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1250 N. PONTIAC TRAIL, WALLED LAKE, MI 48380  
WESTHEIMER, HOUSTON, TX 77042  
9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
622 EMERSON ROAD, ST. LOUIS, MO 63141  
60 PLATO BOULEVARD E. ST. PAUL, MN 55107  
ONE WEST THIRD STREET, TULSA, OK 74103

STATE OF HAWAII, DEPARTMENT OF DEFENSE  
HAWAII ARMY NATIONAL GUARD

# VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

91-1171 ENTERPRISE AVENUE, KAPOLEI, OAHU, 96707

LEIDOS PROJECT NO.: 314929  
CONTRACT NO.: FEDERAL: 15140032  
STATE: CA-1424-C

12 MAY, 2016



SIGN: *Albert E. Ketterer*  
DATE: 5/11/2016  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
EXPIRATION DATE OF LICENSE: 4/30/2018

SYM	DESCRIPTION	DATE	APPR.
0	BID PACKAGE FINAL	12/05/2016	AKG

SUBMITTAL PHASE: BID PACKAGE FINAL

SUBMITTAL DATE: 12/05/2016

DES: AKG DRW: AKG CHK: AKG

STATE OF HAWAII  
FACILITY MANAGEMENT OFFICE  
91-1171 ENTERPRISE AVENUE  
KAPOLEI, HI 96707  
VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
TMK: 91013045

DEPARTMENT OF DEFENSE  
FACILITIES DESIGN & PROJECT BRANCH  
KAPOLEI, HI 96707

SCALE:

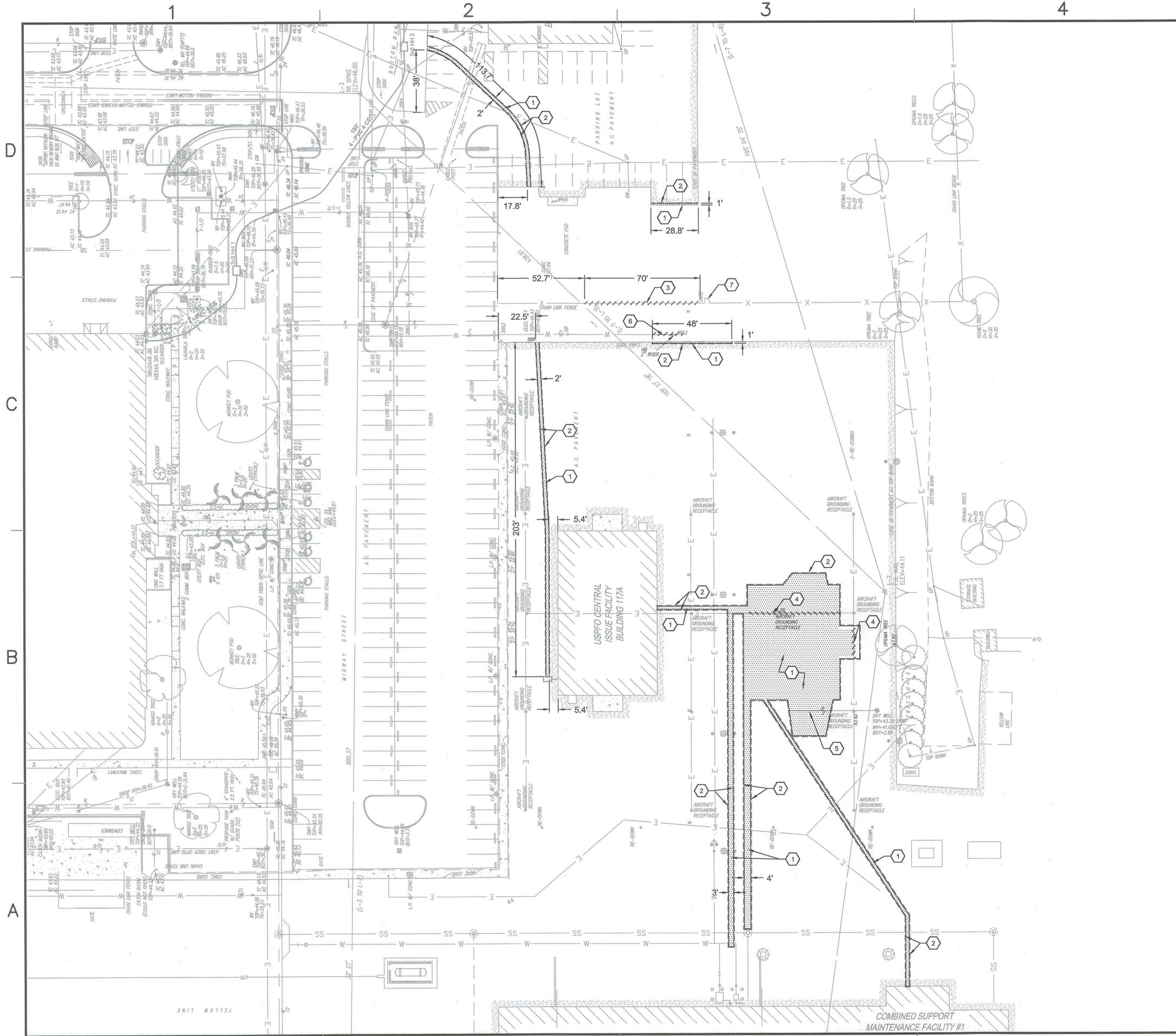
STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140032

SHEET OF

001



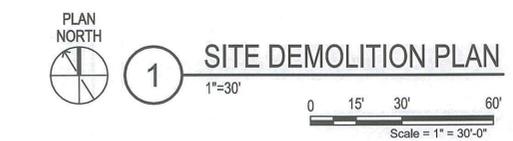


**SHEET NOTES:**

- UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN. BEFORE STARTING ANY WORK, LOCATE AND PROTECT ALL EXISTING BURIED UTILITY LINES, WHETHER OR NOT SHOWN ON THESE DRAWINGS, DURING THE COURSE OF CONSTRUCTION.
- COORDINATE ALL SITE DEMOLITION WITH PROPOSED SITE IMPROVEMENTS, NEW UNDERGROUND UTILITIES.
- SAWCUT PAVEMENTS TO FULL DEPTH PRIOR TO REMOVAL OR REMOVE TO NEAREST PAVEMENT JOINT.

**KEYED NOTES:** ○

- ASPHALT PAVEMENT TO BE REMOVED
- SAWCUT PAVEMENT
- 96" HIGH SECURITY FENCE TO BE REMOVED
- AIRCRAFT GROUNDING RECEPTACLE & CONDUIT TO BE REMOVED (VERIFY EXISTENCE)
- UNDERGROUND DRAINAGE PIPE FROM DRY WELL TO BE USED IN PLACE (VERIFY EXISTENCE)
- WATER LINE & HOSE BID TO BE REMOVED (VERIFY EXISTENCE)
- EXISTING GATE USE IN PLACE



1285 N. PONTIAC TRAIL, WALLED LAKE, MI 48390  
 WESTHEIMER HOUSTON, TX 77068  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 825 EMERSON ROAD, ST. LOUIS, MO 63141  
 80 PLATO BOULEVARD, ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



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SYN	DESCRIPTION	DATE	APPR
0	BID PACKAGE FINAL	12/05/2016	AKG

DES	MJS	DRW	PMG	CHK	AKG
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STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, KAPOLEI, OAHU, HAWAII  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 TMK: 91013045  
 CIVIL DEMOLITION PLAN

SCALE:	1"=30'
STATE JOB NO.:	CA-1424-C
FEDERAL PROJECT NO.:	15140032
SHEET	OF
<b>CD100</b>	

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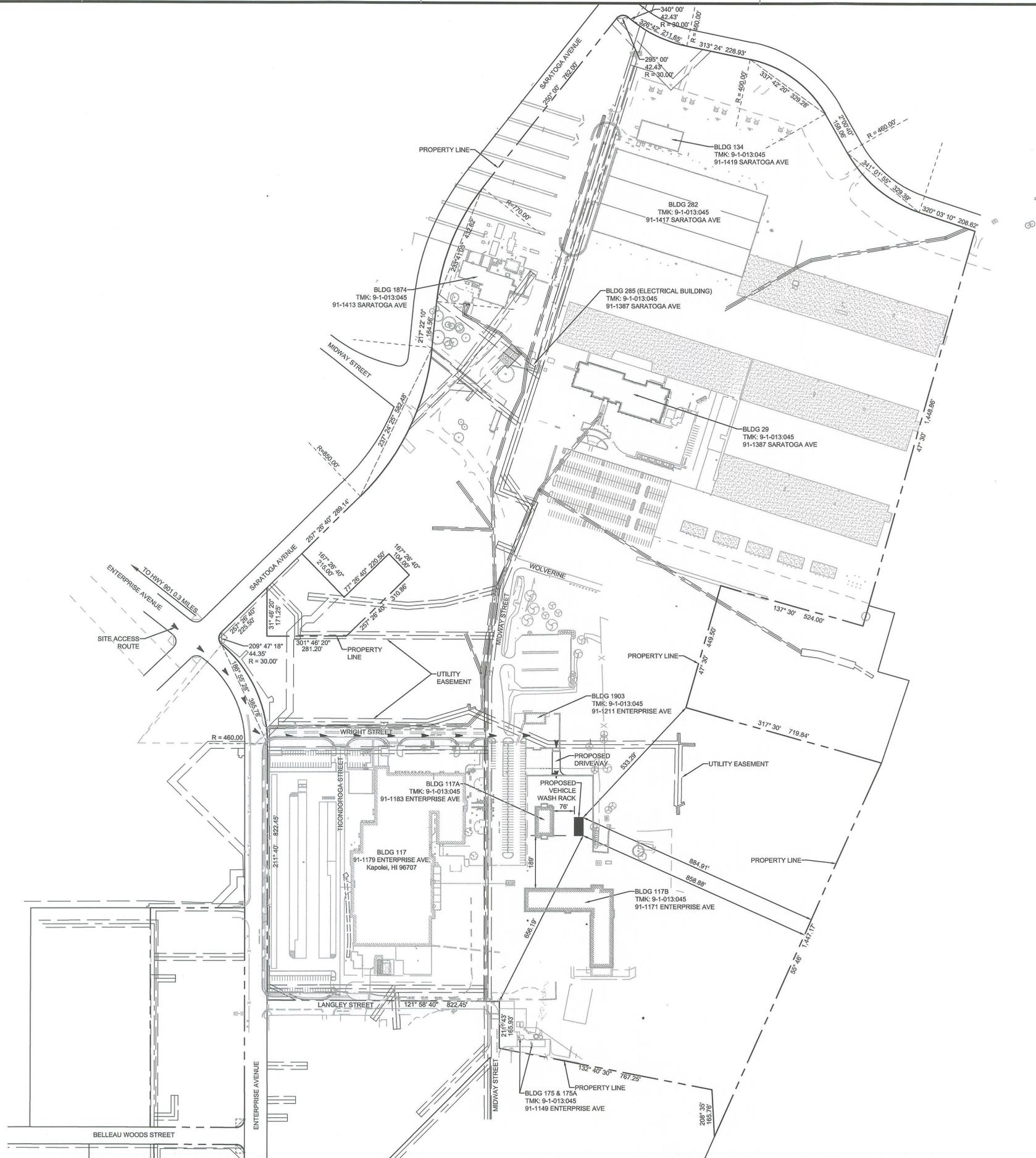
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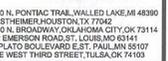
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**PROJECT INFORMATION:**

PROJECT: VEHICLE WASH RACK AT BUILDING 117B  
 OWNER: DEPARTMENT OF DEFENSE (DOD), STATE OF HAWAII  
 STREET ADDRESS: DOD-91-1171 ENTERPRISE AVENUE (CA-1424-D)  
 T.M.K. NUMBER: 91013045  
 SITE LOCATION: 91-1367 SARATOGA AVENUE, KAPOLEI 96707  
 LOT AREA: 138.165 ACRES  
 FLOOD ZONE: ZONE "D"  
 BUILDING PERMIT APPLICATION: A2016-01-1014



1250 N. PONTIAC TRAIL, WALLED LAKE, WA 98090  
 WESTHEIMER-HOUSTON, TX 77062  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 65 PLATO BOULEVARD, EFT. FALL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



*Michael J. Smith*  
 5/12/2016  
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SYMBOL	DESCRIPTION	DATE	AKG	APPR
0	BID PACKAGE FINAL	12/05/2016	AKG	APPR

DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, KAPOLEI, OAHU, HAWAII

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 T.M.K. 91013045

CIVIL SITE PLOT PLAN

STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE

SCALE: 1" = 200'

STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140032

SHEET OF

C-100



**SITE PLOT PLAN**

Scale: 1" = 200'



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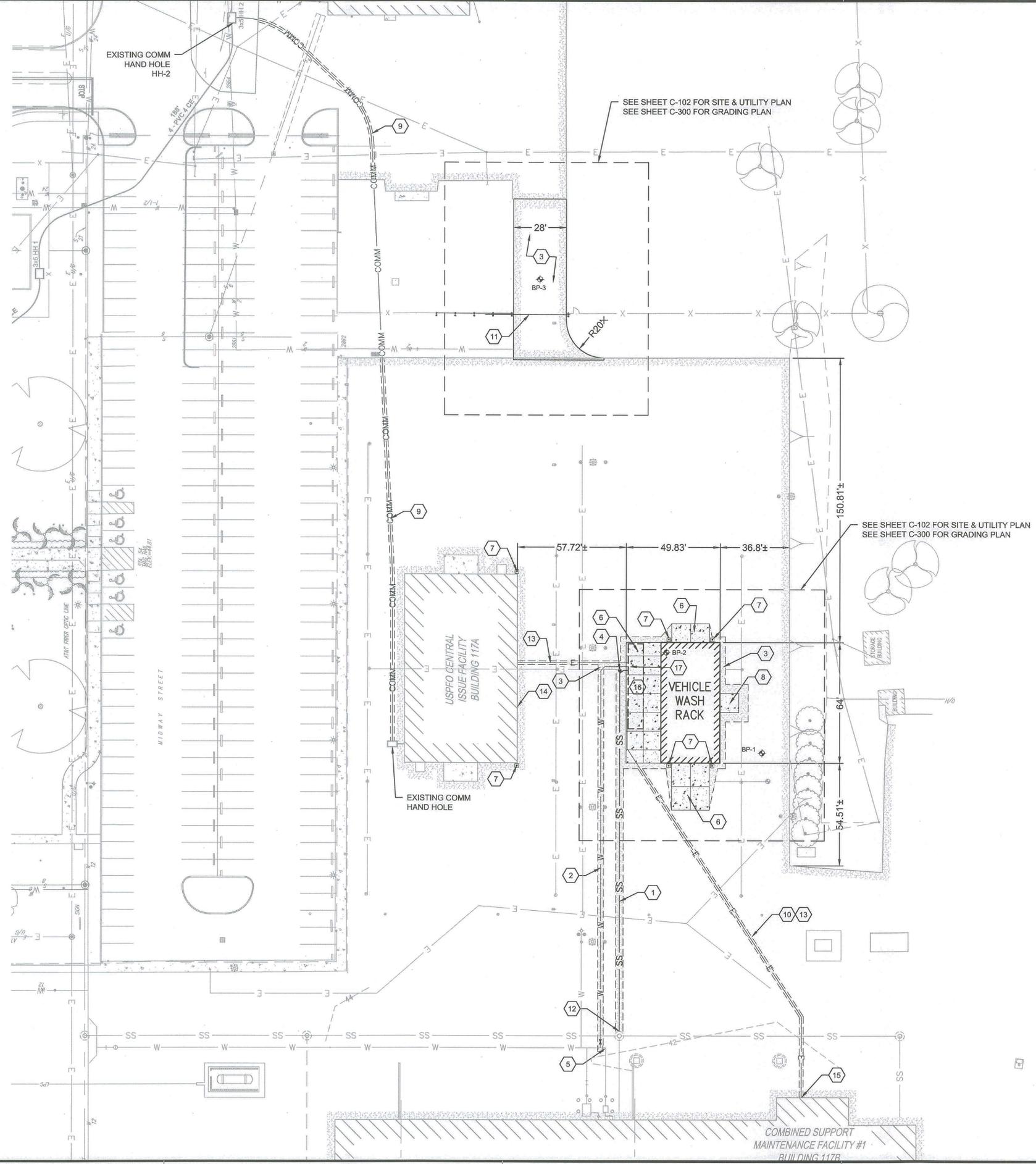
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**SHEET NOTES:**

1. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS. THEREFORE, THEIR LOCATION MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS NOT PRESENTLY KNOWN. BEFORE STARTING ANY WORK, LOCATE AND PROTECT ALL EXISTING BURIED UTILITY LINES, WHETHER OR NOT SHOWN ON THESE DRAWINGS, DURING THE COURSE OF CONSTRUCTION.
2. COORDINATE ALL SITE DEMOLITION WITH PROPOSED SITE IMPROVEMENTS, NEW UNDERGROUND UTILITIES.
3. SAWCUT PAVEMENTS TO FULL DEPTH PRIOR TO REMOVAL OR REMOVE TO NEAREST PAVEMENT JOINT.
4. KEYED NOTES DESIGNATED WITH "ABI" ARE PART OF AN ALTERNATE BID ITEM.

**KEYED NOTES:**

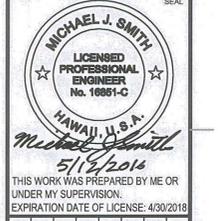
1. 4" SANITARY LATERAL
2. 1" WATERLINE
3. ASPHALT PAVEMENT
4. SANITARY SEWER CLEANOUT
5. WATERLINE CONNECTION
6. CONCRETE PAVEMENT
7. BOLLARD
8. DUMPSTER PAD
9. COMMUNICATIONS DUCT BANK (2X1) (SEE ELECTRICAL DRAWING E-602)
10. ALTERNATE BID ITEM - ELECTRICAL DUCT BANK (2X2) (SEE ELECTRICAL PLANS)
11. CANTILEVERED SLIDE GATE
12. CONNECT SANITARY LATERAL TO EXISTING MANHOLE
13. ELECTRICAL DUCT BANK (1X2) (SEE ELECTRICAL PLANS)
14. STUB-UP TWO (2) 4" RGS CONDUITS UP TO 1'-6" A.F.G. AND CAP THE CONDUITS
15. SEE ELECTRICAL DRAWING E-102 FOR CONDUIT STUB-UP LOCATIONS AT ELECTRICAL ROOM E120.
16. 45' X 8' WASH RACK EQUIPMENT CONTAINER
17. CONTRACTOR TO COORDINATE LOCATION AND CONTINUATION OF UTILITY LINES WITH THE WASH RACK CONTAINER



**1** OVERALL SITE PLAN  
 1"=30'  
 0 15' 30' 60'  
 Scale = 1" = 30'



1250 N. PONTIAC TRAIL, WALLED LAKE, WA 98093  
 WESTMINSTER, COLORADO, CO 80031  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 625 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE	DESCRIPTION	APPR
12/05/2016 <td>BID PACKAGE FINAL <td>AKG </td></td>	BID PACKAGE FINAL <td>AKG </td>	AKG

SUBMITAL PHASE: BID PACKAGE FINAL  
 SUBMITAL DATE: 12/05/2016  
 DES: MJS DRW: PMG CHK: AKG

DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, KAPOLEI, OAHU, HAWAII  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
**VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI**  
 TMK: 91013045  
 CIVIL OVERALL SITE PLAN

SCALE: 1"=30'  
 STATE JOB NO. CA-1424-C  
 FEDERAL PROJECT NO. 15140032  
 SHEET OF  
**C-101**

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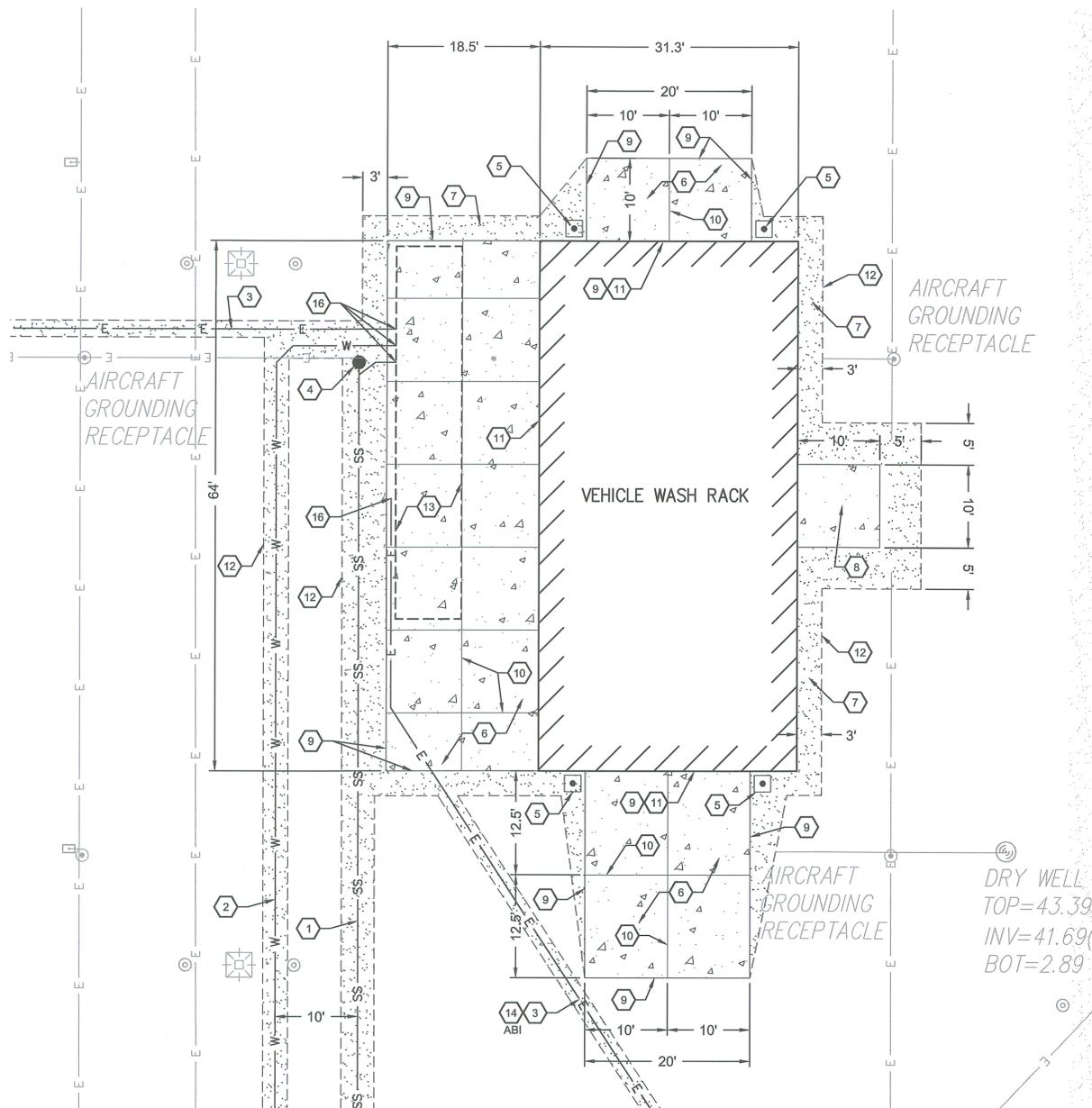
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C

B

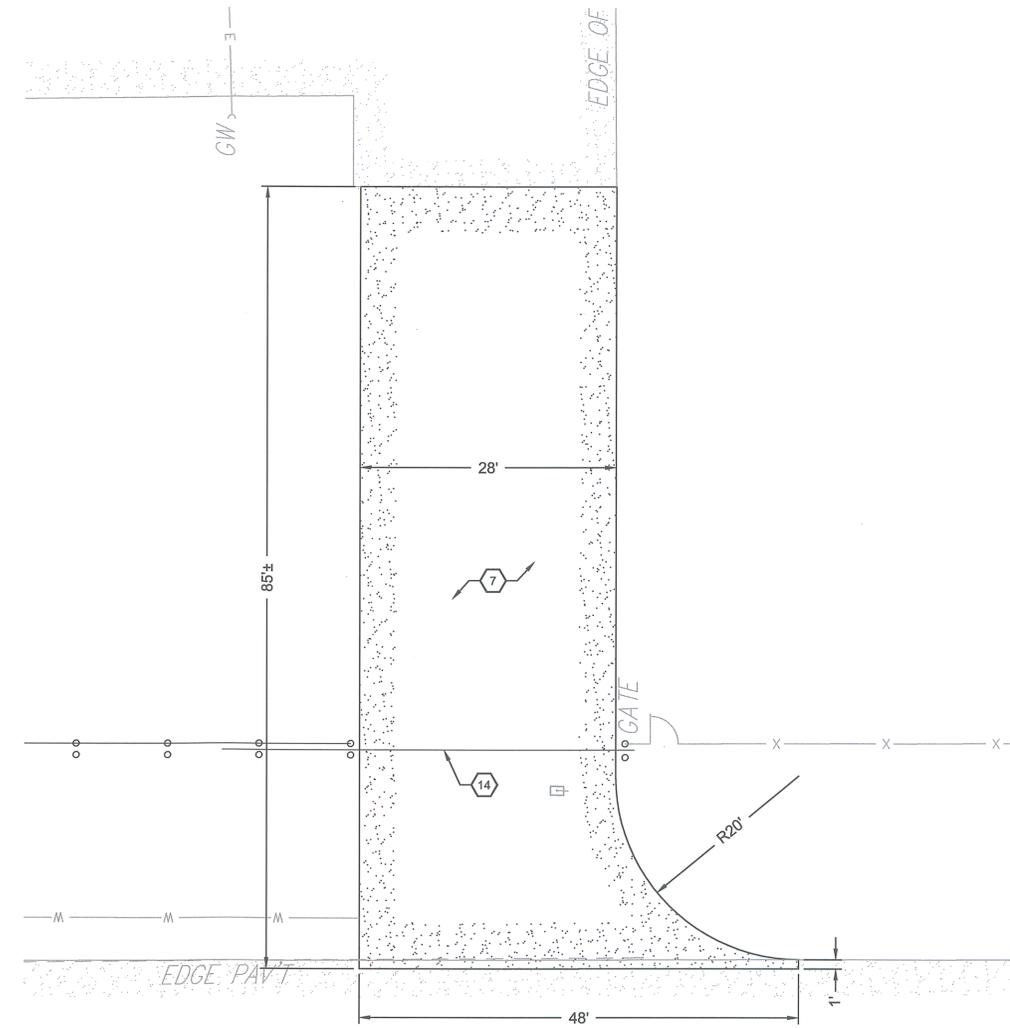
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1 WASH RACK SITE & UTILITY PLAN  
1"=10'

**KEYED NOTES:** ○

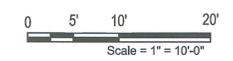
- 4" SANITARY LATERAL (TEMPORARILY CAPPED 12" ABOVE GRADE FOR ISO CONNECTION)
- 1" WATERLINE (TEMPORARILY CAPPED 12" ABOVE GRADE FOR ISO CONNECTION)
- ELECTRICAL DUCT BANK (1X2) (SEE ELECTRICAL PLANS)
- SANITARY SEWER CLEANOUT (SEE DETAIL 2 ON SHEET C-501)
- BOLLARD (SEE DETAIL 4 ON SHEET C-500)
- CONCRETE PAVEMENT (SEE DETAIL 3 ON SHEET C-500)
- ASPHALT PAVEMENT (SEE DETAIL 1 ON SHEET C-500)
- DUMPSTER PAD (SEE DETAIL 3 ON SHEET C-500)
- THICKENED EDGE (SEE DETAIL 7 ON SHEET C-500)
- CONTRACTION JOINT (SEE DETAIL 6 ON SHEET C-500)
- ISOLATION JOINT (SEE DETAIL 6 ON SHEET C-500)
- PAVEMENT SAWCUT
- 45' X 8' WASH RACK EQUIPMENT CONTAINER
- ALTERNATE BID ITEM - ELECTRICAL DUCT BANK (2X2) (SEE ELECTRICAL PLANS)
- CANTILEVERED SLIDE GATE (SEE DETAIL 5 ON SHEET C-500)
- CONTRACTOR TO COORDINATE LOCATION AND CONTINUATION OF UTILITY LINES WITH THE WASH RACK CONTAINER



2 ASPHALT DRIVE SITE PLAN  
1"=10'

**SHEET NOTES:**

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- KEYED NOTES DESIGNATED WITH "ABI" ARE PART OF AN ALTERNATE BID ITEM.



