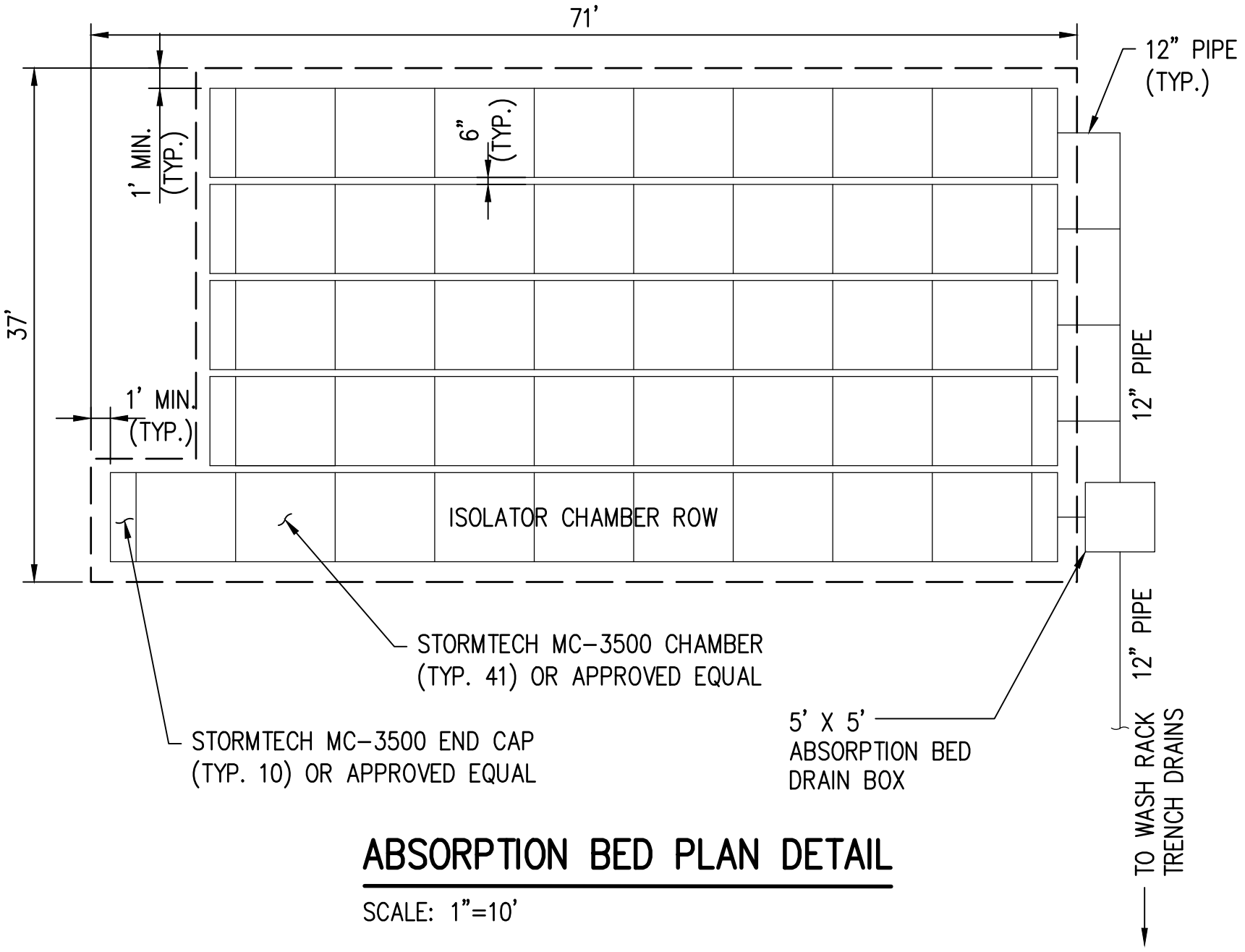
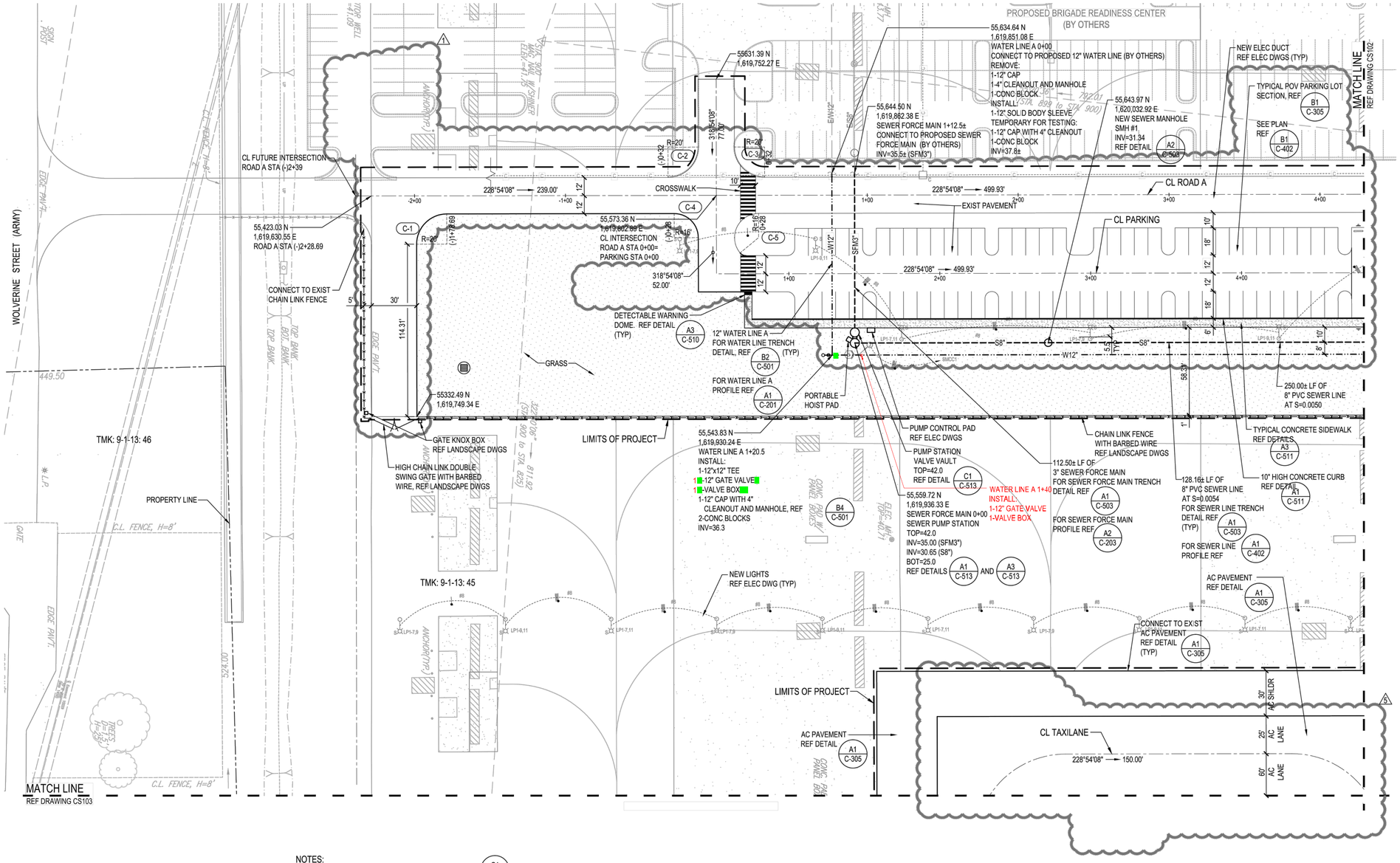
ATTACHMENT 1



ABSORPTION BED PLAN DETAIL

SCALE: 1"=10'

ATTACHMENT 2



NOTES:
1. CONCRETE REACTION BLOCKS FOR WATER MAINS REF C1 / C-501
2. VALVE BOX INSTALLATION FOR GATE VALVE REF B2 / C-502
3. SEWER LINE TRENCH DETAIL REF A1 / C-503
4. FOR TRENCH RESTORATION DETAIL REF C1 / C-510

CURVE DATA

NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
C-1	90°00'00"	20.00	20.00	28.28	31.42
C-2	90°00'00"	20.00	20.00	28.28	31.42
C-3	90°00'00"	20.00	20.00	28.28	31.42
C-4	90°00'00"	16.00	16.00	22.63	25.13
C-5	129°31'16"	16.00	33.94	28.95	36.17

A1 CIVIL SITE AND UTILITY PLAN - 1
1"=30'

AS BUILT
ISSUED FOR CONSTRUCTION - FINAL

JACOBS
501 North Broadway, St. Louis, Missouri 63102-2121

SEAN K. KLEIN
LICENSED PROFESSIONAL ENGINEER
No. 12976-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

APRIL 30, 2016
EXPIRATION DATE OF THE LICENSE

DISCLAIMER

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CONSULTANTS

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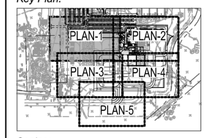
Revision:	Date:	Description:
1	05Nov13	Amendment 1
2	03Dec2013	Amendment No. 2
3	11Dec2013	Addendum 003
4	13Dec2013	Addendum 004
5	27Feb2014	Amendment No. 5
6	05Mar2014	Amendment No. 6
A	29Apr2014	Orig. Conformed Docs 1
B	__Dec2016	AS BUILT

ARMY AVIATION SUPPORT FACILITY (AASF)

HAWAII ARMY NATIONAL GUARD
KALAELOA, OAHU, HAWAII
NATIONAL GUARD BUREAU PROJECT NO. 150023

Key Plan:



Scales:
0 15' 30' 60' 90'
1" = 30'-0"

Jacobs Project No.: FDYD0300

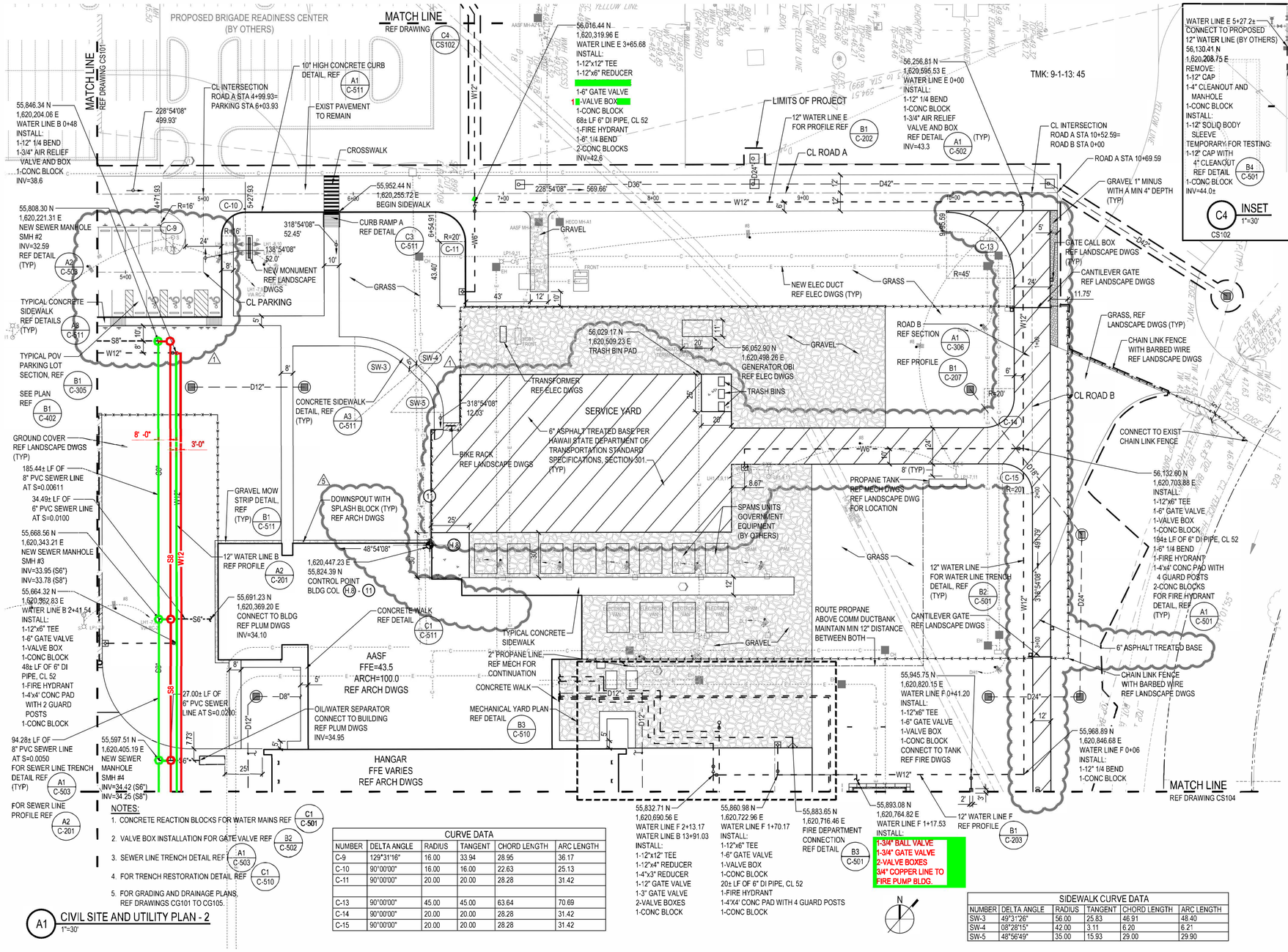
Drawing Title:
CIVIL
SITE AND UTILITY
PLAN - 1

