

HAWAII ARMY NATIONAL GUARD NATIONAL GUARD TRAINING CENTER

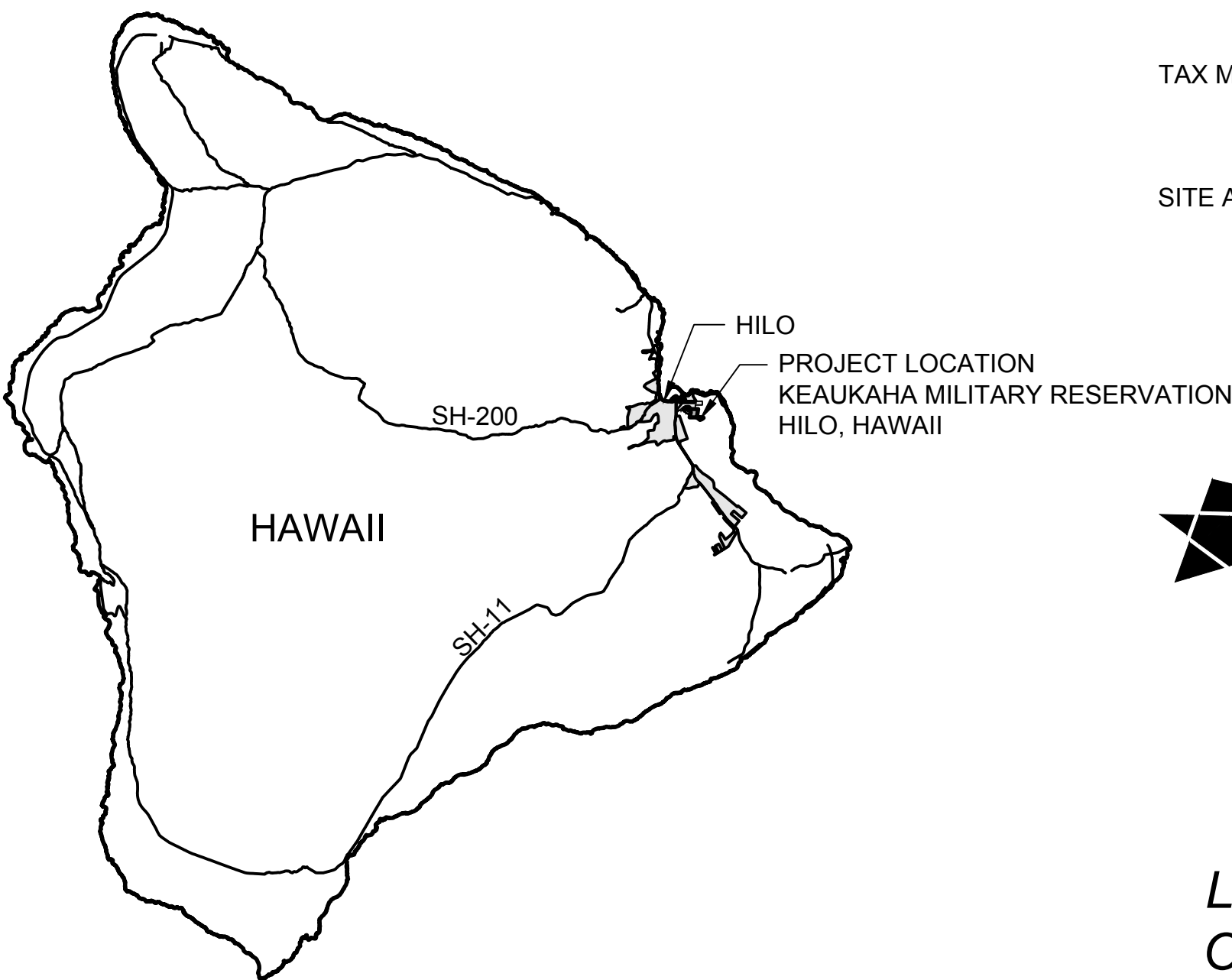


25 METER FULLY CONTAINED SDZ RANGE

KEAUKAHA MILITARY RESERVATION
HILO, HAWAII

APRIL 11, 2014

PROJECT NUMBER 15120001
STATE JOB NO. CA-1410



STATEMENT OF WORK:

THE PROJECT IS LOCATED AT THE KEAUKAHA MILITARY RESERVATION NEAR HILO, HAWAII. THE PROJECT SITE IS AT THE SOUTHEAST LIMITS OF THE MILITARY RESERVATION, APPROXIMATELY 7250 FEET ALONG PUNA TRAIL, SOUTHEAST OF THE CANTONMENT AREA. THE PROJECT CONSISTS OF GRADING, DRAINAGE, AND SITE PREPARATION TO CONSTRUCT A MILITARY FACILITY CONTAINING A BAFFLED 25 METER ZERO RANGE.

LEGAL OWNER: STATE OF HAWAII
LESSEE/TENANT: ARMY NATIONAL GUARD, HAWAII
MR. MORRIS ONISHI
808-672-1543
3949 DIAMOND HEAD RD
HONOLULU, HI 96816

TAX MAP KEY:	Z	S	PL	PAR	LOT
	2	1	13	10	N/A

SITE ADDRESS: KEAUKAHA MILITARY RESERVATION
HILO, HI



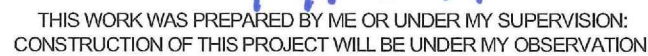
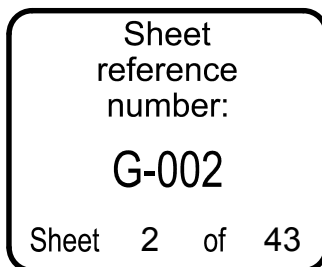
Leidos Engineering, LLC
One West 3rd Street, Suite 200
Tulsa, Oklahoma 74103