1200 N. PONTIAC TRAIL, WALLED LAKE, MI 48390  
 WESTHEIMER HOUSTON, TX 77042  
 860 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 822 EMERSON ROAD, ST. LOUIS, MO 63141  
 621 P.O. BOX, BULLHEAD CITY, OKLAHOMA CITY, OK 73117  
 ONE WEST THIRD STREET, TULSA, OK 74103



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 EXPIRATION DATE OF LICENSE: 4/30/2018

DATE	DESCRIPTION	SYM	APPR	AVG
12/05/2016	BID PACKAGE FINAL	0		

SUBMITAL PHASE: BID PACKAGE FINAL

SUBMITAL DATE: 12/05/2016

DES: MJS DRW: PMG CHK: AKG

DEPARTMENT OF DEFENSE  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, KAPOLEI, OAHU, HAWAII

HAWAII ARMY NATIONAL GUARD  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 TWMK: 91013045

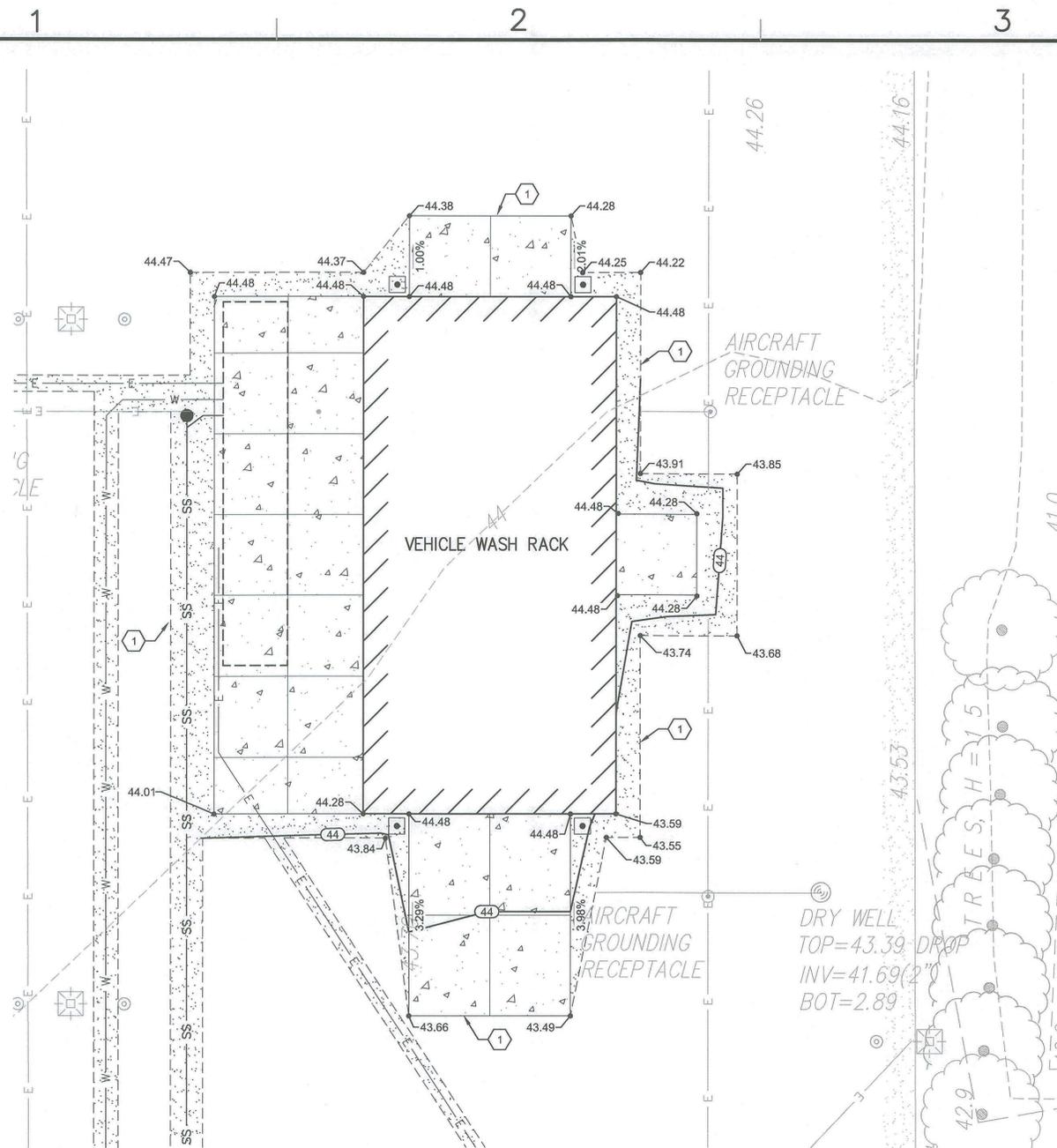
CIVIL SITE & UTILITY PLAN

SCALE: 1"=10'

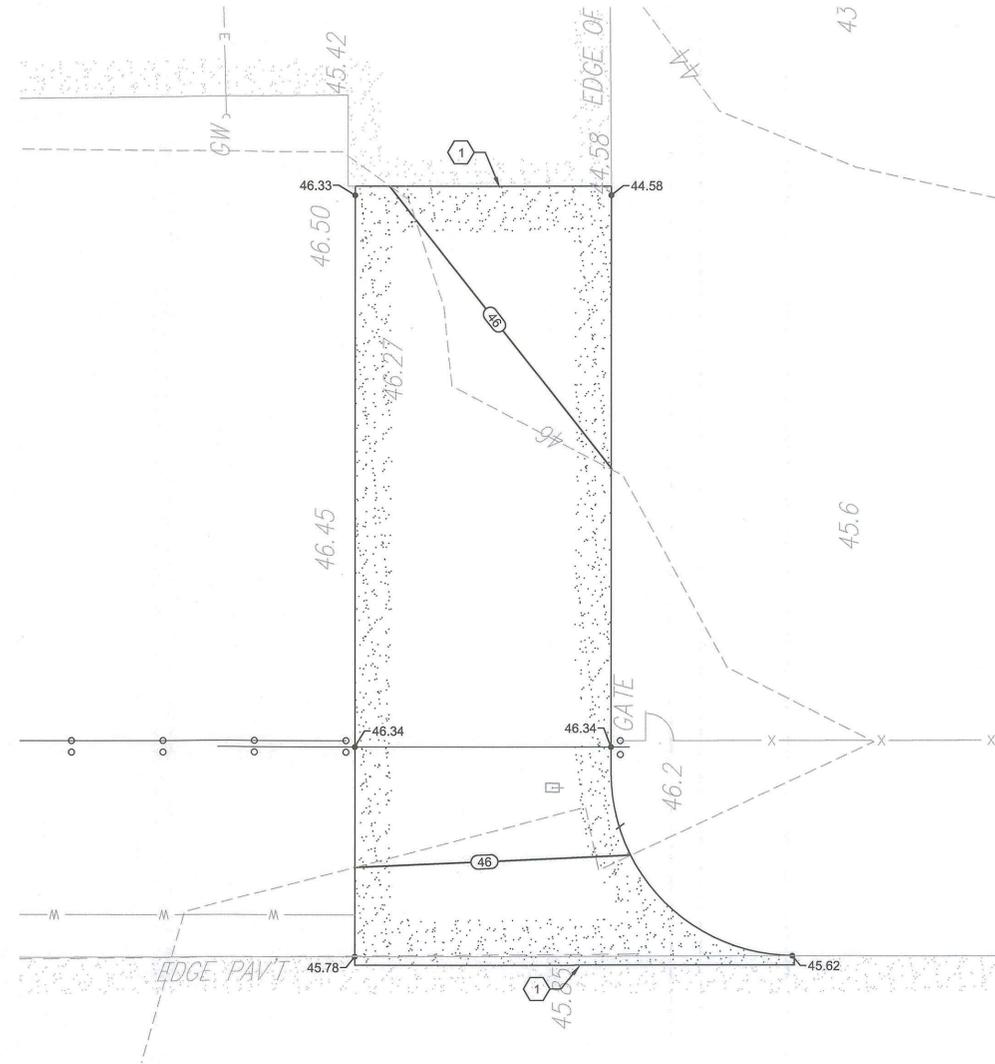
STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140032

SHEET OF C-102



PLAN NORTH  
**1** WASH RACK GRADING PLAN  
 1"=10'

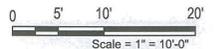


PLAN NORTH  
**2** ASPHALT DRIVE GRADING PLAN  
 1"=10'

**KEYED NOTES:**   
 1. MATCH EXISTING GRADE

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**leidos**  
 1250 N. PONTIAC TRAIL, WALLED LAKE, MI 48390  
 WESTHEIMER HOUSTON, TX 77062  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 802 EMERSON ROAD, ST. LOUIS, MO 63114  
 80 PLATO BOULEVARD, EAST PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



HAWAII, U.S.A.  
*Michael J. Smith*  
 5/16/2014  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 EXPIRATION DATE OF LICENSE: 4/30/2018

SYMBOL	DESCRIPTION	DATE	APPR.
0	BID PACKAGE FINAL	12/05/2016	AKG

SUBMITTAL PHASE  
**BID PACKAGE FINAL**

SUBMITTAL DATE  
 12/05/2016

DES: MJS | DRW: PMG | CHK: AKG

DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 DESIGN AND PROJECT MANAGEMENT BRANCH  
 KALAELOA, KAPOLEI, OAHU, HAWAII  
 91-1171 ENTERPRISE AVENUE  
**VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI**  
 TMK: 91013045  
 CIVIL GRADING PLAN

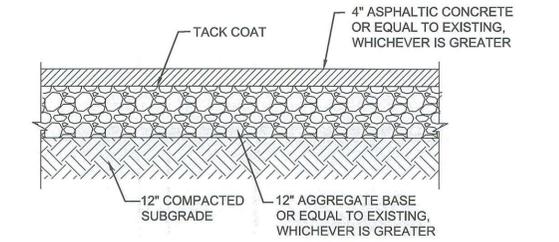
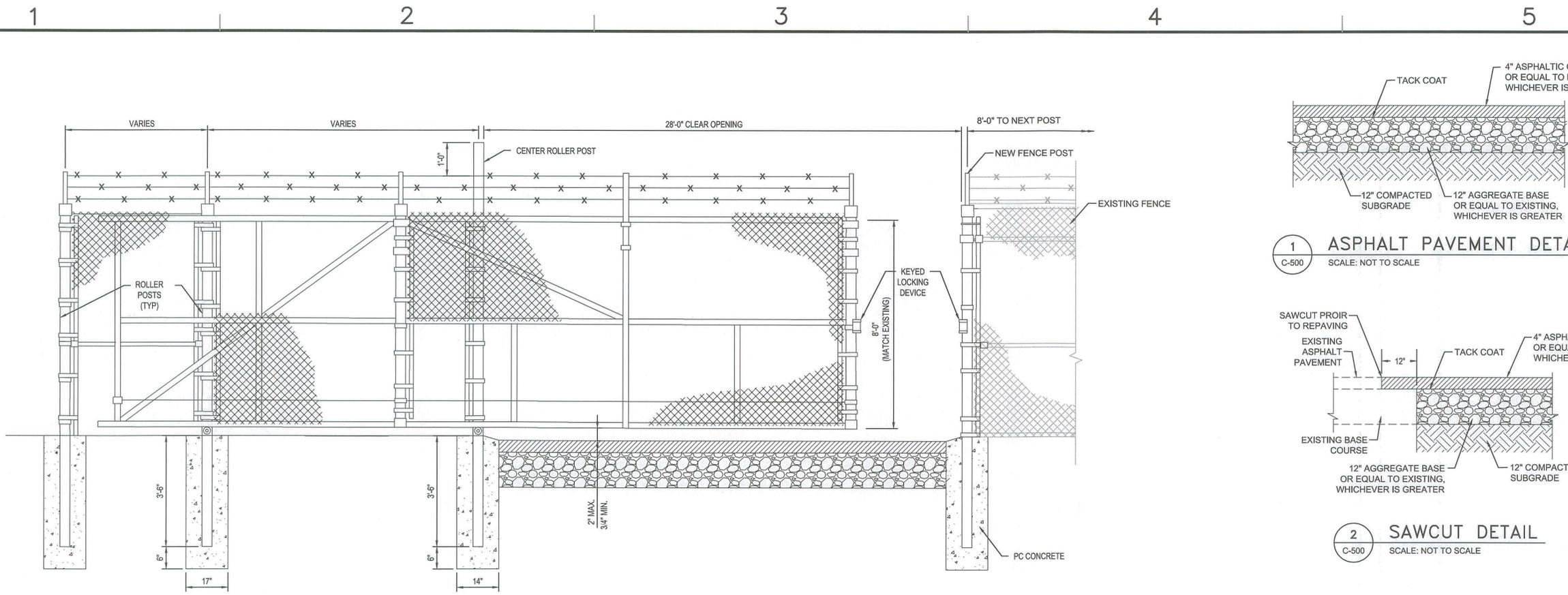
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STATE JOB NO. CA-1424-C

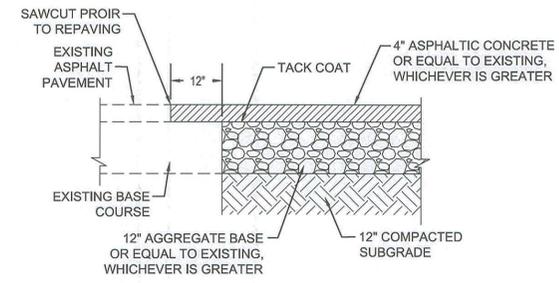
FEDERAL PROJECT NO. 15140032

SHEET OF

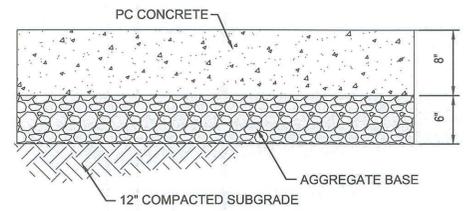
**C-300**



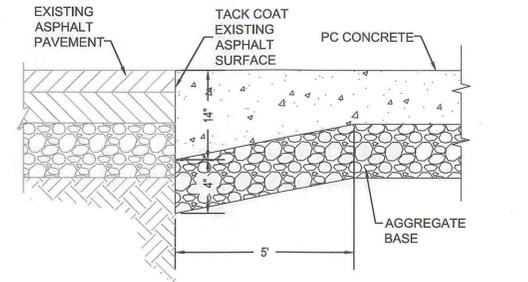
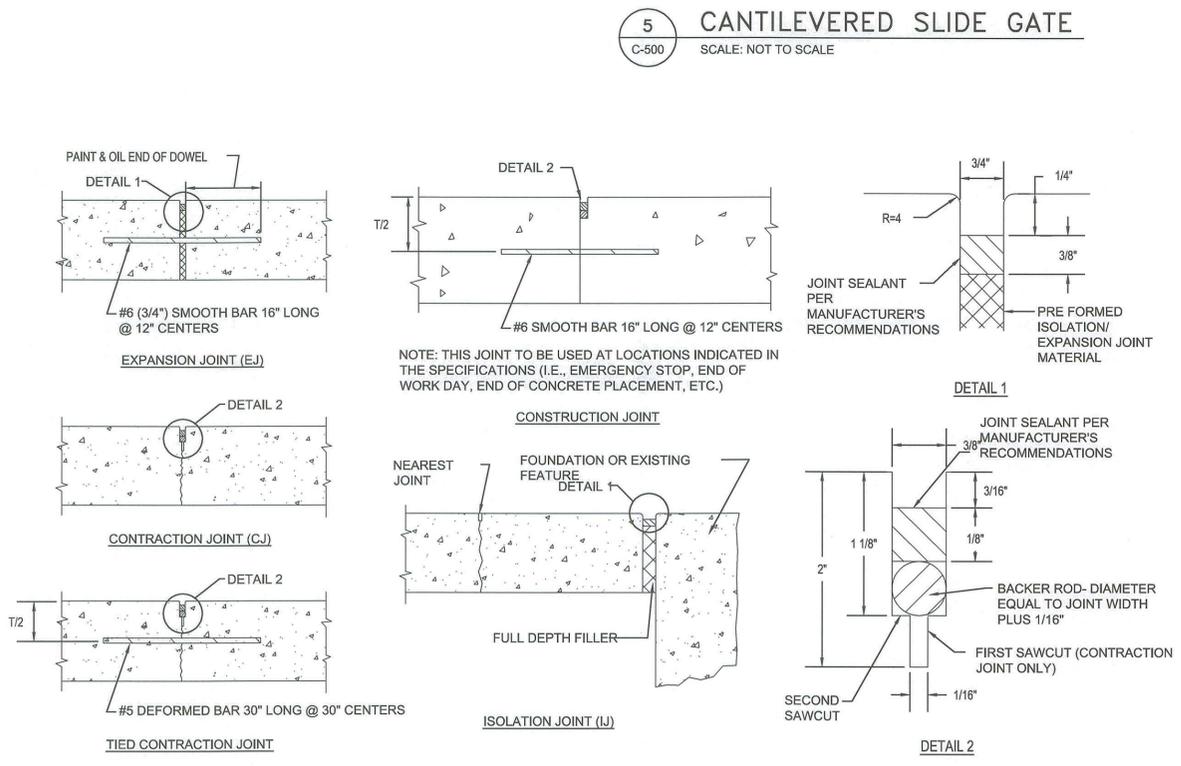
1 ASPHALT PAVEMENT DETAIL  
C-500 SCALE: NOT TO SCALE



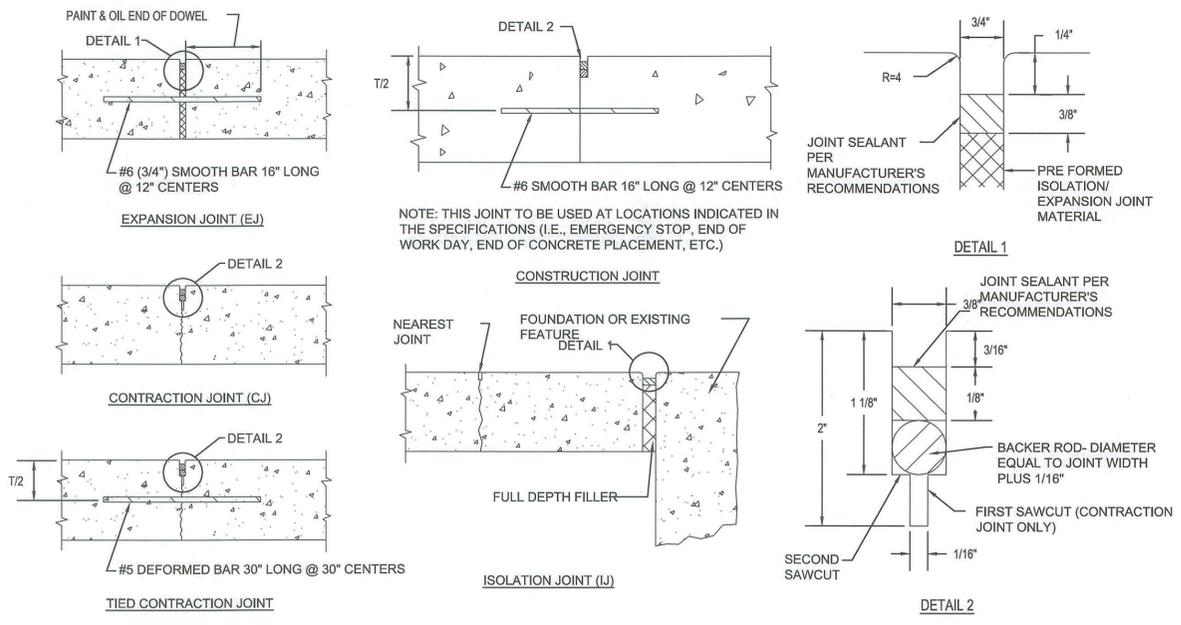
2 SAWCUT DETAIL  
C-500 SCALE: NOT TO SCALE



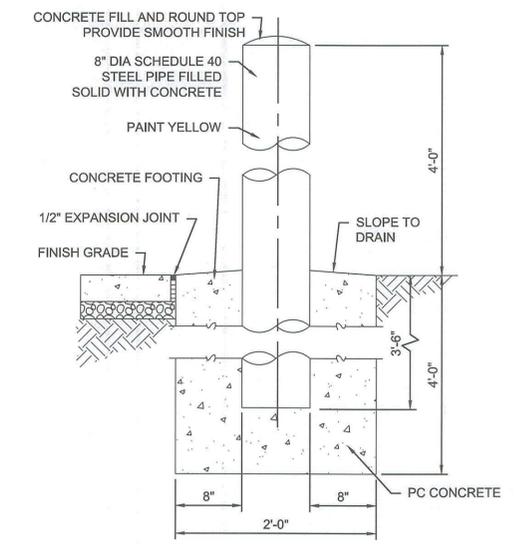
3 CONCRETE PAVEMENT DETAIL  
C-500 SCALE: NOT TO SCALE



7 TRANSITION - EXISTING ASPHALT TO CONCRETE SECTION  
C-500 SCALE: NOT TO SCALE



6 PAVEMENT JOINT DETAILS  
C-500 SCALE: NOT TO SCALE



4 BOLLARD DETAIL  
C-500 SCALE: NOT TO SCALE



1250 N. PONTIAC TRAIL, WALLED LAKE, MI 48390  
WESTHEIMER HOUSTON, TX 77042  
9403 N. BROADWAY, OKLAHOMA CITY, OK 73114  
822 EMERSON ROAD, ST. LOUIS, MO 63141  
62 PLATO BOULEVARD, EAST PAUL, TN 35047  
ONE WEST THIRD STREET, TULSA, OK 74103



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12/05/2016	AKG	0	BID PACKAGE FINAL

BID PACKAGE FINAL

SUBMITAL DATE: 12/05/2016

DES: MJS DRW: PMG CHK: AKG

DEPARTMENT OF DEFENSE  
DESIGN AND PROJECT MANAGEMENT BRANCH

HAWAII ARMY NATIONAL GUARD  
KALAELOA, KAPOLEI, OAHU, HAWAII

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

91-1171 ENTERPRISE AVENUE  
TMMK 91013045

CIVIL DETAILS

STATE OF HAWAII  
FACILITY MANAGEMENT OFFICE

SCALE: NOT TO SCALE

STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140032

SHEET OF C-500

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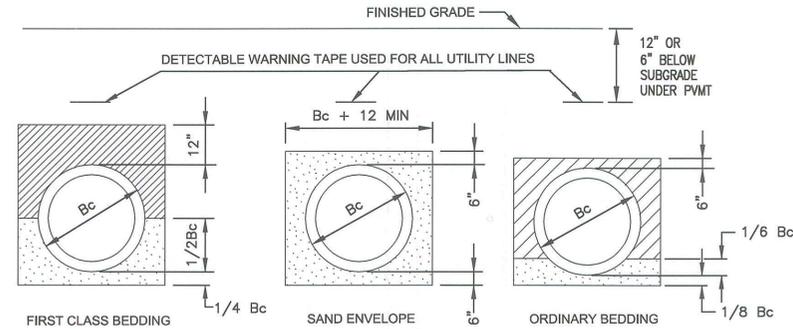
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**LEGEND**

Bc-PIPE BELL CIRCUMFERENCE

TAMPED BACKFILL, FREE FROM STONES, ORGANIC MATERIAL AND DEBRIS COMPACTED TO 95% STANDARD DENSITY.

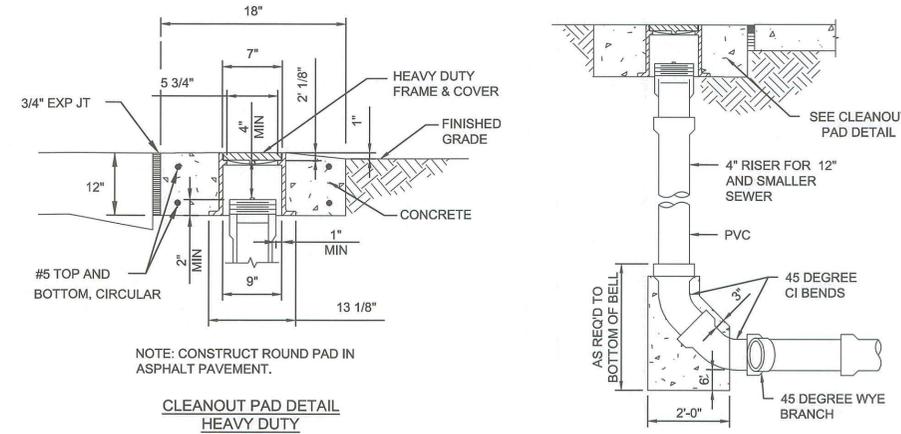
COMPACTED GRANULAR MATERIAL, CONSISTING OF SAND.

HAND PACKED BACKFILL, FREE FROM STONES AND DEBRIS, FINELY DIVIDED.

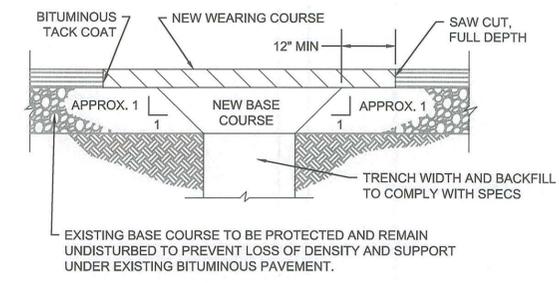
**NOTE:**

- IN ROCK, TRENCH EXCAVATE AT LEAST 6 INCHES BELOW BELL OF PIPE. COMPACTED GRANULAR MATERIAL MAY BE SUBSTITUTED FOR ANY PART OF OTHER BACKFILL MATERIALS.
- WATER PIPES ARE REQUIRED TO BE IN SAND BEDDING ONLY.