Date: 20 JANUARY 2015

Designed By: S. KLEIN
Drawn By: E. QUINABO, J. TARA
Checked By: A. KATO

Drawing No.: CS101

ATTACHMENT 2



NOTES:

1. CONCRETE REACTION BLOCKS FOR WATER MAINS REF C1 C-501
2. VALVE BOX INSTALLATION FOR GATE VALVE REF B2 C-502
3. SEWER LINE TRENCH DETAIL REF A1 C-503
4. FOR TRENCH RESTORATION DETAIL REF C1 C-510
5. FOR GRADING AND DRAINAGE PLANS, REF DRAWINGS CG101 TO CG105.

A1 CIVIL SITE AND UTILITY PLAN - 2
1"=30'

CURVE DATA					
NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
C-9	129°31'16"	16.00	33.94	28.95	36.17
C-10	90°00'00"	16.00	16.00	22.63	25.13
C-11	90°00'00"	20.00	20.00	28.28	31.42
C-13	90°00'00"	45.00	45.00	63.64	70.69
C-14	90°00'00"	20.00	20.00	28.28	31.42
C-15	90°00'00"	20.00	20.00	28.28	31.42

SIDEWALK CURVE DATA					
NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
SW-3	49°31'26"	56.00	25.83	46.91	48.40
SW-4	08°28'15"	42.00	3.11	6.20	6.21
SW-5	48°56'49"	35.00	15.93	29.00	29.90

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No. 12976-C
HAWAII, U.S.A.

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4	13Dec2013	Addendum 004
5	27Feb2014	Amendment No. 5
6	06Mar2014	Amendment No. 6
A	29Apr2014	Orig Conformed Docs 1

ARMY AVIATION SUPPORT FACILITY (AASF)

HAWAII ARMY NATIONAL GUARD
KALAELOA, OAHU, HAWAII

NATIONAL GUARD BUREAU PROJECT NO. 150023

Key Plan:

Scales:

0 15' 30' 60' 90'
1" = 30'-0"

Jacobs Project No.: FDYD0300

Drawing Title:

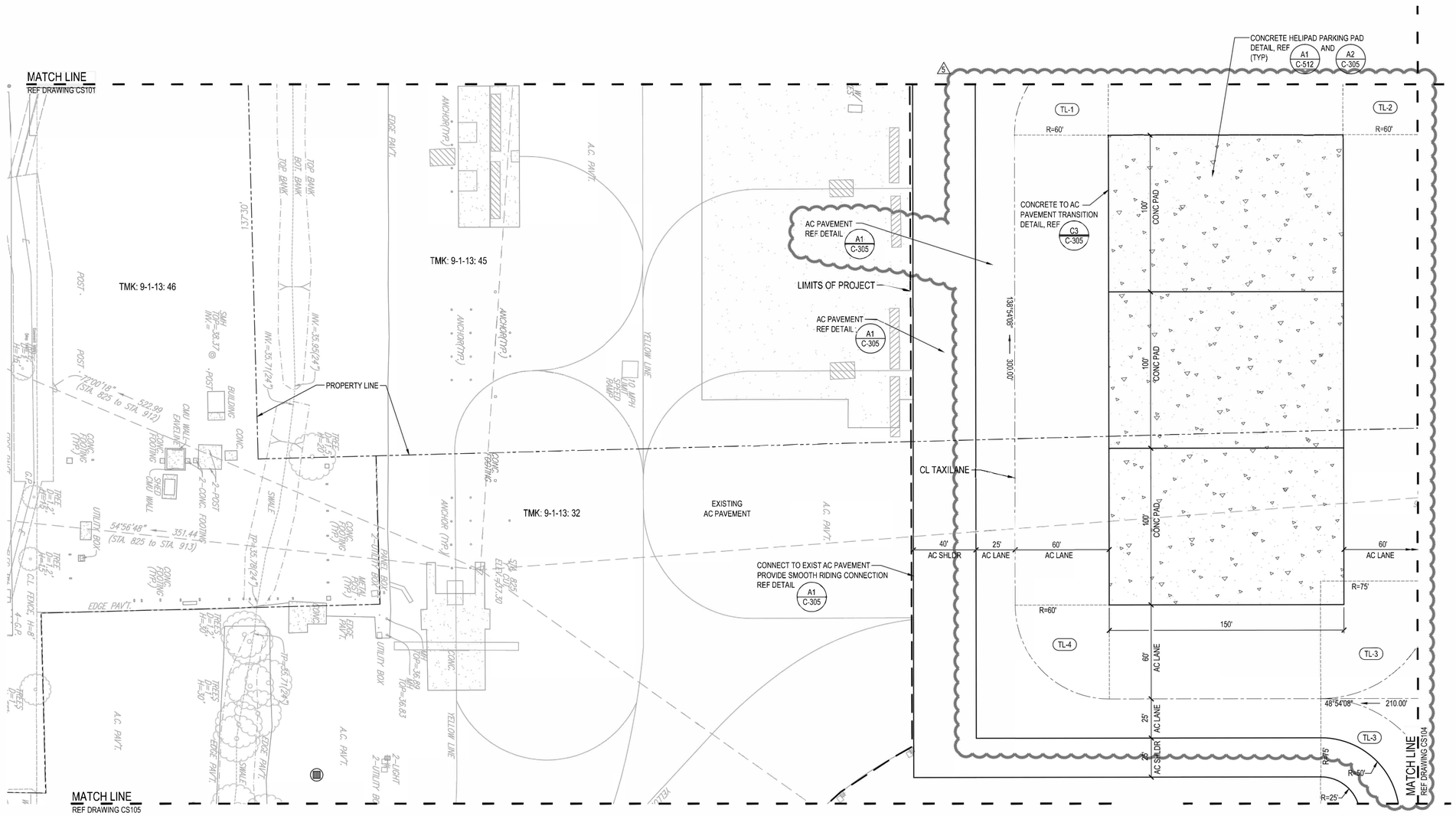
CIVIL
SITE AND UTILITY
PLAN - 2

Date: 20 JANUARY 2015

Designed By: S. KLEIN
Drawn By: E. QUINABO, J. TAIRA
Checked By: A. KATO

Drawing No.: CS102

ATTACHMENT 2



CL TAXILANE CURVE DATA					
NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
TL-1	90°00'00"	60.00	60.00	84.85	94.25
TL-2	90°00'00"	60.00	60.00	84.85	94.25
TL-3	90°00'00"	75.00	75.00	106.07	117.81
TL-4	90°00'00"	60.00	60.00	84.85	94.25

A1 CIVIL SITE AND UTILITY PLAN - 3
1"=30'

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JACOBS
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SEAN K. KLEIN
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No. 12976-C
HAWAII, U.S.A.

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5	27Feb2014	Amendment No. 5
6	05Mar2014	Amendment No. 6
A	29Apr2014	Orig Conformed Docs 1

ARMY AVIATION SUPPORT FACILITY (AASF)

HAWAII ARMY NATIONAL GUARD
KALAELOA, OAHU, HAWAII

NATIONAL GUARD BUREAU PROJECT NO. 15002150023

Key Plan:

Scales:
0 15' 30' 60' 90'
1" = 30'-0"

Jacobs Project No.: FDYD0300

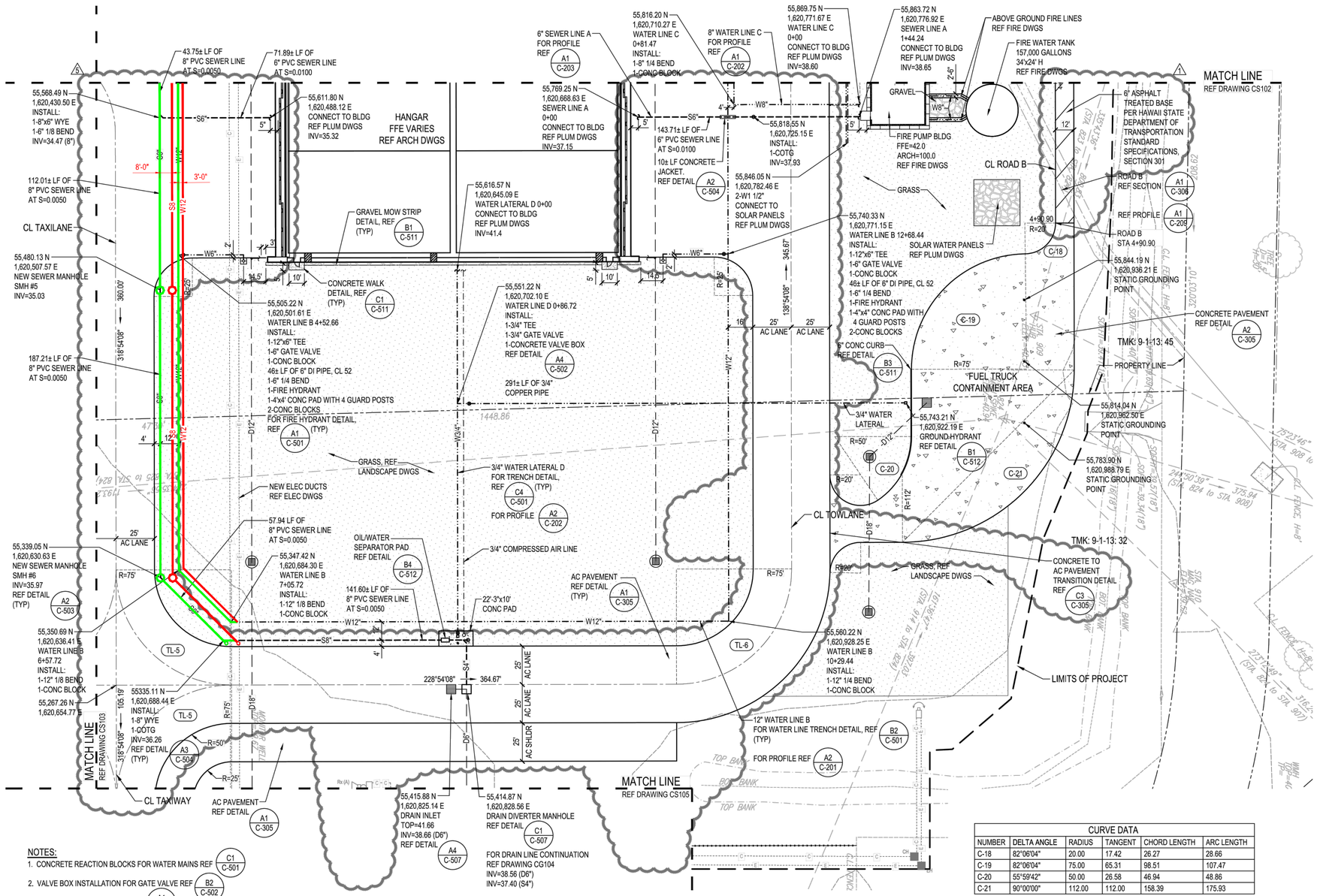
Drawing Title:
CIVIL
SITE AND UTILITY
PLAN - 3