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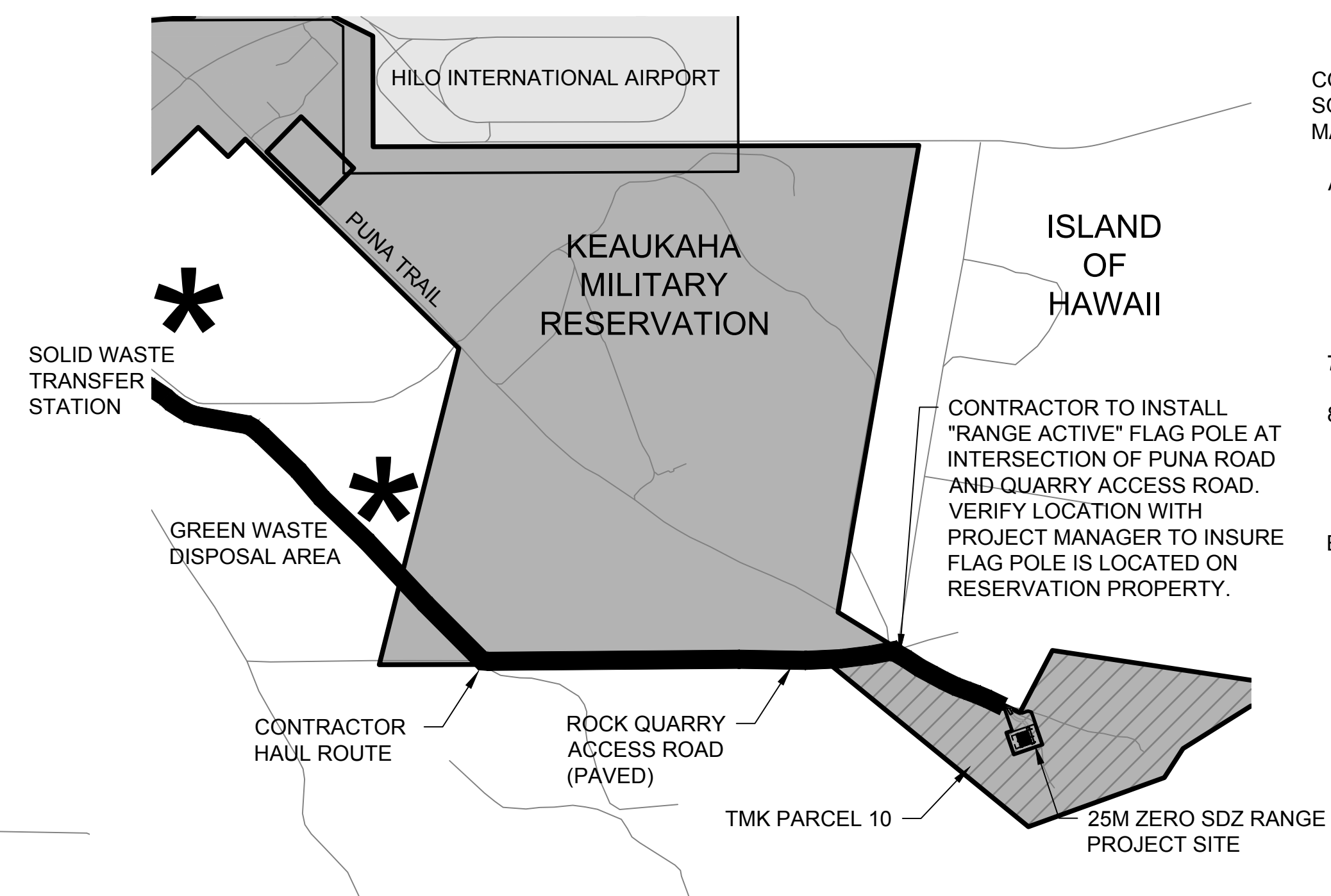
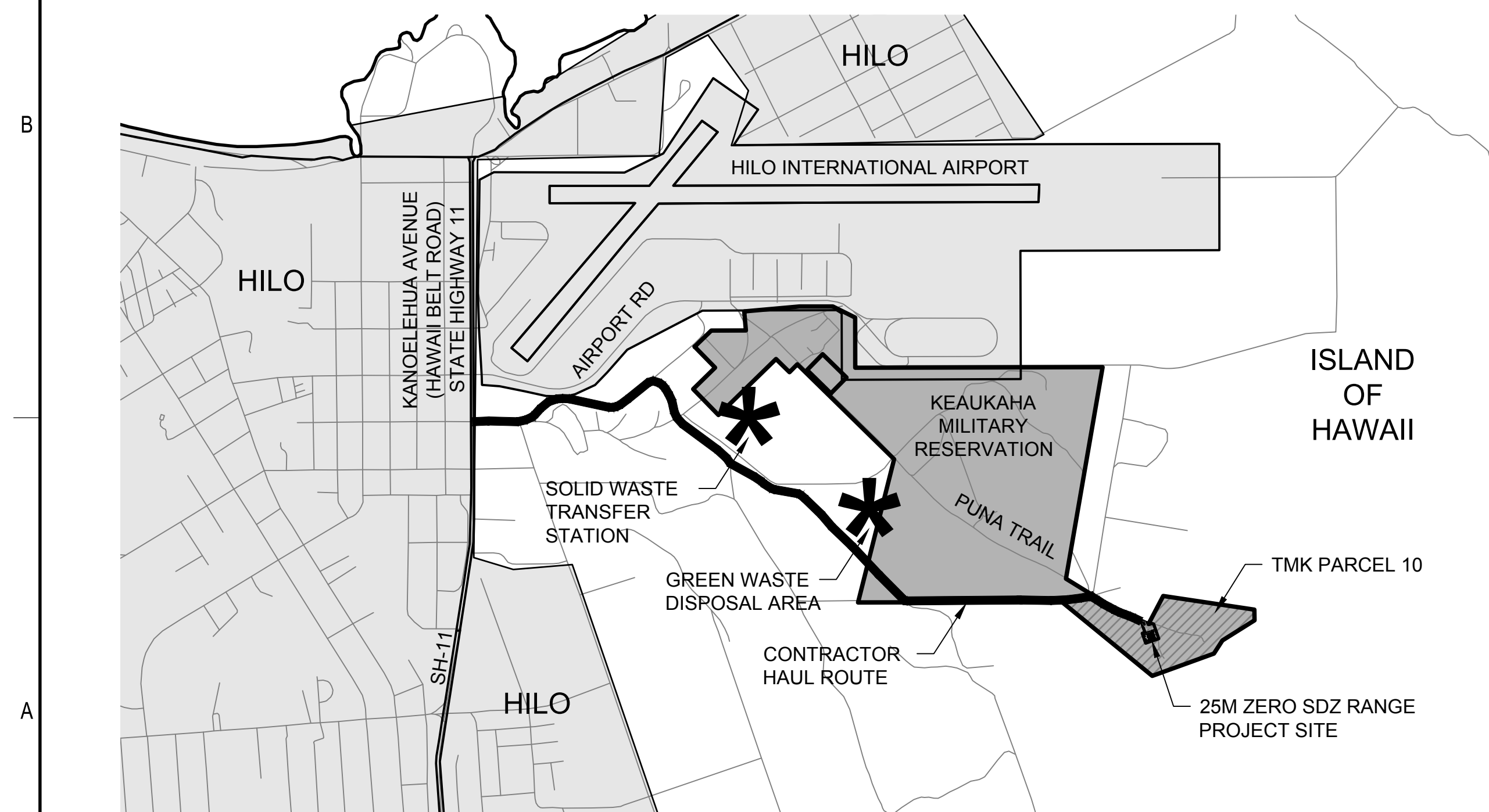
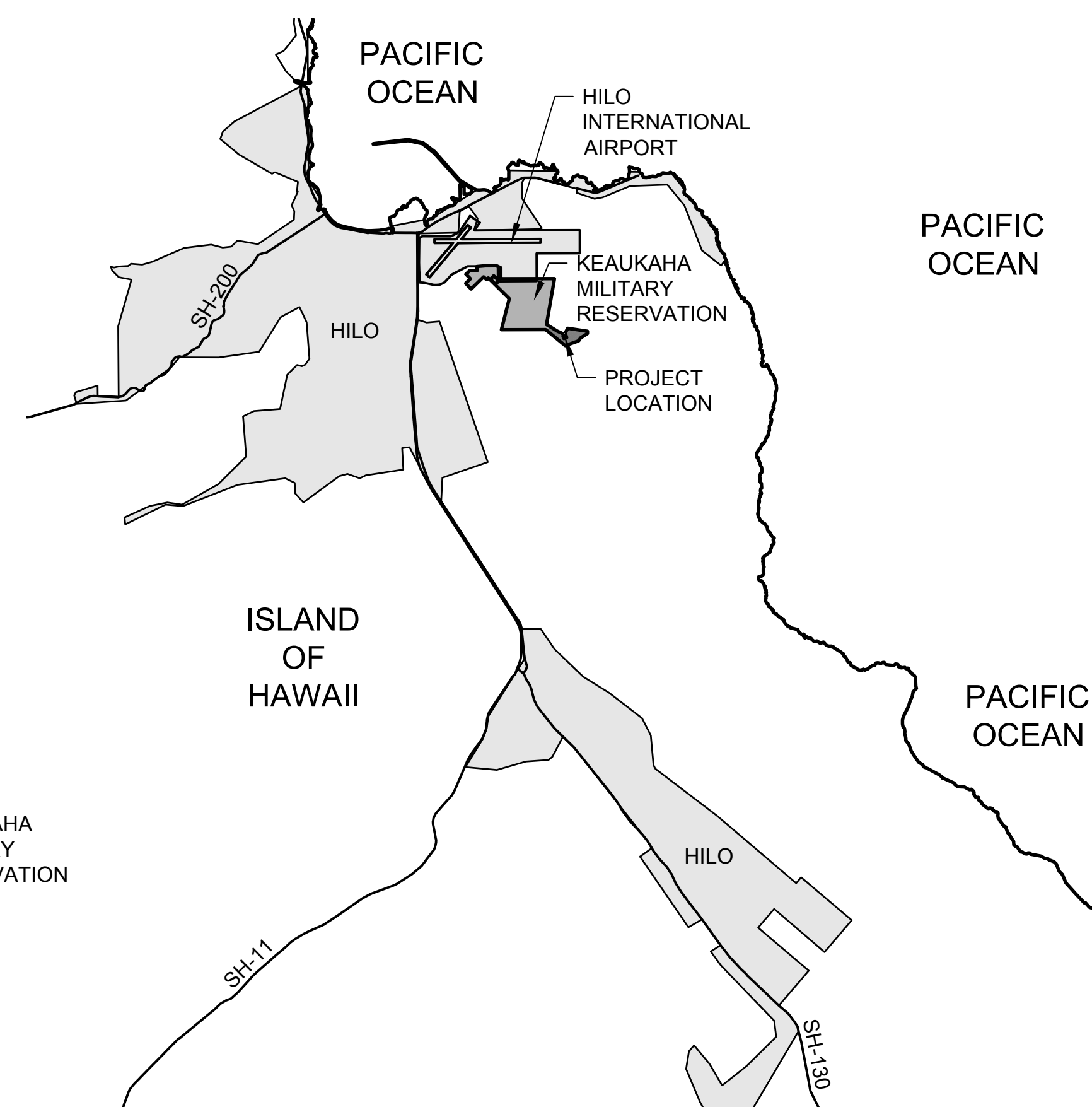
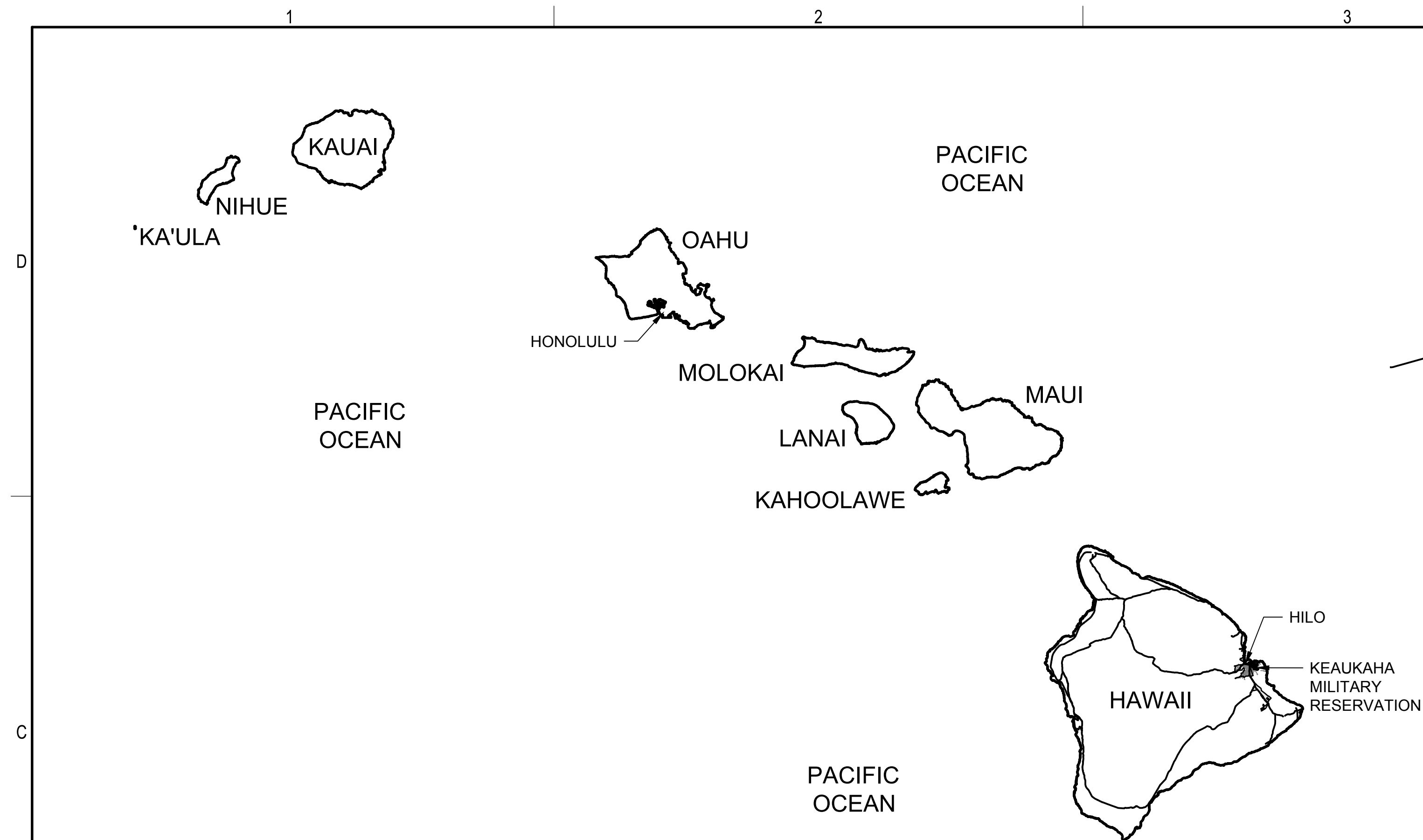
1. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL REQUIRED PERMITS FROM APPROPRIATE GOVERNMENT AGENCIES. BUILDING PERMIT A2014-BH00078 HAS BEEN REVIEWED AND APPROVED BY THE COUNTY OF HAWAII PENDING PICKUP AND PAYMENT OF PERMIT FEE BY THE CONTRACTOR.
2. CONTRACTOR SHALL PREPARE, SUBMIT, OBTAIN, AND PAY FOR NPDES PERMITS AFTER CONSTRUCTION CONTRACT HAS BEEN EXECUTED.
3. CONTRACTOR SHALL SECURE AND PAY FOR ON-SITE ARCHAEOLOGIST TO MONITOR SITE DURING EXCAVATION AND SHALL INCLUDE THE COST OF THE PREPARATION OF THE FINAL REPORT IN HIS BID.
4. ALL CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1986, AND "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII, AND INCLUDING SUPPLEMENTS AND AMENDMENTS MADE THERETO.
5. TOPOGRAPHIC SURVEY WORK COMPLETED BY THE INDEPENDENT HAWAII SURVEYORS, LLC DATED JANUARY 22, 2013.
6. ALL COORDINATES AND AZIMUTHS ARE REFERRED TO GOVERNMENT TRIANGULATION STATION "HALAI 2." ELEVATIONS ARE REFERENCED TO MEAN SEA LEVEL.
7. ALL ELEVATIONS AND DISTANCES SHOWN ON PLANS ARE IN FEET.
8. FOR BENCH MARK, SEE SHEET C-100.
9. DIMENSIONS TAKE PRECEDENCE OVER SCALE.
10. WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR.
11. ALL EXISTING UTILITY LOCATIONS SHOWN ON PLANS AND PROFILES ARE BASED ON AVAILABLE SOURCES. THE CONTRACTOR SHALL VERIFY PRIOR TO ITS CONSTRUCTION, THE EXACT HORIZONTAL AND VERTICAL LOCATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, AND SHALL BE RESPONSIBLE FOR THE REPAIR OR REPLACEMENT OF SAME IN THE EVENT OF DAMAGE DUE TO HIS CONSTRUCTION PRACTICES. BEFORE DISRUPTING SERVICE OF ANY UTILITY, THE CONTRACTOR SHALL CONTACT AND COORDINATE ITS WORK WITH THE RESPONSIBLE UTILITY AUTHORITY.
12. THE CONTRACTOR AGREES THAT IT SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITION DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; AND THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.
13. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR UTILITIES SUCH AS ELECTRICITY, WATER, ETC REQUIRED FOR ITS OPERATION AND ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
14. THE CONTRACTOR SHALL CONDUCT ALL TESTS REQUESTED BY THE ENGINEER AND BE RESPONSIBLE FOR EXPENSES INCURRED IN CONDUCTING THESE TESTS.
15. IF DIMENSIONAL ERRORS OR CONFLICTS OCCUR, THE CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE AND THE ENGINEER SHALL WAIT FOR CLARIFICATION BEFORE RESUMING OR COMMENCING WORK ON THE DISCREPANCY ITEM.
16. THE CONTRACTOR SHALL COORDINATE THE STORAGE OF ITS MATERIAL AND EQUIPMENT WITH THE OWNER'S REPRESENTATIVE.
17. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL TRAFFIC CONTROL DEVICES IN CONFORMANCE WITH THE "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS," AND TO THE SATISFACTION OF THE ENGINEER.
18. THE CONTRACTOR SHALL PROVIDE TO THE ENGINEER "AS-BUILT" DRAWINGS OF ALL STRUCTURES UPON COMPLETION OR WORK.
19. THE CONTRACTOR SHALL PROTECT ALL EXISTING PAVEMENT FROM DAMAGE DUE TO ITS CONSTRUCTION PRACTICES. IN THE EVENT OF DAMAGE, THE CONTRACTOR SHALL CONTACT AND COORDINATE ITS WORK WITH THE RESPONSIBLE AUTHORITY.
20. THE ENGINEER RESERVES THE RIGHT TO MAKE CHANGES TO THE DRAINAGE SYSTEM AS SUCH CHANGES ARE FOUND TO BE NECESSARY AS THE LAND IS CLEARED AND CONSTRUCTION PROGRESSES.

