
REVISION 6		

1241 ALA AMOAMO ST
HONOLULU, HI 96819

VIVIAN L. ARITA
LICENSED PROFESSIONAL LANDSCAPE ARCHITECT
No. 18181
HAWAII, U.S.A.

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

SIGNATURE 4/30/22 EXPIRATION DATE

AES WEST O'AHU SOLAR PLUS STORAGE PROJECT
TMK: 9-2-002:007, Hono'uli'uli, 'Ewa, O'ahu, Hawai'i

LANDSCAPE DETAIL, SECTION, PLANT LIST, NOTES AND IRRIGATION EQUIPMENT LIST

DATE:	JUNE 2019
SCALE:	AS NOTED
DRAWN BY:	VA
MD JOB NO.:	2007

L3

3 OF 3 SHEETS