Date: 20 JANUARY 2015

Designed By: S. KLEIN
Drawn By: E. QUINABO, J. TAIRA
Checked By: A. KATO

Drawing No.: CS103

ATTACHMENT 2



NOTES:

1. CONCRETE REACTION BLOCKS FOR WATER MAINS REF C1 C-501
2. VALVE BOX INSTALLATION FOR GATE VALVE REF B2 C-502
3. SEWER LINE TRENCH DETAIL REF A1 C-503

A1 CIVIL SITE AND UTILITY PLAN - 4
1"=30'

CURVE DATA					
NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
C-18	82°06'04"	20.00	17.42	26.27	28.66
C-19	82°06'04"	75.00	65.31	98.51	107.47
C-20	55°59'42"	50.00	26.58	46.94	48.86
C-21	90°00'00"	112.00	112.00	158.39	175.93

CL TAXILANE CURVE DATA					
NUMBER	DELTA ANGLE	RADIUS	TANGENT	CHORD LENGTH	ARC LENGTH
TL-5	90°00'00"	75.00	75.00	106.07	117.81
TL-6	90°00'00"	75.00	75.00	106.07	117.81

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JACOBS
501 North Broadway, St. Louis, Missouri 63102-2121

SEAN K. KLEIN LICENSED PROFESSIONAL ENGINEER No.12976-C HAWAII, U.S.A.

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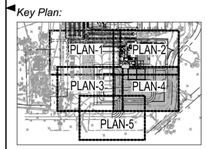
A	29Apr2014	Orig Conformed Docs 1
B	__Dec2016	AS BUILT

ARMY AVIATION SUPPORT FACILITY (AASF)

HAWAII ARMY NATIONAL GUARD
KALAELOA, OAHU, HAWAII

NATIONAL GUARD BUREAU PROJECT NO. 150023

Key Plan:



Scales:
0 15' 30' 60' 90'
1" = 30'-0"

Jacobs Project No.: FDYD0300

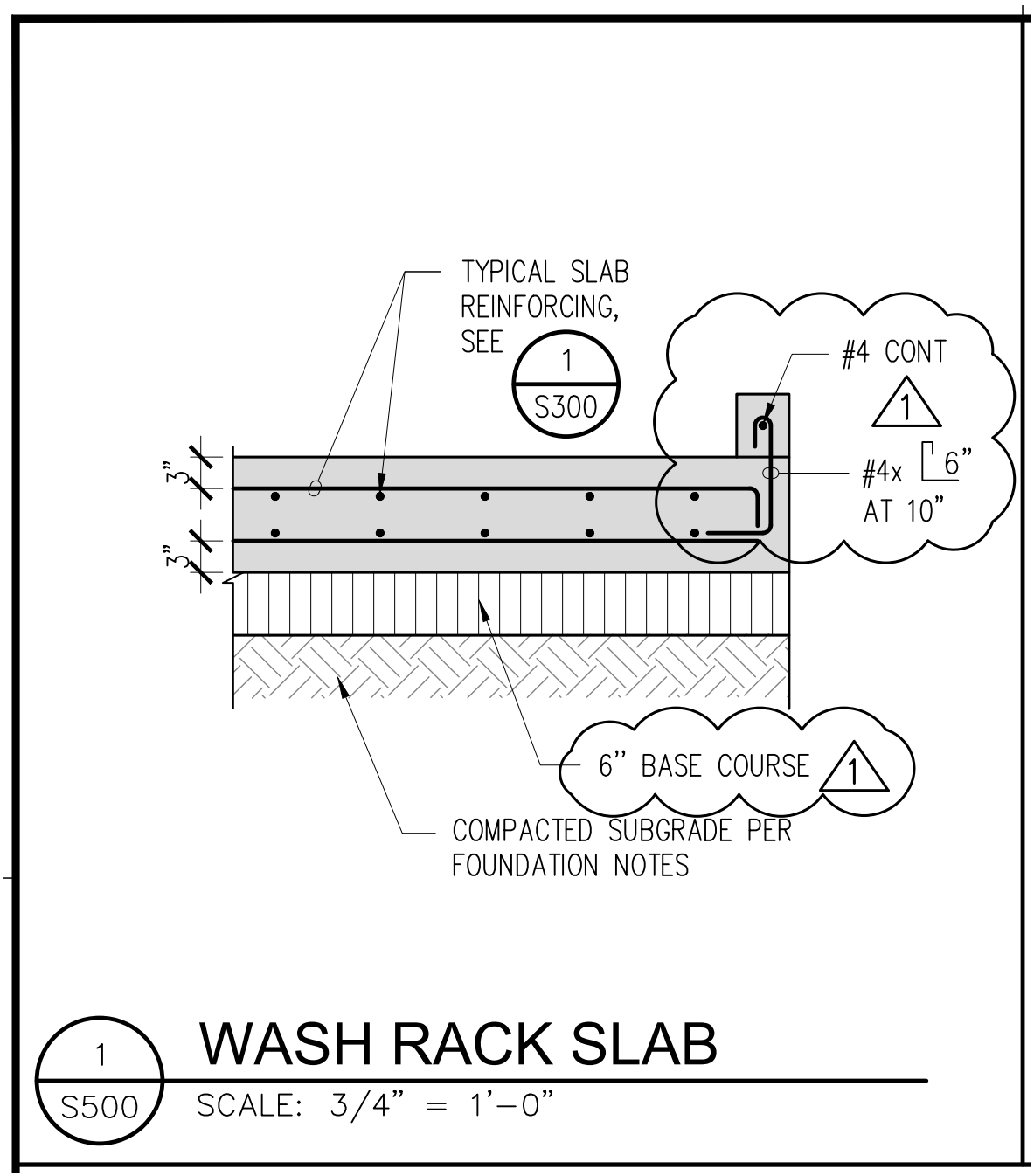
Drawing Title:
CIVIL
SITE AND UTILITY
PLAN - 4

Date: 20 JANUARY 2015

Designed By: S KLEIN
Drawn By: E QUINABO, J TABA
Checked By: A KATO

Drawing No.: CS104

ATTACHMENT 3

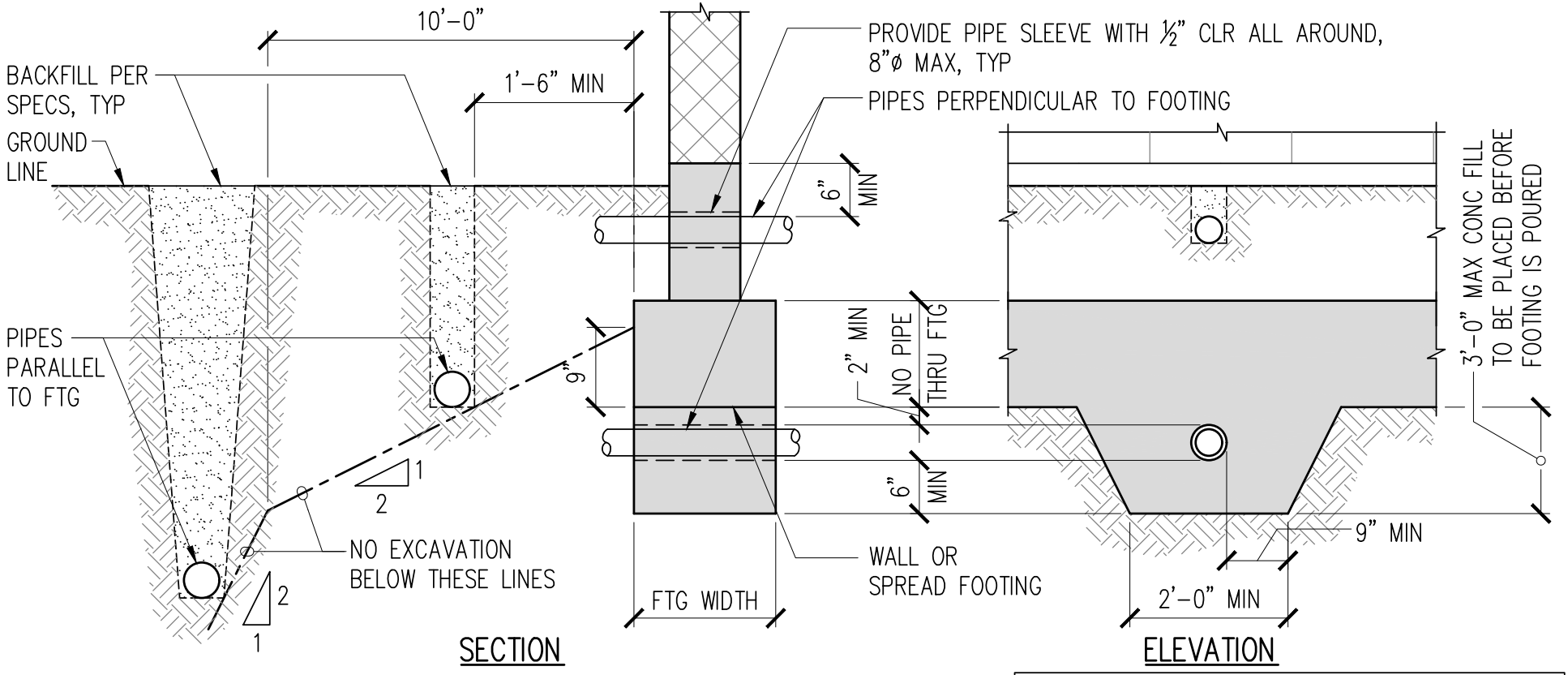


1
S500

WASH RACK SLAB

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

ATTACHMENT 4



NOTES:
1. FOR PIPES PERPENDICULAR TO FOOTING AT MORE THAN 3'-0" BELOW BOTTOM OF FOOTING, TRENCH SHALL BE BACKFILLED WITH COMPACTED FILL PER SPECIFICATIONS.
2. CONTRACTOR SHALL DETERMINE EXACT DEPTH AND LOCATION OF PIPES PRIOR TO EXCAVATION FOR FOOTINGS. FOOTING SHALL BE LOWERED AS REQUIRED.