1. PRIOR TO START OF RANGE ACTIVITIES, CONTRACTOR SHALL SUBMIT TO HIARNG-ENV A HAZARDOUS MATERIAL INVENTORY LOG OF CHEMICAL PRODUCTS TO BE USED IN THE PROJECT, AND PROVIDE AN UPDATE NO LATER THAN 31 JANUARY OF EACH CALENDAR YEAR. THE LOG SHALL INCLUDE THE PRODUCT NAME AND MANUFACTURER ID NUMBER, CONTAINER SIZE, AMOUNT USED, THE MAXIMUM NUMBER OF CONTAINERS TO BE STORED ON SITE AT ANY GIVEN DAY DURING THE PROJECT. MATERIAL SAFETY DATA SHEETS (MSDSs) SHALL BE PROVIDED OR MADE AVAILABLE TO THE COR AND HIARNG-ENV UPON REQUEST.
2. PRIOR TO START OF RANGE ACTIVITIES, CONTRACTOR SHALL PROVIDE TO HIARNG-ENV AN ESTIMATE OF THE MAXIMUM AMOUNT OF HAZARDOUS WASTE EXPECTED TO BE GENERATED PER MONTH, AND THE TOTAL AMOUNT ANTICIPATED TO BE STORED ON SITE AT ANY GIVEN TIME. ALL WASTE WILL BE STORED IN A SECURED AREA PENDING REMOVAL FOR DISPOSAL, WITH SIGNAGE INDICATING CONTACT INFORMATION AND SHALL BE MANAGED IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS.
3. CONTRACTOR SHALL PROVIDE COPIES OF ALL WASTE DISPOSAL DOCUMENTATION (INCLUDING ANY REQUIRED LAB ANALYSIS, WASTE PROFILES, AND ANY OTHER SUPPORTING DOCUMENTATION) TO THE CORE AND HIARNG-ENV, ALONG WITH DRAFT COPIES OF THE WASTE MANIFESTS FOR REVIEW PRIOR TO WASTE SHIPMENT OFF SITE FOR DISPOSAL. IF CONTRACTOR UTILIZES A HIARNG EPA ID NUMBER FOR WASTE DISPOSAL, MANIFESTS WILL ONLY BE SIGNED BY INDIVIDUALS AUTHORIZED BY HIARNG-ENV.
4. HIARNG-ENV APPROVAL IS REQUIRED FOR ANY FUELING OPERATIONS BEING CONDUCTED ON SITE, WHICH WILL BE CONDUCTED IN ACCORDANCE WITH ALL APPLICABLE REQUIREMENTS.
5. HIARNG-ENV APPROVAL IS REQUIRED FOR ANY ABOVE-GROUND STORAGE TANK STAGED ON SITE. FOR STORAGE OF OIL EXCEEDING THE EPA THRESHOLD OF 1,320 GALLONS SHELL CAPACITY OF OIL IN CONTAINERS 55 GALLONS OR GREATER, CONTRACTOR IS RESPONSIBLE FOR PREPARING A SPILL PREVENTION, CONTROL AND COUNTERMEASURES (SPCC) PLAN IN ACCORDANCE WITH 40 CFR 112.
6. CONTRACTOR SHALL USE PROTECTIVE MEASURES, E.G., SECONDARY CONTAINMENT, SPILL KITS, ETC., FOR ON-SITE CHEMICALS, EQUIPMENT AND VEHICLES TO PREVENT SPILLS AND LEAKS INTO THE ENVIRONMENT AND ENSURE ONLY RAINWATER ENTERS ON-SITE UICs, STORM DRAINS, SWALES, STREAMS, AND OTHER PATHS TO NAVIGABLE WATERS.
7. CONTRACTOR SHALL REPORT SPILLS IMMEDIATELY TO THE COR AND HIARNG-ENV. CONTRACTOR SHALL IMMEDIATELY CLEAN UP ALL SPILLS IN ACCORDANCE WITH ALL FEDERAL, STATE, AND LOCAL GUIDELINES AND TO THE SATISFACTION OF HIARNG-ENV. CONTRACTOR SHALL MAINTAIN ADEQUATE SPILL SUPPLIES COMMENSURATE WITH THE POTENTIAL FOR SPILLS, AND WILL CONTRACT OUT SPILL CLEANUP BEYOND THEIR CAPABILITIES. CONTRACTOR SHALL ACCOMPLISH ALL REGULATORY VERBAL AND WRITTEN NOTIFICATIONS TO THE STATE EMERGENCY RESPONSE COMMISSION, LOCAL EMERGENCY PLANNING COMMITTEE (LEPC), NATIONAL RESPONSE CENTER (NRC), ENVIRONMENTAL PROTECTION AGENCY (EPA), AS APPLICABLE, AND PROVIDE HIARNG-ENV COPIES OF ALL SPILL REPORTS.
8. CONTRACTOR, IN COORDINATION WITH HIARNG-ENV, IS RESPONSIBLE FOR OBTAINING ANY AND ALL REQUIRED ENVIRONMENTAL PERMITS, E.G., CONSTRUCTION RELATED SURFACE DISCHARGE PERMITS, COUNTY REQUIRED INDUSTRIAL WASTEWATER DISCHARGE PERMITS, MINOR (POLLUTION SOURCE AIR PERMITS, ETC FOR AND CONTRACT RELATED WORK.

1. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER HANDLING, STORAGE AND/OR DISPOSAL OF ALL WASTE GENERATED BY THIS CONSTRUCTION, INCLUDING GRUBBING AND EXCESS EXCAVATED MATERIAL ANY MATERIAL BROUGHT TO THE COUNTY LANDFILLS WILL BE SUBJECTED TO THE INSTITUTED TIPPING FEES, WITH NO EXCEPTIONS OR EXEMPTIONS.
2. ALL WASTES GENERATED BY CONSTRUCTION, INCLUDING GRUBBING, DEMOLITION AND EXCESS EXCAVATION MATERIAL MAY BE BROUGHT TO THE WEST HAWAII OR THE HILO LANDFILL. THE CONTRACTOR SHALL CHECK WITH THE SOLID WASTE DIVISION FOR DISCLOSURE OF THE CURRENT LANDFILL FEE AND CONSIDERATION OF THAT FEE SHALL BE INCLUDED IN THE CONTRACTOR'S BID SUM.
3. CONSTRUCTION, DEMOLITION AND GRUBBING MATERIAL SHALL NOT BE DEPOSITED AT ANY OF THE COUNTY TRANSFER STATIONS, BUT SHALL BE TRANSPORTED FOR DISPOSAL TO EITHER THE WEST HAWAII OR HILO LANDFILL.
4. ASBESTOS MATERIAL MUST BE SEPARATED, DOUBLE BAGGED AND LANDFILLED IN ACCORDANCE WITH REGULATIONS OF THE SOLID WASTE DIVISION, DEPARTMENT OF PUBLIC WORKS. INFORMATION MAY BE OBTAINED BY CALLING THE DIVISION AT (808) 961-8339 BETWEEN 7:00 A.M. AND 4:00 P.M. MONDAY THROUGH FRIDAY.



Signature Dayle Schuchel 4.30.2016
Expiration Date of the License



SOLID WASTE DISPOSAL
LOCATION & PROCEDURES:

POINT OF CONTACT:

WENDELL HATAMI
(808)844-6624

GREEN WASTE:

EAST HAWAII ORGANICS FACILITY (EHOF)
1651 Ho'OLAULIMA ROAD
HILO, HAWAII 96721

EHOF PROCEDURES:

1. ALL GREEN WASTE DROP-OFF AND MULCH PICK UP CUSTOMERS (RESIDENTIAL, COMMERCIAL AND AGENCY) TO THE EHOF MUST DRIVE TO THE SORT STATION SCALE HOUSE.
2. ALL VEHICLES WILL BE WEIGHED AND AN AUTHORIZED PASS WILL BE GIVEN TO EACH CUSTOMER. SCALE ATTENDANTS WILL BE DIRECTIONS TO CUSTOMERS TO DRIVE TO THE EHOF ENTRANCE.
3. AN EHOF YARD MANAGER WILL RECIEVE AND LOG THE PASS FROM THE CUSTOMER. THEY WILL ALSO SCREEN ALL INCOMING LOADS FOR CONTAMINANTS AND DIRECT VEHICLES TO THE APPROPRIATE AREA WITHIN THE EHOF. NO ENTRY WILL BE GRANTED TO CUSTOMERS WITHOUT THE AUTHORIZED PASS.
4. ALL CUSTOMERS (RESIDENTIAL, COMMERCIAL AND AGENCY) WILL NEED TO RETURN TO THE SCALE TO WEIGH OUT.
5. THERE ARE CURRENTLY NO GREEN WASTE DISPOSAL TIP FEES
6. HOURS OF OPERATION FOR THE EHOF IS 6:30AM TO 4:15PM.

SOLID WASTE:

HILO RECYCLING & TRANSFER STATION
1471 Ho'OLAULIMA ROAD
HILO, HAWAII 96721

SOUTH HILO SANITARY LANDFILL SCALEHOUSE:
1665 HO'OLAULIMA ROAD
HILO, HAWAII 96721

SOLID WASTE PROCEDURES:

CONTRACTOR SHALL BE REQUIRED TO SUBMIT
SOLID WASTE REPORTS TO THE HIARNG PROJECT
MANAGER AS FOLLOWS:

- A. SUBMIT SOLID WASTE REPORTS FOR THE DURATION OF THE PROJECT. THE REPORTS SHALL ADDRESS:
 1. DIVERTED WASTE (I.E. WASTE THAT DOES NOT GO INTO THE LANDFILL.
 7. RECYCLED WASTE
 8. LANDFILL WASTE
 4. RECOVERED WASTE (I.E. FREON FROM AC EQUIPMENT AND REFRIGERATOR.)
- B. SUBMIT LEGIBLE COPIES OF DUMP TICKET RECEIPTS FROM VENDOR, SHOWING TONNAGE OF WASTE. IF WASTE PRODUCTS ARE COMBINED TOGETHER WITH OTHER PROJECTS, THE CONTRACTOR SHALL PROVIDE A BREAKDOWN PER PROJECT.




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

Daye Schuchl 4.30.2016

Signature Expiration Date of the License

[illegible]

 174103	Leidos Engineering LLC One West 3rd Street, Suite 200 Tulsa, Oklahoma 74103	Drawn by: JBB	Checked by: JBB	Date: 04-11-2014
		Designed by: JBB	Design file no: 2552223000	
		Reviewed by: DW	Drawing code: DW	
		Submitted by: SMC	File name: 2224-G-101	

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

LOCATION AND VICINITY MAPS


Sheet
reference
number:
G-101

Sheet 3 of 43

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Date: April 18, 2014 - 1:11pm
User: wardm

1. TOP AND TOE OF SLOPE ARE APPROXIMATE AND HAVE BEEN SHOWN FOR INFORMATIONAL PURPOSES ONLY. CONTRACTOR SHALL VERIFY LOCATION IN FIELD AND SHALL ADJUST LIMITS AS NECESSARY TO COMPLETE THE INSTALLATION AS GENERALLY INDICATED ON THESE DOCUMENTS. THIS WORK SHALL BE PERFORMED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