**1 CLASSES OF EMBEDMENT FOR PIPE IN TRENCHES**  
C-501 SCALE: NOT TO SCALE



**2 CLEANOUT**  
C-501 SCALE: NOT TO SCALE



**3 BITUMINOUS PAVEMENT REPAIR  
DETAIL FOR UTILITY TRENCHES**  
C-501 SCALE: NOT TO SCALE



1250 N. PONTIAC TRAIL, WALKER LAKE, AR 48360  
WEST HENNER, HOUSTON, TX 77062  
9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
652 EMERSON ROAD, ST. LOUIS, MO 63141  
60 PLATO BOULEVARD E. ST. PAUL, MN 55107  
ONE WEST THIRD STREET, TULSA, OK 74103



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BID PACKAGE FINAL

DESIGNER	DRAWN	CHECKED	DATE
MJS	DRW	PMG	12/05/2016

DEPARTMENT OF DEFENSE  
DESIGN AND PROJECT MANAGEMENT BRANCH  
HAWAII ARMY NATIONAL GUARD  
KALAELOA, KAPOLEI, OAHU, HAWAII  
VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
TMK: 91013045  
CIVIL DETAILS

SCALE: NOT TO SCALE

STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140032

SHEET OF C-501

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## STRUCTURAL DESIGN CRITERIA

UNIFIED FACILITIES CRITERIA (UFC)		
UFC 1-200-01	DESIGN: GENERAL BUILDING REQUIREMENTS (CHANGE 2, 1 NOVEMBER 2014)	
UFC 3-301-01	STRUCTURAL ENGINEERING (CHANGE 1 MAY 2014)	
UFC 4-010-01	DoD MINIMUM ANTITERRORISM STANDARDS FOR BUILDINGS (CHANGE 1, 1 OCTOBER 2013)	
UFC 3-310-04	SEISMIC DESIGN OF BUILDING (1 JUNE 2013)	
INTERNATIONAL CODE COUNCIL (ICC)		
INTERNATIONAL BUILDING CODE 2012		
AMERICAN CONCRETE INSTITUTE (ACI)		
ACI 318-11		
ACI 117-10	STANDARD SPECIFICATION FOR TOLERANCES FOR CONCRETE CONSTRUCTION AND MATERIALS	
ACI 302.1R-04	GUIDE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION	
ACI 315-99	DETAILS AND DETAILING OF CONCRETE REINFORCEMENT	
ACI 360R-10	GUIDE TO DESIGN OF SLAB-ON-GRADE	
ACI 318-11	BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE	
ACI 530-11/530.1-11	BUILDING CODE REQUIREMENTS AND SPECIFICATIONS FOR MASONRY STRUCTURES	
AMERICAN WELDING SOCIETY		
AWS D.1.1	STRUCTURAL WELDING CODE (2012)	
AWS D.1.3	STRUCTURAL WELDING CODE SHEET STEEL 2008	
AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)		
AISC 325-11	STEEL CONSTRUCTION MANUAL, 14TH EDITION	
AISC 360-10	SPECIFICATION AND CODES FOR STRUCTURAL STEEL BUILDINGS	
AMERICAN IRON AND STEEL INSTITUTE (AISI)		
AISI S100-2007	NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS 2007 EDITION	
AMERICAN SOCIETY OF CIVIL ENGINEERS (ASCE/SEI)		
ASCE/SEI 7-10	MINIMUM DESIGN LOADS FOR BUILDINGS AND OTHER STRUCTURES	
STEEL JOIST INSTITUTE (SJI)		
43rd EDITION CATALOG	CATALOG OF STANDARD SPECIFICATION AND LOAD TABLES FOR STEEL JOIST AND JOIST GIRDER	
STEEL DECK INSTITUTE (SDI)		
	SDI DESIGN MANUAL FOR COMPOSITE DECKS, FORM DECKS AND ROOF DECKS (PUBLICATION No 31)	
	SDI DIAPHRAGM DESIGN MANUAL (3rd EDITION) STRUCTURAL LOADS	
STRUCTURAL LOADS		
DEAD LOADS		
	SELF WEIGHT OF ALL STEEL ELEMENTS INCORPORATED INTO ROOF CONSTRUCTION (DECK, PURLINS, JOIST, BEAMS, TRUSSES, ETC).	
	UNIFORMLY DISTRIBUTED COLLATERAL (MECH., ELEC., PLUMB., ETC) (CONSIDER 7 psf FOR SEISMIC AND 5 psf FOR WIND).	5psf
	MINIMUM MATERIAL WEIGHTS (CEILING, ROOF INSULATION, ROOF MEMBRANE, STANDING SEAM, RIGID BOARD) UNLESS NOTED OTHERWISE	10psf
LIVE LOADS		
	ROOF LIVE LOAD UNIFORM (REDUCIBLE PER BUILDING CODE)	20psf
	ROOF LIVE LOAD CONCENTRATED	300lbs
	ROOF LIVE LOAD (ANY SINGLE PANEL POINT OF THE BOTTOM CHORD OF EXPOSED ROOF TRUSSES OR ANY POINT ALONG THE PRIMARY STRUCTURAL MEMBERS SUPPORTING ROOF OVER STORAGE WAREHOUSE AND GARAGES)	2000lbs
	GROUND FLOOR LIVE LOAD (STORAGE, MECH. AREAS AND VEHICULAR DRIVEWAYS)	250psf
SNOW LOADING		
	GROUND SNOW	0psf
	SNOW IMPORTANCE FACTOR (Is) FOR RISK CATEGORY II (UFC 3-301-01 TABLE 2-2)	1.0
	THERMAL FACTOR Ct	1.0
	EXPOSURE FACTOR Ce	0.9
WIND LOADING		
	WIND IMPORTANCE FACTOR	1.0
	EXPOSURE	C
	BASIC WIND SPEED (UFC 3-301-01 TABLE E-1) FOR RISK CATEGORY II	130 mph
	BUILDING ENCLOSURE: PARTIALLY ENCLOSED / CANOPY: OPEN STRUCTURE	
SEISMIC LOADING		
	RISK CATEGORY	II
	SEISMIC IMPORTANCE FACTOR (Ie) FOR RISK CATEGORY II (UFC 3-301-01 TABLE 2-2)	1.0
	SITE CLASS (PER GEOTECHNICAL REPORT)	B
	SPECTRAL RESPONSE ACCELERATION, SHORT PERIOD (Ss) (FROM UFC 3-301-01)	0.59
	SPECTRAL RESPONSE ACCELERATION, 1 SECOND PERIOD (S1) (FROM UFC 3-301-01)	0.17
	SEISMIC DESIGN CATEGORY	C
	SEISMIC RESISTING SYSTEM ORDINARY MOMENT RESISTING FRAME SYSTEM R=	3.0

## GENERAL NOTES

- VERIFY ALL DIMENSIONS BEFORE STARTING WORK. THE A/E AND CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES FOUND.
- SPECIFIC DETAILS AND NOTES TAKE PRECEDENCE OVER STANDARD DETAILS AND NOTES. WHERE CONFLICTS EXIST BETWEEN THE DRAWINGS, THE SPECIFICATIONS AND THE GENERAL STRUCTURAL NOTES, SPECIFIC DETAILS SHALL GOVERN.
- VERIFY THE COORDINATION OF ALL TRADES AND REPORT ANY CONFLICTS IMMEDIATELY TO THE A/E AND THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE.
- OPENINGS FOR CONDUIT, PIPE BANKS, ETC., NOT SHOWN ON STRUCTURAL DRAWINGS SHALL BE APPROVED BY THE A/E PRIOR TO INSTALLATION. ADDITIONAL STRUCTURAL REINFORCEMENT AND CLOSURES FOR FLOOR AND WALL SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE GOVERNMENT.
- DETAILS ENTITLED OR NOTED AS TYPICAL SHALL APPLY NOT ONLY WHERE SPECIFICALLY INDICATED OR REFERENCED, BUT WHERE THE NATURE OF THE CONSTRUCTION REQUIRES THEIR USE.
- COORDINATE THE LOCATIONS AND SIZES OF ALL OPENINGS IN FLOORS, AND LOCATIONS OF COMPONENTS REQUIRED TO BE EMBEDDED IN THE CONCRETE, WITH PLUMBING, MECHANICAL AND ELECTRICAL REQUIREMENTS AND COORDINATE THROUGH THE GENERAL CONTRACTOR.
- INFORM THE A/E AND THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE IN WRITING OF ANY DEVIATION FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL NOT BE RELIEVED OF THE RESPONSIBILITY OF SUCH DEVIATION BY THE A/E'S REVIEW OF SHOP DRAWINGS, PRODUCT DATA, ETC., UNLESS THE CONTRACTOR HAS SPECIFICALLY INFORMED THE A/E AND THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE OF SUCH DEVIATION AT THE TIME OF SUBMISSION, AND THE A/E HAS GIVEN WRITTEN APPROVAL TO THE SPECIFIC DEVIATION.
- DO NOT SCALE THESE DRAWINGS, USE DIMENSIONS.
- NO OPENING SHALL BE MADE IN ANY STRUCTURAL MEMBERS WITHOUT WRITTEN APPROVAL OF THE E.O.R.
- NO CHANGE IN SIZE OR DIMENSION OF STRUCTURAL MEMBERS SHALL BE MADE WITHOUT THE WRITTEN APPROVAL OF THE A/E.
- OPENINGS LESS THAN 10 INCHES ARE GENERALLY NOT SHOWN ON THE STRUCTURAL DRAWINGS. REFER TO MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR SUCH OPENINGS.
- THE STRUCTURE, INCLUDING, BUT NOT LIMITED TO, STEEL MOMENT FRAMES, CAST-IN-PLACE CONCRETE SLABS, AND STEEL ROOF DECK DIAPHRAGM, IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION. ALL TEMPORARY BRACING AND/OR SUPPORT THAT MAY BE REQUIRED AS THE RESULT OF THE CONTRACTOR'S CONSTRUCTION METHODS AND/OR SEQUENCES SHALL BE DESIGNED AND FURNISHED BY CONTRACTOR.

## FOUNDATION EXCAVATION AND BACKFILL

- THE FOUNDATION HAS BEEN DESIGNED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE GEOTECHNICAL ENGINEERING REPORT PREPARED FOR THIS PROJECT BY AMEL TECHNOLOGIES, INC. DATED JUNE 2015
- ALLOWBLE SOIL BEARING PRESSURE FOR SHALLOW FOUNDATIONS EQUALS 3000 PSF.
- REMOVE FILL MATERIALS WITHIN BUILDING FOOTPRINT AND TO 10 FEET OUTSIDE THE BUILDING FOOTPRINT. BACKFILL WITH STRUCTURAL FILL PER SOIL REPORT RECOMMENDATIONS. SLAB-ON-GRADE SHALL BE OVER 6" MINIMUM THICK DRAINAGE LAYER (AASHTO SP-57 STONE)
- IN AREAS WHERE BEDROCK IS ENCOUNTERED AT THE PROPOSED FOUNDATION BEARING ELEVATION. THE AREA SHALL BE UNDERCUT 12 INCHES. THE 12 INCHES UNDERCUT SHALL BE REPLACED WITH AASHTO #57 STONE UP TO THE PROPOSED FOUNDATION BOTTOM ELEVATION.
- PROVIDE SOILS SPECIAL INSPECTION PER IBC. SEE SPECIAL INSPECTION NOTES THIS SHEET. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH ENGINEERED FILL.
- CONTRACTOR SHALL PROVIDE MEANS TO ADEQUATELY DRAIN ALL EXTRANEIOUS WATER FROM THE SITE TO ENSURE A DRY FOUNDATION BASE.

## ABBREVIATIONS

@	AT
A/E	ARCHITECT AND ENGINEER OF RECORD
ABI	ALTERNATE BID ITEM
ANEX	ANEX TOP OF STEEL MIDDLE (COL AB)
T.O.S.M	
ARCH.	ARCHITECT OR ARCHITECTURAL DRAWINGS
ASD	ALLOWABLE STRENGTH DESIGN
B	BOTTOM
B.O.S.	BOTTOM OF STEEL
C	CENTER LINE
CJ	CONSTRUCTION JOINT
CL	CENTER LINE
CLR.	CLEAR
COL.	COLUMN
CONT.	CONTINUOUS
COORD.	COORDINATE
DIA.	DIAMETER
DWGS	DRAWINGS
E.O.R.	ENGINEER OF RECORD
ELEV.	ELEVATION
EQ.	EQUAL
EXP.	EXPANSION
EXT.	EXTERIOR
FND.	FOUNDATION
GA	GAGE
GALV.	GALVANIZED
H, HI	HIGH
H.P.	HIGH POINT
HORIZ.	HORIZONTAL
HSS	HOLLOW STRUCTURAL SECTION
JB	JOIST BEARING
L, LO	LOW

## ABBREVIATIONS

L.P.	LOW POINT
LLH	LONG LEG HORIZONTAL
LLV	LONG LEG VERTICAL
MAX.	MAXIMUM
MIN.	MINIMUM
O.C.	ON CENTER
OPP.	OPPOSITE
P.A.F.	POWDER ACTUATED FASTENERS
PL	PLATE
RECT.	RECTANGULAR
REQ'D	REQUIRED
SIM	SIMILAR
SJ	SAWED JOINT
SP.	SPACES
SYMM.	SYMMETRICAL
T	TOP
T.O. OR T/	TOP OF
T.O.L.R.S.	TOP OF LOW ROOF STEEL
T.O.S.	TOP OF STEEL
THRU	THROUGH
TYP	TYPICAL
U.N.O.	UNLESS NOTED OTHERWISE
VERT.	VERTICAL
VIF	VERIFY IN FIELD
W.P.	WORK POINT
W/	WITH
W/O	WITH OUT
Ø	DIAMETER

## SPECIAL INSPECTION

PER UFC 1-200-01 (2-17.1), THE CONTRACTOR SHALL RETAIN THIRD PARTY QUALITY ASSURANCES AGENCIES TO CONDUCT THE SPECIAL INSPECTIONS REQUIRED BY THE IBC. THE INSPECTING AGENCY SHALL PROVIDE REPORTS OF THE SPECIAL INSPECTIONS DIRECTLY TO THE GOVERNMENT. THE INSPECTING AGENCY SHALL ALSO SUBMIT COPIES OF THESE REPORTS TO THE GENERAL CONTRACTOR (WITHIN TWO DAYS FOLLOWING INSPECTION) AND THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE.

THE FOLLOWING STRUCTURAL ELEMENTS OF CONSTRUCTION SHALL REQUIRE SPECIAL INSPECTION PER IBC SECTION 1704:

TYPE OF CONSTRUCTION	IBC SECTION	IBC TABLE	NOTES
STEEL FABRICATION	1704.2	-	-
STEEL CONSTRUCTION	1704.3	1704.3	-
CONCRETE	1704.4	1704.4	-
SOILS	1704.7	1704.7	SEE NOTE 4
MASONRY	1704.5	1704.5.1	

SPECIALY INSPECTED WORK WHICH IS INSTALLED OR COVERED WITHOUT THE APPROVAL OF THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE IS SUBJECT TO REMOVAL.

CONTRACTOR SHALL RETAIN THE SERVICES OF A LICENSED GEOTECHNICAL ENGINEER TO PERFORM SOIL SPECIAL INSPECTION.

THE SPECIAL INSPECTORS MUST BE CERTIFIED BY THE GENERAL CONTRACTOR TO PERFORM THE TYPES OF INSPECTION SPECIFIED.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INFORM THE SPECIAL INSPECTOR OR INSPECTION AGENCY, AND THE GENERAL CONTRACTOR DESIGNATED REPRESENTATIVE AT LEAST TWO (2) WORKING DAYS PRIOR TO PERFORMING ANY WORK THAT REQUIRES SPECIAL INSPECTION. ANY WORK PERFORMED WITHOUT REQUIRED SPECIAL INSPECTION IS SUBJECT TO REMOVAL.

PROVIDE SPECIAL INSPECTION FOR ALL POST-INSTALLED ANCHORS. PERIODICALLY INSPECT THE FOLLOWING:

- GENERAL COMPLIANCE WITH MANUFACTURER'S INSTRUCTION
- PRODUCT NAME AND DESCRIPTION
- ADHESIVE EXPIRATION DATE FOR ADHESIVE ANCHORS
- HOLE DIAMETER, DEPTH, LOCATION AND EDGE DISTANCE
- CLEANLINESS OF HOLE AND ANCHOR
- ANCHOR DIAMETER, LENGTH AND STEEL GRADE
- ANCHOR EMBEDMENT AND SPACING
- TORQUE REQUIREMENT PER MANUFACTURER'S INSTRUCTION



**BENHAM**  
Specialty Contracting

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SEAL



DATE: 12/05/2016

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

EXPIRATION DATE OF LICENSE: 4/30/2018

DATE

12/05/2016

DATE

**MISCELLANEOUS**

- 1 THE CONTRACTOR SHALL INCLUDE AND PROVIDE THE FOLLOWING SERVICES -
  - A VERIFICATION OF ALL DIMENSIONS, ELEVATIONS, OPENING SIZES, AND MECHANICAL EQUIPMENT WEIGHTS PRIOR TO STARTING WORK AND INCORPORATE THIS INFORMATION INTO THE PROJECT SHOP AND ERECTION DRAWINGS.
  - B VERIFICATION OF ALL DIMENSIONS AND MEMBER SIZES RELATING TO ANY EXISTING CONSTRUCTION.
  - C VERIFICATION OF ALL FLOOR DRAINS, SLOPED FLOORS, FLOOR DEPRESSIONS AND OFFSETS WITH THE ARCHITECTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS PRIOR TO THE SUBMITTAL OF STRUCTURAL STEEL, STEEL DECK, AND/OR CONCRETE REINFORCEMENT SHOP DRAWINGS.
  - D COORDINATE WITH THE OWNER AND REMOVE ALL ABANDONED FOUNDATIONS, UTILITIES, PIPELINES, ETC. THAT MAY INTERFERE WITH THE NEW CONSTRUCTION.
  - E THE GENERAL CONTRACTOR SHALL REVIEW AND APPROVE ALL SHOP DRAWINGS PRIOR TO SUBMITTAL NOTING CHANGES MADE WHICH DO NOT COMPLY WITH DESIGN DRAWINGS. PRIOR WRITTEN APPROVAL FROM THE CONTRACTING OFFICER, STRUCTURAL ENGINEER OF RECORD, AND ARCHITECT SHALL BE REQUIRED FOR ALL DEVIATIONS FROM THE DESIGN DOCUMENTS MADE BY THE CONTRACTOR. REQUEST FOR INFORMATION SHALL NOT BE USED TO INTRODUCE SUBSTITUTIONS, DEVIATIONS, OR CHANGES FROM THE REQUIREMENTS INDICATED BY THE CONSTRUCTION DOCUMENTS.
  - F PROVIDE TEMPORARY BRACING AND SHORING AS REQUIRED FOR STABILITY DURING CONSTRUCTION.
- 2 PLANS, SECTIONS, AND DETAILS ARE NOT TO BE SCALED FOR DETERMINATION OF QUANTITIES, LENGTHS, OR FIT OF MATERIALS.
- 3 SHOP DRAWINGS SHALL BE ORIGINAL DRAWINGS, PREPARED BY CONTRACTOR, SUBCONTRACTOR, SUPPLIER OR DISTRIBUTOR. REPRODUCTION OF STRUCTURAL CONTRACT DOCUMENTS AS ERECTION PLANS OR DETAILS WILL NOT BE PERMITTED AND WILL BE REJECTED WITHOUT REVIEW.
- 4 SEE PLUMBING AND ELECTRICAL DRAWINGS FOR SIZE AND LOCATION OF ALL OPENINGS, SLEEVES, CURBS, PADS, INSERTS, ETC. NOT SHOWN ON STRUCTURAL DRAWINGS. BEFORE FABRICATION OF MATERIALS, COORDINATE WITH PLUMBING, AND ELECTRICAL DRAWINGS AND SPECIFICATIONS AND PROVIDE ALL MISCELLANEOUS AND STRUCTURAL ITEMS INDICATED OR REQUIRED TO COMPLETE THE WORK.
- 5 CONSTRUCTION DOCUMENTS CONSIST OF THESE DRAWINGS AND A SEPARATE BOOK OF SPECIFICATIONS. THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY, NEITHER IS MEANT TO STAND ALONE FOR ANY PORTION OF THE WORK DESCRIBED HEREIN. ANY CONFLICT BETWEEN DRAWINGS AND SPECIFICATIONS SHALL BE REPORTED IMMEDIATELY TO THE ARCHITECT/ENGINEER.
- 6 THE DESIGN DOCUMENTS REFLECT THE FINAL COMPLETED STATE OF THE STRUCTURAL SYSTEMS AND ELEMENTS. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION RELATED ENGINEERING TO INCLUDE BUT NOT BE LIMITED TO CONSTRUCTION MEANS AND METHODS, TEMPORARY SUPPORTS AND BRACING, TEMPORARY USE OF STRUCTURES, PARTIALLY CONSTRUCTED STRUCTURES AND INCOMPLETE STRUCTURES. ALL CONSTRUCTION AND RELATED ENGINEERING SHALL BE IN ACCORDANCE WITH ASCE 37-02 DESIGN LOADS ON STRUCTURES DURING CONSTRUCTION".
- 7 THE CONTRACTOR SHALL BECOME FAMILIAR WITH THE SURVEY AND SUBSURFACE INVESTIGATION REPORT BEFORE BEGINNING CONSTRUCTION
- 8 EACH SUBCONTRACTOR IS RESPONSIBLE FOR INSTRUCTIONS DIRECTED TO THE "CONTRACTOR", WHERE APPLICABLE, UNLESS SPECIFICALLY RELIEVED OF RESPONSIBILITY BY THE GENERAL CONTRACTOR.
- 9 CONCRETE EQUIPMENT PADS (HOUSEKEEPING) REQUIRED FOR MECHANICAL AND ELECTRICAL EQUIPMENT SHALL MEET THE FOLLOWING REQUIREMENTS:
  - A PAD SIZE SHALL BE BASED ON THE REQUIREMENTS OF THE EQUIPMENT SELECTED TO BE INSTALLED BY THE CONTRACTOR.
  - B PAD SIZE SHALL BE A MINIMUM OF 12 INCHES GREATER THAN THE SIZE OF THE EQUIPMENT IN EACH DIRECTION (U.N.O.).
  - C PADS LOCATED ON ELEVATED CONCRETE FLOORS SHALL BE 4 INCHES THICK (U.N.O.).
  - D PADS LOCATED ON CONCRETE SLABS-ON-GRADE SHALL BE 4 INCHES THICK (U.N.O.).
- 10 THE CONTRACTOR SHALL DESIGN AND PROVIDE ALL ITEMS FOR ATTACHING PLUMBING, ELECTRICAL, AND PROCESS EQUIPMENT AND ELEMENTS TO THE BUILDING STRUCTURE TO RESIST ALL LOADS INCLUDING SEISMIC LOADS. ATTACHMENT SHALL BE MADE SO AS NOT TO OVERSTRESS THE STRUCTURAL MEMBERS. THE CONTRACTOR SHALL COORDINATE THE ATTACHMENTS AND LOCATIONS OF THE EQUIPMENT AND ELEMENTS AND INCORPORATE THEIR REQUIREMENTS INTO THE STRUCTURAL STEEL SHOP DRAWINGS. THE SHOP DRAWING SUBMITTAL SHALL INCLUDE ATTACHMENT CALCULATIONS AND SHALL BE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE WHERE THE PROJECT IS LOCATED. REFER TO THE PLUMBING AND ELECTRICAL DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
- 11 A CONTINUOUS CLASS A VAPOR RETARDER WITH A PERM RATING OF 0.01 PERMS OR LESS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S DIRECTIONS UNDER ALL SLABS ON GRADE AND MAT FOUNDATIONS INDICATED IN DRAWINGS. ALL PENETRATIONS SHALL BE SEALED WITH BOOTS PER THE MANUFACTURER'S RECOMMENDATIONS.
- 12 SUBSTITUTION OF EXPANSION ANCHORS FOR EMBEDDED ANCHORS SHOWN ON THE DRAWINGS WILL NOT BE PERMITTED UNLESS APPROVED BY THE STRUCTURAL ENGINEER OF RECORD IN ADVANCE.

**CONCRETE**

- 1 ALL CONCRETE SHALL HAVE A MINIMUM DENSITY OF 145 PCF AND A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS.
- 2 BEFORE PLACING CONCRETE, COORDINATE WITH MECHANICAL, PLUMBING AND ELECTRICAL CONTRACTOR FOR BLOCKOUTS AND EMBEDDED ITEMS NOT SHOWN ON STRUCTURAL DRAWINGS.
- 3 EXPOSED EDGES OF CONCRETE ABOVE GRADE SHALL HAVE 3/4" X 45 DEGREE CHAMFERS, UNLESS NOTED OTHERWISE (U.N.O.)
- 4 PROVIDE STANDARD HOOKS ON BARS TERMINATING AT A CONCRETE FACE UNLESS NOTED (E.G.: EDGES OF OPENINGS, SLAB EDGES, EXPANSION JOINTS, ENDS OF BEAMS, AND AT TOP, BOTTOM, AND ENDS OF WALLS, ETC.).
- 5 ALL CONSTRUCTION JOINTS SHOWN ON DRAWINGS SHALL BE INCORPORATED INTO THE STRUCTURE, UNLESS THEIR ELIMINATION IS APPROVED BY THE E.O.R. ADDITIONAL CONSTRUCTION JOINTS, REQUIRED TO FACILITATE CONSTRUCTION, SHALL BE LOCATED AT POINTS OF MINIMUM SHEAR, AND SHALL BE DETAILED ON SHOP DRAWINGS. REINFORCEMENT SHALL PASS CONTINUOUSLY THROUGH THE JOINT.
- 6 WHERE A CONSTRUCTION JOINT IS MADE, THE SURFACE OF THE CONCRETE SHALL BE ROUGHENED, THOROUGHLY CLEANED, AND ALL LAITANCE REMOVED. IN ADDITION, VERTICAL JOINTS SHALL BE THOROUGHLY WETTED AND SLUSHED WITH A COAT OF NEAT CEMENT GROUT IMMEDIATELY BEFORE PLACING NEW CONCRETE.
- 7 FOR LOCATION OF SLAB CONSTRUCTION JOINTS (CJ) AND SAW JOINTS (SJ) SEE PLAN. MAXIMUM SPACING SHALL BE 15 FEET FOR 4 AND 6 INCH THICK SLABS ON GRADE, AND 20 FEET FOR 8 INCH THICK SLAB ON GRADE.
- 8 THE CONTRACTOR SHALL FURNISH TO THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE, COMPLETE LEGIBLE COPIES OF ALL CONCRETE POUR TICKETS WITHIN FOUR (4) HOURS OF THE PLACEMENT OF THE CONCRETE THAT WAS RECEIVED. THE POUR TICKETS SHALL CLEARLY IDENTIFY THE CONCRETE SUPPLIER, THE BATCHING DATA, THE TIME OF THE LOADING/DEPARTURE AND THE ACCURATE TIME OF DELIVERY, AND ANY ADDITIONS OF WATER ENROUTE TO OR AT THE JOB SITE. CLEARLY LOCATE ON A PLAN SHEET THE LOCATIONS OF THE CONCRETE WHERE ADDITIONAL WATER HAD BEEN ADDED.
- 9 ALL FOUNDATIONS ARE DESIGNED WITH FORMED SIDES. IF THE CONTRACTOR ELECTS TO USE EARTH FORMED SIDES, 1 1/2" INCHES OF ADDITIONAL CONCRETE THICKNESS SHALL BE ADDED TO EACH EARTH FORMED FACE TO PROVIDE ADEQUATE COVER OVER THE REINFORCING. TOP PORTIONS OF EXTERIOR FOUNDATIONS EXPOSED TO FINAL GRADE SHALL BE FORMED AT LEAST 6" BELOW FINAL GRADE AT NO ADDITIONAL COST TO THE GOVERNMENT. ANY RELATED ADDITIONAL COSTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- 10 THE WATER CEMENT RATIO FOR ANY STRENGTH CONCRETE SHALL NOT BE MORE THAN 0.45, EXCEPT THAT THE WATER CEMENT RATIO FOR ENTRAINED CONCRETE SHALL NOT BE MORE THAN 0.4.

**REINFORCEMENT**

- 1 REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO ASTM A-615, GR 60, AND DEFORMED WELDED WIRE FABRIC CONFORMING TO ASTM A496 OR A497 AS INDICATED ON DRAWINGS. WELDED WIRE FABRIC SHALL BE SUPPLIED IN MATS NOT ROLLS.
- 2 ALL REINFORCING STEEL, ANCHOR BOLTS, DOWELS, INSERTS, ETC. SHALL BE WELL SECURED IN PLACE AND INSPECTED BY THE CONTRACTING OFFICER OR DESIGNATED REPRESENTATIVE PRIOR TO PLACING CONCRETE
- 3 ALL REINFORCING SHALL BE DETAILED, FABRICATED AND PLACED, IN ACCORDANCE WITH ACI DETAILING MANUAL AND ALL APPLICABLE CODES.
- 4 ALL REINFORCING SHALL BE SUPPORTED IN FORMS, SPACED WITH NECESSARY ACCESSORIES AND SHALL BE SECURELY WIRED TOGETHER, IN ACCORDANCE WITH ACI 318.
- 5 MINIMUM CONCRETE COVER FOR THE REINFORCEMENT SHALL BE AS DETAILED ON THE DRAWINGS. WHERE THE COVER IS NOT DIMENSIONED, USE THE SAME FOR SIMILAR ITEMS. WHERE NO SIMILAR ITEMS INDICATE THE AMOUNT OF COVER, USE THE FOLLOWING IN CONJUNCTION WITH ACI 318:
  - A. CONCRETE DEPOSITED AGAINST THE EARTH ..... 3"
  - B. CONCRETE DEPOSITED AGAINST FORMS AND EXPOSED TO EARTH OR WEATHER ..... 2"
  - C. CONCRETE NOT EXPOSED TO EARTH OR WEATHER
    - SLABS AND WALLS ..... 3/4"
    - BEAMS AND COLUMNS ..... 1 1/2"
- 6 DEVELOPMENT OF REINFORCEMENT AND LAP SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 UNLESS NOTED OTHERWISE.
- 7 MECHANICAL SPLICES SHALL BE IN ACCORDANCE WITH ACI 318 AND DEVELOP AT LEAST 125 PERCENT OF THE SPECIFIED YIELD STRESS OF THE BAR.