TYPICAL PIPE AT FOOTING DETAIL

10 / S501

NOT TO SCALE

1

ATTACHMENT 5

FOR BIDDING PURPOSES ONLY

TO MAIN SWITCHBOARD (MSB1)

GFP

3P2000A

N

G

EXIST MAIN SWITCHBOARD (MSB2)
480Y/277V, 3ø, 4W, 3P2000A MAIN CKT BKR, 65 KAIC

3P800A → EXIST DISTRIBUTION PANEL DH1

3P200A → EXIST PWCP

3P100A → EXIST PANEL ELH1 VIA ATS1

3P1000A → EXIST STANDBY SWITCHBOARD SDH1 VIA MTS1

3P400A → EXIST DISTRIBUTION PANEL DH3–1

3P400A → EXIST SWITCHBOARD DM1

3P800A → EXIST SWITCHBOARD DL1

3P600A → SPARE

3P100A → 3"C, 4#1/0, 1#4 GND → 3P100A / 3P30A, PANEL 4A
480Y/277V, 3ø, 4W,
3P100A MAIN CKT BKR,
14 KAIC MIN
NEMA 4X 316SS

3/4"C, #4 GND

DRY–TYPE XFMR
480Δ–208Y/120V,
3ø, 4W, 30 KVA
NEMA 3R 316SS

1 1/4"C, 4#4, 1#8 GND → 3P70A, PANEL 2A
208Y/120V, 3ø, 4W,
3P70A MAIN CKT BKR,
10 KAIC MIN
NEMA 4X 316SS

3/4"C, #8 GND

3/4"C, 4#10, 1#10 GND

3P125A → 3P200A, 3P200A DISC SW
NEMA 4X 316 SS

3"C, 4#1/0, 1#4 GND

4

3P125A → 3P40A, 1"C, 3#8, 1#10 GND → PHOTOVOLTAIC INVERTER, 24KW @ 480VAC → DC DISC/COMBINER → 3–1"C, 4#10, 1#6 GND

3P40A → PHOTOVOLTAIC INVERTER, 24KW @ 480VAC → DC DISC/COMBINER

3P40A → PHOTOVOLTAIC INVERTER, 24KW @ 480VAC → DC DISC/COMBINER

1P20A → LIGHTS

PANEL "PV"
480Y/277V, 3ø, 4W, 250A BUS
3P125A MAIN CKT BKR, 14 KAIC MIN
NEMA 4X 316SS

PHOTOVOLTAIC PANEL ARRAY:
6 PARALLEL STRINGS OF 15 PANELS, TYP.

ARRAY 1A:

6 strings × 15 panels (1 … 15)

786 VOC

PHOTOVOLTAIC PANEL ARRAY:
6 PARALLEL STRINGS OF 15 PANELS, TYP.

ARRAY 1B:

6 strings × 15 panels (1 … 15)

786 VOC

PHOTOVOLTAIC PANEL ARRAY:
6 PARALLEL STRINGS OF 15 PANELS, TYP.

ARRAY 1C:

RAPID SHUTDOWN MODULE, TYP.

6 strings × 15 panels (1 … 15)

786 VOC

3–1"C, 4#10, 1#6 GND

NOTE(S):

1. PROVIDE SIGNAGE IN ACCORDANCE WITH NEC SECTIONS 110.16, 110.24, AND 408.4(B) FOR NEW ELECTRICAL EQUIPMENT.
2. DC CIRCUIT OF THE INVERTER MEETS THE REQUIREMENTS FOR UNGROUNDED PHOTOVOLTAIC ARRAYS PER NEC 690.35.
3. RHW–USE TYPE PHASE CONDUCTORS WITHIN BUILDING. THW TYPE FOR GROUND CONDUCTORS. TEMPERATURE RATINGS OF 167 DEGREES F UNLESS SPECIFIED. PV WIRE FOR ALL EXPOSED WIRING ON PV CANOPY.

[4] CIRCUIT BREAKER SHALL BE UL LISTED FOR BACKFEED OPERATION.

PHOTOVOLTAIC SYSTEM – ARRAY 1	
SYSTEM CAPACITY:	98.5KW
SYSTEM DESCRIPTION:	ARRAY 1A 1 ARRAY OF 6 STRINGS CONSISTING OF 11 PANELS PER STRING, 365W PER PANEL ARRAY 1B 1 ARRAY OF 6 STRINGS CONSISTING OF 15 PANELS PER STRING, 365W PER PANEL ARRAY 1C 1 ARRAY OF 6 STRINGS CONSISTING OF 15 PANELS PER STRING, 365W PER PANEL
PANEL CHARACTERISTICS:	LG NEON SERIES, LG365N2W–B3 OPEN CIRCUIT VOLTAGE: 48.4VDC PEAK VOLTAGE: 38.6VDC SHORT CIRCUIT CURRENT: 9.89A PEAK CURRENT: 9.46A
INVERTER:	SMA SUNNY TRIPOWER 24000 TL–US ARRAY 1A: 1 EA, 24KW ARRAY 1B: 1 EA, 24KW ARRAY 1C: 1 EA, 24KW

2020-05-20 4:19 PM Z:\ADAP\PROJECTS\219126\E601_219126_One-Line_Diagram

Ronald N.S. Ho and Associates, Inc.

4/30/2022
SIGNATURE LICENSE EXPIRES

NO.	DESCRIPTION	DATE	APPR
STM			

SUBMITTAL PHASE: BID SET
SUBMITTAL DATE: 03/23/20
DES RY | DRW CAD | CHK BO

DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

KALAELOA
OAHU

ARMY AVIATION SUPPORT FACILITY BUILDING 30

ONE–LINE DIAGRAM

SCALE: AS NOTED
STATE JOB NO. CA–1825–C
FEDERAL PROJECT NO. 15190024
SHEET 55 OF 57

E601

ATTACHMENT 6

DIVISION 13 – SPECIAL CONSTRUCTION

SECTION 13650 – PHOTOVOLTAIC SYSTEMS
(THIS SECTION 13650 REVISED BY ADDENDUM 3)

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS
As specified in Section 01100 – PROJECT REQUIREMENTS

1.02 SUMMARY
This section includes the following for installation of photovoltaic systems.

1.03 SUBMITTALS

A. General: Submit under provisions of Section 01300 – SUBMITTALS.

B. Shop Drawings: Submit complete shop drawings and manufacturer's literature for the Owner's review before any work is fabricated. Comply with all requirements of the Section 01300 – SUBMITTALS. Submit five sets of manufacturer's literature for the following:

1. Photovoltaic Modules
2. Inverters
3. Combiner Boxes
4. Raceways
5. Panel Mounting Hardware
6. Rapid Shutdown Device
7. One-line Diagram
8. Three-Line Diagram Shop Drawings. Show system details, devices, and circuiting.
9. Provide photovoltaic installation if layout is different than as shown on drawings. Indicate revised layout, wiring, panel and device locations, new equipment, etc.
10. Contractor's qualifications to indicate minimum experience.
11. Warning Signs

1.04 GUARANTEE AND CERTIFICATE
As specified in Section 16050 – BASIC MATERIALS AND METHODS.

1.05 GENERAL REQUIREMENTS
The Contractor shall furnish all labor, materials (except as hereinafter noted), tools, equipment and appliances required to provide and install all Electrical Work, complete, as indicated on the drawings and/or as herein specified. The

drawings note various sizes of equipment as determined for basis of design; the electrical work, however, shall be installed to comply with the equipment furnished by the successful supplier. The work shall include but not necessarily be limited to, the following:

A. Complete photovoltaic system installation, including all necessary equipment, conduit, wiring, controls and accessories. Any omission in specified equipment will not relieve the contractor of the responsibility for providing a complete system, including all items required proper operation except for such items which are specifically noted as being furnished by others.

B. Before bidding on this work, carefully examine each of the drawings and the site. By submitting a proposal of the work included in this contract, the Contractor shall be deemed to have made such examination and to be familiar with and accept all conditions of the job site.
   1. Prior to ordering equipment, the Contractor shall examine the plans to verify the amount of space allocated for the electrical equipment and to determine if the material proposed will fit within the allotted space. It shall be the Contractor's responsibility to provide equipment that will fit within the allotted space.

   2. Contractor shall have a minimum of 5 years experience installing photovoltaic systems.

1.06 COORDINATION WITH OTHER TRADES

During bidding and construction, Contractor shall coordinate his work with other trades to avoid omissions and overlapping of responsibilities.

1.07 CODES, REGULATIONS AND STANDARD SPECIFICATIONS

A. Work shall conform to latest edition of National Electrical Code.

B. Applicable rules, standards and specifications of following associations shall apply to materials and workmanship:
   1. AMSE PTC 50 (solar PV performance)

   2. ANSI Z21.83 (solar PV performance and safety)

   3. NFPA 853 (solar PVs near buildings)

   4. NEPA 70 (electrical components)

   5. IEEE 1547 (interconnections)

   6. National Electrical Safety Code – ANSI C2 – 2005

PART 2 - PRODUCTS

2.01 MATERIALS

A. All materials shall be new, except as specifically noted, and shall bear the label of Underwriters' Laboratories whenever standards have been established and label service is normally and regularly furnished by the agency.

B. Photovoltaic Modules:
   1. High efficiency, poly or mono-crystalline modules.

   2. Tempered glass low reflectance panel within a corrosion resistant anodized aluminum frame. Panel frame shall be provided with pre-drilled mounting and grounding holes.

   3. Each panel shall have ratings as indicated on drawings.

   4. Nominal panel size shall not exceed 40” x 77”.

   5. Listed on the California Energy Commission’s PTC list.

   6. Modules shall be certified to UL 1703 – “Flat-Plate Photovoltaic Modules and Panels”

   7. 25-year minimum power output manufacturer’s warranty.

   8. Canadian Solar, Grape Solar, Hyundai Heavy Industries Co., LG Electronics or approved equal.

C. Photovoltaic Panel Mounting Racks: Mounting racks shall utilize type anodized aluminum frames, and support members, and type 316 stainless steel hardware to secure the photovoltaic panels to the parking lot canopy system. Exposed bare aluminum on field cut frames or supports shall be coated with a corrosion inhibitor prior to installation. All frame members shall be provided with manufactured end caps.

D. Three-Phase Transformerless String Inverters:

   1. LCD user interface.

   2. 98% minimum CEC efficiency rating.

   3. Maximum open circuit voltage of 1000VDC.

   4. Nominal DC input voltage of 750VDC.

   5. For exterior locations or locations exposed to moisture, the enclosure shall be NEMA 3R or NEMA 4, IP65.

   6. Nominal AC voltage, phase, and maximum output power ratings as indicated on drawings.

   7. Reverse-Polarity Protection.

   8. Ground-Fault Isolation Detection.

   9. Supports communication interfaces via RS485 and Ethernet.

10. DC disconnecting unit with DC surge protection and DC fuses on positive and negative DC inputs.

11. Minimum warranty of 10 years. Specify warranty extension modalities.

12. Must comply with the following requirements:

    a. UL 1741 – "Standard for Static Inverters and Charge Controllers for use in Photovoltaic Systems"

    b. Listed on the CEC list of eligible inverters

13. The inverter shall include provisions for connection to a web-based remote monitoring system. A third party monitoring system will be acceptable in lieu of an integrated monitoring solution.

14. Solaredge, SMA or approved equal.

D. Combiner Boxes: Rated for 1000VDC, integral fuse cover/puller. 16-circuit with fuses rated for 15A, with provisions to incorporate blocking diodes in series with each circuit, and an integral of aftermarket lighting arrester. The enclosure shall be lockable NEMA 4 rated.

E. Rapid Shutdown Device

1. Module level voltage shutdown capacity.

2. DC Input Power Rating: 475W

3. Maximum PV module open circuit voltage at STC: 75V

4. Maximum Input Voltage: 90V

5. Maximum Current Isc: 12A

6. Output Power Range: 0 - 475W

7. Output Voltage Range: 0 - Voc

8. Maximum Allowed System Voltage: 1000V

9. IP68 rated for outdoor use.

10. NEC 2017 690.12 compliant.

11. SMA TS4-R-F or approved equal.

F. Remote Inverter Monitoring System: The remote monitoring system shall provide access to the photovoltaic system performance data through any web browser. The remote monitoring system shall include the following features:
1. Recording of daily, monthly and annual energy generated.

2. Remote configuration of the photovoltaic system by authorized users.

3. Remote diagnosis of the photovoltaic system.

G. Raceways:
1. Conduits: Galvanized rigid steel and PVC schedule 40, 3/4" minimum diameter unless otherwise indicated, for exterior installations only. Electrical metallic tubing for interior installations. Aluminum conduits shall not be used.

2. Flexible Conduit: 3/4" minimum, zinc-coated inside and outside; PVC coated, liquid-tight with factory compression fittings.