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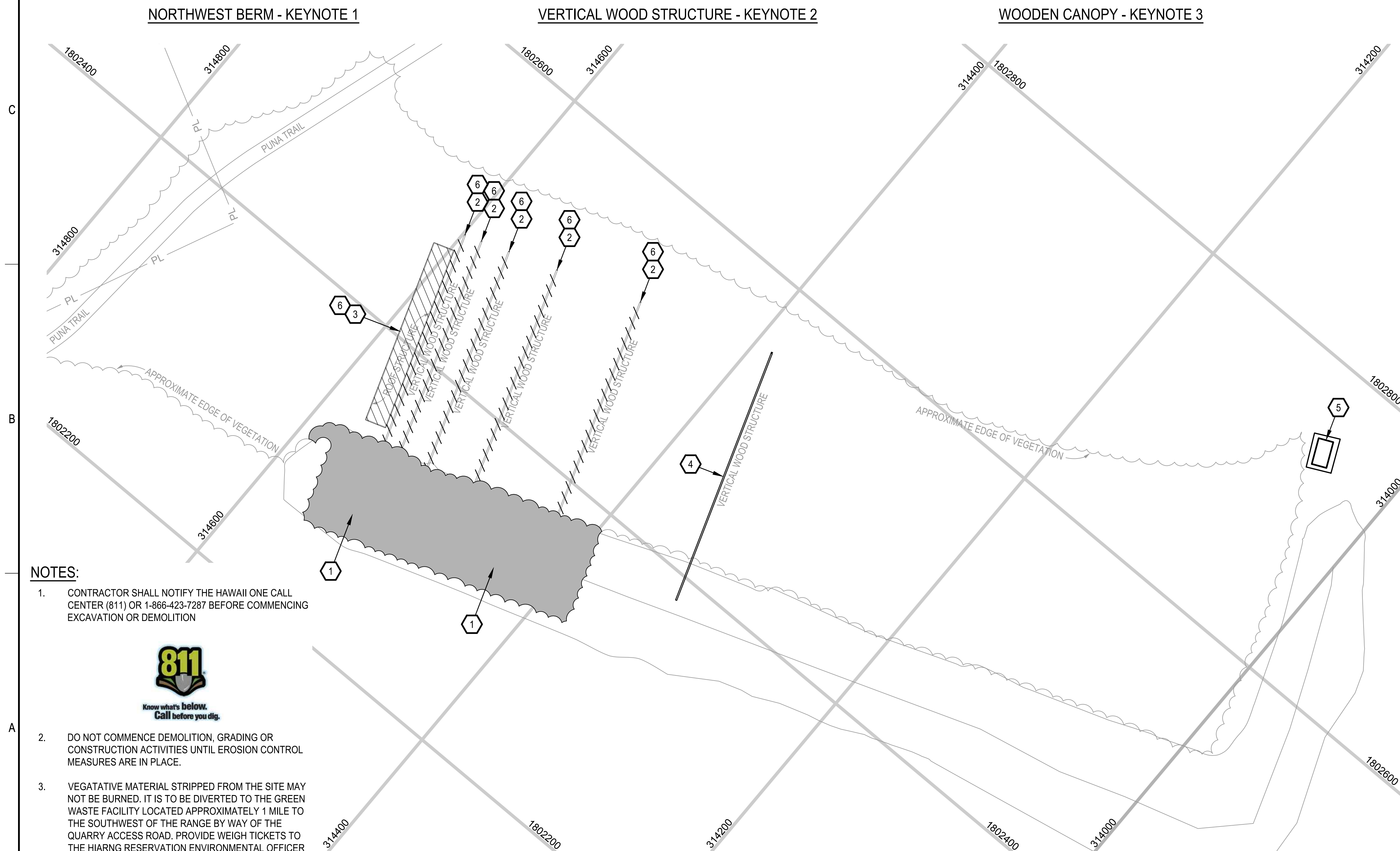
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	Drawn by: JBB Reviewed by: RWW Checked by: JBB Submitted by: SHC	Leidos Engineering LLC One West 3rd Street, Suite 200 Tukaloa, Hawaii 74103		

CIVIL ABBREVIATIONS AND LEGEND

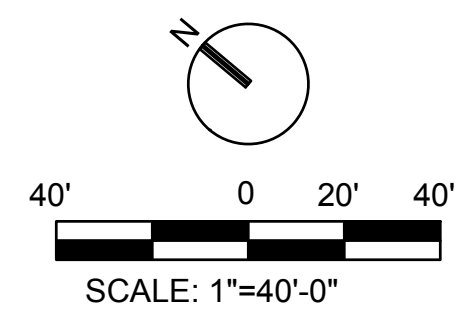
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reference
number:

C-001

Sheet 6 of 43



EXISTING BUILDING - KEYNOTE 5



KEYNOTES:

- 1 REMOVE TREES & VEGETATION INCLUDING STUMPS AND ROOT BALL WHERE PRACTICAL. APPROX. 1130 Sq Yds
- 2 DEMOLISH AND REMOVE VERTICAL WOOD STRUCTURE. APPROX. 180 Lin Ft EACH (5 TOTAL)
- 3 DEMOLISH AND REMOVE WOODEN CANOPY STRUCTURE INCLUDING FOUNDATIONS. APPROX. 1790 Sq Ft
- 4 EXISTING VERTICAL WOOD STRUCTURE TO REMAIN. DO NOT DEMOLISH AS A PART OF THIS PROJECT
- 5 EXISTING BUILDING STRUCTURE TO REMAIN. DO NOT DEMOLISH AS A PART OF THIS PROJECT
- 6 REMOVE AND SALVAGE STEEL CABLES, TURNBUCKLES, HOOKS AND EYELETS (AS FEASIBLE). RETURN TO OWNER FOR FUTURE REUSE.

NOTES:


1. CONTRACTOR SHALL NOTIFY THE HAWAII ONE CALL CENTER (811) OR 1-866-423-7287 BEFORE COMMENCING EXCAVATION OR DEMOLITION
2. DO NOT COMMENCE DEMOLITION, GRADING OR CONSTRUCTION ACTIVITIES UNTIL EROSION CONTROL MEASURES ARE IN PLACE.
3. VEGATATIVE MATERIAL STRIPPED FROM THE SITE MAY NOT BE BURNED. IT IS TO BE DIVERTED TO THE GREEN WASTE FACILITY LOCATED APPROXIMATELY 1 MILE TO THE SOUTHWEST OF THE RANGE BY WAY OF THE QUARRY ACCESS ROAD. PROVIDE WEIGH TICKETS TO THE HIARNG RESERVATION ENVIRONMENTAL OFFICER FOR WASTE DIVERSION DOCUMENTATION.



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

Dayle Kuehl 4.30.2016
Signature Expiration Date of the License

[illegible]

	ARMY NATIONAL GUARD HAWAII		Designed by: JBB	Date: 04-11-2014
	Leidos Engineering LLC One West 3rd Street, Suite 200 Tulsa, Oklahoma 74103		Drawn by: RWJ	Design file: 25522-23000
			Checked by: JBB	Drawing code:
			Reviewed by: DLW	File name: 2225-CJ-051
			Submitted by: SAUC	

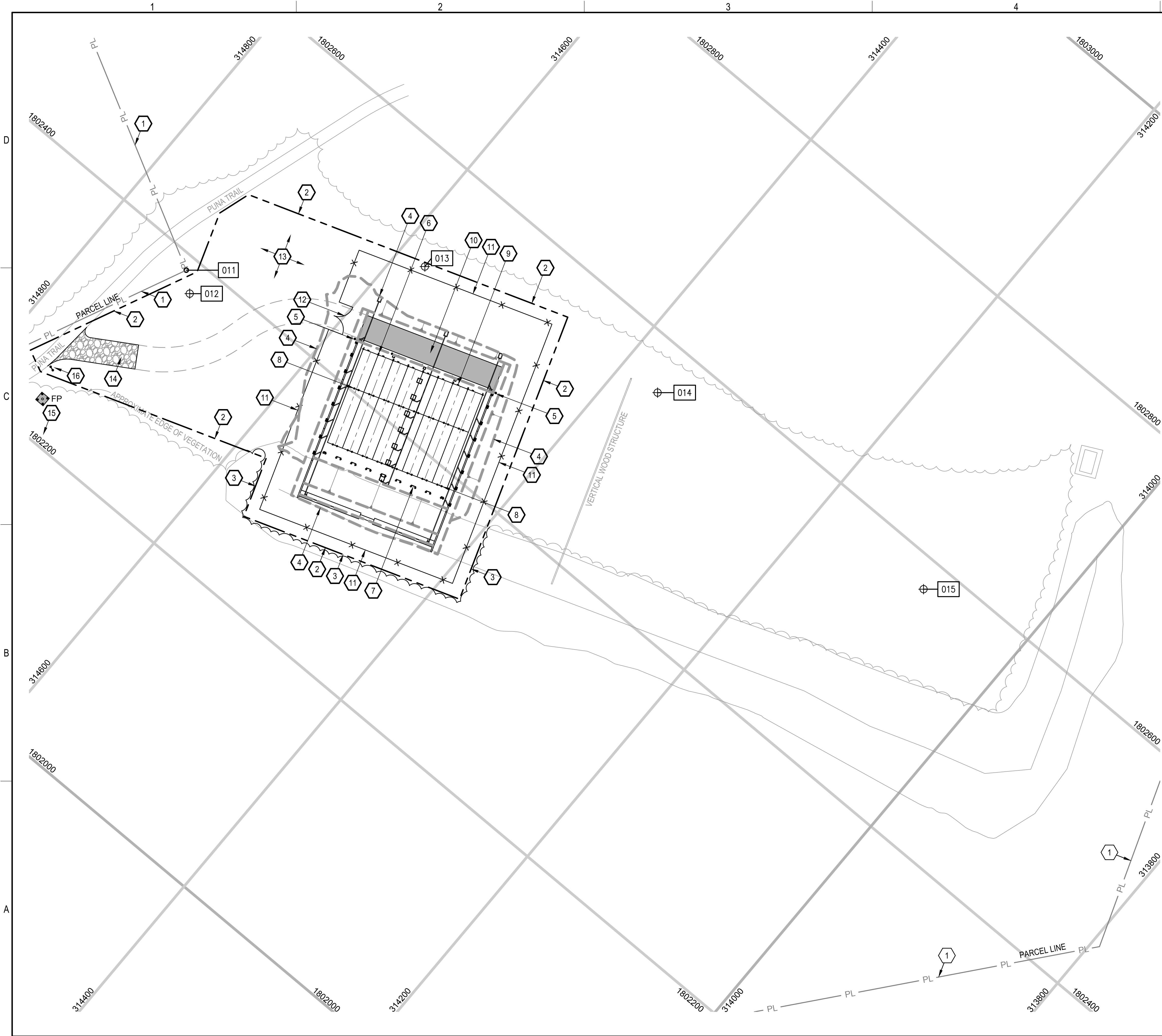
KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

DEMOLITION PLAN

Sheet
reference
number:
C-051

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Date: April 16, 2014 - 1:11pm
User: wardm



NOTES:

- SEE SHEETS C-151 AND C-152 FOR COORDINATE INFORMATION.
- RANGE "ACTIVE" IDENTIFICATION FLAGPOLE. SHOWN FOR DIRECTIONAL PURPOSES ONLY ON THIS SHEET. FLAGPOLE, PROTECTIVE BOLLARDS AND AGGREGATE BASE TO BE INSTALLED ON RESERVATION PROPERTY NEAR THE INTERSECTION OF PUNA TRAIL AND THE PAVED ROAD ACCESSING THE QUARRY. EXACT LOCATION TO BE DETERMINED IN THE FIELD WITH CONSULTATION OF THE HIARNG PROJECT MANAGER. CONTRACTOR TO VERIFY THAT THE PROPOSED LOCATION IS WITHIN THE PROPERTY BOUNDARY OF THE HIARNG PROPERTY.
- REFER TO SHEET G-101 FOR TMK PARCEL 10.

KEYNOTES:

- 1 KMR PROPERTY LINE / PARCEL LINE
- 2 LIMITS OF DISTURBANCE
- 3 TREE/VEGETATION LINE (LIMITS OF CLEARING)
- 4 GRADING LIMITS
- 5 BOLLARD, TYP.
RE: A/C-501
- 6 FIRING LINE MARKER, TYP.
RE: E/C-502
- 7 RANGE LANE MARKER, TYP.
RE: B OR C/C-502
- 8 TARGET BOOT, TYP.
RE: A/C-501
- 9 V-NOTCH RIFLE REST, TYP.
RE: F/C-501
- 10 12" AGGREGATE SURFACE
RE: A/C-300
- 11 72" CHAIN LINK SECURITY FENCE
RE: C-505
- 12 24' DOUBLE LEAF SWING GATE.
RE: C-506
- 13 CONTRACTOR STAGING AND LAYDOWN AREA
- 14 CONSTRUCTION ENTRANCE
RE: B/C-751
- 15 RANGE ACTIVE FLAG POLE
RE: F/C-501 (REFER TO NOTE 2 C-100 FOR ADDITIONAL INFORMATION)
- 16 RANGE IDENTIFICATION SIGN. SUPPLIED BY OTHERS. NOT A PART OF THIS PROJECT. SHOWN FOR INFORMATIONAL PURPOSES ONLY.