**STRUCTURAL STEEL**

- 1 STEEL SHALL CONFORM TO THE FOLLOWING GRADES:
  - A. ALL W SHAPES A992 (Fy=50 KSI)
  - B. ALL ANGLE, CHANNEL A36 (Fy=36 KSI)
  - C. ALL BASE PLATES, CONN. PLATES A36 (Fy=36 KSI)
  - D. STRUCTURAL PIPE A53 GR. B (Fy=35 KSI)
  - E. STRUCTURAL HSS A500 GR. B (Fy=46 KSI)
- 2 ALL STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE", FOURTEENTH EDITION.
- 3 UNLESS NOTED OTHERWISE, THE MINIMUM PLATE THICKNESS SHALL BE 3/8"; BOLT DIAMETER SHALL BE 3/4"; MINIMUM WELD SHALL BE 3/16".
- 4 BOLTED CONNECTIONS SHALL BE BEARING TYPE USING A325N BOLTS, UNLESS NOTED OTHERWISE. OVERSIZED HOLES AND LONG-SLOTTED HOLES ARE NOT ALLOWED, UNLESS SHOWN ON THE DRAWINGS.
- 5 WELDED CONNECTIONS SHALL BE IN ACCORDANCE WITH AWS D1.1 "STRUCTURAL WELDING CODE." ALL WELDS SHALL DEVELOP FULL STRENGTH OF THE WEAKER MEMBER, UNLESS SPECIFICALLY DETAILED OR LOADS ARE INDICATED ON DRAWINGS. WELDING ELECTRODES SHALL BE E70XX.
- 6 SPLICING OF STEEL MEMBERS, UNLESS SHOWN ON DRAWINGS, IS PROHIBITED.
- 7 NO CHANGE IN SIZE OR POSITION OF THE STRUCTURAL ELEMENTS SHALL BE MADE AND HOLES, SLOTS, CUTS, ETC. ARE NOT PERMITTED THROUGH ANY MEMBER UNLESS THEY ARE DETAILED ON THE APPROVED SHOP DRAWINGS, AND THEY CAN BE HANDLED PRIOR TO THE SHOP DRAWING PROCESS AS PER PROCEDURES NOTED IN DIVISION 1 IN SPECIFICATION FOR GENERAL REQUIREMENTS.
- 8 NO FINAL BOLTING OR WELDING SHALL BE MADE UNTIL THE STRUCTURE HAS BEEN PROPERLY ALIGNED.
- 9 FABRICATE ALL BEAMS WITH THE MILL CAMBER UP.
- 10 NO BEAM CONNECTION SHALL HAVE LESS THAN TWO (2) BOLTS OR AN EQUIVALENT WELD.
- 11 CORROSION PROTECTION: PAINTING OF STRUCTURAL STEEL (OR GALVANIZING WHERE APPLICABLE) IS REQUIRED FOR ANY EXPOSED STEEL, SEE SPECIFICATIONS.
- 12 CONNECTIONS MAY BE BOLTED OR WELDED. THE FABRICATOR IS RESPONSIBLE FOR THE DESIGN, OF CONNECTIONS NOT SHOWN ON THE DRAWINGS. GENERALLY, CONNECTIONS SHOWN ON THE STRUCTURAL DRAWINGS ARE SCHEMATIC AND ARE ONLY INTENDED TO SHOW THE RELATIONSHIP OF MEMBERS CONNECTED. ANY CONNECTION THAT IS NOT SHOWN OR IS NOT COMPLETELY DETAILED ON THE STRUCTURAL DRAWINGS SHALL BE DESIGNED BY AN LICENSED PROFESSIONAL ENGINEER, RETAINED BY THE FABRICATOR. WHERE PARTIAL INFORMATION IS GIVEN, THE MINIMUM REQUIREMENTS ABOVE SHALL BE USED FOR THE CONNECTION. PROVIDE CALCULATIONS FOR ALL CONNECTION DESIGNS DULY SEALED BY A REGISTERED ENGINEER FOR APPROVAL BY E.O.R. "COMPLETELY DETAILED" MEANS THE FOLLOWING INFORMATION IS SHOWN ON THE DETAIL DRAWINGS:
  - A. ALL PLATE DIMENSIONS AND GRADES.
  - B. ALL WELD SIZES, LENGTHS, PITCHES, AND RETURNS.
  - C. ALL HOLE SIZES AND SPACING.
  - D. NUMBER AND TYPES OF BOLTS.



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DATE: 12/05/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 EXPIRATION DATE OF LICENSE: 4/30/2018

NO.	BID PACKAGE FINAL	DATE	APPR.
0		12/05/2016	

BID PACKAGE FINAL

12/05/2016

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
 HAWAII ARMY NATIONAL GUARD  
 91-1171 ENTERPRISE AVENUE  
 KAPOLEI, HI 96707  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 THMR: 91013045

SCALE:

STATE JOB NO. CA-1424-C

GENERAL PROJECT NO. 151400332

PROJECT NO. S-002

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**BENHAM**  
leidos

1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48390  
WESTHEIMER, HOUSTON, TX 77042  
8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
622 EMERSON ROAD, ST. LOUIS, MO 63141  
60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/05/2016  
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DATE	DESCRIPTION	APPR	AKG
12/05/2016	0 - BID PACKAGE FINAL		

BID PACKAGE FINAL

12/05/2016

DEPARTMENT OF DEFENSE  
FACILITIES DESIGN & PROJECT BRANCH

KAPOLEI, HI 96707

HAWAII ARMY NATIONAL GUARD

91-1171 ENTERPRISE AVENUE

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

THK#: 91013045

TYPICAL DETAILS

STATE OF HAWAII

FACILITY MANAGEMENT OFFICE

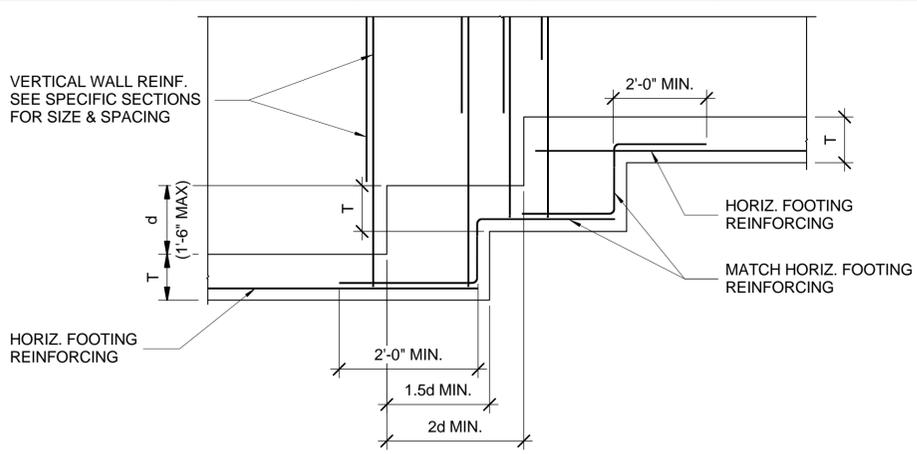
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STATE JOB NO: CA-1424-C

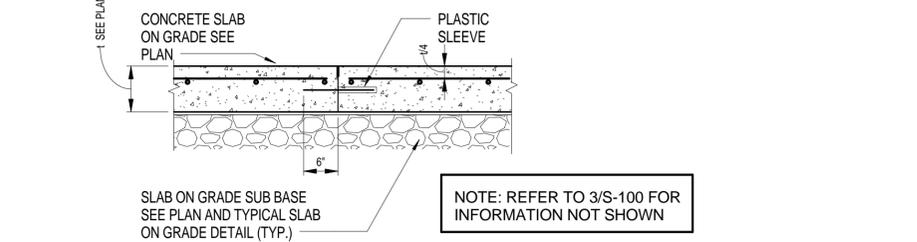
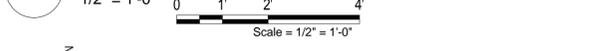
GENERAL PROJECT NO: 151400332

PROJECT NO: S-100

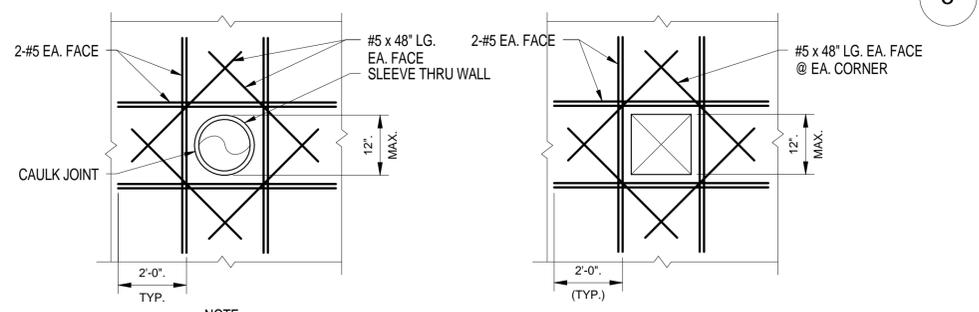
S-100



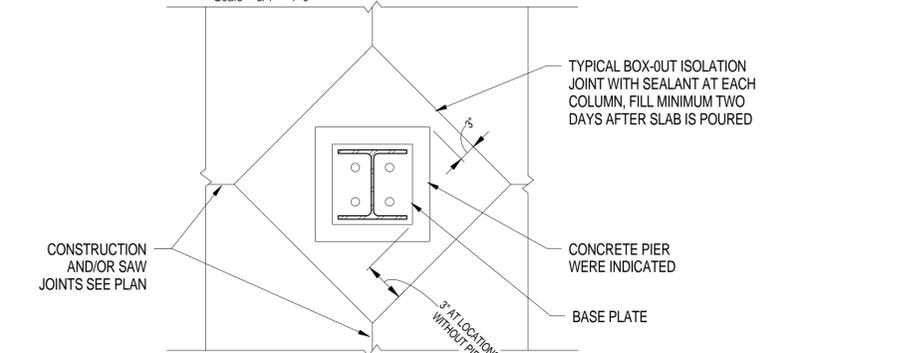
1 TYPICAL STEP FOOTING DETAIL



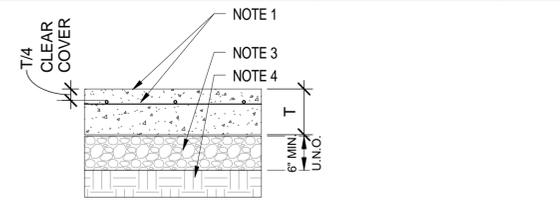
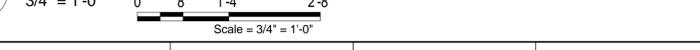
4 TYPICAL SLAB ON GRADE CONSTRUCTION JOINT DETAIL (C.J.)



7 TYPICAL OPENING DETAIL THRU FOUNDATION WALLS

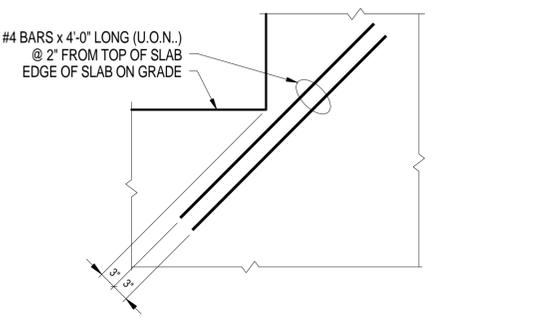
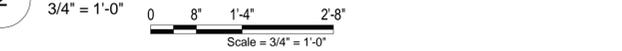


8 TYPICAL COLUMN ISOLATION JOINT DETAIL

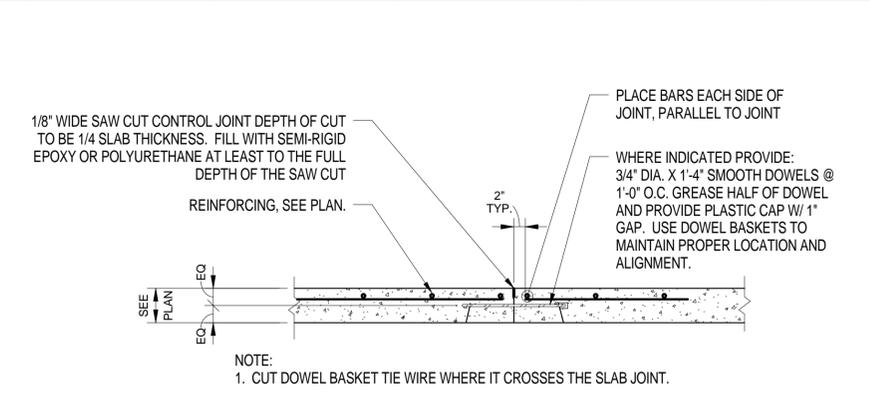


- TYPICAL SLAB ON GRADE REQUIREMENTS
- SLAB ON GRADE AND REINFORCING, SEE PLAN
  - COURSE AGGREGATE CAPILLARY WATER RETARDER. DRY, COMPACTED #57 MEETING ASTM D448 PER SPECIFICATIONS.
  - 6" (U.O.N.) THICK LAYER COMPACTED STRUCTURAL FILL OR PREPARED SUBGRADE. FILL AND SUBGRADE SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS AND GEOTECHNICAL REPORT OR AS NOTED IN GENERAL NOTES.

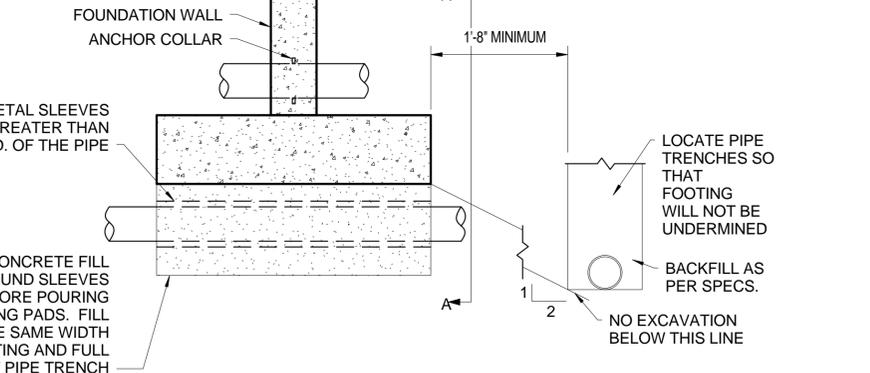
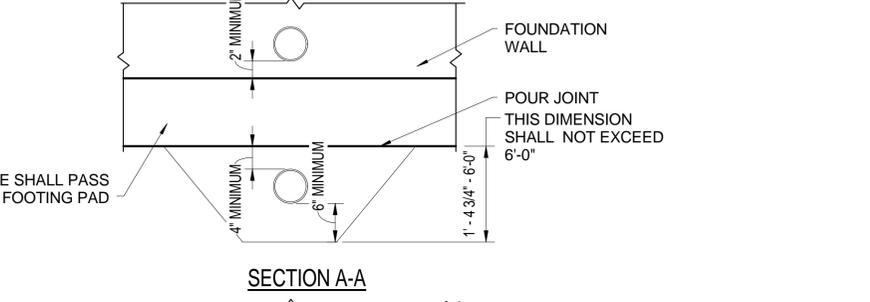
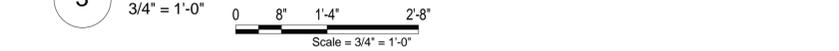
2 TYPICAL SLAB ON GRADE SUBGRADE REQUIREMENTS



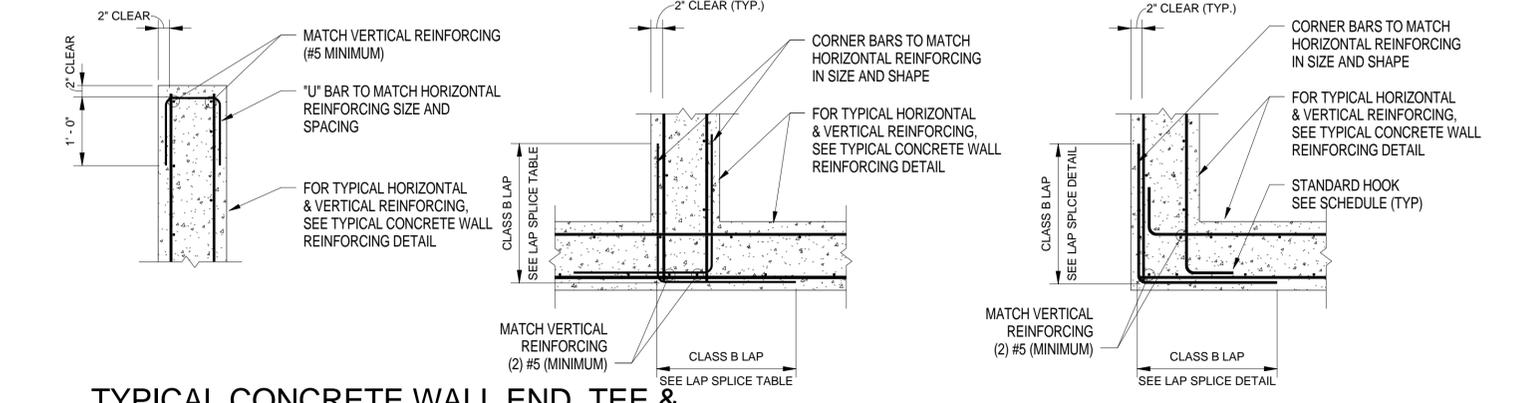
5 TYPICAL RE-ENTRANT CORNER DETAIL



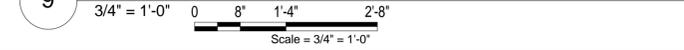
3 TYPICAL SLAB ON GRADE SAW JOINT DETAIL (S.J.)



6 TYPICAL PIPE TRENCH / FOOTING DETAIL



9 TYPICAL CONCRETE WALL END, TEE & CORNER WALL REINFORCING



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**SHEET NOTES**

- NOTE.
- SLAB-ON-GRADE CONSTRUCTION: MAIN BUILDING SLAB: 8" CONC SLAB REINFORCE WITH #6@12" O.C. EACH WAY CENTERED. EXTERIOR EAST CONCRETE SLAB: 6" CONCRETE SLAB REINFORCE WITH #5@12" O.C. EACH WAY, CENTERED. EXTERIOR WEST SLAB: 8" CONCRETE SLAB REINFORCE WITH #5@12" O.C. EACH WAY CENTERED.
- SLAB-ON-GRADE FLOOR ELEVATION 100'-0" (EQUALS 44.48' PER CIVIL DRAWINGS).
- FOLLOWING ELEVATIONS ARE TYPICAL UNLESS NOTED OTHERWISE:
  - TOP OF EXTERIOR FOOTINGS = (97'-0") U.N.O
  - TOP OF PEDESTALS = (99'-4")
  - TOP OF FOUNDATION WALL AT PERIMETER = 102'-6"
  - TOP OF EXTERIOR WALL FOOTING = (97'-0") U.N.O
  - TOP OF GRADE BEAMS = (98'-6")
- COORDINATE THIS SHEET WITH THE SLAB PLANS
- ALL COLUMN FOUNDATION AND PEDESTALS ARE CENTERED UNDER COLUMNS UNLESS NOTED OTHERWISE.
- ALL FOUNDATION WALL FOOTINGS ARE CENTERED UNDER FOUNDATION WALLS UNLESS NOTED OTHERWISE.
- SEE S001 & S002 FOR GENERAL NOTES.
- F# - FOOTING (SEE SCHEDULE ON SHEET S101 FOR SIZE AND REINFORCING)
- P# - PEDESTAL (SEE SCHEDULE ON SHEET S101 FOR SIZE AND REINFORCING)

**KEYED NOTES (THIS SHEET) AS-DENOTED BY #**



1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/04/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 EXPIRATION DATE OF LICENSE: 4/30/2018

DATE	DESCRIPTION	BY	CHK	APPR
12/05/2016	BID PACKAGE FINAL			

**BID PACKAGE FINAL**

SUBMITTAL DATE: 12/05/2016  
 DATE: 12/05/2016

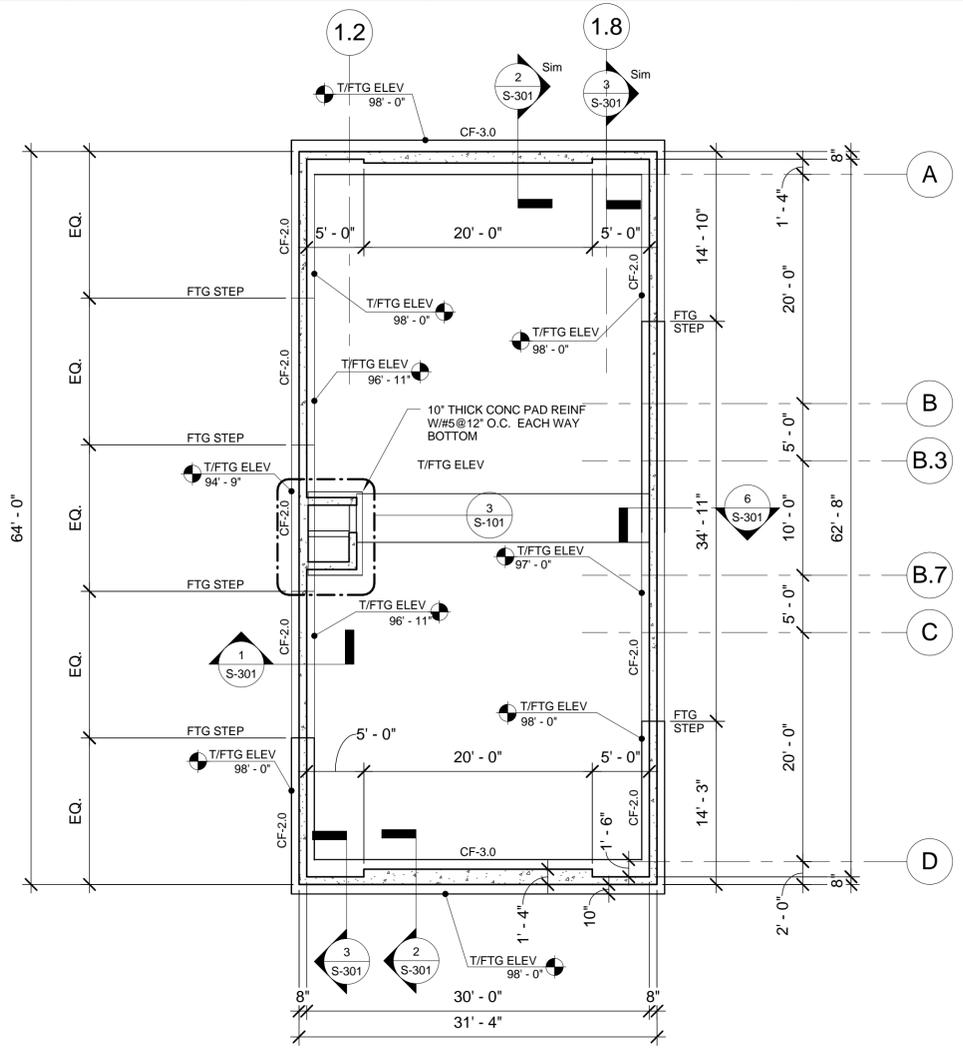
DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 THMK: 91013045  
 BASE BID & ABI FOUNDATION PLANS

SCALE: As indicated

STATE JOB NO: CA-1424-C

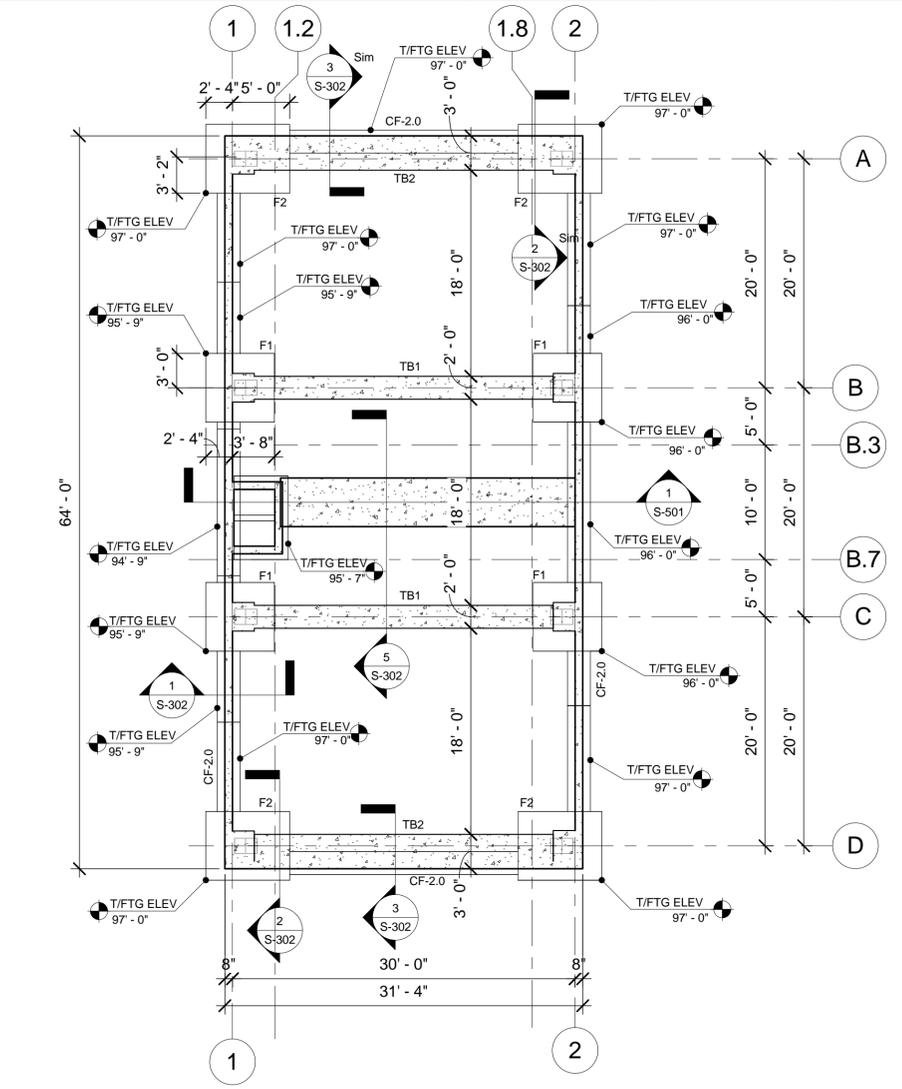
FEDERAL PROJECT NO: 15140032

SHEET: S-101



**1 VEHICLE WASH RACK FOUNDATION PLAN - BASE BID**

Scale = 1/8" = 1'-0"  
 0 4 8 16



**2 VEHICLE WASH RACK FOUNDATION PLAN - ABI**

Scale = 1/8" = 1'-0"  
 0 4 8 16

**STRUCTURAL COLUMN FOOTING SCHEDULE (ABI)**

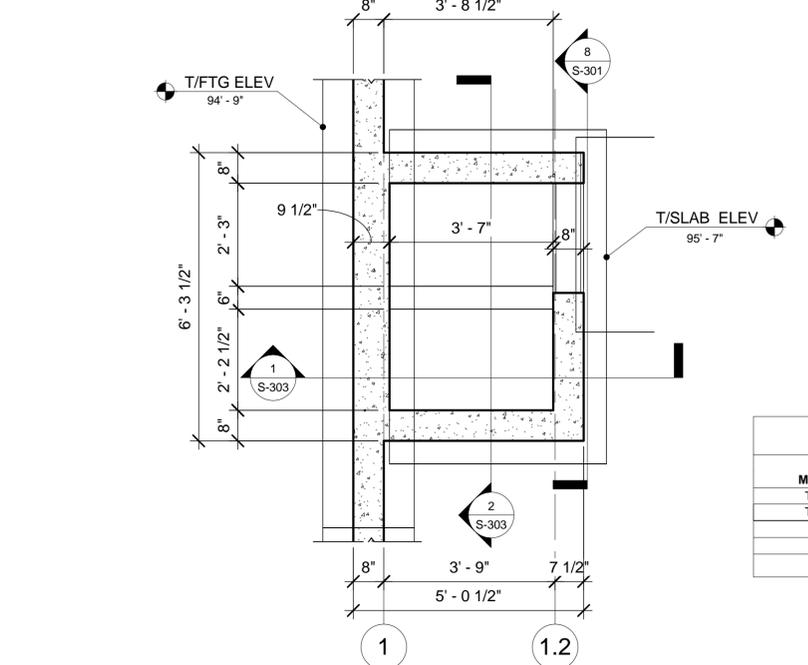
Mark	LENGTH x WIDTH x DEPTH	TOP REINF. EACH WAY	BOTTOM REINF. EACH WAY
F1	6'-0" x 6'-0" x 2'-0"	8-#7	8-#7
F2	7'-4" x 6'-0" x 2'-0"	8-#7	8-#7

**CONTINUOUS FOOTING SCHEDULE (BASE BID & ABI)**

MARK	WIDTH	FOUNDATION THICKNESS	LONGITUDINAL REINFORCING (CONTINUOUS)		NOTES
			TOP	BOTTOM	
CF-2.0	2'-0"	1'-0"	3-#5	3-#5	TRANSVERSE REINF: #5@12" O.C. BOTTOM
CF-3.0	3'-0"	1'-0"	4-#5	4-#5	TRANSVERSE REINF: #5@12" O.C. BOTTOM

**CONCRETE TIE BEAM SCHEDULE (ABI)**

MARK	SIZE B X D	QTY	SIZE	REINFORCEMENT		STIRRUPS		REMARKS	
				LEFT SUPPORT	RIGHT SUPPORT	SIZE	TYPE		SPACING
TB1	24" x 18"	8	#8			#4	CLOSED	8"	THRU-OUT
TB2	28" x 18"	8	#8			#4	CLOSED	8"	THRU-OUT