H. Wires and Cables: Conductors shall be copper, No. 12 AWG minimum; No. 10 AWG and smaller, solid and round; No. 8 AWG and larger, 7 or 19 strands concentric. All conductors for photovoltaic direct current systems shall be type USE-2.

I. Warning Signs: Engraved white lettering with red background, 1/2” high lettering minimum, stainless steel (316) screw type fasteners.

J. Nameplates: Bakelite nameplates shall be black finish with white core and shall have 1/4" high engraved letters indicating the name of the equipment being served by the device on which the nameplate is to be installed or the name of the device, etc.

K. Conduit and Equipment Supports: Conduit and equipment supports shall be fabricated from stainless steel type 316. All mounting hardware shall be stainless steel type 316.

L. Hardware, Supports, Backing, Etc.: All hardware, supports, backing and other accessories necessary to install electrical equipment shall be provided. Wood materials shall be “wolmanized” treated against termites, iron or steel materials shall be galvanized for corrosion protection, and non-ferrous materials shall be brass or bronze. Exterior materials shall be stainless steel (316) with the exception of mounting brackets for the photovoltaic panels which shall not produce electrolysis with the metal framing, corrosion resistant aluminum or brass.

PART 3 - EXECUTION

3.01 GENERAL

A. The Contractor shall provide all the hardware and appurtenances as needed for a complete solar photovoltaic system.

B. All systems shall be installed in accordance with all applicable requirements of local electrical codes and the National Electrical Code (NEC), including but not limited to Article 690, “Solar Photovoltaic Systems” and Article 705 – “Interconnected Electrical Power Production Sources”.

C. Systems shall be designed and installed using UL or ETL listed components, including mounting systems.

D. All Balance of Systems (wiring, component, wiring, conduits, and connections) must be suited for conditions for which they are to be installed. Inverters shall be installed in all-weather enclosures suitable for exterior location. An interval data meter must be installed to measure the AC output of the inverter.

E. Interconnection must comply with HECO "Standard Interconnection Agreement" (SIA) standards. The contractor shall complete the HECO SIA and provide all required submittals to HIARNG. HIARNG will for submit to NAVFAC. NAVFAC will submit the SIA to HECO for processing and approval.

F. For a building with an existing fire alarm control panel (FACP), provide wiring as necessary from inverter to FACP. The FACP shall disable the operation of the inverter when alarmed. 3/4" minimum conduit.

G. For inverters connected to the emergency power of an emergency/standby generating system, provide wiring as necessary from inverter to the automatic transfer switch (ATS). The ATS shall disable the operation of the inverter when operating on emergency power. 3/4" minimum conduit.

3.02 INSTALLATION

A. Structural Supports:

1. All structures supporting photovoltaic and array systems shall be designed to resist dead load, live load, plus wind and seismic loads per IBC 2006 with City and County of Honolulu Amendments.

2. Photovoltaic systems, including rail support system, shall be designed to support all loading specified based on spacing of structural steel support framing shown on the drawings.

3. Thermal loads caused by fluctuations of component and ambient temperatures must be combined with all the above load combinations

4. All structural components, including array structures, shall be designed in a manner commensurate with attaining a minimum 30 year design life. Particular attention shall be given to the prevention of corrosion at the connections between dissimilar metals.

5. Construct concrete equipment pad for inverters and other equipment, if necessary.

B. Wiring System:

1. For exterior locations above grade where exposed to damage, use PVC schedule 80.

2. Above grade interior locations where not exposed to damage, use EMT with UL approved grounding connectors.

3. Conduit system shall be continuous from outlet to outlet or fitting to fitting so that electrical continuity is obtained between all conduits of the system.

4. Conduits cut square and inner edges reamed. Butt together evenly in couplings.

5. Make bends and offsets with hickey or conduit-bending machine. Do not use vise or pipe tee. Flattened or crushed conduit not acceptable.

6. Use of running threads not permitted. Where conduits cannot be joined by standard threaded couplings, approved water-tight conduit unions shall be used.

7. Cap conduits during construction with plastic or metal-capped bushings to prevent entrance of dirt or moisture. Swab all conduits and dry before installing wires.

8. Pull wires shall be placed in all empty conduits ten feet in length or longer.

9. Install insulating bushings and two locknuts on each end of every conduit run at enclosures and boxes. Provide grounding bushings as required.

10. Label wiring at combiner boxes with circuit or string numbers.

11. All support rails shall be closed ended with manufacturer supplied end caps.

C. Grounding:

1. All metallic enclosures, raceways, and electrical equipment shall be grounded according to requirements of NEC Article 250. Final connection to equipment, raceways and other metallic parts directly exposed to ungrounded electric conductors shall be No. 12 AWG minimum, copper, NEC type TW, green insulation.

2. All grounding wire runs within building shall be routed together with circuit conductors.

D. Cleaning and Repairing:

During the progress of work, all rubbish, waste lumber, displaced materials, etc. shall be removed as soon as possible and upon completion of the work, Contractor shall remove from the State's property and from all public and private property, at his own expense, all temporary structures, rubbish and waste material resulting from his operations.

E. Finishing:

1. All cutting or wall penetrations that may be required for complete installation of the electrical work shall be carefully performed, and all patching shall be finished in first-class condition by the Contractor.

2. Close unused knockouts in boxes or enclosures with metal cap.

3. Wipe clean all exposed raceways, enclosures and supports with rag and solvent. Unfinished raceways, enclosures and supports shall be

prime-painted and finished to blend into background. (Do not cover nameplates.) Factory finished enclosures shall not be painted.

F. Miscellaneous Details:

1. Provide permanent labels on the top frame of each photovoltaic panel identifying the string and panel numbers (i.e. “A-6/5” would identify string 6, panel 5 in array A). The labels shall be embossed or engraved to prevent fading and shall be permanently attached to the panels. The panels may be engraved with the information in lieu of providing permanent labels.

2. Cut, drill and patch as required to install electrical system. Repair any surface damaged or marred by notching, drilling or any other process necessary for installation of electrical work. Cutting, repairs and refinishing are subject to the approval of the Owner. Need for remedial work determined by Owner as attributable to poor coordination and workmanship shall be cause for reconstruction to the satisfaction of the Owner.

3. Attachment of electrical equipment to wood by non-ferrous wood screws. Attachment to concrete by expansion anchors. Powder-charge-driven studs and anchors permitted only with prior approval.

4. All grounding wire within building run in metallic conduit, and where practicable, routed together with circuit conductors.

5. Furnish necessary test equipment and make all tests necessary to check for unspecified grounding, shorts and wrong connections. Correct faulty conditions, if any.

6. Revise all panel circuit directories, using typewriter. Verify “use” designations before typing. Provide new nameplates on all new switchboard mounted circuit breakers.

7. Prime and paint all exposed conduits and junction boxes (including stainless steel junction boxes) to match exterior finish of the building.

8. Provide warning sign on the main building disconnect reading “WARNING: BUILDING IS FED BY PHOTOVOLTAIC GENERATING FACILITY”. Provide warning sign on the main distribution panel disconnect reading “WARNING: BUILDING IS FED BY MULTIPLE PHOTOVOLTAIC GENERATING FACILITIES”.

9. Provide warning sign on photovoltaic system AC disconnect circuit breaker reading “ATTENTION: PHOTOVOLTAIC GENERATING FACILITY”.

10. Provide warning signs on disconnecting means where all terminals may be energized in the open position reading “WARNING: ELECTRICAL SHOCK HAZARD, DO NOT TOUCH TERMINALS, TERMINALS ON BOTH THE LINE AND LOAD SIDES MAY BE ENERGIZED IN THE OPEN POSITION”.

3.03 TESTING AND INSPECTION

A. If the Owner discovers any errors, the Contractor, at his own expense, shall go over all similar portions of the entire job, taking the necessary or directed remedial action.

B. Installations, 600 volts and less shall be tested for insulation resistance after all wiring is completed and ready for connection to equipment. Using a 500V megger, measure and record the insulation resistance from phase to phase and phase to neutral. The above tests shall be witnessed by the Owner and the records turned over to him for proper disposition. The Contractor shall notify the Owner when this test is to be performed.

C. The Contractor shall retape splices which have been bared for inspection. The Contractor shall test all portions of the electrical system furnished by him for proper operation and freedom from accidental grounds. All tests shall be subject to the approval of the Owner.

D. Wherever test or inspection reveals faulty equipment or installation, the Contractor shall take corrective action, at his own expense, repairing or replacing equipment or installation as directed.

3.04 OPERATION AND MAINTENANCE

A. Any item of material, apparatus, equipment furnished and installed, or construction by the Contractor showing defects in design, construction, quality or workmanship within one year from the date of final acceptance by the Owner shall be replaced by such new material, apparatus or parts as may be found necessary to make such defective portion of the complete system conform to the true intent and meaning of the specification and/or the drawings. Such repairs or replacement shall be made by the Contractor free of all expense to the Owner.

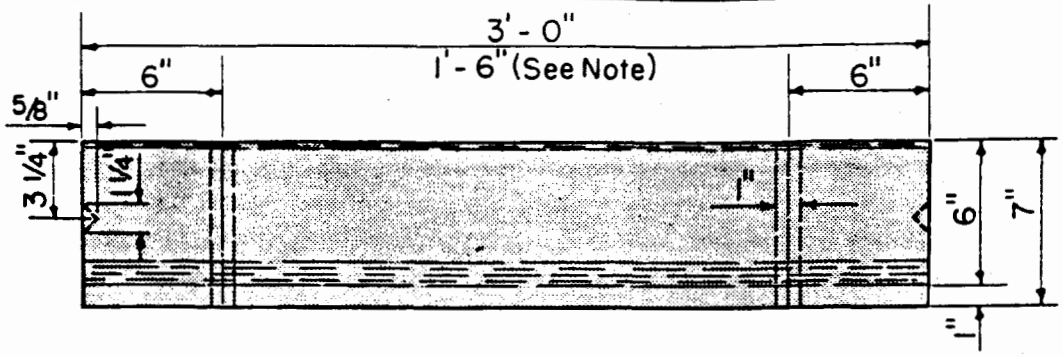
B. The Contractor shall provide notification to the Owner as early as practical, but in no event less than five working days, prior to any planned maintenance and repairs.

C. The Contractor will provide a minimum of ten working days notification to the Owner if any planned repairs or maintenance that will result in any disruption to electrical distribution system.

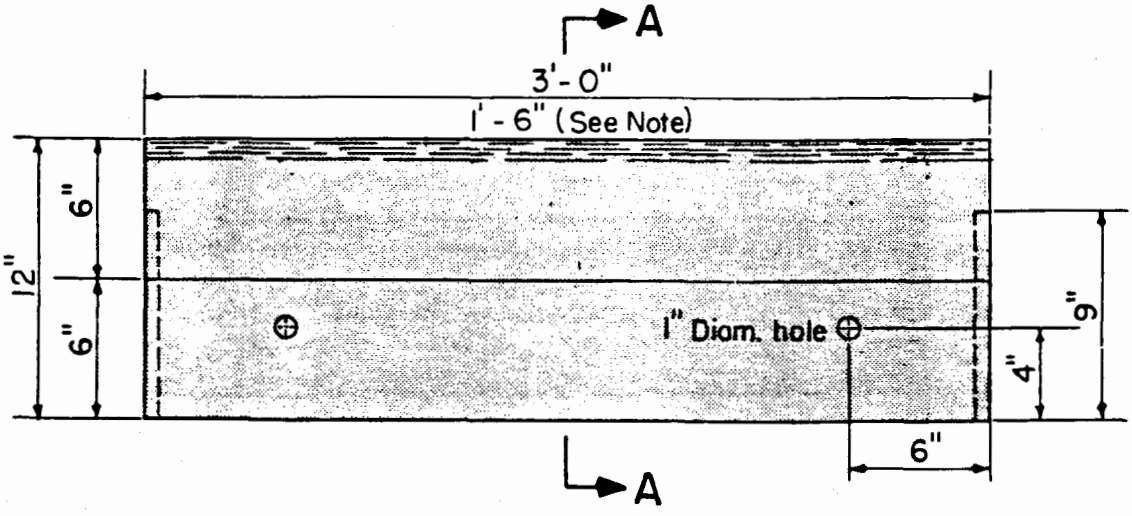
D. There shall be no interruption of power supply to any of the State's facilities as a result of the installation of the Solar Photovoltaic System. Contractor shall provide standby backup generation at its own cost if required to prevent interruption of the power supply.