LEGAL OWNER: STATE OF HAWAII
LESSEE/TENANT: ARMY NATIONAL GUARD, HAWAII

TAX MAP KEY:				
Z	S	PL	PAR	LOT
2	1	13	10	N/A

SITE ADDRESS: KEAUKAHA MILITARY RESERVATION
HILO, HI



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

Signature: *Dayne Lee Weierbach* 4-30-2016
Expiration Date of the License



Date	Mark	Description
04-11-14	DLW	APR
0	ISSUED FOR BID	

Date:	Designed by:	Drawn by:	Checked by:	Reviewed by:	Submitted by:
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File name:					
2223-C-100					

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE
OVERALL SITE PLAN

Sheet reference number:
C-100
Sheet 9 of 43

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User: wardm

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B
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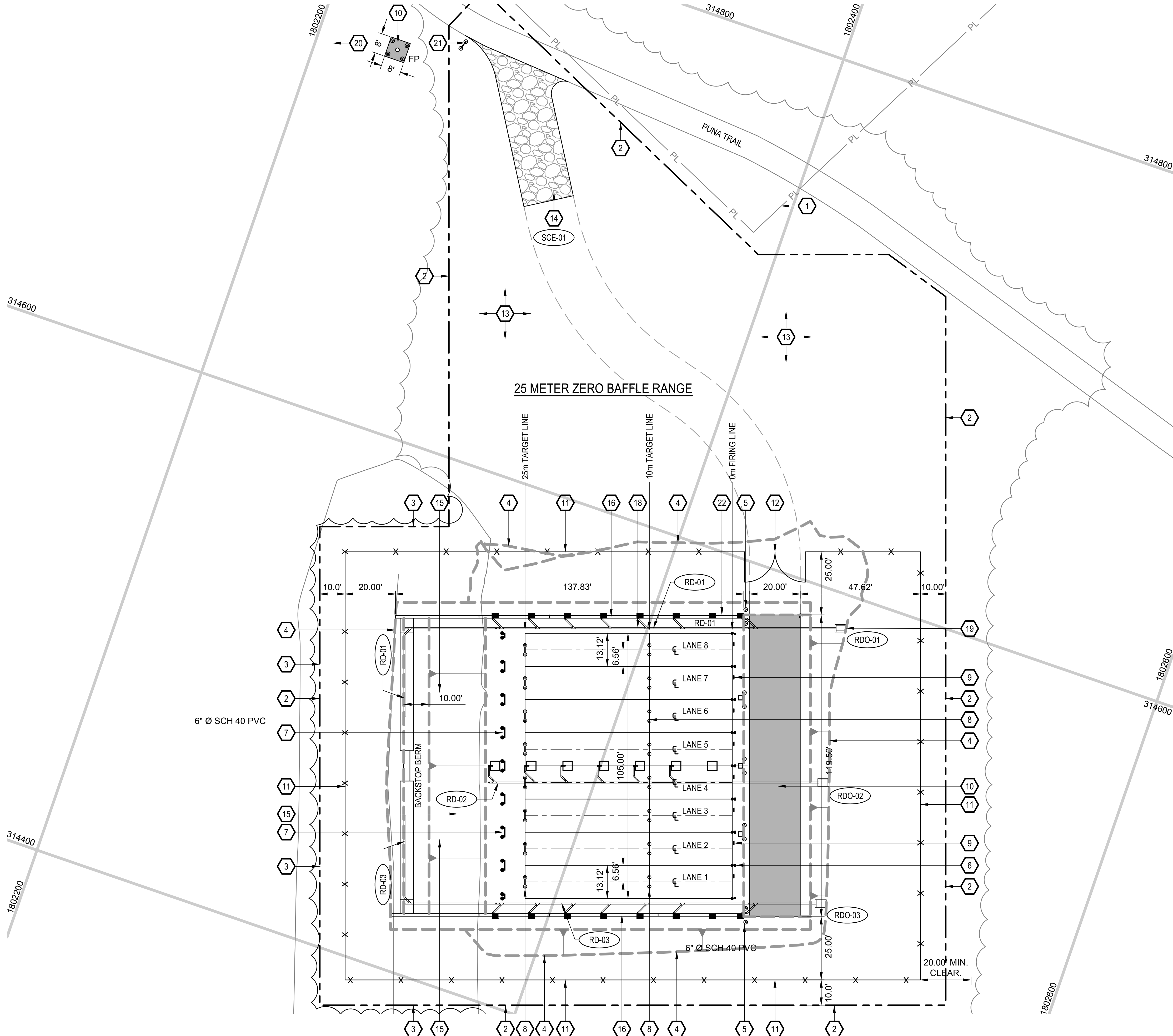
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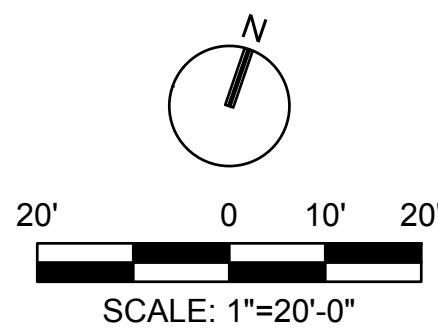
- SEE SHEET C-401 FOR ENLARGED RANGE SITE PLAN
- SEE SHEET C-121 FOR GEOMETRIC DATA

LEGEND:

- RD-XX ROOF DOWNSPOUT DRAIN-(ID No.)
RDO-XX ROOF DRAIN OUTLET-(ID No.)

KEYNOTES:

- KMR PROPERTY LINE
- LIMITS OF DISTURBANCE
- TREE/VEGETATION LINE (LIMITS OF CLEARING)
- GRADING LIMITS
- BOLLARD, TYP.
RE: A/C-501
- FIRING LINE MARKER, TYP.
RE: C-502
- RANGE LANE MARKER, TYP.
RE: C-502
- TARGET BOOT, TYP.
RE: C-502
- V-NOTCH RIFLE REST, TYP.
RE: C-502
- 12" AGGREGATE SURFACE
RE: 1/C-300
- 72" CHAIN LINK SECURITY FENCE (FE6-TBR-72)
RE: C-505
- 24' DOUBLE LEAF SWING GATE.
RE: C-506
- CONTRACTOR STAGING AND LAYDOWN AREA
- CONSTRUCTION ENTRANCE
RE: B/C-751
- BACKSTOP BERM.
RE: D/C-503
- CONCRETE SIDE WALL.
RE: S-501 THROUGH S-503
- 6" PVC SHED 40 ROOF LEADER AND DRAIN.
RE: C-502, C-503, C-302 THRU C-304
- ROOF DRAIN OUTLET.
RE: A/C-504
- RANGE ACTIVE FLAG POLE
RE: E & F/C-501 (REFER TO NOTE 2 C-100 FOR ADDITIONAL INFORMATION)
- RANGE IDENTIFICATION SIGN. SUPPLIED BY OTHERS. NOT A PART OF THIS PROJECT. SHOWN FOR INFORMATIONAL PURPOSES ONLY.
- BUILDING NUMERICAL IDENTIFICATION SIGN. SUPPLIED BY OTHERS. NOT A PART OF THIS PROJECT. SHOWN FOR INFORMATIONAL PURPOSES ONLY.



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

Signature: *Dayne Lee Weierbach* 4-30-2016
Expiration Date of the License



Date	Mark	Description	Appr.
04-11-14	0	ISSUED FOR BID	DLW

Designed by: UBB	Checked by: UBB	Date: 04-11-2014
Drawn by: RWV	Reviewed by: DLW	Design file no. 255223000
Submitted by: SAC	File name: 2223-C-101	Drawing code: DLW

ARMY NATIONAL GUARD
HAWAII

leidos

Leidos Engineering LLC
One West 3rd Street, Suite 200
Tulsa, Oklahoma 74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

SITE PLAN
SHEET 1

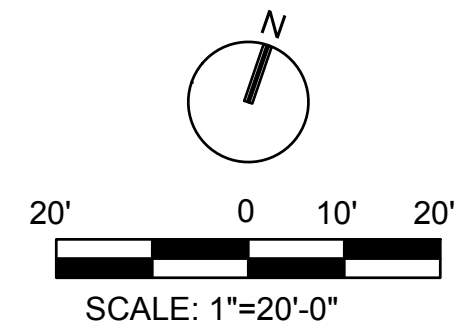
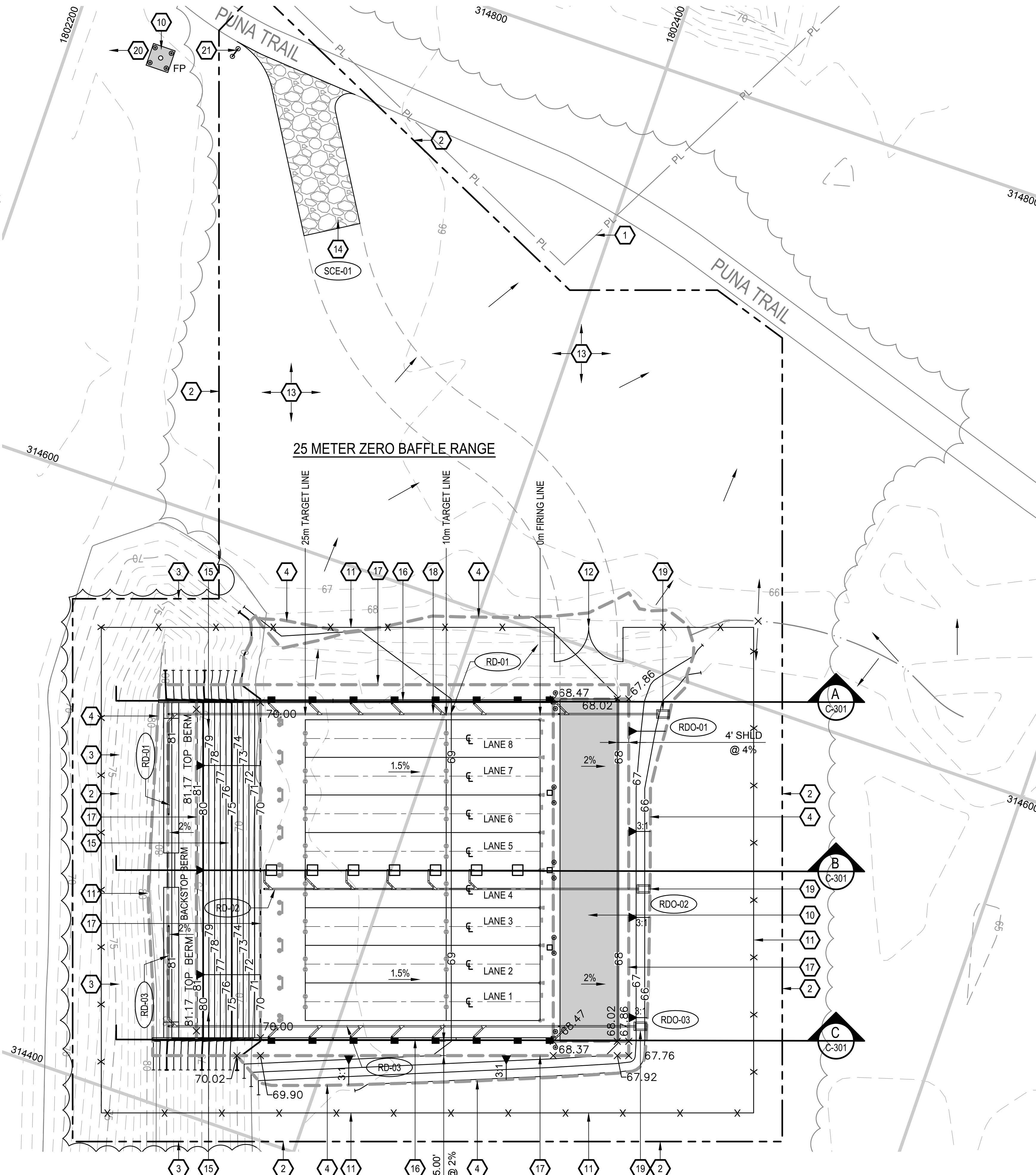
Sheet reference number:
C-101