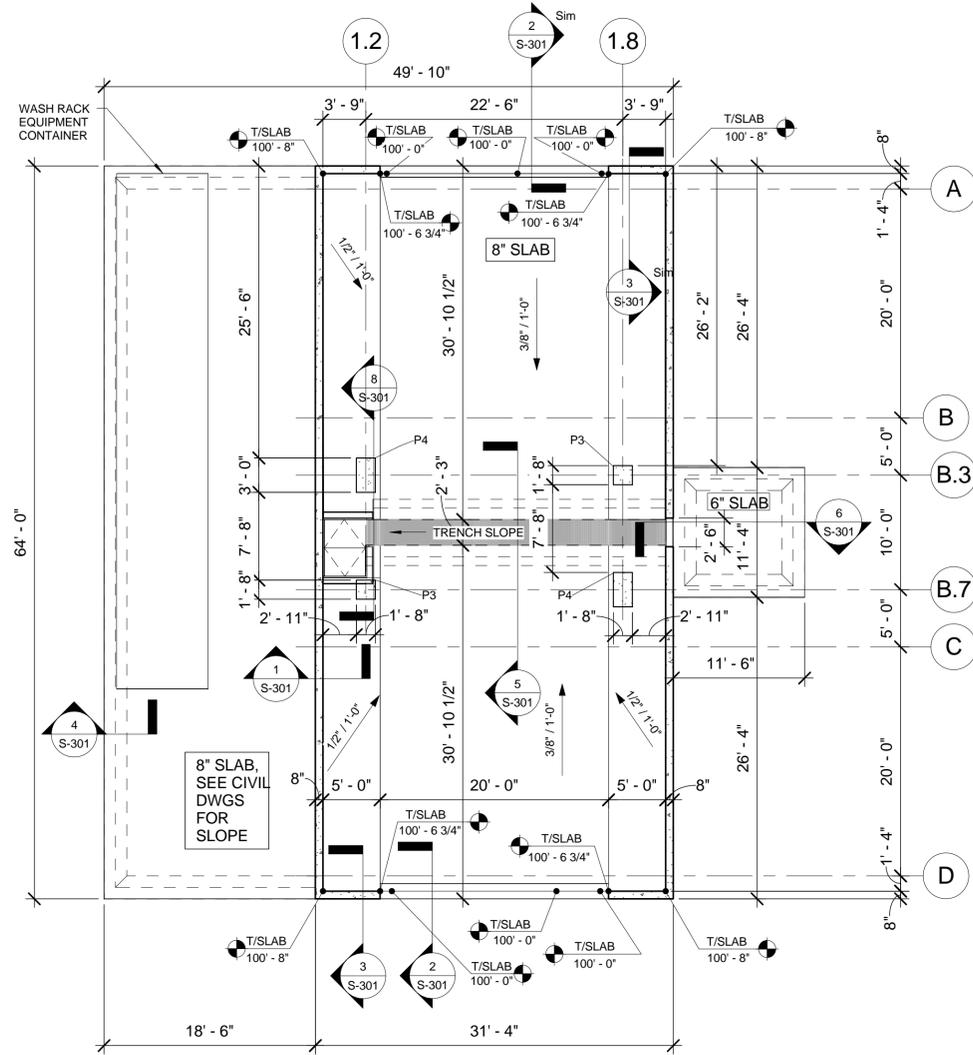


**3 CONCRETE SUMP PIT FOUNDATION PLAN (BASE BID & ABI)**

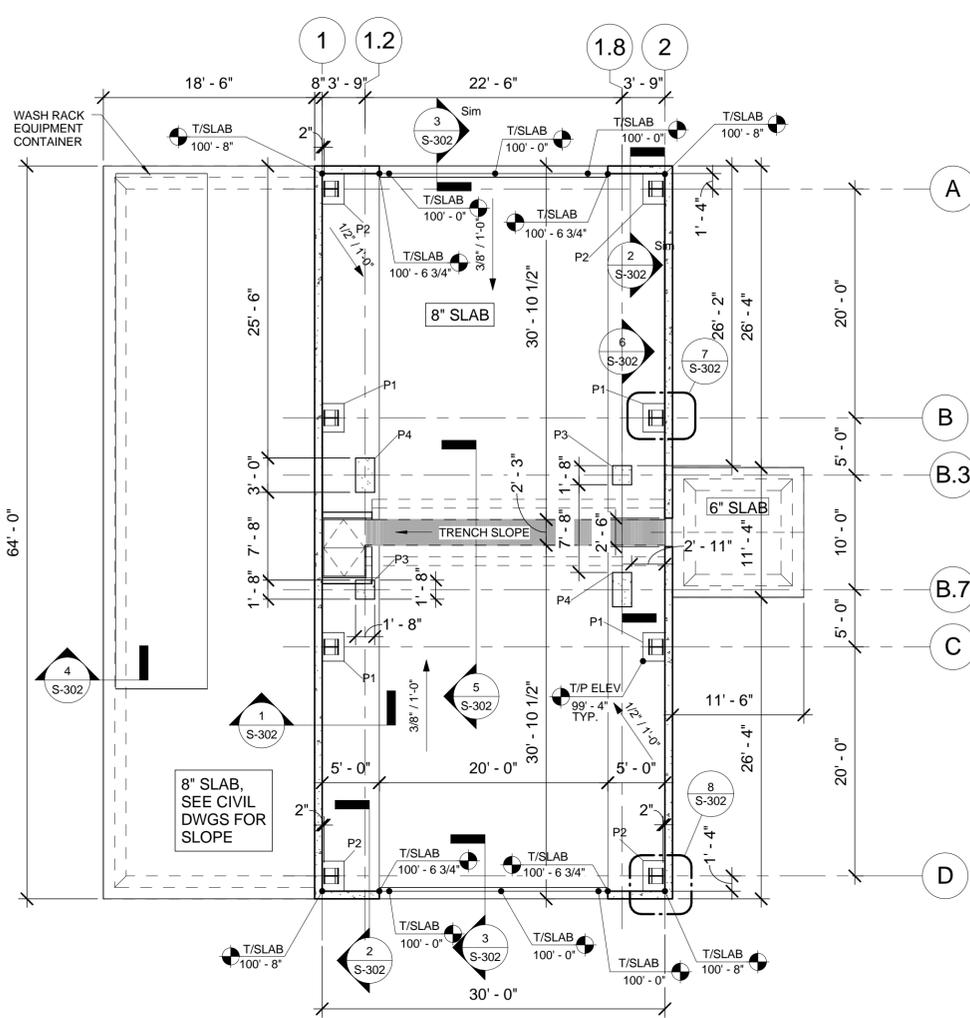
Scale = 1/2" = 1'-0"  
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**1 VEHICLE WASH RACK SLAB PLAN - BASE BID**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"



**2 VEHICLE WASH RACK SLAB PLAN - ABI**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"

**STRUCTURAL PEDESTAL SCHEDULES - BASE BID & ABI**

LOCATION	MARK	TYPE	Top Level	Top Offset	TOP OF PEDESTAL	VERTICAL REINF.	REINF. TIES	Comments
B-1	P1	30 x 30	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
A-1	P2	30 x 32	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
A-2	P2	30 x 32	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
B-2	P1	30 x 30	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
B.3-1.8	P3	20 x 20	LEVEL ONE	2' - 6"	102' - 6"	8 - #7	#4 @ 8" O.C.	
B.3-1.2	P4	36 x 20	LEVEL ONE	2' - 6"	102' - 6"	4 - #7	#4 @ 8" O.C.	
B.7-1.8	P4	36 x 20	LEVEL ONE	2' - 6"	102' - 6"	8 - #7	#4 @ 8" O.C.	
B.7-1.2	P3	20 x 20	LEVEL ONE	2' - 6"	102' - 6"	4 - #7	#4 @ 8" O.C.	
C-2	P1	30 x 30	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
C-1	P1	30 x 30	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
D-1	P2	30 x 32	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	
D-2	P2	30 x 32	LEVEL ONE	-8"	99' - 4"	12 - #8	#4 @ 12" O.C.	

**SHEET NOTES**

- NOTE.
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- COORDINATE THIS SHEET WITH THE SLAB PLANS
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- SEE S001 & S002 FOR GENERAL NOTES.
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- P# - PEDESTAL (SEE SCHEDULE ON SHEET S101 FOR SIZE AND REINFORCING)



1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48380  
 WESTHEIMER, HOUSTON, TX 77042  
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 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/05/2016  
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 EXPIRATION DATE OF LICENSE: 4/30/2018

DATE	DESCRIPTION	BY	CHK	APPR
12/05/2016	0 - BID PACKAGE FINAL			

**BID PACKAGE FINAL**

DATE: 12/05/2016

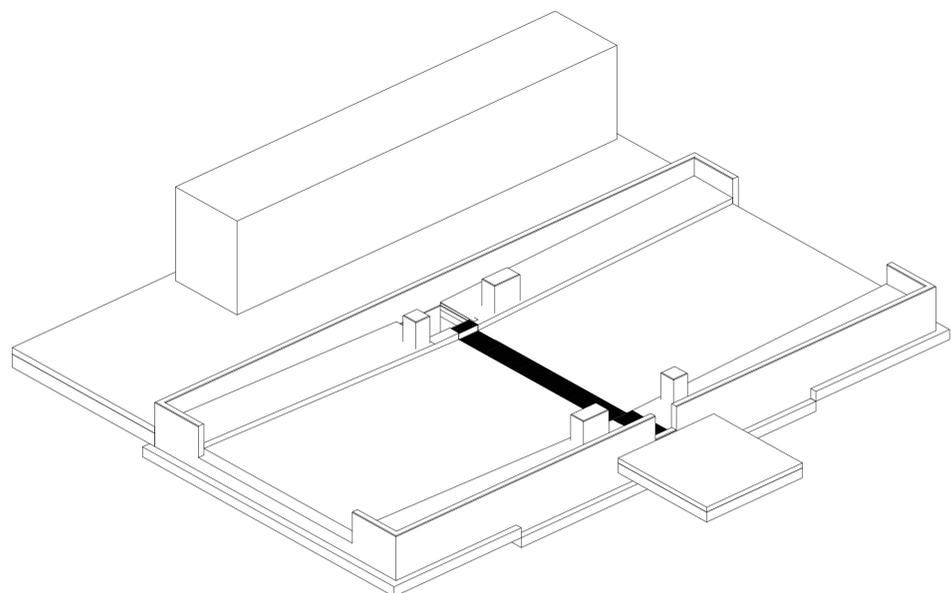
DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 THM#: 91013045

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

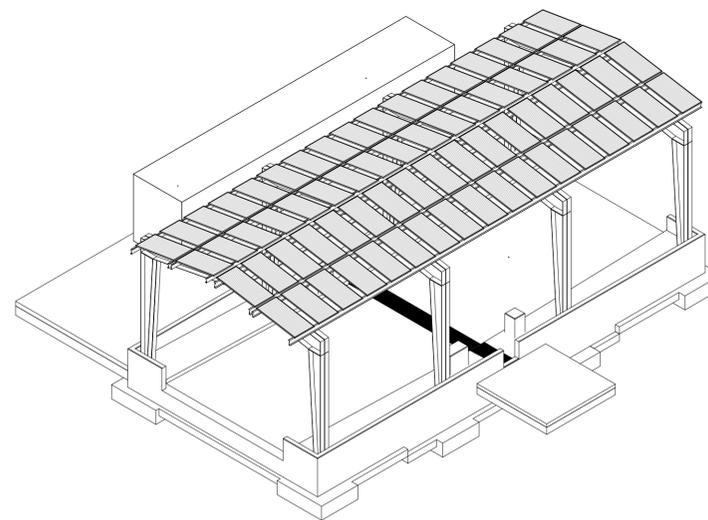
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FEDERAL PROJECT NO: 151400332

SHEET NO: S-102

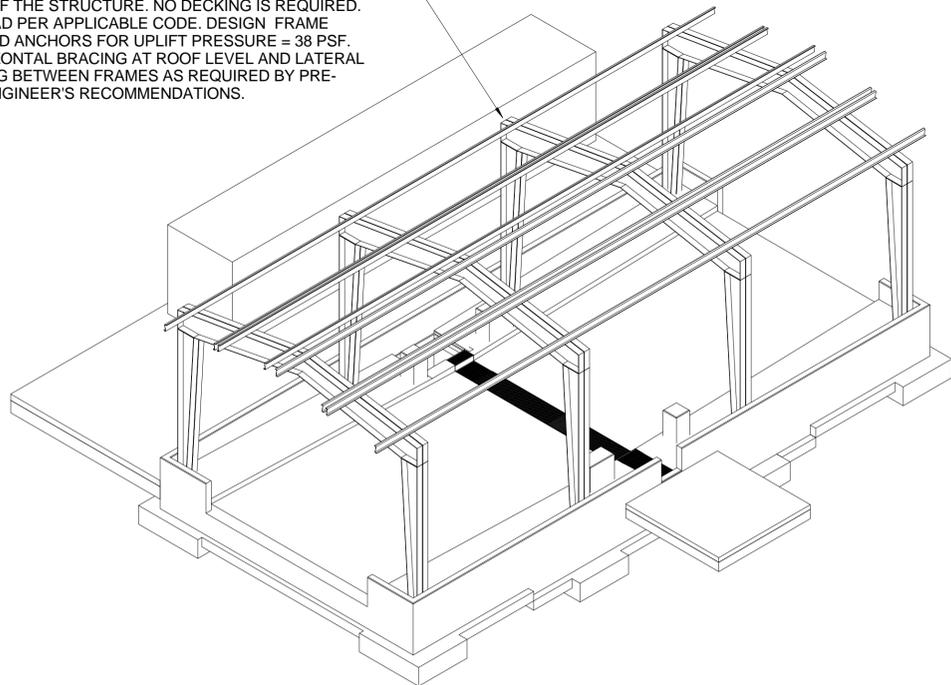


**1 3D BASE BID**  
 Scale = 1/8" = 1'-0"

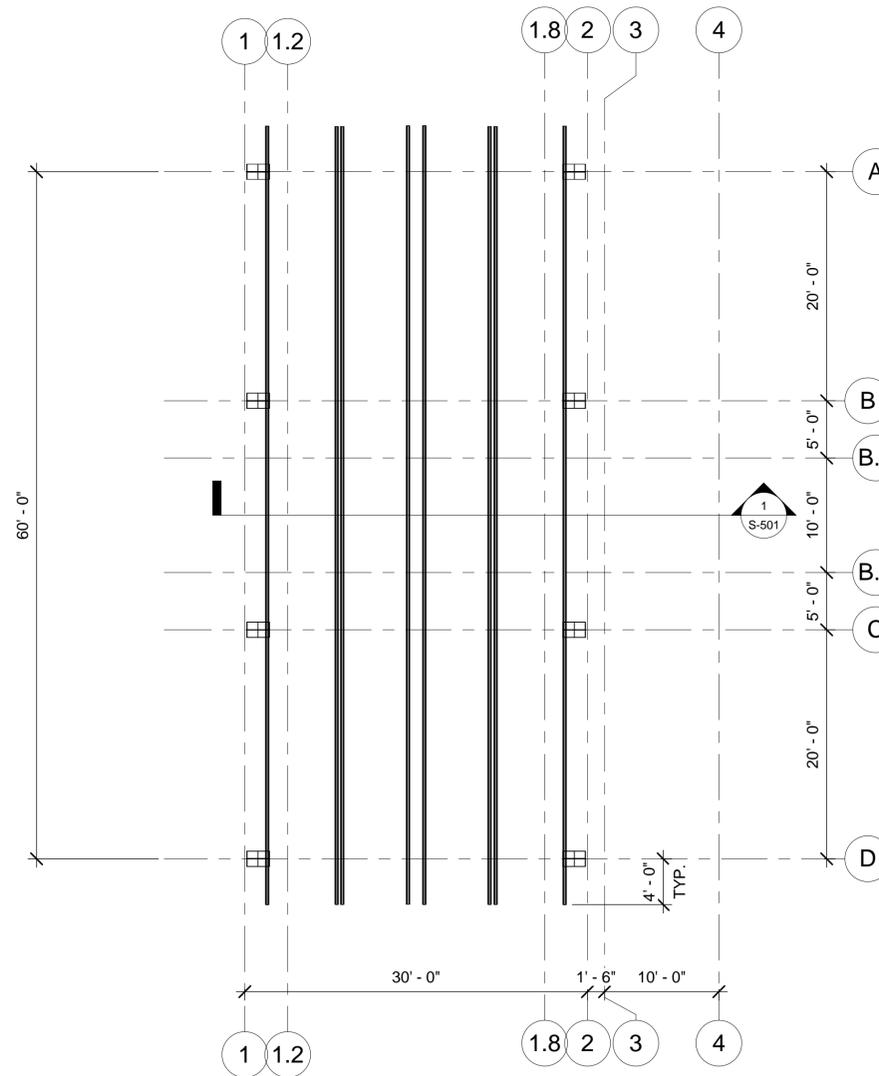


**3 3D ABI PHOTOVOLTAIC PANELS LAYOUT - ABI**  
 Scale = 3/32" = 1'-0"

PRE-FABRICATED BUILDING TO BE DESIGNED BY OTHERS TO ACCOMODATE PHOTOVOLTAIC PANELS WEIGHT = 10 PSF PLUS SELF WEIGHT OF THE STRUCTURE. NO DECKING IS REQUIRED. APPLY LIVE LOAD PER APPLICABLE CODE. DESIGN FRAME BASE PLATE AND ANCHORS FOR UPLIFT PRESSURE = 38 PSF. PROVIDE HORIZONTAL BRACING AT ROOF LEVEL AND LATERAL CROSS BRACING BETWEEN FRAMES AS REQUIRED BY PRE-FABRICATED ENGINEER'S RECOMMENDATIONS.



**2 3D ABI**  
 Scale = 1/8" = 1'-0"



**4 PRE-FAB METAL BUILDING ROOF FRAMING PLAN - ABI**  
 Scale = 1/8" = 1'-0"



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BID PACKAGE FINAL

12/05/2016

STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 TIKI: 91013045

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

BASE BID & ABI ROOF FRAMING PLANS

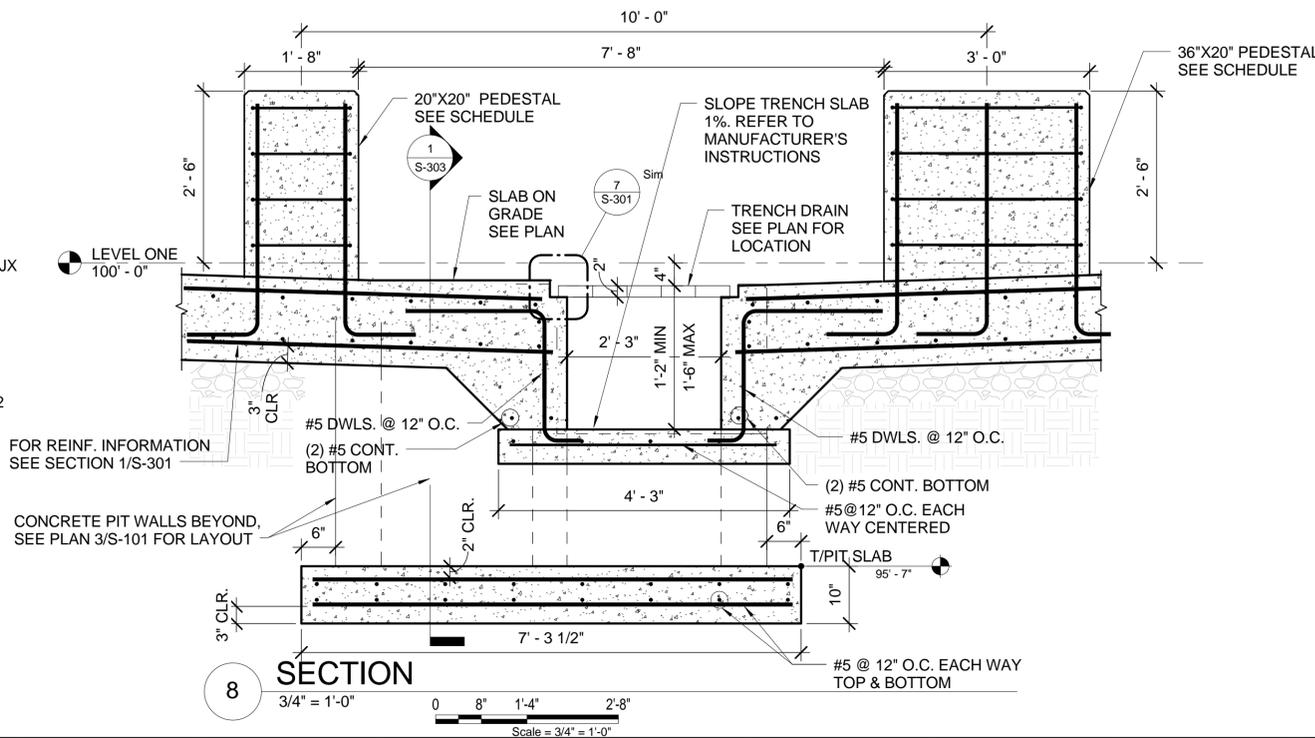
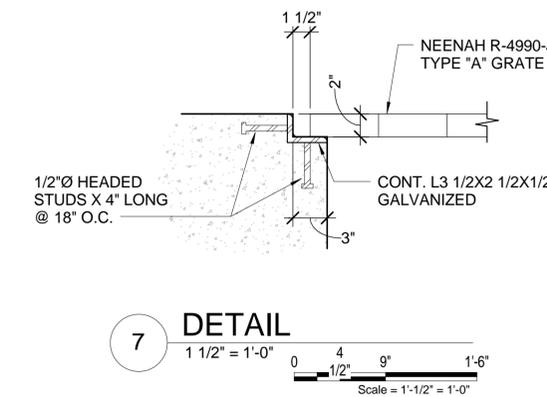
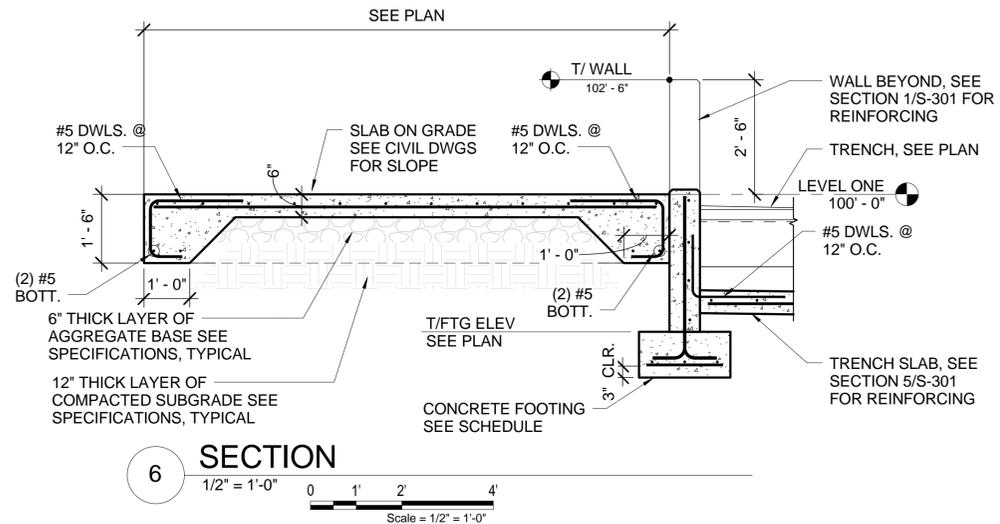
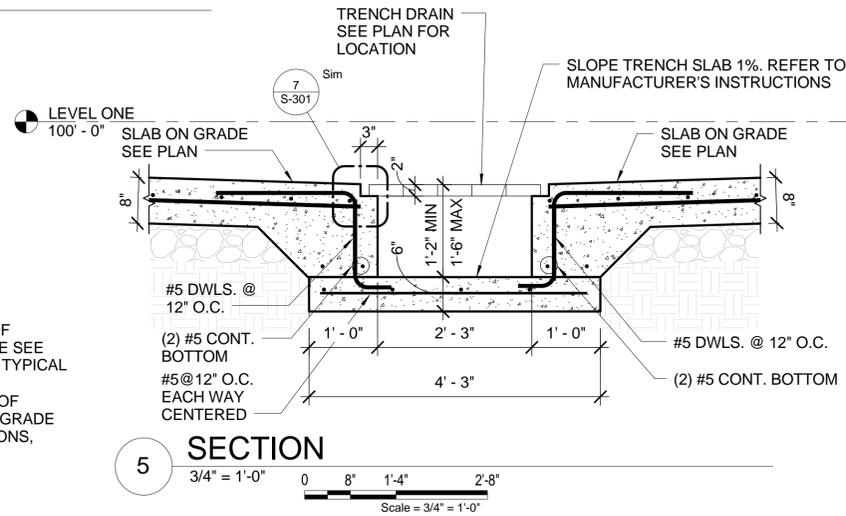
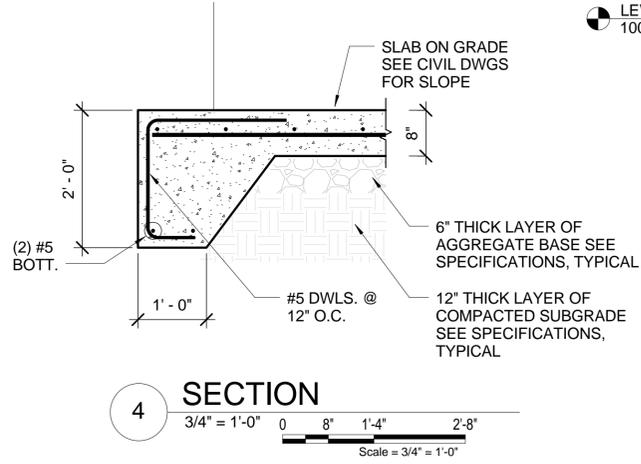
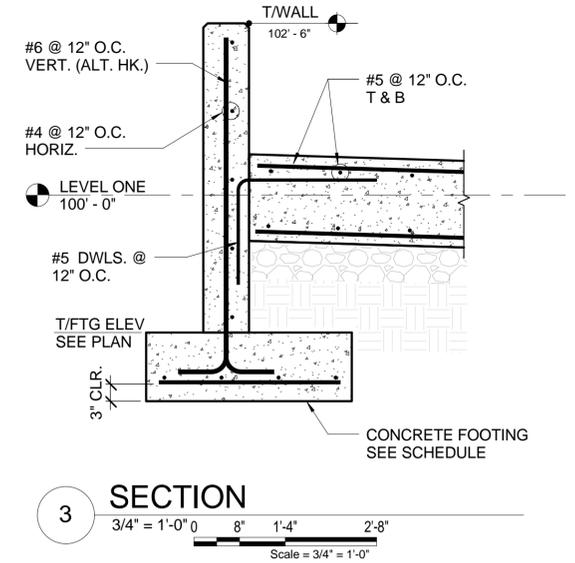
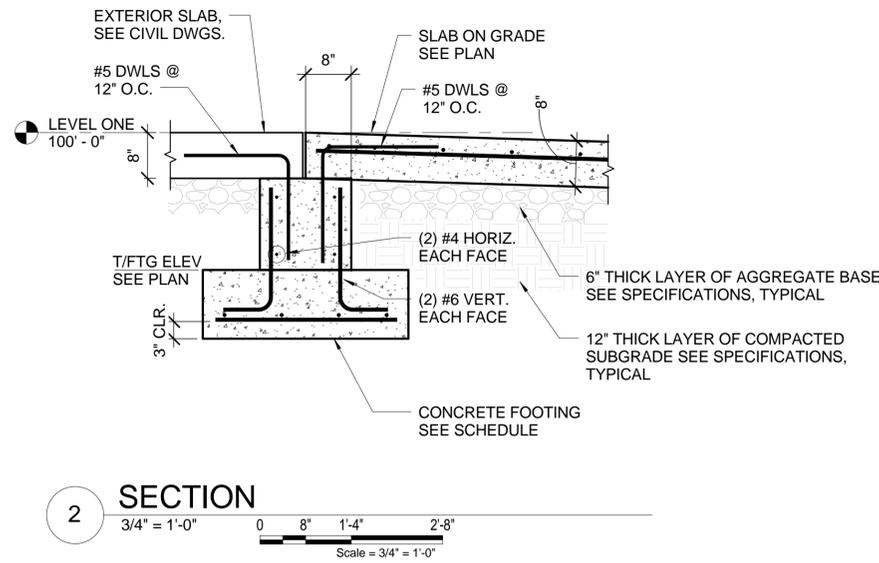
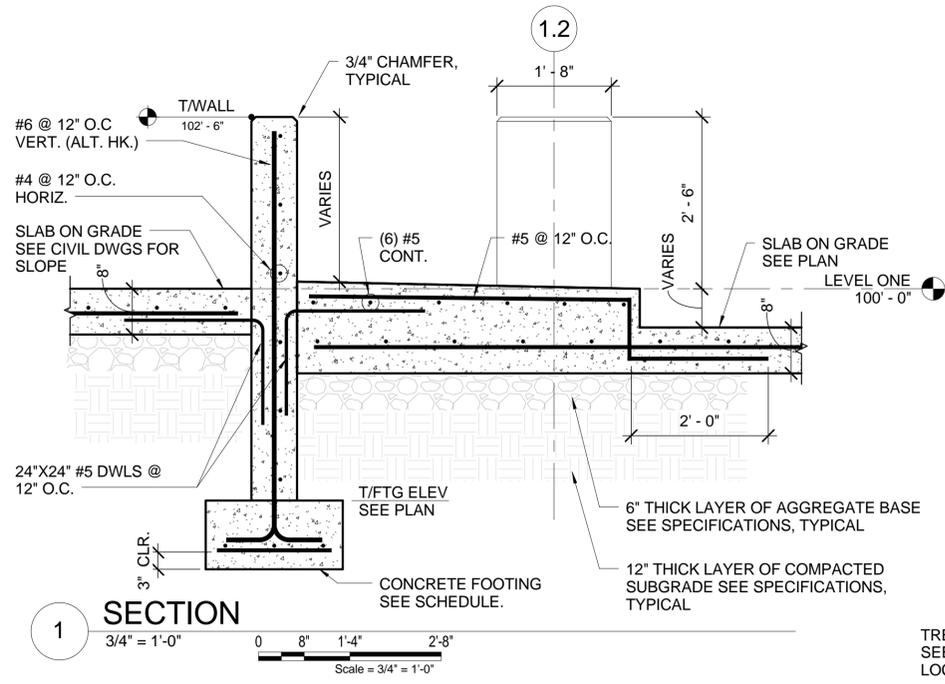
SCALE: 1/8" = 1'-0"