END OF SECTION

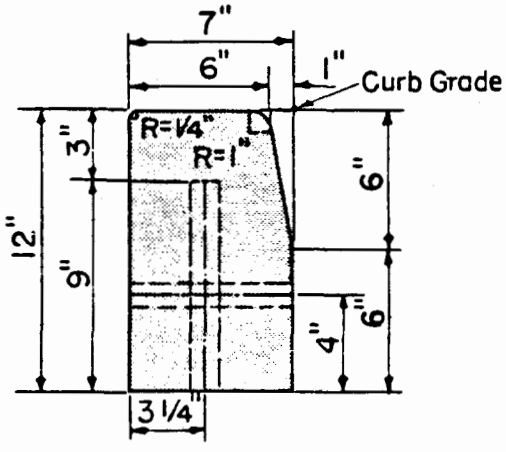
ATTACHMENT 7



PLAN



ELEVATION



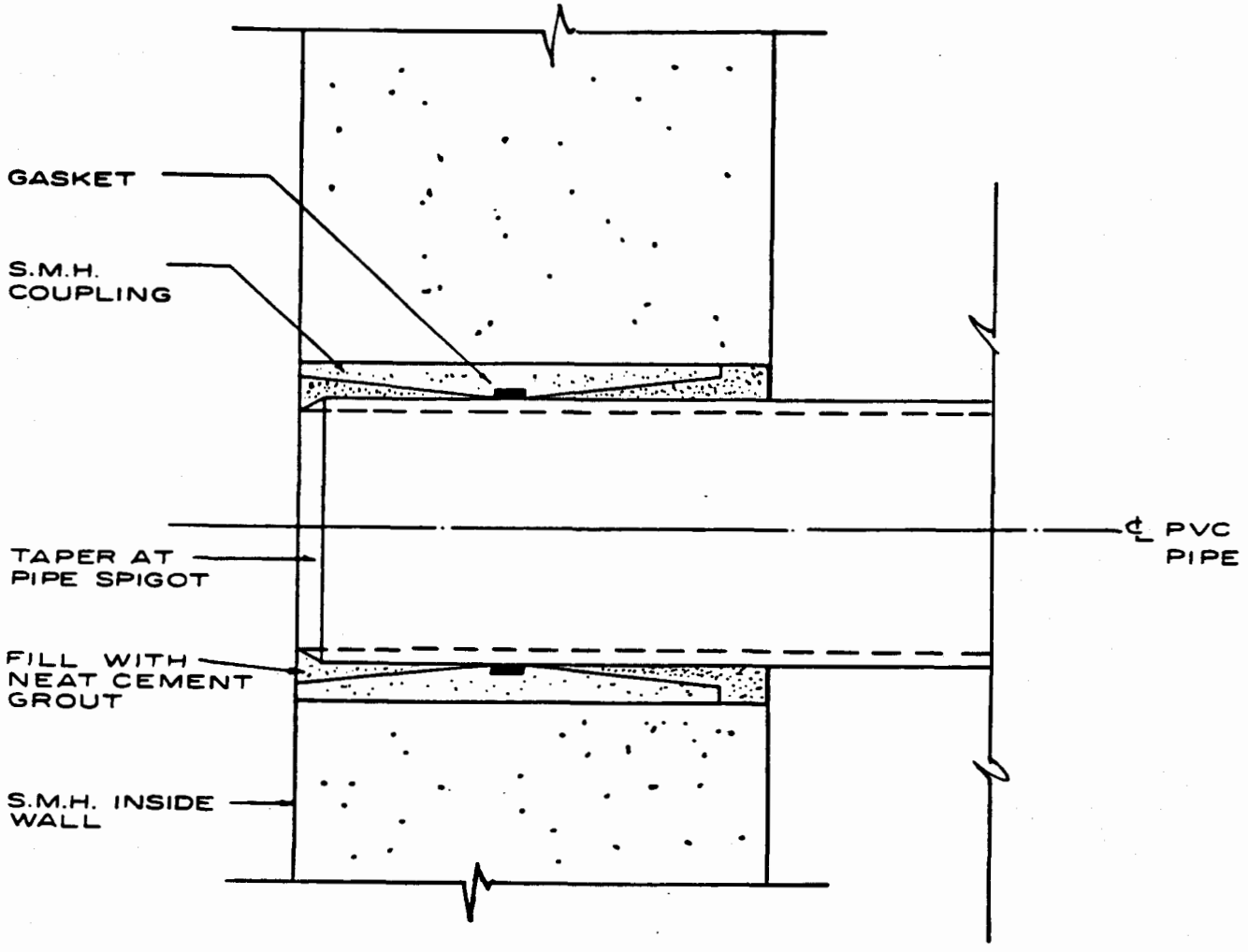
SECTION A - A

NOTE:
For curb returns use 1' - 6" pre-cast concrete curbs.

PRE-CAST CONCRETE CURB

COUNTY OF KAUAI CITY & COUNTY OF HONOLULU COUNTY OF MAUI COUNTY OF HAWAII	PRE-CAST CONCRETE CURB SCALE: 1-1/2" = 1'-0" SEPTEMBER 1984	STANDARD DETAILS	R-1

ATTACHMENT 8



SECTION THRU MANHOLE WALL

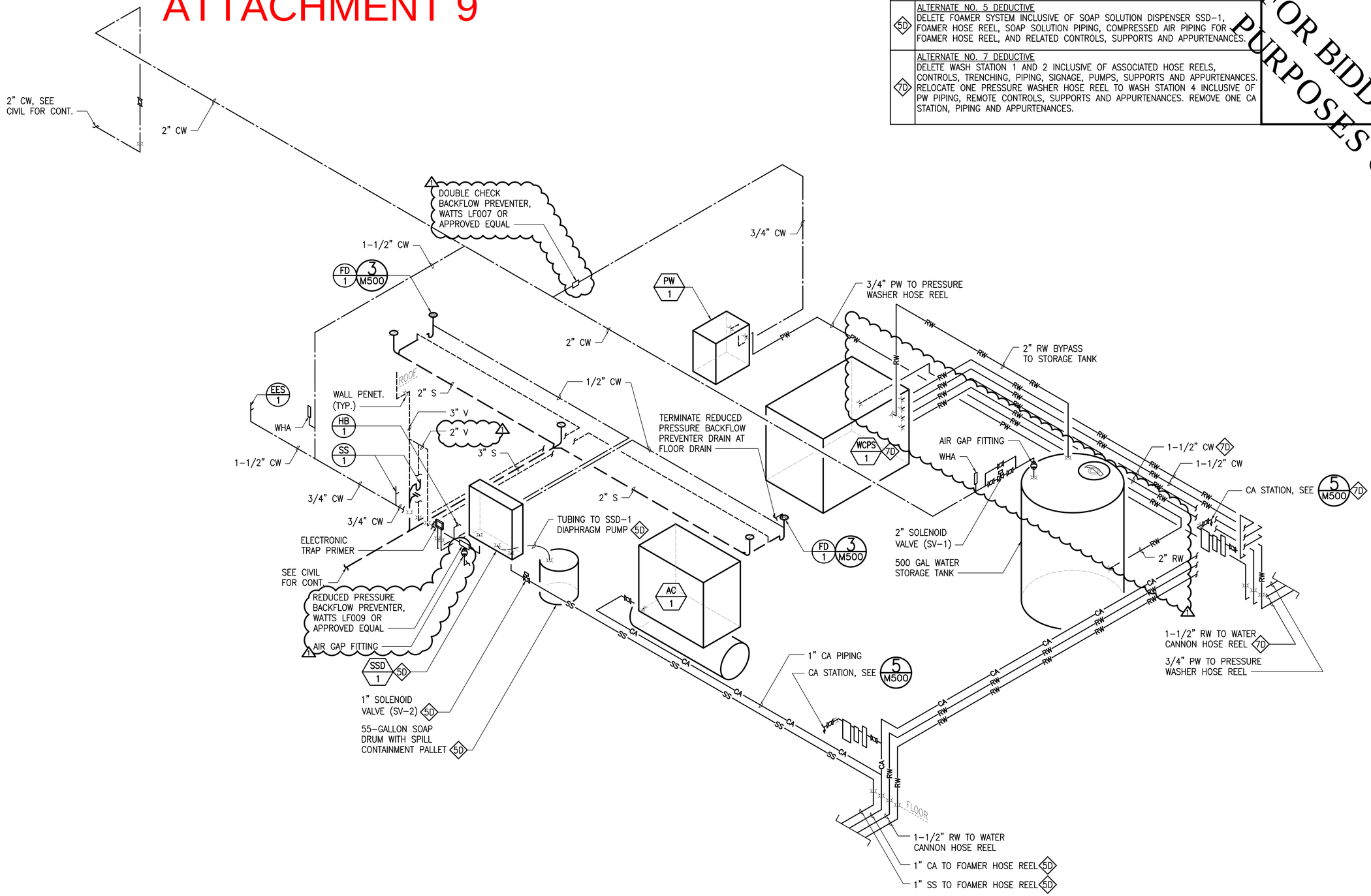
S-48	STANDARD DETAILS	PVC PIPE - RESILIENT MANHOLE CONNECTION SEPTEMBER 1984 NOT TO SCALE	COUNTY OF KAUAI CITY & COUNTY OF HONOLULU COUNTY OF MAUI COUNTY OF HAWAII

ATTACHMENT 9

FOR BIDDING PURPOSES ONLY

BID ALTERNATE KEYNOTES

5D	ALTERNATE NO. 5 DEDUCTIVE DELETE FOAMER SYSTEM INCLUSIVE OF SOAP SOLUTION DISPENSER SSD-1, FOAMER HOSE REEL, SOAP SOLUTION PIPING, COMPRESSED AIR PIPING FOR FOAMER HOSE REEL, AND RELATED CONTROLS, SUPPORTS AND APPURTENANCES.
7D	ALTERNATE NO. 7 DEDUCTIVE DELETE WASH STATION 1 AND 2 INCLUSIVE OF ASSOCIATED HOSE REELS, CONTROLS, TRENCHING, PIPING, SIGNAGE, PUMPS, SUPPORTS AND APPURTENANCES. RELOCATE ONE PRESSURE WASHER HOSE REEL TO WASH STATION 4 INCLUSIVE OF PW PIPING, REMOTE CONTROLS, SUPPORTS AND APPURTENANCES. REMOVE ONE CA STATION, PIPING AND APPURTENANCES.