Sheet 10 of 43

1. ALL GRADING WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE DEPARTMENT OF PUBLIC WORKS (DPW) APPROVES A GRADING PERMIT.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE DPW SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1, FUGITIVE DUST.
4. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL AND CHAPTER 54, WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
5. THE CONTRACTOR SHALL SOD OR PLANT ALL SLOPES AND EXPOSED AREA IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
6. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED.
7. THE CONTRACTOR SHALL INFORM THE DPW OF THE LOCATION OF THE DISPOSAL AND/OR BORROW SITE(S) REQUIRED FOR THIS PROJECT WHEN AN APPLICATION FOR A GRADING PERMIT IS MADE. THE DISPOSAL AND/OR BORROW SITE(S) MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
8. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAY, AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE DEPARTMENT OF PUBLIC WORKS. GRADING WORK ON NORMAL WORKING DAYS SHALL BE BETWEEN THE HOURS OF 7:00 AM TO 3:30 PM.
9. FILLS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM D-1557 TEST.
10. THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE PLACING FILLS ON NATURAL GROUND SURFACE.
11. THE LIMITS OF THE GRADED AREA SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF GRADING WORK.
12. THE CONTRACTOR SHALL CONFINE ALL ITS GRADING OPERATIONS WITHIN LIMITS OF DISTURBANCE AND SHALL PROTECT EXISTING FEATURES CLOSE TO LIMITS.
13. SHOULD ANY UNIDENTIFIED SITES OR REMAINS SUCH AS SHELL, BONE, OR CHARCOAL DEPOSITS, HUMAN BURIALS, ROCK OR CORAL ALIGNMENTS, PAVING OR WALLS BE ENCOUNTERED, WORKS IN THE AFFECTED AREA SHALL CEASE AND THE PLANNING DEPARTMENT AND THE OWNER'S DESIGNATED REPRESENTATIVE IMMEDIATELY NOTIFIED. SUBSEQUENT WORK SHALL PROCEED UPON AN ARCHEOLOGICAL CLEARANCE FROM THE PLANNING DEPARTMENT, THROUGH THE OWNER'S DESIGNATED REPRESENTATIVE, WHEN IT FINDS THAT SUFFICIENT MITIGATIVE MEASURES HAVE BEEN TAKEN.
14. THE FOLLOWING QUANTITIES ARE APPROVED FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ITS OWN QUANTITIES. ESTIMATED EARTHWORK QUANTITIES:
EXCAVATION = 28.6 CY
EMBANKMENT = 3374.0 CY
TOTAL GRADED AREA = 0.63 ACRES

1. ALL GRADING WORK SHALL CONFORM TO CHAPTER 10 OF THE HAWAII COUNTY CODE. SHOULD A GRADING PERMIT BE REQUIRED, NO WORK SHALL COMMENCE UNTIL THE DEPARTMENT OF PUBLIC WORKS (DPW) APPROVES A GRADING PERMIT.
2. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS RESULTING FROM HIS WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE DPW SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL KEEP THE PROJECT AND SURROUNDING AREAS FREE FROM DUST NUISANCES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL RULES OF THE STATE DEPARTMENT OF HEALTH, HAR 11-60.1, FUGITIVE DUST.
4. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 55, WATER POLLUTION CONTROL AND CHAPTER 54, WATER QUALITY STANDARDS, AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII.
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9. FILLS SHALL BE COMPACTED TO 95% OF MAXIMUM DENSITY PER ASTM D-1557 TEST.
10. THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE PLACING FILLS ON NATURAL GROUND SURFACE.
11. THE LIMITS OF THE GRADED AREA SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF GRADING WORK.
12. THE CONTRACTOR SHALL CONFINE ALL ITS GRADING OPERATIONS WITHIN LIMITS OF DISTURBANCE AND SHALL PROTECT EXISTING FEATURES CLOSE TO LIMITS.
13. SHOULD ANY UNIDENTIFIED SITES OR REMAINS SUCH AS SHELL, BONE, OR CHARCOAL DEPOSITS, HUMAN BURIALS, ROCK OR CORAL ALIGNMENTS, PAVING OR WALLS BE ENCOUNTERED, WORKS IN THE AFFECTED AREA SHALL CEASE AND THE PLANNING DEPARTMENT AND THE OWNER'S DESIGNATED REPRESENTATIVE IMMEDIATELY NOTIFIED. SUBSEQUENT WORK SHALL PROCEED UPON AN ARCHEOLOGICAL CLEARANCE FROM THE PLANNING DEPARTMENT, THROUGH THE OWNER'S DESIGNATED REPRESENTATIVE, WHEN IT FINDS THAT SUFFICIENT MITIGATIVE MEASURES HAVE BEEN TAKEN.
14. THE FOLLOWING QUANTITIES ARE APPROVED FOR PERMIT PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING ITS OWN QUANTITIES. ESTIMATED EARTHWORK QUANTITIES:

EXCAVATION =	28.6 CY
EMBANKMENT =	3374.0 CY
TOTAL GRADED AREA =	0.63 ACRES



1. SEE SHEET C-402 FOR ENLARGED RANGE GRADING PLAN
2. SEE SHEET C-121 FOR GEOMETRIC DATA

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE COUNTY OF HAWAII DEPARTMENT OF PUBLIC WORKS "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1986, AND "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984, AND INCLUDING SUPPLEMENTS AND AMENDMENTS MADE THERETO.

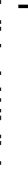
- 1 KMR PROPERTY LINE
- 2 LIMITS OF DISTURBANCE
- 3 TREE/VEGETATION LINE (LIMITS OF CLEARING)
- 4 GRADING LIMITS
- 10 12" AGGREGATE SURFACE
RE: A/C-300
- 11 72" CHAIN LINK SECURITY FENCE (FE6-TBR-72)
RE: C-505
- 12 24' DOUBLE LEAF SWING GATE.
RE: C-506
- 13 CONTRACTOR STAGING AND LAYDOWN AREA
- 14 CONSTRUCTION ENTRANCE
RE: B/C-751
- 15 BACKSTOP BERM.
RE: D/C-300
- 16 CONCRETE SIDE WALL.
RE: S-501 THROUGH S-503
- 17 GRADE BREAK
- 18 6" PVC SHED 40 ROOF LEADER AND DRAIN.
RE: C-302 THRU C-304 & C-503 THRU C-504
ROOF DRAIN OUTLET.
- 19 RE: A/C-504
- 20 RANGE ACTIVE FLAG POLE
RE: F/C-501 (REFER TO NOTE 2 C-100 FOR
ADDITIONAL INFORMATION)
- 21 RANGE IDENTIFICATION SIGN, SUPPLIED BY
OTHERS. NOT A PART OF THIS PROJECT.
SHOWN FOR INFORMATIONAL PURPOSES
ONLY.



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

Dayle Kuehl 4.30.2016
Signature Expiration Date of the License

[illegible]

	ARMY NATIONAL GUARD HAWAII		Signed by: JBB	Date: 04-11-2014
	Requested by: DLW	Checked by: JBB	Requested by: DLW	Drawing code: 25522-23000
Leidos Engineering LLC One West 3rd Street, Suite 200 Tulsa, Oklahoma 74103			Submitted by: SNC	File name: 2225_C-111

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE


GRADING PLAN SHEET 1

Sheet
reference
number:
C-111

Sheet 11 of 43

25M ZERO RANGE V-NOTCH RIFLE REST LOCATIONS				
LANE	CIVIL DETAIL	NORTHING	EASTING	ELEVATION
1	F/C-502	314480.02	1802464.23	68.53
2	F/C-502	314492.43	1802459.95	68.53
3	F/C-502	314504.84	1802455.68	68.53
4	F/C-502	314517.25	1802451.41	68.53
5	F/C-502	314529.66	1802447.13	68.53
6	F/C-502	314542.07	1802442.86	68.53
7	F/C-502	314554.48	1802438.59	68.53
8	F/C-502	314566.89	1802434.31	68.53

[illegible]


 leidos Leidos Engineering LLC One Leidos Way Suite 200 Tulsa, Oklahoma 74103	ARMY NATIONAL GUARD HAWAII	Designed by: JBB	Date: 04-11-2014
		Drawn by: RWW	Design file no. 255223000
		Checked by: JBB	Drawing code: 2203-C-152
		Reviewed by: DLW	File name: 2203-C-152
		Submitted by: SAC	

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE


Sheet
reference
number:

C-152

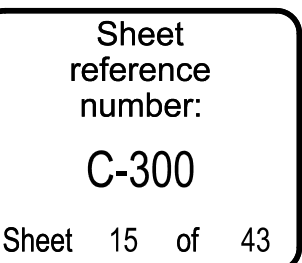
Sheet 14 of 43



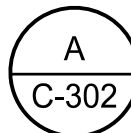
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
 CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.


 4.30.2016

Signature _____ Expiration Date of the License _____



Signature David A. Kuehl 4.30.2016
Expiration Date of the License



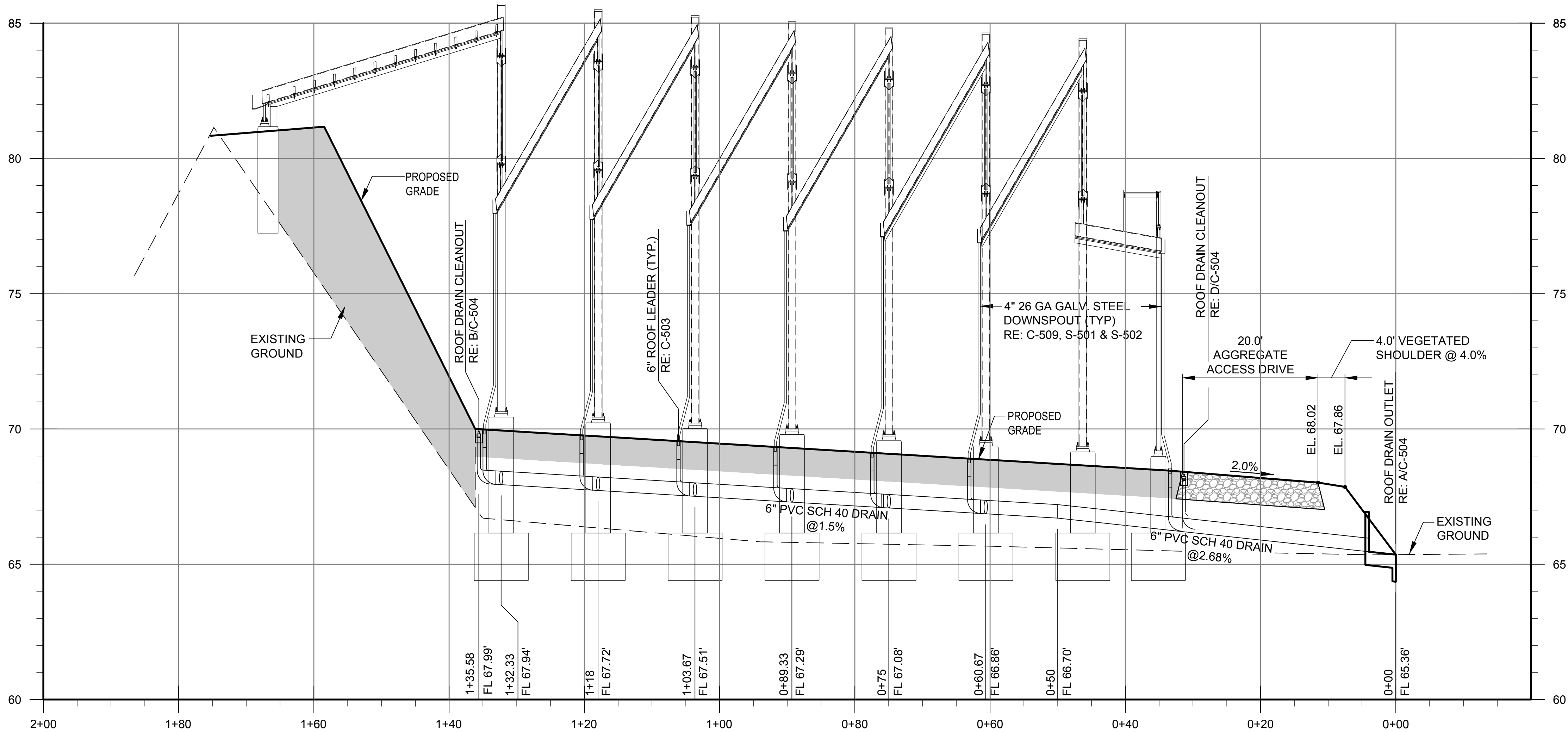
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VERTICAL 1"=2.5'



Dayle Muehl 4.30.2016
Signature Expiration Date of the License

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Date: April 18, 2014 - 1:12pm
User: wardm

A
B
C
D



ROOF DRAIN PROFILE -
"RD-02" (CENTRAL LINE)

SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=2.5'

DAYNE LEE WEIERBACH
LICENSED PROFESSIONAL ENGINEER
No. 15489-C
HAWAII U.S.A.
4.11.2014

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

Signature: *Dayne Lee Weierbach* 4.30.2016
Expiration Date of the License



0	ISSUED FOR BID	04-11-14	DLW
Mark	Date	Apr.	

Designed by: JBB	Checked by: JBB	Date: 04-11-2014
Drawn by: RNW	Reviewed by: DLW	Design file no: 255223000
Submitted by: SAC	File name: 2223-C-303	Drawing code:

ARMY NATIONAL GUARD
HAWAII

leidos

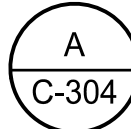
Leidos Engineering LLC
One West Street,
Tulsa, Oklahoma
74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