STATE JOB NO: CA-1424-C

FEDERAL PROJECT NO: 15140033

SHEET NO: S-111

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**BENHAM**

**leidos**

1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48380  
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BID PACKAGE FINAL

12/05/2016

STATE OF HAWAII

DEPARTMENT OF DEFENSE

FACILITIES DESIGN & PROJECT BRANCH

HAWAII ARMY NATIONAL GUARD

KAPOLEI, HI 96707

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

91-1171 ENTERPRISE AVENUE

THMK: 91013045

FOUNDATION SECTIONS & DETAILS

SCALE: As indicated

STATE JOB NO: CA-1424-C

FEDERAL PROJECT NO: 15140032

SHEET: S-301

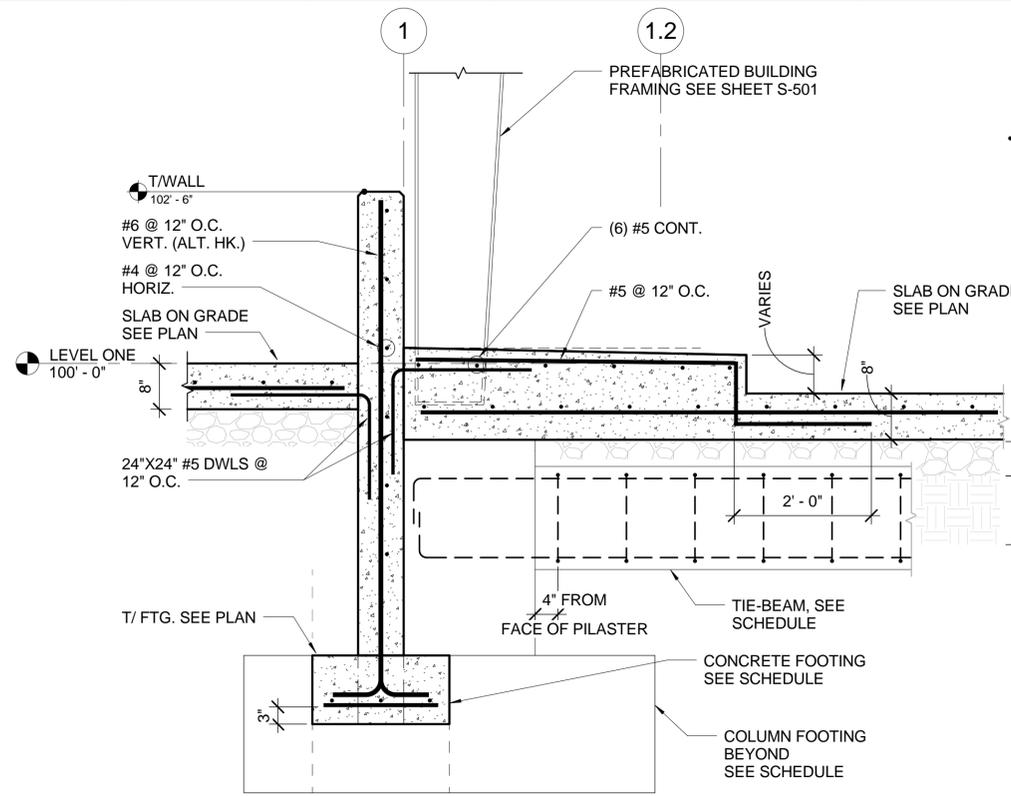
DATE: 12/05/2016

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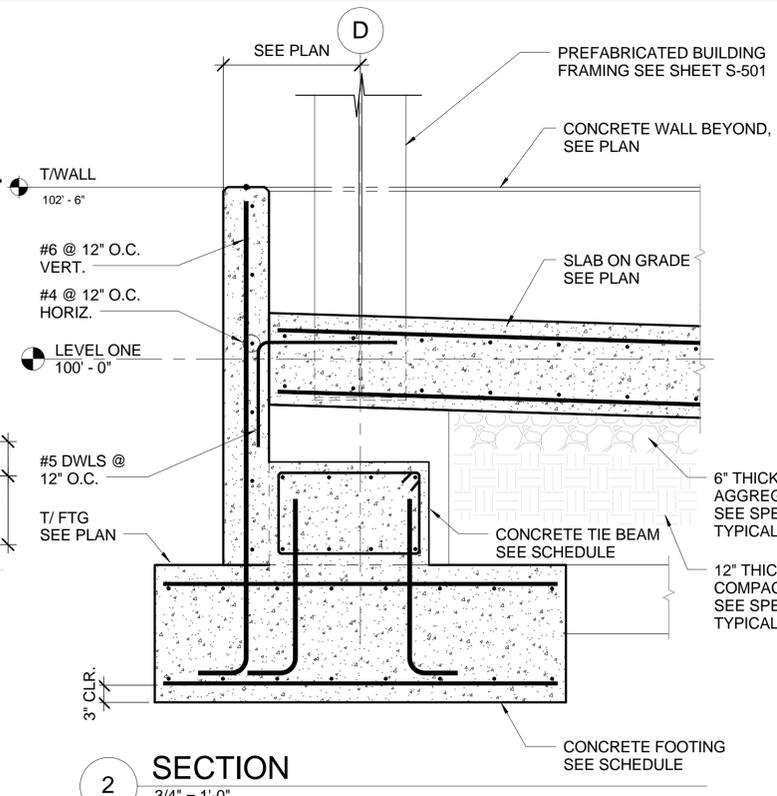
SCALE: 1 1/2" = 1'-0"

SCALE: 1/2" = 1'-0"

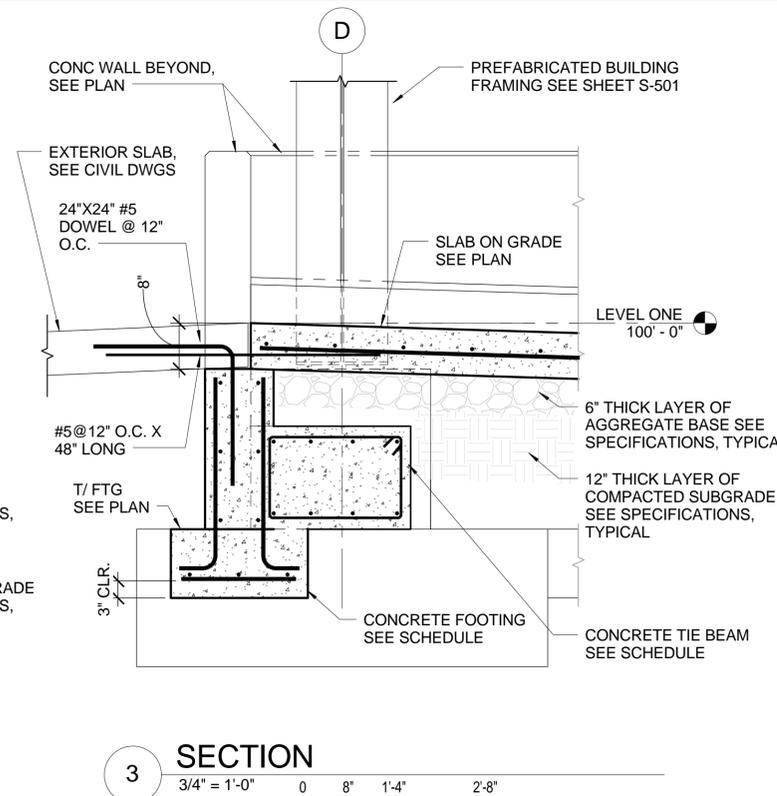
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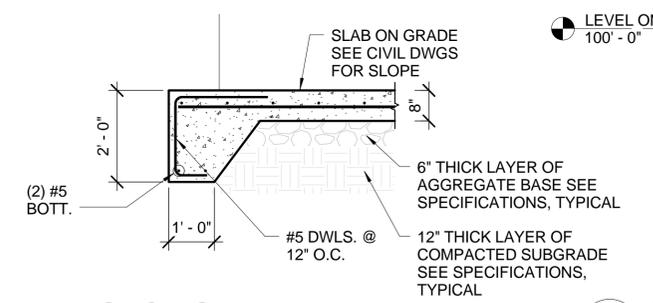
**1 SECTION**  
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 Scale = 3/4" = 1'-0"



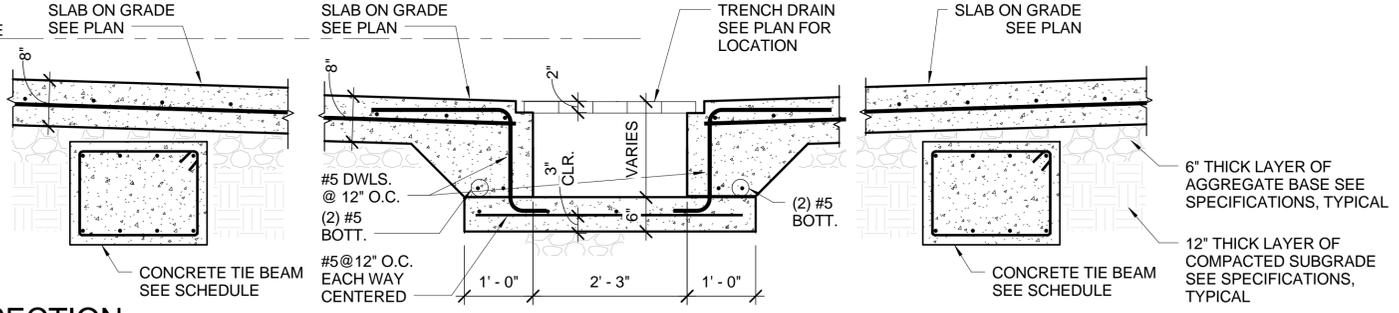
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 3/4" = 1'-0"  
 Scale = 3/4" = 1'-0"



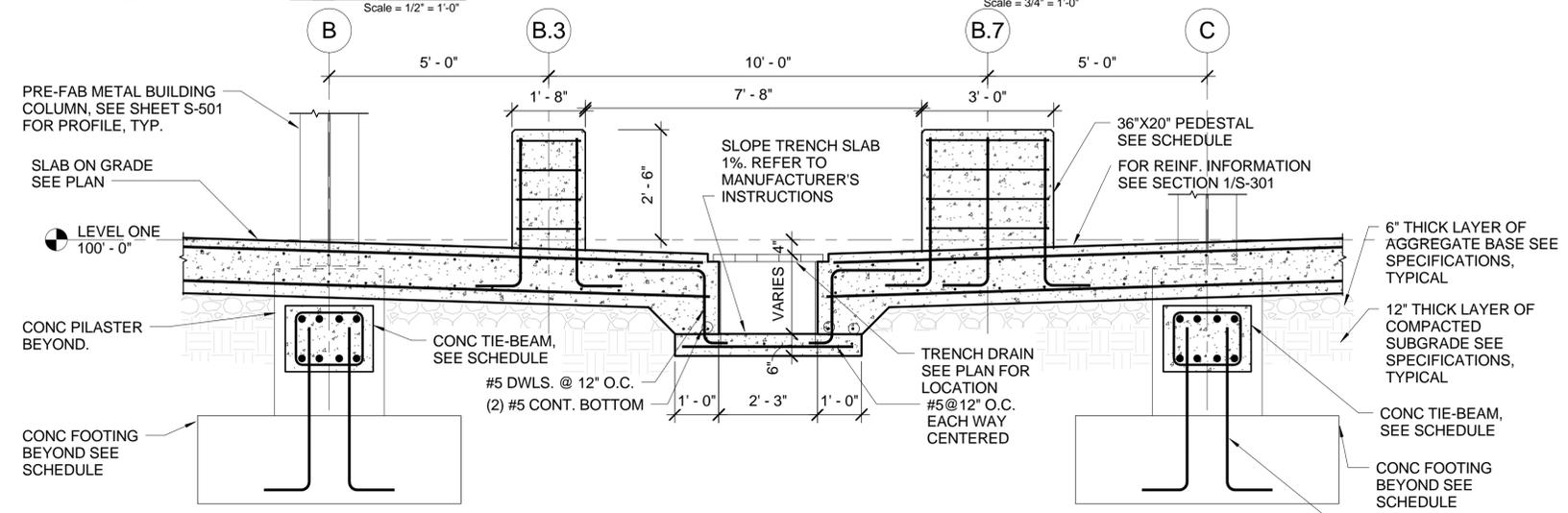
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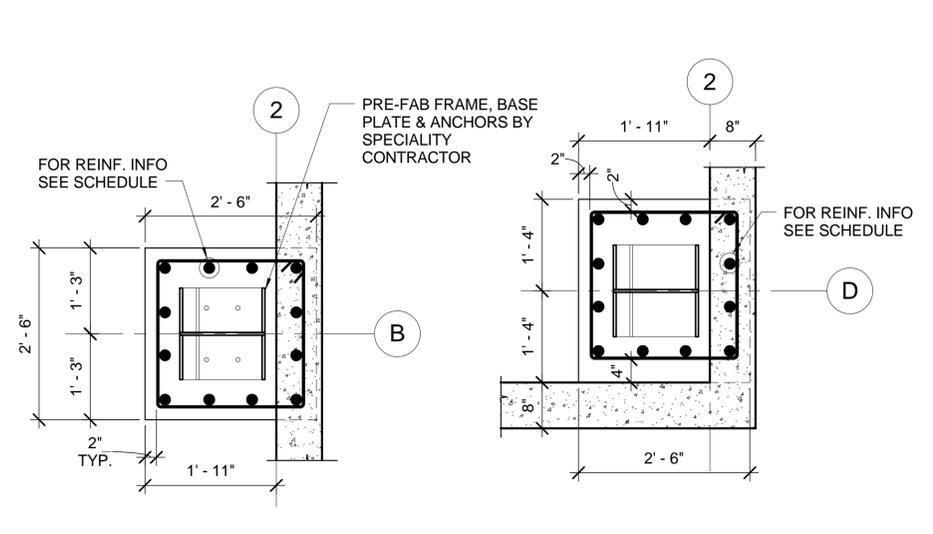
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 Scale = 1/2" = 1'-0"



**5 SECTION**  
 3/4" = 1'-0"  
 Scale = 3/4" = 1'-0"



**6 SECTION**  
 1/2" = 1'-0"  
 Scale = 1/2" = 1'-0"



**7 DETAIL**  
 3/4" = 1'-0"  
 Scale = 3/4" = 1'-0"

**8 DETAIL**  
 3/4" = 1'-0"  
 Scale = 3/4" = 1'-0"



**BENHAM**  
**leidos**

1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/05/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 EXPIRATION DATE OF LICENSE: 4/30/2018

DATE	DESCRIPTION	BY	CHK	APPR
12/05/2016	BID PACKAGE FINAL			

BID PACKAGE FINAL

12/05/2016

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707

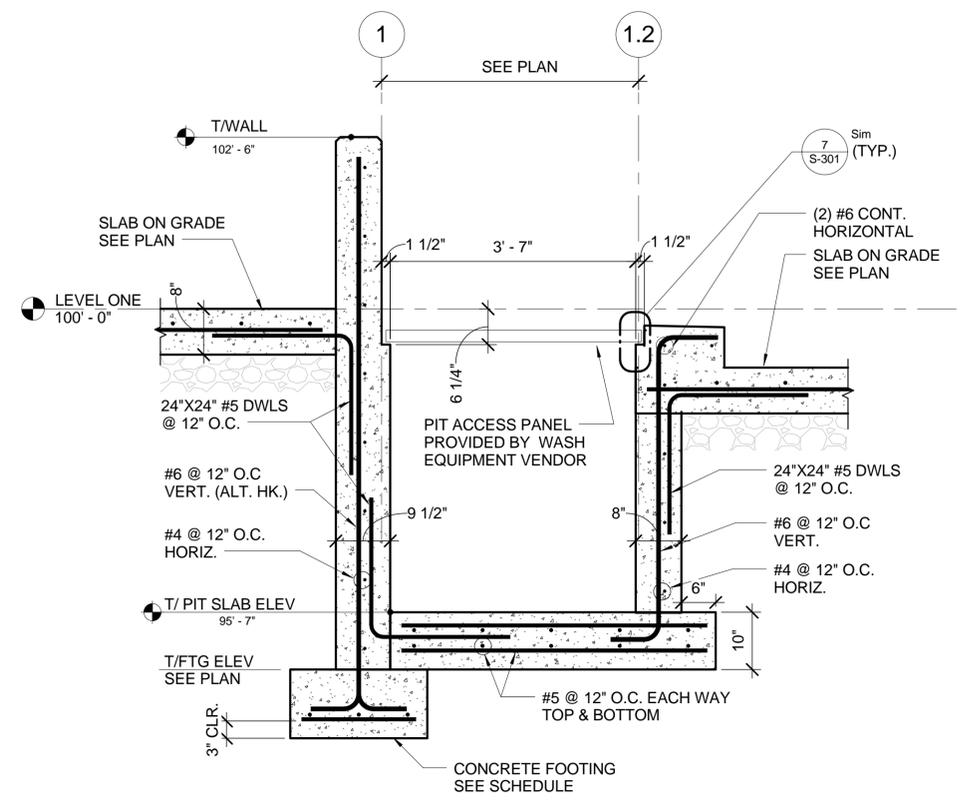
HAWAII ARMY NATIONAL GUARD  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 THIR: 91013045

SCALE: As indicated  
 STATE JOB NO: CA-1424-C  
 GENERAL PROJECT NO: 15140032  
 SHEET NO: 30

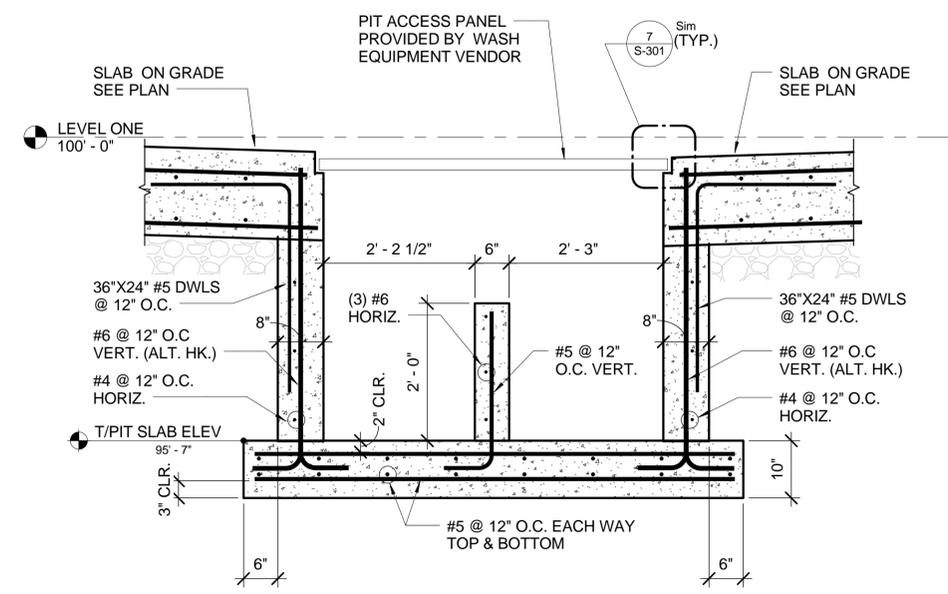
**S-302**

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**1 SECTION**  
 3/4" = 1'-0"  
 0 8" 1'-4" 2'-8"  
 Scale = 3/4" = 1'-0"



**2 SECTION**  
 3/4" = 1'-0"  
 0 8" 1'-4" 2'-8"  
 Scale = 3/4" = 1'-0"



1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/05/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
 EXPIRATION DATE OF LICENSE: 4/30/2018

DATE	DESCRIPTION	BY	CHK	APPR
12/05/2016	0 - BID PACKAGE FINAL			

BID PACKAGE FINAL

12/05/2016

STATE OF HAWAII  
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 DEPARTMENT OF DEFENSE  
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 KAPOLEI, HI 96707  
 THK#: 91013045  
 HAWAII ARMY NATIONAL GUARD  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

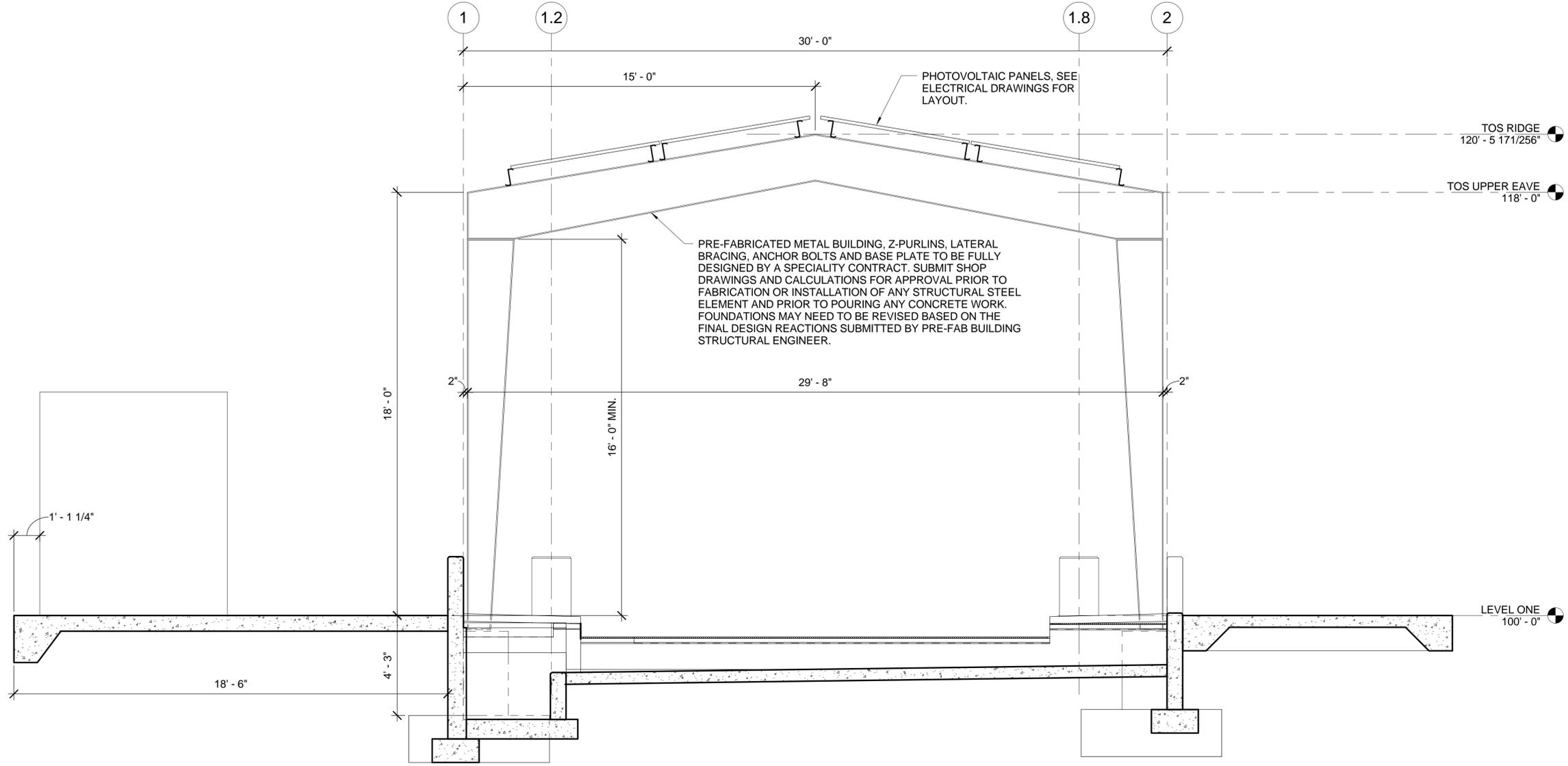
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STATE JOB NO. CA-1424-C

FEDERAL PROJECT NO. 15140033

SHEET NO. S-303

FOUNDATION SECTIONS



1 PRE-FABRICATED BUILDING SECTION - ABI  
 Scale = 3/8" = 1'-0"



1250 N. PONTIAC TRAIL, WALLEE LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 12/05/2018  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 EXPIRATION DATE OF LICENSE: 4/30/2018

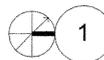
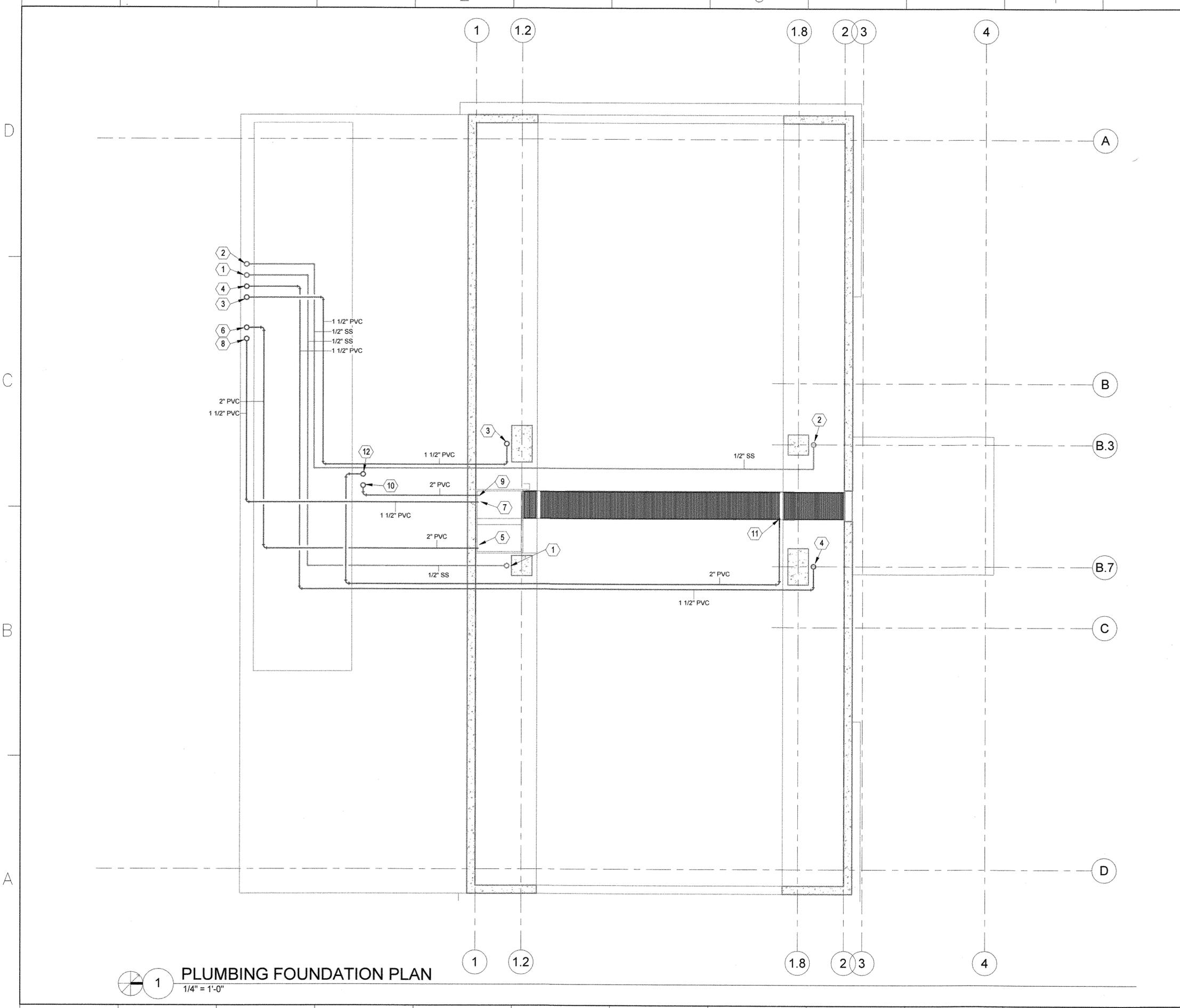
DATE	DESCRIPTION	APPR	AKG
12/05/2018	BID PACKAGE FINAL		

BID PACKAGE FINAL  
 SUBMITTAL DATE: 12/05/2018

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707  
 STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 TIKI: 91013045  
 HAWAII ARMY NATIONAL GUARD  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 FRAMING SECTIONS & DETAILS

SCALE: 3/8" = 1'-0"  
 STATE JOB NO: CA-1424-C  
 FEDERAL PROJECT NO: 15140032  
 SHEET NO: S-501

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**1 PLUMBING FOUNDATION PLAN**  
1/4" = 1'-0"

**SHEET NOTES**

- 1 COORDINATE LOCATION OF ALL PIPING STUBBED UP THROUGH CONCRETE SLAB AND FOUNDATION WALLS WITH FABRICATION AND SHOP DRAWINGS FROM WASH BAY EQUIPMENT MANUFACTURER.
- 2 CONTRACTOR SHALL PROVIDE TEMPORARY DAMAGE PROTECTION FOR PIPING STUBBED UP THROUGH CONCRETE SLAB AND THROUGH FOUNDATION WALLS UNTIL FINAL EQUIPMENT CONNECTIONS ARE MADE.
- 3 PIPING SHALL NOT PENETRATE FOOTINGS OR GRADE BEAMS.
- 4 PIPING SHALL HAVE AS FEW JOINTS AS PRACTICAL BELOW CONCRETE SLAB.
- 5 STAINLESS STEEL PIPING BELOW GRADE SHALL HAVE PIPE WRAP.
- 6 ALL PIPE PENETRATIONS TO BE WATER TIGHT.
- 7 OPEN END OF PIPING SHALL BE COVERED TO AVOID CONTAMINATION.