1 M402 EQUIPMENT ROOM PIPING DIAGRAM
NOT TO SCALE

HAWAII ARMY NATIONAL GUARD

Okahara and Associates Inc.
CONSULTING ENGINEERS

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

SIGNATURE — LICENSE EXPIRES 4/30/2020

SYM	DESCRIPTION	DATE	APPR
1	BLDG PERMIT REVISIONS	5/21/2020	

SUBMITTAL PHASE: BID SET
SUBMITTAL DATE: 03/23/2020
DES KFC DRW KFC CHK ARP

DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

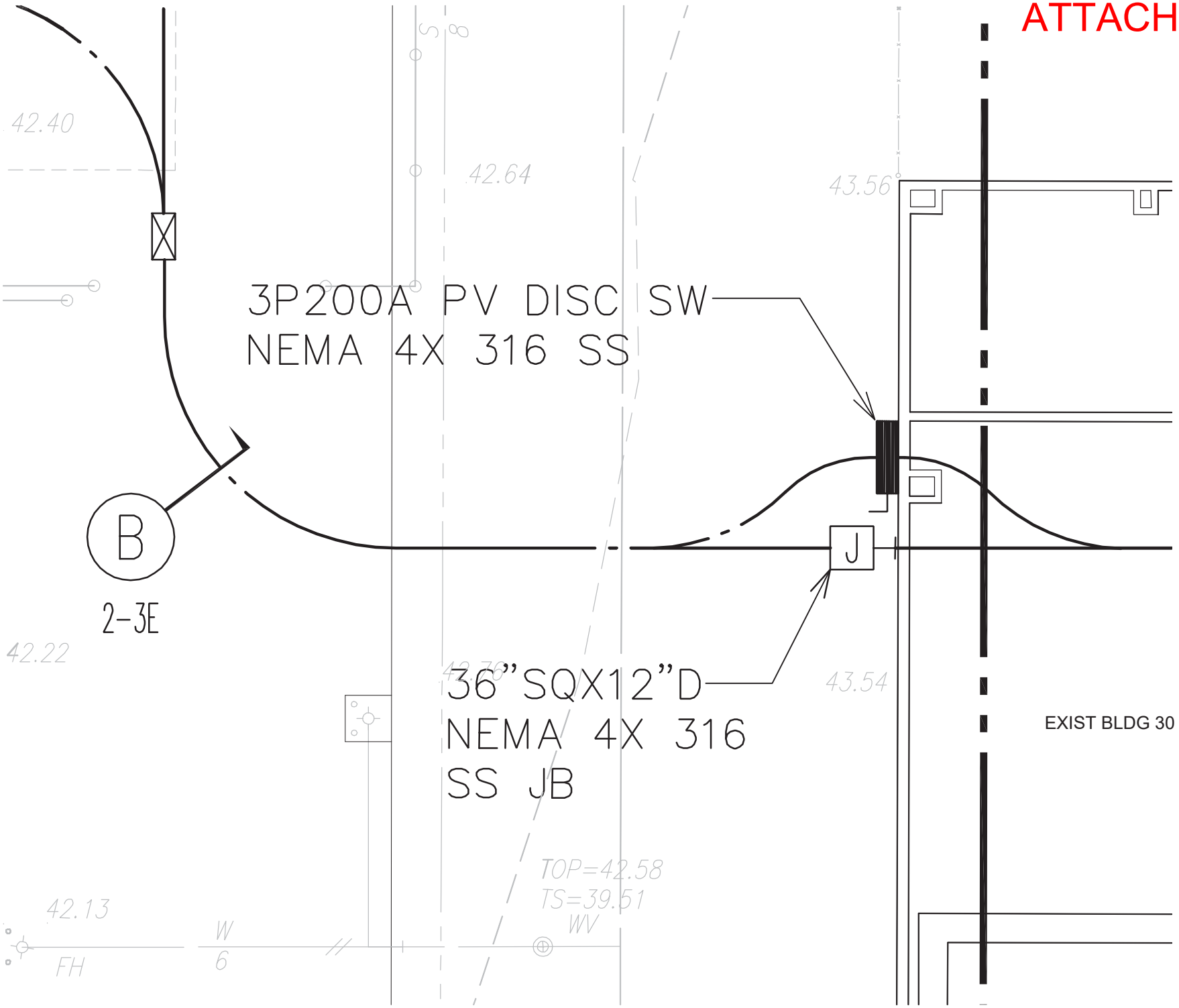
KALAELOA
OAHU

ARMY AVIATION
SUPPORT FACILITY BUILDING 30

EQUIPMENT ROOM PIPING DIAGRAM

SCALE: AS NOTED
STATE JOB NO. CA-1825-C
FEDERAL PROJECT NO. 15190024
SHEET 46 OF 57
M402

ATTACHMENT 10



INDEX TO DRAWINGS

SHEET NO.	DWG NO.	DESCRIPTION
1	001	TITLE SHEET, VICINITY MAP, ISLAND MAP, AND PROJECT SITE MAP
2	C001	DRAWING INDEX AND CONSTRUCTION NOTES
3	C002	CONSTRUCTION NOTES
4	C003	CONSTRUCTION NOTES
5	C004	GENERAL SITE PLAN
6	C005	BID ALTERNATES PLAN
7	C006	EXISTING CONDITIONS AND DEMOLITION PLAN
8	C100	SITE PLAN
9	C200	GRADING PLAN
10	C201	CROSS SECTIONS
11	C300	UTILITY PLAN
12	C301	UTILITY PROFILES
13	C400	DETAILS – 1
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15	C402	DETAILS – 3
16	C403	DETAILS – 4
17	C404	DETAILS – 5
18	C405	DETAILS – 6
19	C501	EROSION AND SEDIMENT CONTROL PLAN AND DETAILS CATEGORY 5
20	C502	EROSION AND SEDIMENT CONTROL NOTES
21	A001	GENERAL NOTES, DRAWING SYMBOLS, ARCHITECTURAL ABBREVIATIONS
22	A101	FLOOR PLAN
23	A102	REFLECTED CEILING PLAN
24	A103	ROOF PLAN
25	A201	EXTERIOR ELEVATIONS
26	A301	SECTIONS
27	A311	WALL SECTIONS
28	A511	DOOR DETAILS
29	A521	ROOF DETAILS
30	A601	DOOR & WINDOW SCHEDULE/TYPES
31	A611	FINISH & MOUNTING SCHEDULE
32	S100	STRUCTURAL GENERAL NOTES
33	S200	TYPICAL DETAILS
34	S201	COLD FORMED STEEL FRAMING TYPICAL DETAILS
35	S300	STRUCTURAL SITE PLAN
36	S400	BUILDING FOUNDATION AND ROOF FRAMING PLAN, SECTION
37	S500	CONCRETE DETAILS
38	S501	FRAMING DETAILS
39	S600	PHOTOVOLTAIC FRAME SECTION AND DETAILS
40	M100	MECHANICAL LEGEND, SCHEDULES AND NOTES
41	M200	MECHANICAL SITE PLAN – BASE BID
42	M201	MECHANICAL SITE PLAN – ALTERNATE DEDUCTIVES
43	M300	MECHANICAL EQUIPMENT ROOM PLAN AND WASH RACK RULES SIGN DETAIL
44	M400	WASH RACK SCHEMATIC DIAGRAM AND SEQUENCE OF OPERATION
45	M401	OIL WATER SEPARATOR PIPING DIAGRAM AND CONTROL PANEL ELEVATION
46	M402	EQUIPMENT ROOM PIPING DIAGRAM
47	M500	MECHANICAL DETAILS
48	E001	SYMBOL LIST, GENERAL NOTES
49	E101	DEMOLITION SITE LIGHTING PLAN
50	E201	ELECTRICAL SITE PLAN 1
51	E202	ELECTRICAL SITE PLAN 2
52	E301	NEW SITE LIGHTING PLAN
53	E401	EQUIPMENT BUILDING ELECTRICAL PLAN
54	E501	EQUIPMENT BUILDING LIGHTING PLAN
55	E601	ONE–LINE DIAGRAM
56	E602	LIGHT POLE DETAILS
57	E603	PANEL SCHEDULES, LIGHT FIXTURE SCHEDULE

COVID–19 NOTES:

1. DURING THE COVID–19 PANDEMIC, CONTRACTOR SHALL FOLLOW THE GUIDELINES THAT ARE PUT OUT BY THE STATE OF HAWAII.

GENERAL NOTES:

1. THE CONTRACTOR SHALL COMPLETE ALL REQUIREMENTS STATED IN THE CONTRACT.
2. THE CONTRACTOR'S NORMAL WORKING HOURS SHALL BE IN ACCORDANCE WITH TECHNICAL PROVISION SECTION 01310. NO WORK WILL BE PERFORMED ON STATE HOLIDAYS, AIRPORT EMERGENCIES, WEEKENDS, OR WHEN POOR WEATHER RESTRICTS CONSTRUCTION.
3. THE EXISTING TOPOGRAPHY AND LOCATIONS OF EXISTING AIRPORT LAYOUT AS SHOWN ON THE DRAWINGS ARE BASED TOPOGRAPHIC SURVEY PERFORMED BY CONTROLPOINT SURVEYING INC. THE CONTRACTOR IS RESPONSIBLE FOR VERIFICATION OF EXISTING CONDITIONS.
4. PRIOR TO STARTING ANY WORK, THE ENGINEER WILL DETERMINE IF ENVIRONMENTAL CONTROLS ARE NEEDED. NO WORK SHALL COMMENCE UNTIL THE ENGINEER'S WRITTEN AUTHORIZATION TO COMMENCE WORK IS RECEIVED. THE ENGINEER MAY REQUIRE WORK UNDER ENVIRONMENTAL CONTROLS AT ANY TIME DURING THE PROJECT, EVEN IF IT IS NOT REQUIRED PRIOR TO THE PERFORMANCE OF ANY WORK.
5. TO ENSURE PUBLIC AND WORKER SAFETY ON THIS PROJECT, THE STATE WILL NOT ALLOW ANY WORK TO COMMENCE UNTIL THE CONTRACTOR'S DETAILED PROJECT WORK SCHEDULE IS APPROVED BY THE STATE PROJECT MANAGER. SAID SCHEDULE SHALL PICTORIALLY SHOW THE WORK AREA(S) FOR EACH WORKDAY. THE CONTRACTOR SHALL KEEP ALL PERSONNEL AND EQUIPMENT UNDER ITS JURISDICTION WITHIN THE WORK AREA(S) AND ASSIGNED AIRPORT OPERATIONS AREA (AOA) TRAVEL ROUTE(S).
6. THE CONTRACTOR SHALL STAGE THEIR EQUIPMENT ONLY AT STATE DESIGNATED LOCATIONS AND SHALL COMPLY WITH ALL ASSOCIATED REQUIREMENTS. THE STAGING AREA(S) WILL BE DETERMINED BY THE AIRPORT OPERATION DISTRICT OFFICE.
7. THE CONTRACTOR SHALL ONLY ENTER AND EXIT THE AOA THROUGH STATE ASSIGNED GATES.
8. THE CONTRACTOR MAY NOT USE TEMPORARY AIR OPERATIONS AREA (AOA) BADGES/PERMITS. THESE ITEMS WILL ONLY BE ISSUED BY THE STATE DURING STATE EMERGENCIES.
9. THE CONTRACTOR SHALL CLEAN UP MATERIAL SPILLS AT THE END OF EACH WORK DAY AND/OR WHENEVER THEY OCCUR AND SHALL ONLY DISCARD EXCESS ASPHALT CONCRETE AT AREAS DESIGNATED BY THE STATE.
10. THE CONSTRUCTION STAGING AND MATERIAL STOCKPILING AREAS WILL BE DETERMINED BY THE AIRPORT OPERATIONAL MANAGER.
11. WORK TO BE DONE IN THE INTERSECTION AREAS, INCLUDING RUNWAYS AND TAXIWAYS, MAY BE SCHEDULED ON THE WEEKEND WITHOUT ADDITIONAL COST TO THE AIRPORTS DIVISION AND HIARNG.
12. THE CONTRACTOR SHALL OPERATE BOTH A POWER BROOM AND VACUUM SWEEPER AT ALL TIMES TO ENSURE THAT THE AOA REMAINS FOD FREE.
13. THE RUNWAY AND TAXIWAY LIGHTS SHOULD BE SWITCHED OFF WHEN WORK IS OCCURRING OR WHEN NOT IN USE.
14. THE CONTRACTOR SHALL HAVE AT LEAST TWO (2) PEOPLE ON THE AOA POSSESSING AND CONTINUOUSLY MONITORING THE FOLLOWING FULLY CHARGED COMMUNICATION DEVICES:
    1. A TWO–WAY RADIO CAPABLE OF COMMUNICATING ON APPLICABLE FREQUENCIES; AND
    2. A CELLULAR TELEPHONE, WITH A LISTING OF ALL REQUIRED EMERGENCY CONTACT NUMBERS.
15. CONTRACTOR SHALL RE–PLANT AND PROVIDE IRRIGATION AND MAINTENANCE OF ANY DISTURBED PLANTINGS/LANDSCAPING FOR A PERIOD OF 90 CALENDAR DAYS OR UNTIL VEGETATION TAKES ROOT, WHICHEVER IS SHORTER.
16. THE CONTRACTOR IS RESPONSIBLE FOR JOBSITE ADMINISTRATION. PROVIDE A COMPETENT SUPERINTENDENT ON THE JOB AND PROVIDE AN ADEQUATE STAFF TO EXECUTE THE WORK. THE SUPERINTENDENT SHALL HAVE AT LEAST FIVE (5) YEARS OF CONSTRUCTION AND PROJECT MANAGEMENT EXPERIENCE.
17. CONTRACTOR SHALL COORDINATE WITH HIARNG TO DEVELOP A PLAN TO PREVENT FOREIGN OBJECT DEBRIS (FOD) FROM ENTERING AIRFIELD. (1)