ROOF DRAIN PROFILE SHEET 2

Sheet
reference
number:
C-303

Sheet 18 of 43

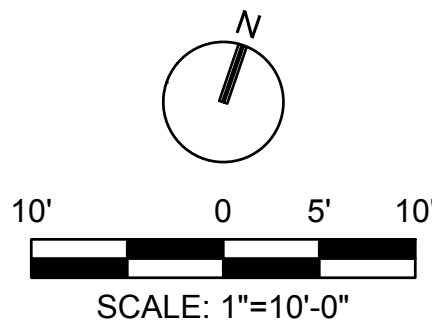
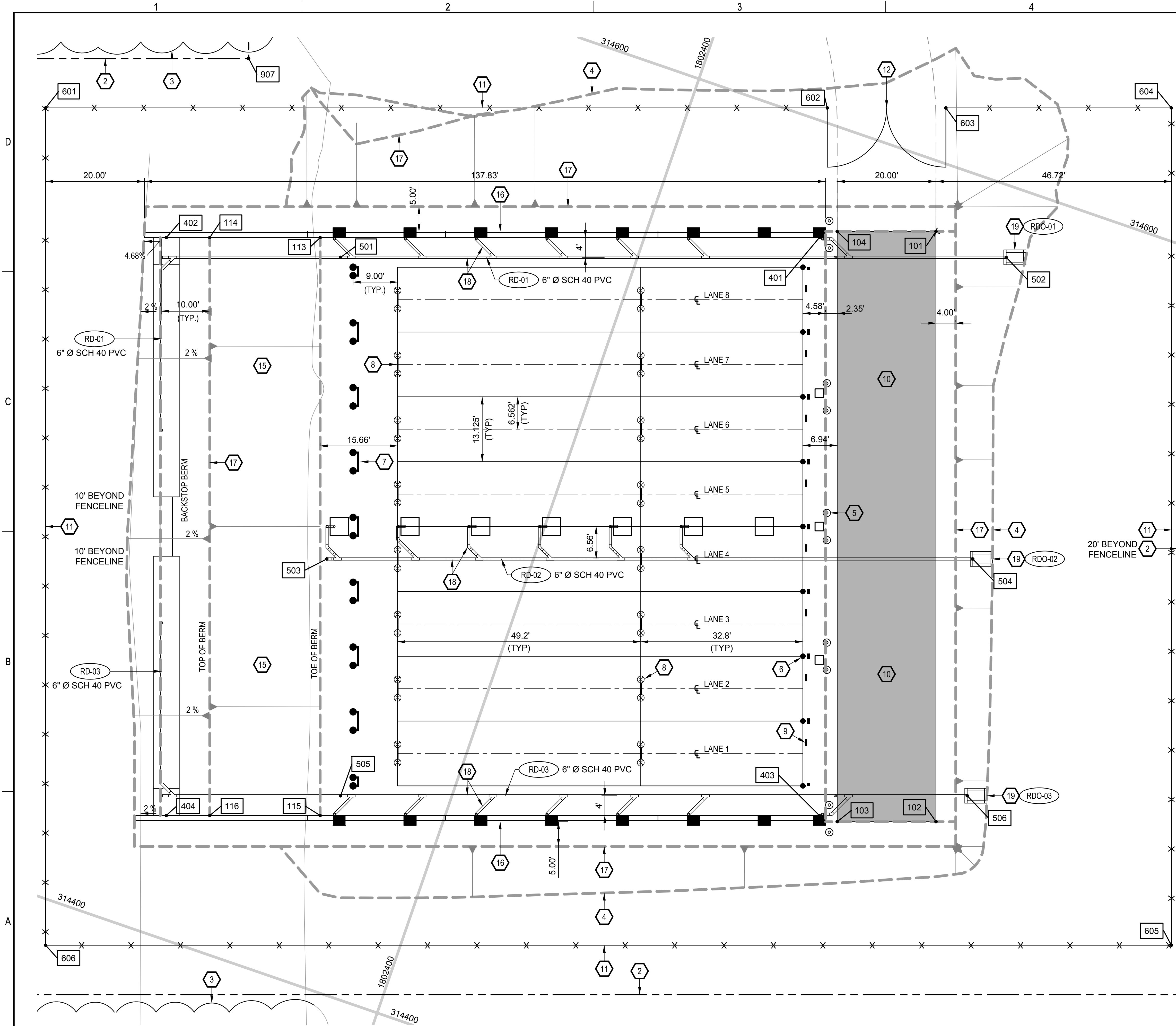


SCALE: HORIZONTAL 1"=10'
VERTICAL 1"=2.5'



Dayle Kuehl 4.30.2016
Signature Expiration Date of the License

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Date: April 16, 2014 - 1:12pm
User: wardm



NOTES:
1. SEE SHEETS C-151 AND C-152 FOR COORDINATE INFORMATION

- KEYNOTES:**
- 2 LIMITS OF DISTURBANCE
 - 3 TREE/VEGETATION LINE (LIMITS OF CLEARING)
 - 4 GRADING LIMITS
 - 5 BOLLARD, TYP.
RE: A/C-501
 - 6 FIRING LINE MARKER, TYP.
RE: E/C-502
 - 7 RANGE LANE MARKER, TYP.
RE: B OR C/C-502
 - 8 TARGET BOOT, TYP.
RE: A/C-502
 - 9 V-NOTCH RIFLE REST, TYP.
RE: F/C-502
 - 10 12" AGGREGATE SURFACE
RE: A/C-300
 - 11 72" CHAIN LINK SECURITY FENCE (FE6-TBR-72)
RE: C-505
 - 12 24' DOUBLE LEAF SWING GATE.
RE: C-506
 - 15 BACKSTOP BERM.
RE: D/C-300
 - 16 CONCRETE SIDE WALL.
RE: S-501 THROUGH S-503
 - 17 GRADE BREAK.
 - 18 6" PVC SCHEDULE 40 ROOF LEADER AND DRAIN.
RE: C-503, C-504 & C-302 THRU C-304
 - 19 ROOF DRAIN OUTLET.
RE: A/C-504



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.
CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Dayne Lee Weierbach 4-30-2016
Signature Expiration Date of the License



Date	DLW	Apr.
04-11-14		
0		
ISSUED FOR BID		
Mark		
Description		

Designed by: JBB	Checked by: JBB	Date: 04-11-2014
Drawn by: RWV	Reviewed by: DLW	Design file no. 255223000
Submitted by: SAC	File name: 2223-C-401	Drawing code: 255223000
ARMY NATIONAL GUARD HAWAII	leidos	Latios Engineering LLC One West Street, Tulsa, Oklahoma 74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE
ENLARGED RANGE SITE PLAN

Sheet
reference
number:
C-401
Sheet 20 of 43

PIPE BOLLARD DETAIL

BOLLARD PLACEMENT AT SIDEWALL DETAIL

PIPE BOLLARD PLACEMENT AT BAFFLE COLUMN DETAIL

**BOLLARD PLACEMENT
AT FLAG POLE DETAIL**

 SCALE: $\frac{3}{8}" = 1'0"$

RANGE FLAG POLE FOUNDATION DETAIL


RANGE ACTIVE (HOT)
FLAG POLE DETAIL

SCALE: $\frac{1}{4}" = 1'-0"$

LUMINAIRE REQUIREMENTS

1. LUMINAIRE SHALL MEET FEDERAL AVIATION ADMINISTRATION SPECIFICATIONS FOR OBSTRUCTION LIGHTING (L-810).
2. CAST ALUMINUM HOUSING.
3. ONE PIECE 360° RED HEAT RESISTANT GLASS FRESNEL GLOBE. PROVIDE TOGGLE TYPE LATCHES AND CLAMPING TO SECURE GLOBES.
4. PROVIDE SAFETY CHAINS ON GLOBES. MOUNT PHOTO-ELECTRIC CONTROL TO CONTROL LAMPS.
5. MOUNT LUMINAIRE ON 1" RIGID STEEL CONDUIT. PROVIDE JUNCTION BOX AND MOUNTING PLATE AT BASE UNLESS INDICATED OTHERWISE.
6. PROVIDE INTERNAL GREEN GROUNDING SCREW.

[illegible]

 leidos Leidos Engineering LLC One West 3rd Street, Tulsa, Oklahoma 74103	ARMY NATIONAL GUARD HAWAII		Designed by: USB	Date: 04-11-2014
	Drawn by: JWW	Checked by: JBB	Design: C2223000	Drawing code: Drawing code:
	Reviewed by: DJW	Submitted by: SAC	File name: 2223-C-501	



KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

RANGE DETAILS

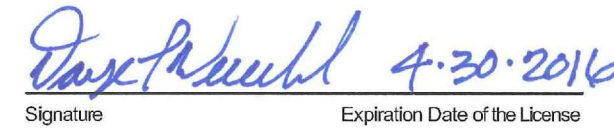
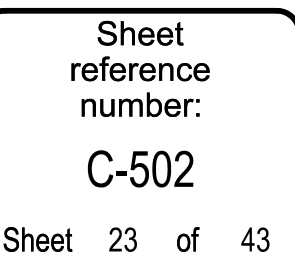
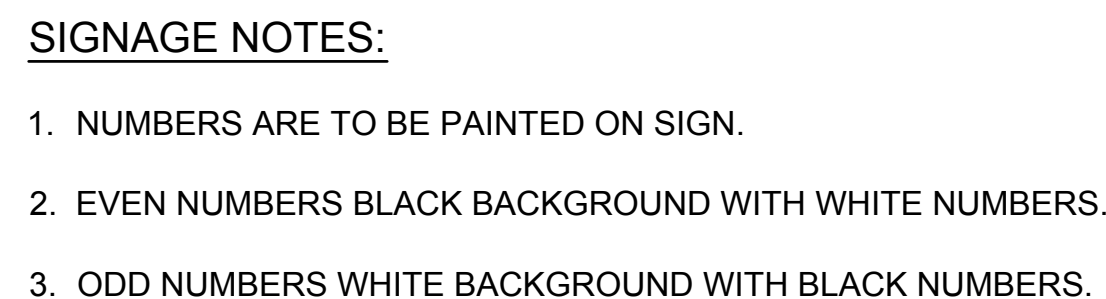
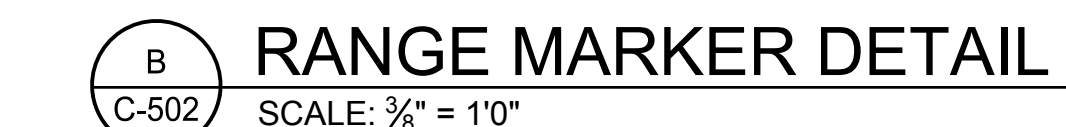
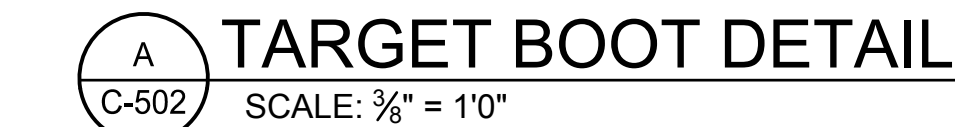
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reference
number:
C-501