**KEYED NOTES (THIS SHEET) AS- DENOTED BY (#)**

- 1 TERMINATE 1/2" STAINLESS STEEL PIPE 12" ABOVE CONCRETE SLAB FOR PRESSURE WASHER 1.
- 2 TERMINATE 1/2" STAINLESS STEEL PIPE 12" ABOVE CONCRETE SLAB FOR PRESSURE WASHER 2.
- 3 TERMINATE 1 1/2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR WATER CANNON 1.
- 4 TERMINATE 1 1/2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR WATER CANNON 2.
- 5 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" BEYOND FOUNDATION WALL FOR CONNECTION TO SUMP RECOVERY.
- 6 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR CONNECTION TO SUMP RECOVERY.
- 7 TERMINATE 1 1/2" SCHEDULE 80 PVC PIPE 12" BEYOND FOUNDATION WALL FOR ISO TANK PURGE/BACKWASH/OZONE.
- 8 TERMINATE 1 1/2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR ISO TANK PURGE/BACKWASH/OZONE.
- 9 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" BEYOND FOUNDATION WALL FOR ALTERNATE CONE BOTTOM PURGE.
- 10 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR ALTERNATE CONE BOTTOM PURGE.
- 11 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" THROUGH FOUNDATION WALL FOR CONE BOTTOM PURGE.
- 12 TERMINATE 2" SCHEDULE 80 PVC PIPE 12" ABOVE CONCRETE SLAB FOR CONE BOTTOM PURGE.

**SYMBOLS AND ABBREVIATIONS**

- PIPE TURNED UP
- PVC** SCHEDULE 80 PVC PIPING
- SS** SCHEDULE 80 TYPE 304 STAINLESS STEEL PIPING



1200 N. PONTIAC TRAIL, WALLEE LAKE, MI 48300  
WESTHEIMER, HOUSTON, TX 77042  
9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
622 EMERSON ROAD, ST. LOUIS, MO 63141  
60 PILATO BOULEVARD E, ST. PAUL, MN 55107  
ONE WEST THIRD STREET, TULSA, OK 74103



SIGN: *Albert E. Ketterer*  
DATE: 12/05/2016  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
EXPIRATION DATE OF LICENSE: 12/31/2018

NO.	DATE	BY	DESCRIPTION
0	12/05/2016	WAO	BID PACKAGE FINAL

SUBMITTAL PHASE:  
**BID PACKAGE FINAL**

DES: WAO DRW: TMD CHK: WAO

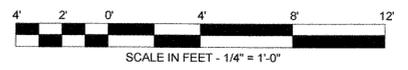
STATE OF HAWAII  
FACILITY MANAGEMENT OFFICE  
91-1171 ENTERPRISE AVENUE  
TMM: 91013045

DEPARTMENT OF DEFENSE  
FACILITIES DESIGN & PROJECT BRANCH  
KAPOLEI HI 96707

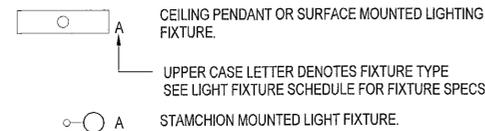
**VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI**

**PLUMBING FOUNDATION PLAN**

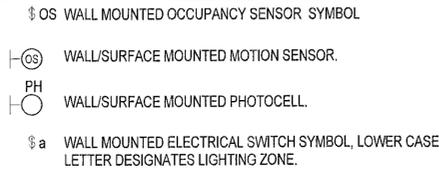
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STATE JOB NO. CA-1424-C  
FEDERAL PROJECT NO. 15140032  
SHEET 01  
**P-010**



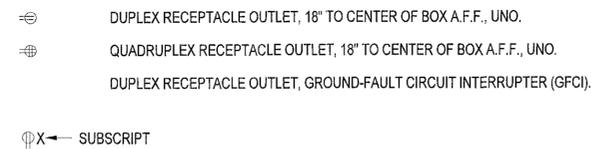
**LIGHTING FIXTURE SYMBOLS**



**LIGHTING CONTROL SYMBOLS**

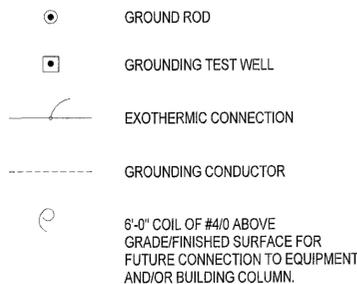


**RECEPTACLES SYMBOLS**



NOTES: SUBSCRIPTS SHALL BE ADDED TO SYMBOL WHERE APPLICABLE.  
 "WP" = WEATHER PROOF.  
 "GFCI" = GROUND-FAULT CIRCUIT INTERRUPTER TYPE RECEPTACLE.

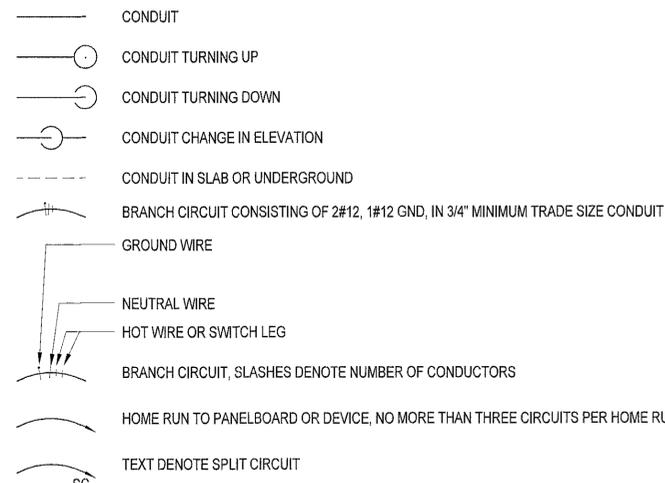
**GROUNDING**



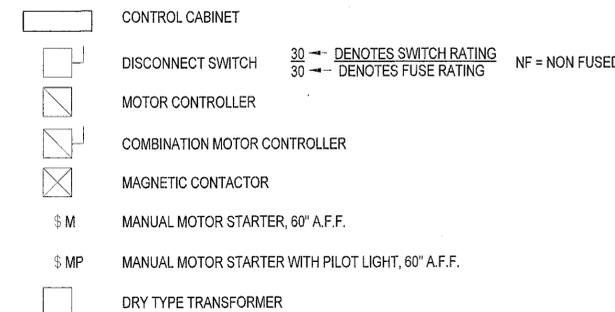
**ABBREVIATIONS**

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
A	AMPERE	CONTD	CONTINUED	GEN	GENERATOR GENERAL	LTG	LIGHTING	OH	OVERHEAD/ OPPOSITE HAND	SWBD	SWITCHBOARD
ACB	AIR CIRCUIT BREAKER	COR	CONTRACTING OFFICER'S REPRESENTATIVE	GF	GROUND FAULT	M	METER	OPER	OPERATOR	SWGR	SWITCHGEAR
AF	AMPERE FRAME	CP	CONTROL PANEL	GFCI	GROUND FAULT CIRCUIT INTERRUPTER	MAINT	MAINTENANCE	P	POLE	TB	TERMINAL BOARD
AFC	AVAILABLE FAULT CURRENT	CR	CONTROL RELAY	GND	GROUND	MAX	MAXIMUM	PB	PUSHBUTTON/ PULL BOX	TC	TERMINAL CABINET/ TIME CLOCK/ TRIP COIL
AFF	ABOVE FINISHED FLOOR	CFL	COMPACT FLUORESCENCE LAMP	HID	HIGH INTENSITY DISCHARGE	MCA	MINIMUM CIRCUIT AMPACITY	PC	PHOTOELECTRIC CELL	TD	TIME DELAY
AFG	ABOVE FINISHED GRADE	CT	CURRENT TRANSFORMER/ CERAMIC TILE/ COOLING TOWER	H-O-A	HAND-OFF-AUTOMATIC SWITCH	MCB	MAIN CIRCUIT BREAKER	PF	POWER FACTOR/ PROFILE	TGB	TELECOMMUNICATIONS GROUND BUSBAR
AHU	AIR HANDLING UNIT	CU	COPPER	HP	HORSEPOWER	MCP	MOTOR CIRCUIT PROTECTOR	PNL	PANEL	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
AIC	AMPERES INTERRUPTING CAPACITY	D	DIMMER/ DEEP/ DEPTH	HPS	HIGH PRESSURE SODIUM	MH	MANHOLE, METAL HALIDE	PT	POTENTIAL TRANSFORMER	TYP	TYPICAL
AT	AMPERE TRIP	DIST	DISTRIBUTION	IG	ISOLATED GROUND	MLO	MAIN LUGS ONLY	PNLBRD	PANELBOARD	UNO	UNLESS NOTED OTHERWISE
A.T.S.	AUTOMATIC TRANSFER SWITCH	DS	DISCONNECT SWITCH/ DOWN SPOUT	IMC	INTERMEDIATE METAL CONDUIT	MIN	MINIMUM	PVC	POLYVINYL CHLORIDE	UNSHLD	UNSHIELDED
AWG	AMERICAN WIRE GAUGE	DWG	DRAWING	INST	INSTANTANEOUS	MOCPD	MAXIMUM OVERCURRENT PROTECTIVE DEVICE	REF	REFER TO/ REFERENCE/ REFRIGERATOR	UPS	UNINTERRUPTIBLE POWER SUPPLY
B	BELL	ELEC	ELECTRIC, ELECTRICAL	JB	JUNCTION BOX/ JOIST BEARING	MMS	MANUAL MOTOR STARTER	PWR	POWER	V	VOLT
BKR	BREAKER	EMER	EMERGENCY	KA	KILOAMPERE	MTD	MOUNTED	REM	REMOTE	VCB	VACUUM CIRCUIT BREAKER
C	CONDUIT	EMT	ELECTRICAL METALLIC TUBING	KCMIL	THOUSAND CIRCULAR MILLS	MTR	MOTOR	RGS/RMC	RIGID GALVANIZED STEEL CONDUIT	VFD	VARIABLE FREQUENCY DRIVE
CAB	CABINET	EO	ELECTRICALLY OPERATED	KS	KEY SWITCH	MTS	MANUAL TRANSFER SWITCH	ROOM	ROOM	W	WIRE/ WATT/ WIDTH/ WEST
CB	CIRCUIT BREAKER	EPO	EMERGENCY POWER OFF	KV	KILOVOLT	NF	NON-FUSED, NON-FUSABLE	SA	SURGE ARRESTER	W/	WITH
CCT	CIRCUIT	FA	FIRE ALARM	KVA	KILOVOLT-AMPERE	NC	NORMALLY CLOSED	SC	SPLIT CIRCUIT	WLD	WELDING
CNTL	CONTROL	FU	FUSE	KW	KILOWATT	NO	NORMALLY OPEN	SHLD	SHIELDED	WP	WEATHER PROOF/ WORKING POINT
COL	COLUMN	FS	FLOW SWITCH	LA	LIGHTNING ARRESTER	NEUT	NEUTRAL	SW	SWITCH	XFMR	TRANSFORMER
COMM	COMMUNICATIONS	GBT	GENERATOR BUS-TIE	LED	LIGHT-EMITTING DIODE	OC	OVERCURRENT	SPD	SURGE PROTECTION DEVICE	XP	EXPLOSION PROOF

**CONDUIT RACEWAY & WIRING SYMBOLS**



**POWER AND CONTROL PLAN SYMBOLS**

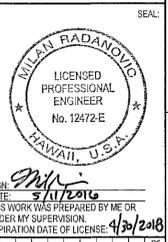


**GENERAL NOTES:**

- NOT ALL THE SYMBOLS AND ABBREVIATIONS USED IN THIS LEGEND ARE USED IN THIS SET OF DRAWINGS.
- REFER TO GROUNDING PLANS FOR ADDITIONAL SYMBOLS AND INFORMATION.



1250 N. PONTIAC TRAIL, WALL LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 8400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 60 PLATO BOULEVARD E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103



DATE	BY	DESCRIPTION
12/05/2018	MLR	BID PACKAGE FINAL

BID PACKAGE FINAL

DATE: 12/05/2018

DES: VHR DRB: VHR CHG: MCB

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
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HAWAII ARMY NATIONAL GUARD  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 KAPOLEI, HI 98707

VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI

LEGEND AND ABBREVIATIONS

STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 KAPOLEI, HI 98707  
 TMR: 91013045

SCALE: 12" = 1'-0"

STATE JOB NO.: CA-1424-C

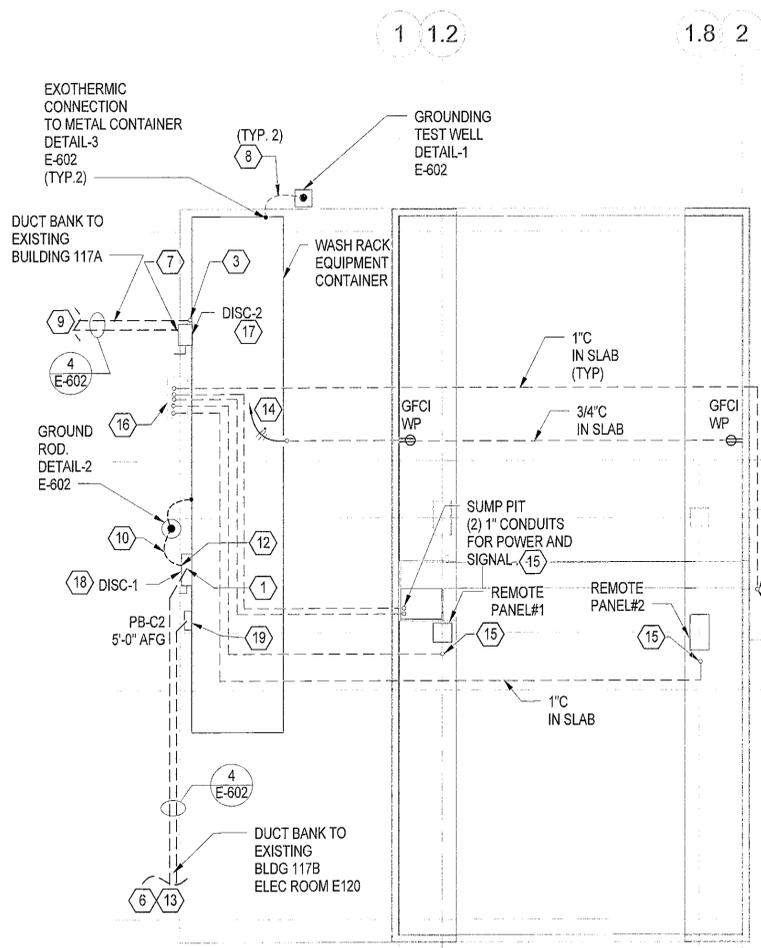
PROJECT NO.: 1514C032

SHEET OF

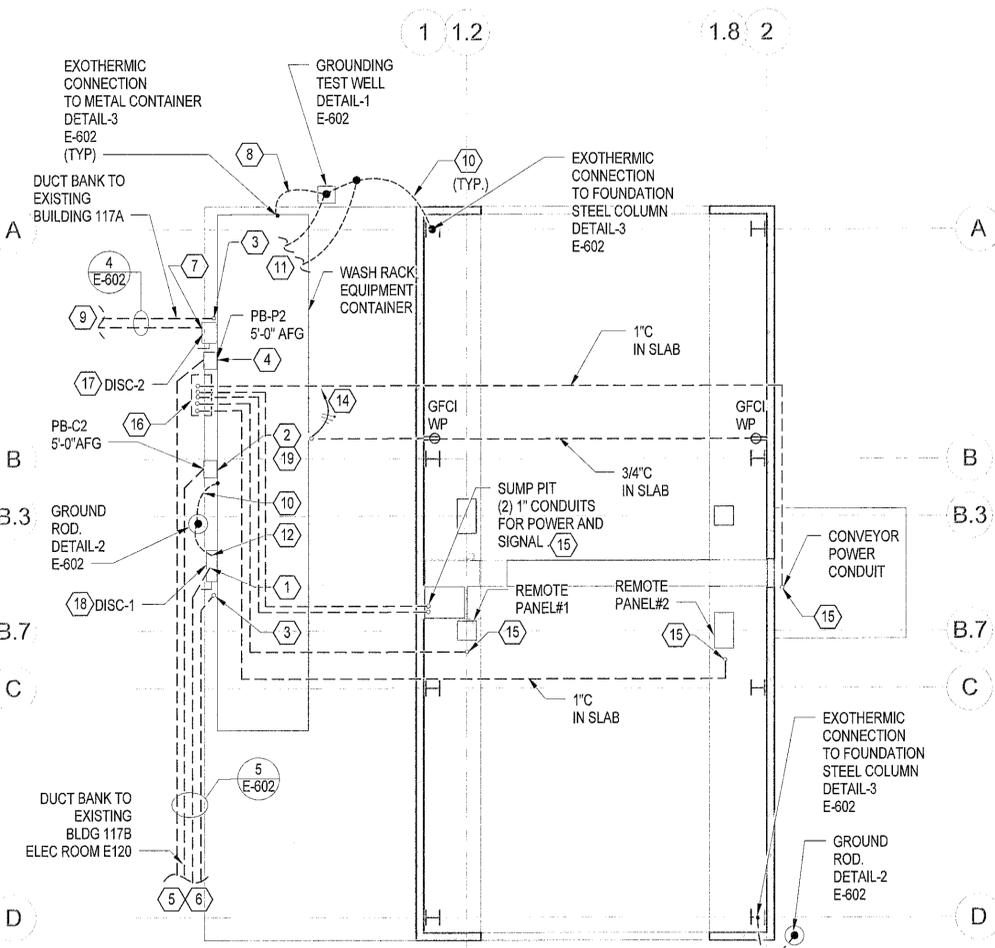
E-001

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**1 WASH RACK ELECTRICAL PLAN-BASE BID**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"



**2 WASH RACK-ELECTRICAL PLAN-ABI**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"

**SHEET NOTES**

1. LOCATIONS OF ELECTRICAL EQUIPMENT, CONDUIT AND POWER CONNECTIONS SHOWN ON THIS PLAN ARE APPROXIMATE. REFER TO WASH RACK EQUIPMENT VENDOR DRAWINGS FOR EXACT LOCATION AND INSTALLATION DETAILS.

**KEYED NOTES (THIS SHEET) AS-DENOTED BY #**

1. STUB-UP ONE(1) 4" RGS CONDUIT TO DISC-1 AND TERMINATE CABLE SIZE AS SHOWN ON ONE-LINE DIAGRAM SHEET E-601.
2. STUB-UP ONE(1) 4" RGS CONDUIT TO PB-C2 PULL BOX. EXTEND 1" RGS CONDUIT FROM PB-C2 WITH TWO(2) CAT-6 CABLES (1 SPARE) TO PV SYSTEM INVERTER IN WASH RACK EQUIPMENT CONTAINER. SEE SHEET E-103 DETAIL-2 FOR COMPLETE CONDUIT ROUTING.
3. STUB-UP ONE(1) 4" RGS SPARE CONDUIT UP TO 18" AFG AND CAP IT.
4. STUB-UP ONE(1) 4" RGS CONDUIT TO PB-P2 PULLBOX FOR INVERTER POWER WIRING. EXTEND CONDUIT AND WIRING TO INVERTER AC OUTPUT DISCONNECT WITH CABLE SIZE AS SHOWN ON ONE-LINE DIAGRAM SHEET E-601.
5. ELECTRICAL DUCT BANK WITH (4)-4" PVC SCHD 40 CONDUITS WITH PULL STRINGS TO EXISTING BLDG 117B ELEC ROOM E120. SEE SHEET E-602 FOR 2X2 DUCT BANK DETAIL. REFER TO SHEET C-101 CIVIL SITE PLAN FOR DUCT BANK ROUTE.
6. SEE SHEET E-102 FOR DUCT BANK STUB-UP LOCATIONS AT ELECTRICAL ROOM E120.
7. STUB-UP ONE(1) 4" RGS CONDUIT WITH PULL STRING TO DISC-2 FOR FUTURE POWER FEEDER CABLE TO BUILDING 117A.
8. STUB-UP AND SECURE 4/0 GROUNDING CONDUCTOR IN CONDUIT SLEEVE, LENGTH AS NEEDED, FOR BONDING TO METAL CONTAINER.
9. ELECTRICAL DUCT BANK WITH (2)-4" PVC SCHD 40 CONDUITS WITH PULL STRINGS TO EXISTING BLDG 117A. SEE SHEET E-602 FOR 2X1 DUCT BANK DETAIL. REFER TO SHEET C-101 CIVIL SITE PLAN FOR DUCT BANK ROUTE.
10. 4/0 BARE COPPER GROUNDING CONDUCTOR MIN. 30" BELOW GRADE.
11. STUB-UP AND SECURE (2) 4/0 GROUNDING CONDUCTORS IN TWO SEPARATE CONDUIT SLEEVES, LENGTH AS NEEDED. EXTEND GROUNDING CONDUCTORS FOR PV SYSTEM INVERTER "AC" AND "DC" GROUNDING. COORDINATE WITH WASH RACK EQUIPMENT METAL CONTAINER SUPPLIER DRAWINGS FOR INVERTOR LOCATION.
12. GROUNDING ELECTRODE CONNECTION TO SERVICE ENTRANCE DISCONNECT.
13. ELECTRICAL DUCT BANK WITH (2)-4" PVC SCHD 40 CONDUITS WITH PULL STRINGS TO EXISTING BLDG 117B ELEC ROOM E120. SEE SHEET E-602 FOR 2X1 DUCT BANK DETAIL. REFER TO SHEET C-101 CIVIL SITE PLAN FOR DUCT BANK ROUTE.
14. PROVIDE A 20A, 120V CIRCUIT FROM WASH RACK EQUIPMENT SUPPLIER PANEL.
15. 1" CONDUIT STUB-UP(S) 6" AFF. REFER TO WASH RACK EQUIPMENT VENDOR DRAWINGS FOR STUB-UP DETAILS.
16. REFER TO WASH RACK EQUIPMENT VENDOR DRAWINGS FOR ELECTRICAL AND OTHER UTILITIES STUB-UP DETAILS FOR THIS AREA.
17. 208V/3P NEMA 3R DISC-2 SUPPLIED AND INSTALLED BY WASH RACK EQUIPMENT SUPPLIER. SEE SHEET E-601 FOR ONE-LINE DIAGRAM.
18. 480V/3P NEMA 3R DISC-1 SUPPLIED AND INSTALLED BY WASH RACK EQUIPMENT SUPPLIER. SEE SHEET E-601 FOR ONE-LINE DIAGRAM.
19. EXTEND A 3/4" RGS CONDUIT WITH A SINGLE TWISTED PAIR SHIELDED INSTRUMENT CABLE TO WATER FLOW METER OUTPUT DEVICE.