PAINTING NOTES:

1. THE FINISH GRADE OF THE RESURFACE AREA WILL BE PENDING ON CONTRACTOR'S VERIFICATION OF EXISTING FIELD CONDITIONS.
2. BEFORE THE END OF EACH WORKDAY, THE CONTRACTOR SHALL PAINT EITHER TEMPORARY OR PERMANENT PAVEMENT MARKINGS, AS DIRECTED BY THE ENGINEER, WITHIN THE WORK AREA WHERE THE ORIGINAL PAVEMENT MARKINGS WERE REMOVED DUE TO THE UTILITY WORK.
3. ALL PAVEMENT MARKINGS TO BE PAINTED ACCORDING TO THE CONTRACT SHALL BE LAID OUT BY A LICENSED SURVEYOR WITH SUFFICIENT REFERENCE POINTS. DETAILS FOR NEW PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH FAA ADVISORY CIRCULAR (AC) 150/5340–1K, "STANDARDS FOR AIRPORT MARKING".
4. THE CONTRACTOR SHALL NOT DISCARD ANY EXCESS PAINT ON EXISTING PAVEMENT MARKINGS, INCLUDING PERFORMING TEST SPRAYS ON THE EXISTING MARKINGS, SPRAYING EXISTING MARKINGS TO CLEAN PAINT GUNS, AND PAINTING ADDED MARKING TO AVOID REQUIRED PAINT CLEAN UP. THE CONTRACTOR SHALL POSSESS TRAPS FOR EXCESS SPRAYING AND TEST SPRAY, AND A WATERPROOF CONTAINER TO CAPTURE AND HOLD ALL PAINTING WASH WATER. ALL WASH WATER SHALL BE PROPERLY HAULED AND DISPOSED OFF THE AIRPORT DAILY.
5. THE CONTRACTOR SHALL PERFORM THEIR CONTRACTED PAINTING WORK ON THE ASPHALT CONCRETE TEST SECTION(S), AND THE PAINTED PAVEMENT MARKING SPECIMENS WILL BE EVALUATED BY THE ENGINEER FOR CONFORMANCE TO THE CONTRACT REQUIREMENTS. NONCONFORMING PAINTING WORK WILL NOT BE ACCEPTED BY THE ENGINEER, AND THE TEST SECTION(S) WILL NOT BE ACCEPTED UNTIL PAINTING WORK CONFORMS TO THE CONTRACT REQUIREMENTS.

AC PAVEMENT NOTES:

1. THE CONTRACTOR SHALL COMPLETELY REPLACE PAVEMENT REMOVED BEFORE THE END OF EACH WORKDAY, INCLUDING CLEAN ALL WORK AREAS.
2. TO ENSURE THAT NO MILITARY AND COMMERCIAL AIRCRAFT SERVING THE MILITARY AND PUBLIC IS DAMAGED BY FOREIGN OBJECT DEBRIS; THE CONTRACTOR SHALL KEEP THE WORK AREAS, AOA TRAVEL ROUTE, AND ALL ADJACENT AREAS CLEAN AT ALL TIMES BY CONTINUOUSLY OPERATING A POWER BROOM AND AT LEAST TWO VACUUM SWEEPERS. IF THESE AREAS ARE NOT PROPERLY CLEANED, THE ENGINEER, MILITARY, OR AIRPORT MANAGER MAY REQUIRE REMEDIAL CLEANING AS STATED IN THE TECHNICAL PROVISIONS.
3. THE CONTRACTOR SHALL SCHEDULE THEIR WORK TO COMPLETE FULL PAVING WIDTH WITHIN EACH WORK AREA TO PRODUCE HOT LONGITUDINAL JOINTS.
4. SAW CUTTING OPERATIONS MAY BE CONTINUOUS, EXCEPT WHEN PERFORMING WORK ON THE TEST SECTION. SAW CUT SHALL BE STRAIGHT, VERTICAL, AND TO A MINIMUM DEPTH OF THREE (3) INCHES. TACK COAT SHALL BE APPLIED TO SAWED CUT FACE PER TECHNICAL SPECIFICATION SECTION 02513.
5. THE CONTRACTOR SHALL CHIP EXCAVATION CORNERS STRAIGHT AND VERTICAL.
6. THE CONTRACTOR IS FULLY RESPONSIBLE TO ENSURE THAT ALL EXPOSED SURFACES TO RECEIVE NEW ASPHALT CONCRETE ARE FREE FROM DUST, DEBRIS, AND POTENTIAL SLIP PLANES.
7. PRIOR TO STARTING FULL PAVEMENT REPAIR OPERATIONS, THE CONTRACTOR SHALL CONSTRUCT TEST SECTION(S) OVER A MINIMUM OF FORTY–EIGHT–HOUR (48–HOUR) PERIOD. THE CONTRACTOR SHALL ALSO WAIT A MINIMUM FIVE (5) ADDITIONAL WORKDAYS THEREAFTER FOR THE STATE TO ACCEPT THE TEST SECTION(S). FULL PAVEMENT REPAIR OPERATIONS MAY ONLY COMMENCE AFTER RECEIPT OF THE STATE'S PROJECT MANAGER'S WRITTEN ACCEPTANCE.
8. ROLLING FRESHLY PLACED AC MIX SHALL BE DONE IN THE FOLLOWING ORDER:
    A. TRANSVERSE JOINTS,
    B. LONGITUDINAL JOINTS (WHEN ADJOINING A PREVIOUSLY PLACED LANE),
    C. INITIAL OR BREAKDOWN ROLLING,
    D. SECOND OR INTERMEDIATE ROLLING, AND
    E. FINISH ROLLING.

FOR BIDDING PURPOSES ONLY

ATTACHMENT 11

Okahara and Associates Inc.
CONSULTING ENGINEERS

CHARLES L. JURY
LICENSED PROFESSIONAL ENGINEER
NO. 13190–C
HAWAII USA

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS WORK IS NOT OBSERVED

SIGNATURE 4/30/2020 LICENSE EXPIRES

STM	DESCRIPTION	DATE	APPR
1	PRE–BID REVISIONS	5/21/2020	

SUBMITTAL PHASE: BID SET
SUBMITTAL DATE: 03/23/2020
DES. AHN | DRW AHN | CHK CLJ

DEPARTMENT OF DEFENSE
HAWAII ARMY NATIONAL GUARD
DESIGN AND PROJECT MANAGEMENT BRANCH
STATE OF HAWAII
FACILITY MANAGEMENT OFFICE

KALAELOA
OAHU

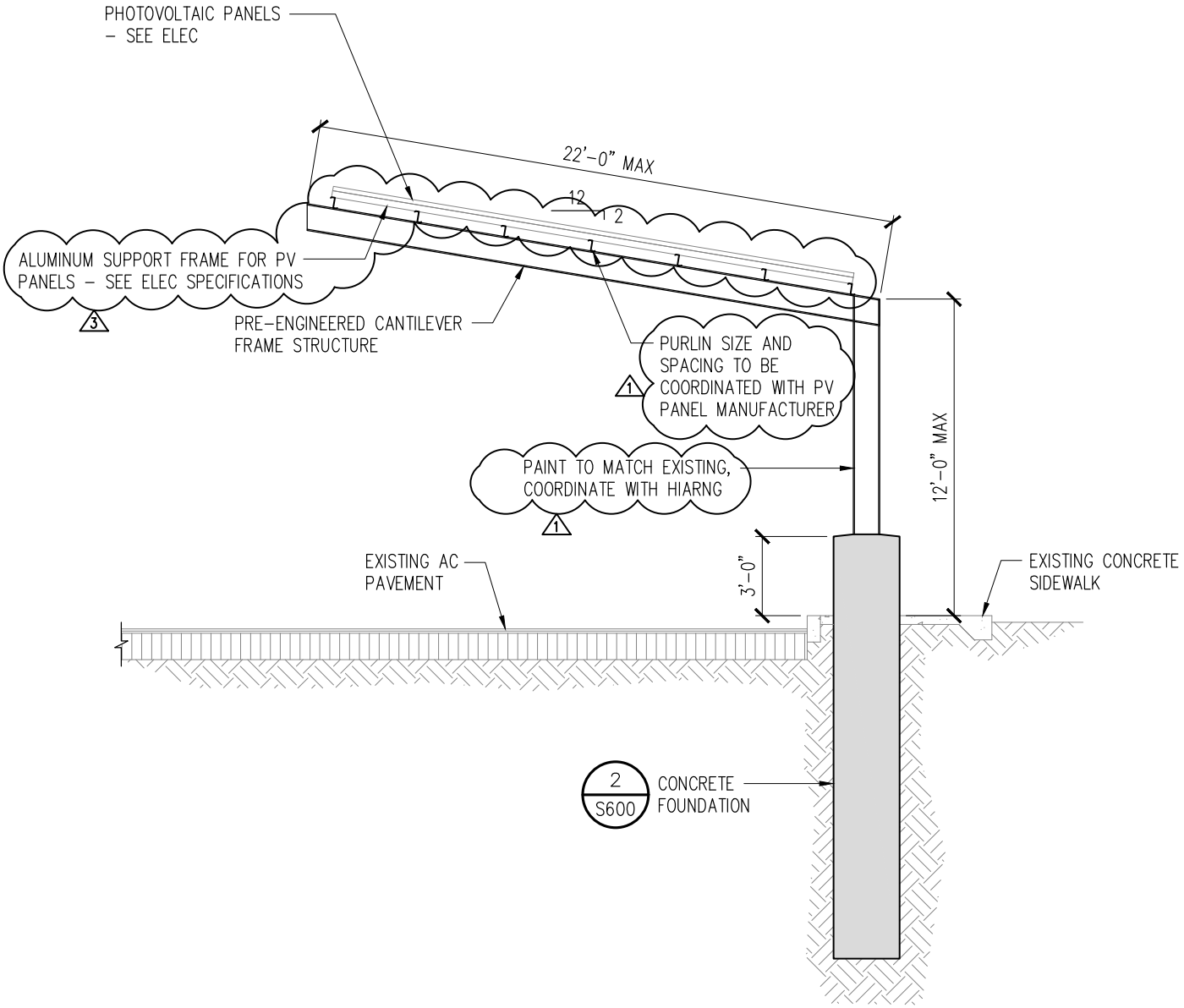
ARMY AVIATION
SUPPORT FACILITY BUILDING 30

DRAWING INDEX AND CONSTRUCTION NOTES

SCALE: AS NOTED
STATE JOB NO. CA–1825–C
FEDERAL PROJECT NO. 15190024
SHEET 2 OF 57
C001

ATTACHMENT 12

NOTE: PHOTOVOLTAIC STRUCTURE IS ADDITIVE. SEE ELECTRICAL FOR MODULES.



1 / S600 PHOTOVOLTAIC FRAME STUCTURE SECTION

SCALE: 1/4" = 1'–0"