**BENHAMI**  
A Harsco Company

**leidos**

1250 N. PONTIAC TRAIL, WALLED LAKE, MI 48306  
 WESTHEIMER, HOUSTON, TX 77042  
 9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 822 EMERSON ROAD, ST. LOUIS, MO 63141  
 50 PLATO BOULEVARD E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, TULSA, OK 74103

SEAL



SEAL

DATE: 5/17/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 EXPIRATION DATE OF LICENSE: 4/30/2018

NO.	DATE	BY	DESCRIPTION
0	12/05/2016	JAG	BID PACKAGE FINAL

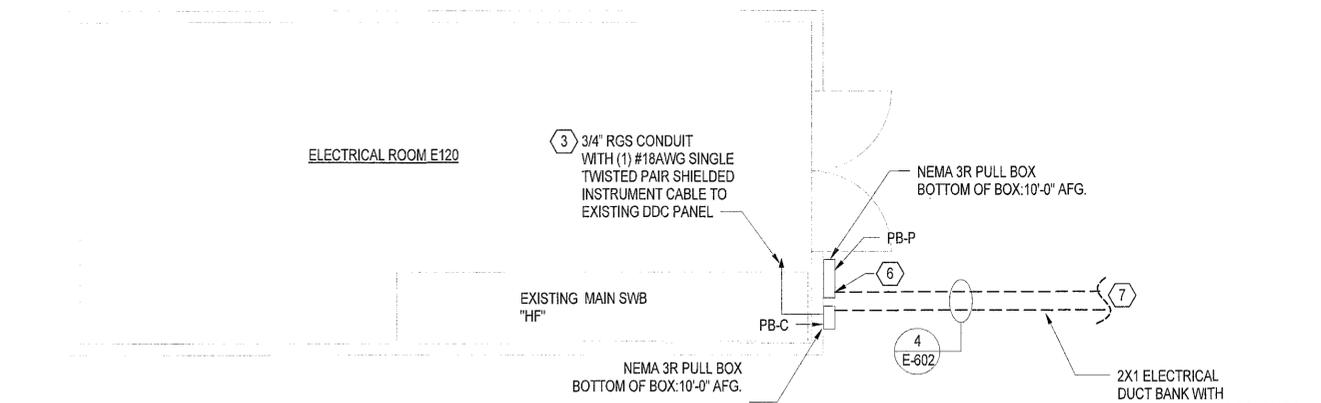
DATE: 12/05/2016  
 JES: VHR DBR: VHR C114-MC3

DEPARTMENT OF DEFENSE  
 HAWAII ARMY NATIONAL GUARD  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 TRAC: 910103045

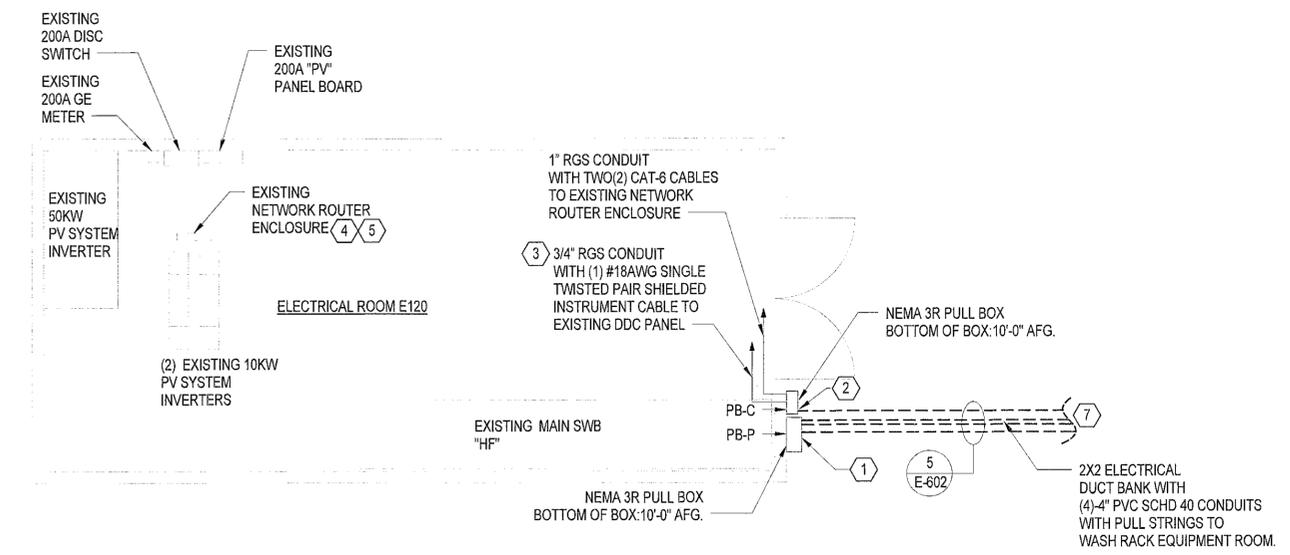
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STATE JOB NO.: CA-1424-C  
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 SHEET OF: E-101

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**1** EXISTING ELECTRICAL ROOM E120-PLAN-BASE BID  
 1/4" = 1'-0"  
 Scale = 1/4" = 1'-0"



**2** EXISTING ELECTRICAL ROOM E120-PLAN-ABI  
 1/4" = 1'-0"  
 Scale = 1/4" = 1'-0"

**SHEET NOTES**

1. EXISTING EQUIPMENT THAT IS ONLY RELATED TO WASH RACK SCOPE OF WORK IS SHOWN ON THIS PLAN.

**KEYED NOTES (THIS SHEET) AS-DENOTED BY #**

1. STUB-UP (3) THREE 4" RGS CONDUITS TO PULL BOX PB-P ONE SPARE AND TWO FOR POWER FEEDERS. EXTEND CONDUITS AND WIRING TO EXISTING SWB 'HF' AND TO EXISTING 'PV' PANEL WITH CONDUIT AND WIRE SIZE AS SHOWN ON ONE-LINE DIAGRAM SHEET E-601
2. STUB-UP ONE (1) 4" RGS CONDUIT TO PULL BOX PB-C. EXTEND 1" RGS CONDUIT FROM PB-C WITH TWO (2) CAT-6 CABLES TO EXISTING NETWORK ROUTER ENCLOSURE AS SHOWN ON THIS VIEW.
3. COORDINATE WITH CONTRACTING OFFICER'S REPRESENTATIVE TO FIELD LOCATE EXISTING DDC SYSTEM PANEL. TIE SIGNAL WIRING FROM WASH RACK WATER FLOW METER TO EXISTING DDC SYSTEM AND PROVIDE ANY REQUIRED SOFTWARE/PROGRAMING UPGRADES.
4. INSTALL TWO (2) CAT-6 CABLES ONE SPARE AND ONE FOR PV INVERTER FROM THIS ENCLOSURE TO VEHICLE WASH RACK EQUIPMENT CONTAINER.
5. REPLACE EXISTING 4-PORT NETWORK ROUTER WITH A 8-PORT ROUTER. COORDINATE WITH CONTRACTING OFFICER FOR ROUTER TYPE AND BEFORE DISCONNECTING EXISTING ROUTER, ALSO HAND OVER EXISTING ROUTER TO THE CONTRACTING OFFICER.
6. STUB-UP ONE (1) 4" RGS CONDUIT TO PB-P PULL BOX FOR POWER FEEDER. EXTEND CONDUIT AND WIRING TO EXISTING SWB 'HF' WITH CONDUIT AND WIRE SIZE AS SHOWN ON ONE-LINE DIAGRAM SHEET E-601.
7. SEE SHEET C-101 CIVIL SITE PLAN FOR DUCT BANK ROUTE. REFER TO SHEET 602 FOR DUCT BANK DETAILS.



1250 N. PONTIAC TRAIL, WALLED LAKE, MI 48390  
 WESTHEIMER, HOUSTON, TX 77042  
 9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
 622 EMERSON ROAD, ST. LOUIS, MO 63141  
 80 PLATO BOULEVARD E. ST. PAUL, MN 55107  
 ONE WEST THIRD STREET, JULSA, OK 74103

SEAL:  
 M. J. RADANOVIC  
 LICENSED PROFESSIONAL ENGINEER  
 No. 12472-E  
 HAWAII, U.S.A.  
 SIGN DATE: 5/17/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 EXPIRATION DATE OF LICENSE: 4/30/2018

NO.	BID PACKAGE FINAL	DATE	APPR.
0		12/05/2015	

REVISION PHASE:  
**BID PACKAGE FINAL**

DATE: 12/05/2015

JES: VWR CRR: VWR CH: MCB

DEPARTMENT OF DEFENSE  
**HAWAII NATIONAL GUARD**  
 FACILITIES DESIGN & PROJECT BRANCH  
 KAPOLEI, HI 96707  
 STATE OF HAWAII  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 KAPOLEI, HI 96707  
 PHONE: 808-431-3045  
**VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI**  
**EXISTING ELECTRICAL ROOM E120 PLAN**

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

STATE JOB NO.: CA-1424-C

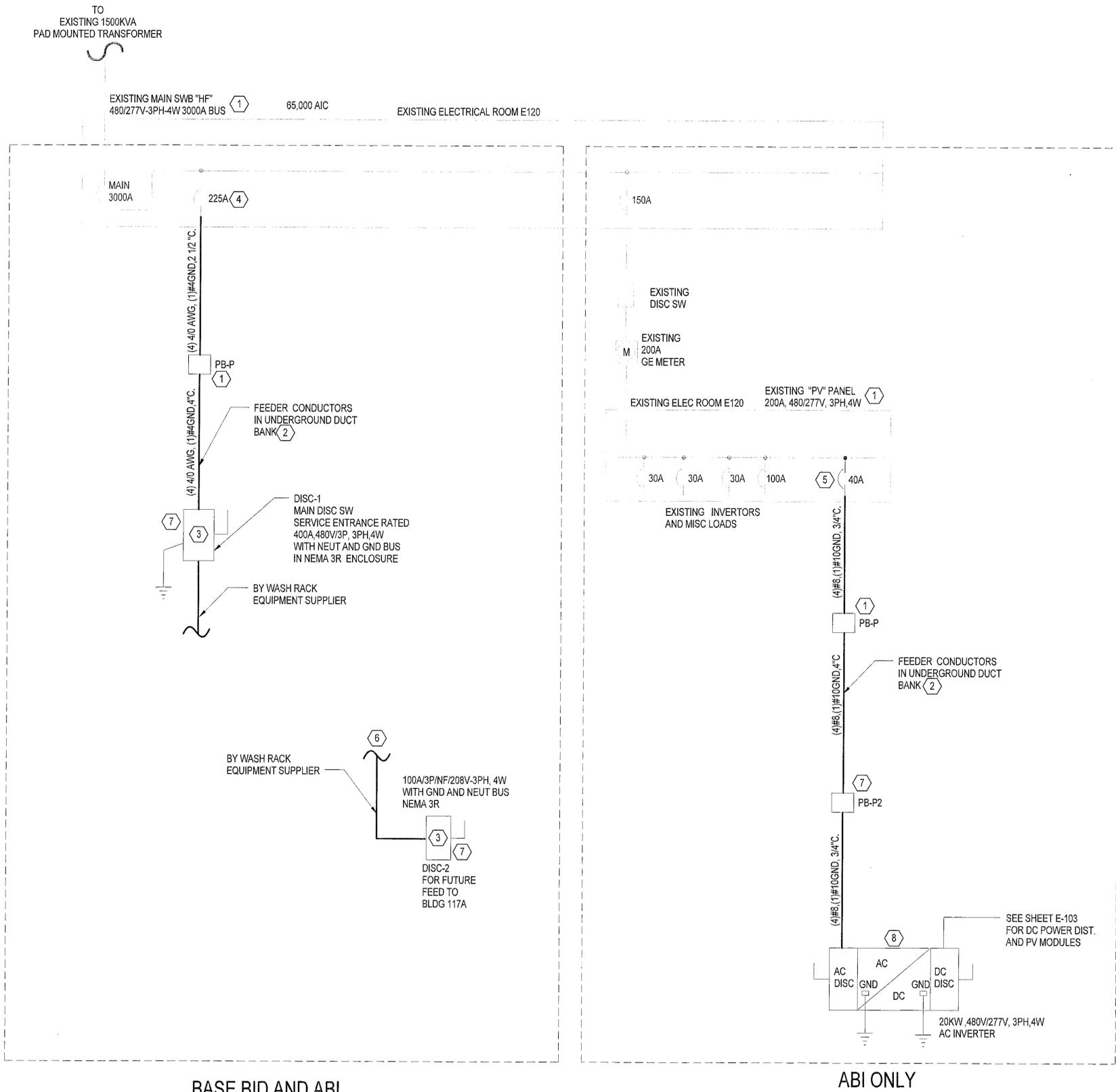
FEEDBACK PROJECT NO.: 1514C032

SHEET OF

**E-102**



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BASE BID AND ABI

ABI ONLY

- KEYED NOTES (THIS SHEET)** AS-DENOTED BY #
- SEE SHEET E-102 FOR EQUIPMENT LAYOUT IN EXISTING ELECTRICAL ROOM E120.
  - SEE CIVIL SITE PLAN C-101 FOR ELECTRICAL DUCT BANK ROUTE.
  - EQUIPMENT PROVIDED AND INSTALLED BY WASH RACK EQUIPMENT SUPPLIER.
  - CONTRACTOR TO UTILIZE EXISTING SPARE 225A, 480V, 3-POLE BREAKER IN EXISTING MAIN SWITCHBOARD FOR FEEDER TO VEHICLE WASH RACK 480V MAIN DISCONNECT SWITCH.
  - CONTRACTOR TO PROVIDE A 40A, 480V, 3-POLE BREAKER IN AVAILABLE SPACES IN EXISTING "PV" PANEL. MATCH TYPE AND "AIC" RATING OF THIS BREAKER WITH EXISTING BREAKERS.
  - 100A/208V/3P, 4W SERVICE BY WASH RACK EQUIPMENT CONTRACTOR FROM WASH RACK EQUIPMENT 208V PANEL.
  - SEE SHEET E-101 WASH RACK ELECTRICAL PLAN FOR LOCATION.
  - REFER TO WASH RACK EQUIPMENT VENDOR DRAWINGS FOR LOCATION AND SPACE PROVIDED FOR PV SYSTEM AC INVERTER.

**BENHAMI**  
**leidos**  
 1250 N. PONTIAC TRAIL, VALLEJO, CA 94590  
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 9400 N. BROADWAY, OKLAHOMA CITY, OK 73114  
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**MILAN RADANOVIC**  
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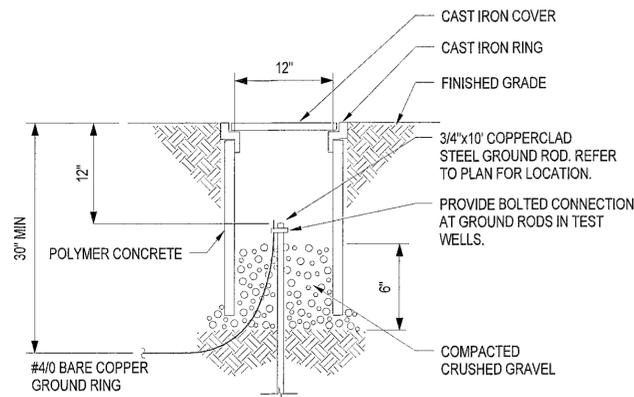
SIGN: *M. Radanovic*  
 DATE: 5/17/2016  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
 EXPIRATION DATE OF LICENSE: 4/30/2018

SYMBOL	DESCRIPTION	DATE	APPR
0	BID PACKAGE FINAL	12/05/2016	

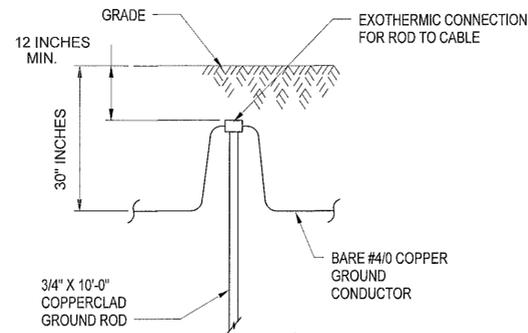
DEPARTMENT OF DEFENSE  
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 KAPOLEI, HI 96707

HAWAII ARMY NATIONAL GUARD  
 FACILITY MANAGEMENT OFFICE  
 91-1171 ENTERPRISE AVENUE  
 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 TWM: 91013045

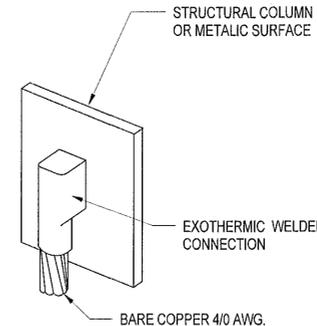
SCALE: 12" = 1'-0"  
 STATE JOB NO. CA-1424-C  
 FEDERAL PROJECT NO. 15140032  
 SHEET OF  
**E-601**



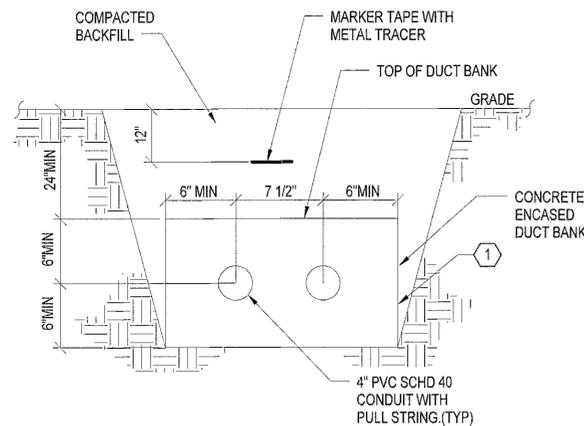
**1 GROUND TEST WELL**  
SCALE: NOT TO SCALE



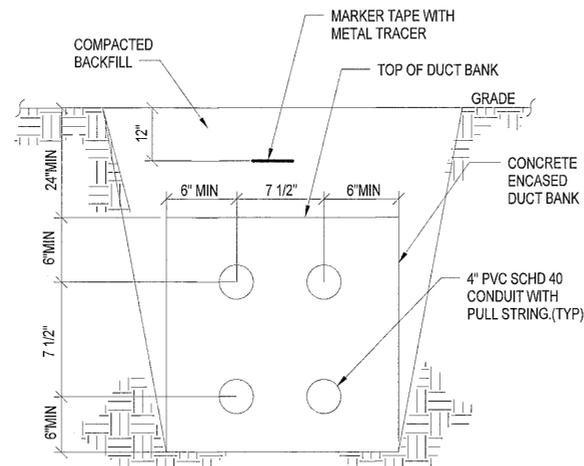
**2 GROUND ROD CONNECTION**  
SCALE: NOT TO SCALE



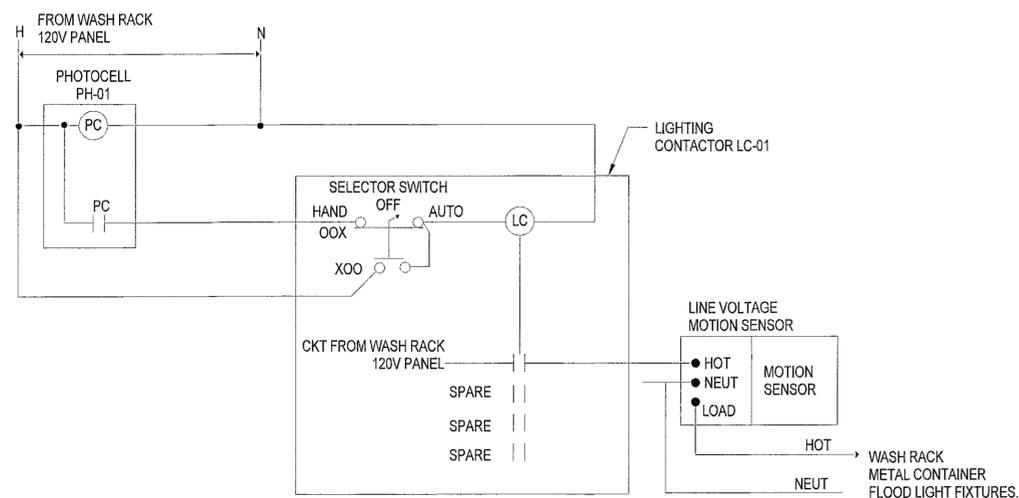
**3 CONNECTION TO METAL STRUCTURE**  
SCALE: NOT TO SCALE



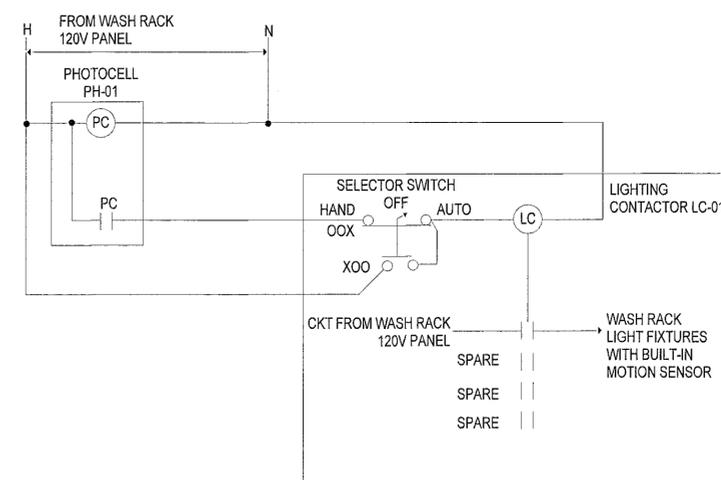
**4 2X1 ELECTRICAL DUCT BANK**  
SCALE: NOT TO SCALE



**5 2X2 ELECTRICAL DUCT BANK-ABI**  
SCALE: NOT TO SCALE



**6 CONTROL SCHEMATICS-LIGHTING CONTACTOR-BASE BID**  
SCALE: NOT TO SCALE



**7 CONTROL SCHEMATICS-LIGHTING CONTACTOR-ABI**  
SCALE: NOT TO SCALE

**KEYED NOTES (THIS SHEET)**

AS- DENOTED BY #

- AS PART OF BASE BID: A 2X1 COMMUNICATIONS DUCT BANK SHALL BE CONSTRUCTED FROM AN EXISTING HAND HOLE (HH-2) TO THE EXISTING HAND HOLE LOCATED OUTSIDE BUILDING 117A. SEE CIVIL SITE PLAN C-101 FOR DUCT BANK ROUTE.



**BENHAM**  
INCORPORATED COMPANY

**leidos**

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622 EMERSON ROAD, ST. LOUIS, MO 63141  
80 PLATO BOULEVARD, E. ST. PAUL, MN 55107  
ONE WEST THIRD STREET, TULSA, OK 74103



DATE: 2/11/2016  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.  
EXPIRATION DATE OF LICENSE: 4/30/2018

NO.	BID PACKAGE FINAL	DATE	APPR.
0	BID PACKAGE FINAL		

SUBMITTAL PHASE: BID PACKAGE FINAL

DATE: 12/05/2018

DES. VLR: EPR. VLR: C114-MCB

DEPARTMENT OF DEFENSE  
HAWAII ARMY NATIONAL GUARD  
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KAPOLEI, HI 96707  
VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
91-1171 ENTERPRISE AVENUE  
TMAK: 91013045

SCALE: As indicated

STATE JOB NO.: CA-1424-C

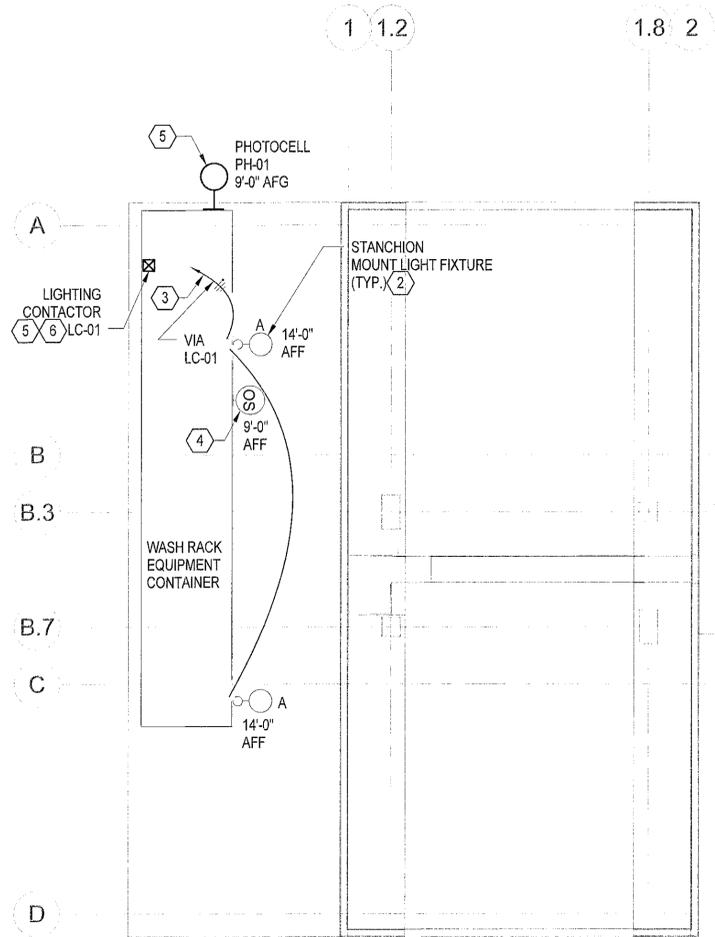
FEDERAL PROJECT NO.: 1514C032

SHEET OF

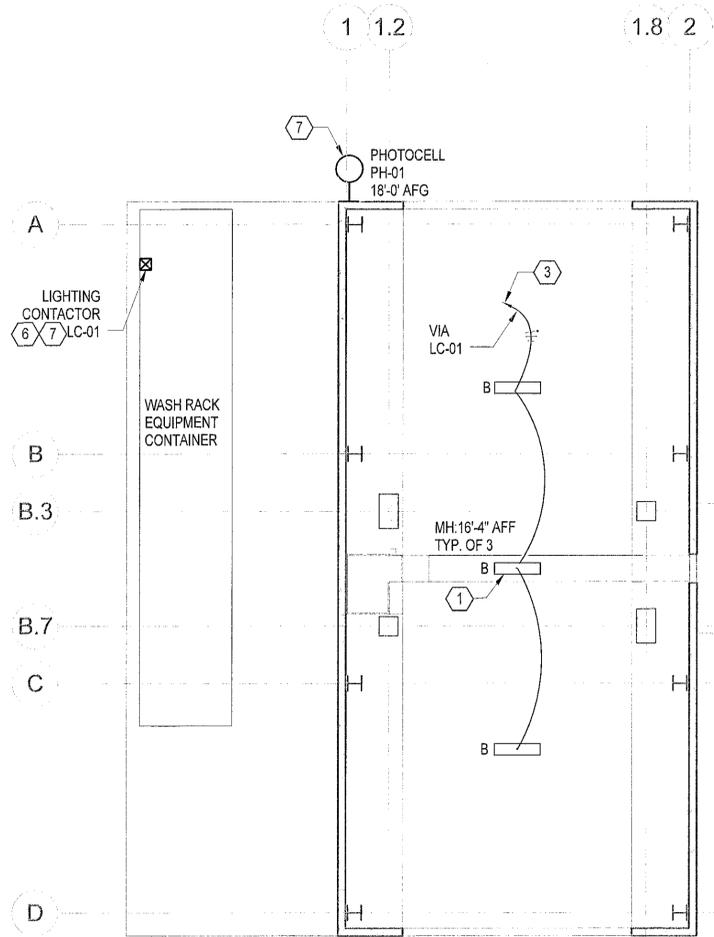
**E-602**

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**1 WASH RACK LIGHTING PLAN-BASE BID**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"



**2 WASH RACK-LIGHTING PLAN-ABI**  
 1/8" = 1'-0"  
 Scale = 1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE (BASIS OF DESIGN)								
	TYPE	FIXTURE DESCRIPTION	MANUFACTURER AND CATALOG NUMBER	LAMPS		CKT VOLTS	FIXTURE INPUT WATTS	NOTES
				NO	TYPE			
BASE BID	A	MEDIUM LED PREDATOR FLOOD LIGHT FIXTURE	HOLOPHANE PML-LED-3-4K-07A-120V-65-1-K-BP	1	7920 LUMENS LED	120	80	PREDATOR MEDIUM LED WITH LED MODULES:3, COLOR:4K,07A DRIVER, 120V, BEAM PATTERN:65 MOUNTING: TENON SLIPFITTER KNUCKLE, LISTED FOR WET LOCATION, FINISH: BLACK.
ABI	B	4' INDUSTRIAL VAPORTITE LED FIXTURE	COOPER LIGHTING-METALUX VT4LED-LD4-11-DR-120V-L840-ED1-WL-MSO/WL	1	11000 LUMENS LED	120	115	PENDANT MOUNTED, VT4 SERIES, VAPORTITE FIXTURE, WITH COLOR: 40K, "ED" FIXED OUTPUT DRIVER, BUILT-IN WET LISTED MOTION SENSOR TYPE: MSO/WL 360, PROVIDE FIXTURE WITH STAINLESS STEEL CHAIN AND HARDWARE FOR PENDENT MOUNT.

- KEYED NOTES (THIS SHEET) AS-DENOTED BY #**
- LED LIGHT FIXTURE WITH BUILT-IN WET LISTED MOTION SENSOR. PENDANT MOUNT LIGHT FIXTURE FROM UNDERSIDE OF STRUCTURAL TRUSSES WITH BOTTOM OF FIXTURE AT ELEVATION SHOWN ON PLAN.
  - LED FLOOD LIGHT FIXTURE MOUNTED TO 1 1/4" RGS CONDUIT STANCHION. MOUNT BOTTOM OF FIXTURE TO ELEVATION AS SHOWN ON PLAN. PROVIDE UNISTRUT AND ALL NECESSARY HARDWARE TO ATTACH STANCHION MOUNT TO THE WASH RACK EQUIPMENT METAL CONTAINER. MOUNT LIGHT FIXTURE WITH TILT 45 DEGREES OR FIELD ADJUST FOR MAXIMUM LIGHT LEVELS TO THE WASH RACK AREA.
  - PROVIDE A 20A, 120V CIRCUIT FROM WASH RACK EQUIPMENT PANEL.
  - OUTDOOR MOTION SENSOR, TYPE: PIR, LINE VOLTAGE 120V, LOAD RATING 1000W, 180-270 DEGREE COVERAGE WATTSTOPPER EW-200-120-G OR EQUAL. CONTRACTOR TO USE MASK TAPE SHIPPED WITH THE SENSOR AND FIELD MASK. MOTION SENSOR COVERAGE FROM 270 DEGREES TO 180 DEGREES. ALSO ADJUST MOUNTING TILT TO PROVIDE COVERAGE IN REQUIRED AREA IN ORDER TO AVOID FALSE SIGNALS.
  - SEE LIGHTING CONTACTOR AND PHOTO CELL WIRING DETAIL-6 ON SHEET E-602.
  - INSTALL LIGHTING CONTACTOR INSIDE WASH RACK EQUIPMENT METAL CONTAINER CLOSE TO THE WASH RACK VENDOR SUPPLIED 120V PANEL.
  - SEE LIGHTING CONTACTOR AND PHOTO CELL WIRING DETAIL-7 ON SHEET E-602.



**BENHAIM**  
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SEAL: M. J. RADANOVIC  
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 HAWAII, U.S.A.

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12/05/2016	

**BID PACKAGE FINAL**

DATE: 12/05/2016

DES: VJR    CDR: VJR    CIV: MCB

DEPARTMENT OF DEFENSE  
 FACILITIES DESIGN & PROJECT BRANCH  
 HAWAII ARMY NATIONAL GUARD  
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 VEHICLE WASH RACK AT BLDG. 117B, KALAELOA, HI  
 THW: 91013045  
 WASH RACK LIGHTING PLAN

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

STATE JOB NO.: CA-1424-C

FEDERAL PROJECT NO.: 1514C032

SHEET OF

**EL-101**