Sheet 22 of 43



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

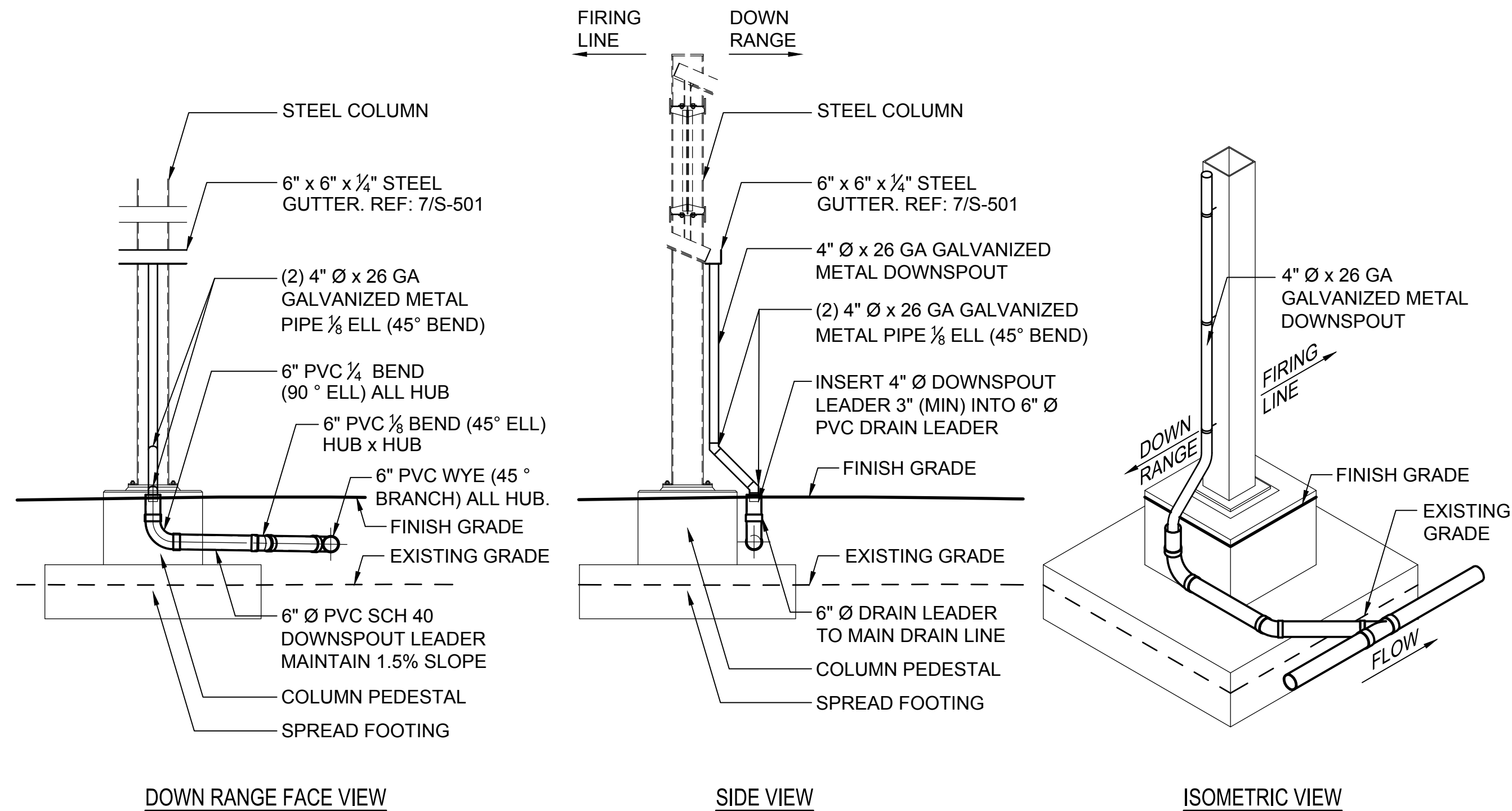
Daya Praveen 4.30.2016



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User: wordin

D

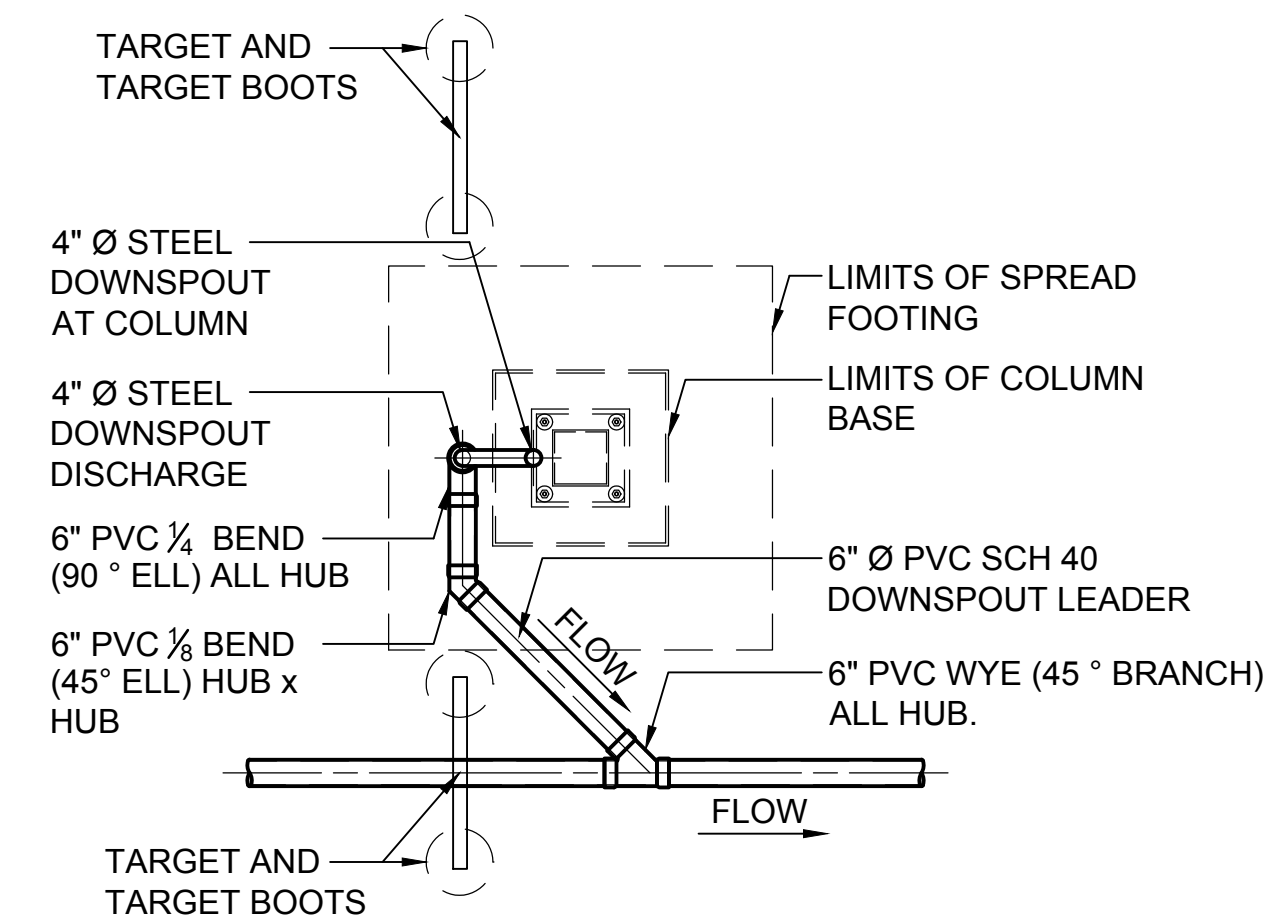
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**ROOF DRAIN LEADER
CONNECTION DETAIL**

A
C-503
NOT TO SCALE

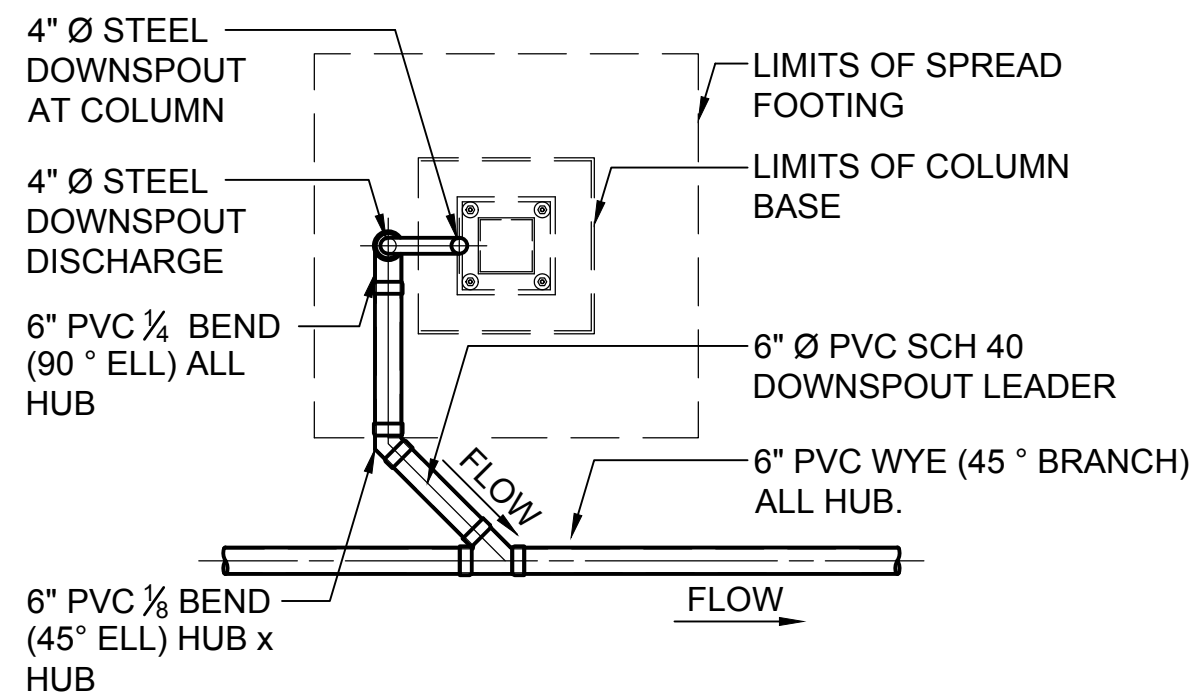
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**ROOF LEADER @ COLUMN
"H3" CONNECTION DETAIL**

D
C-503
SCALE: 1/4" = 1'-0"

E
C-503

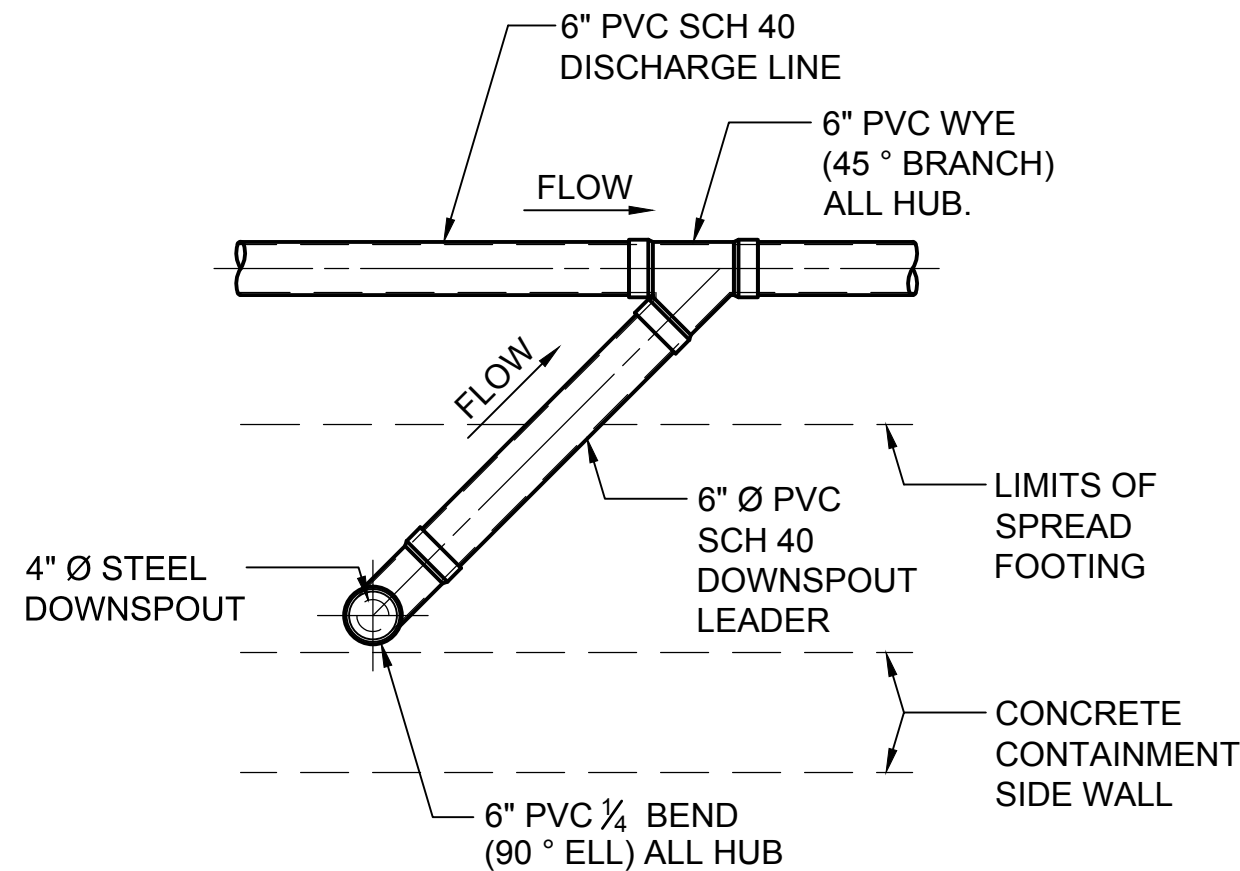


**TYPICAL CENTER COLUMN ROOF
LEADER CONNECTION DETAIL**

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

A

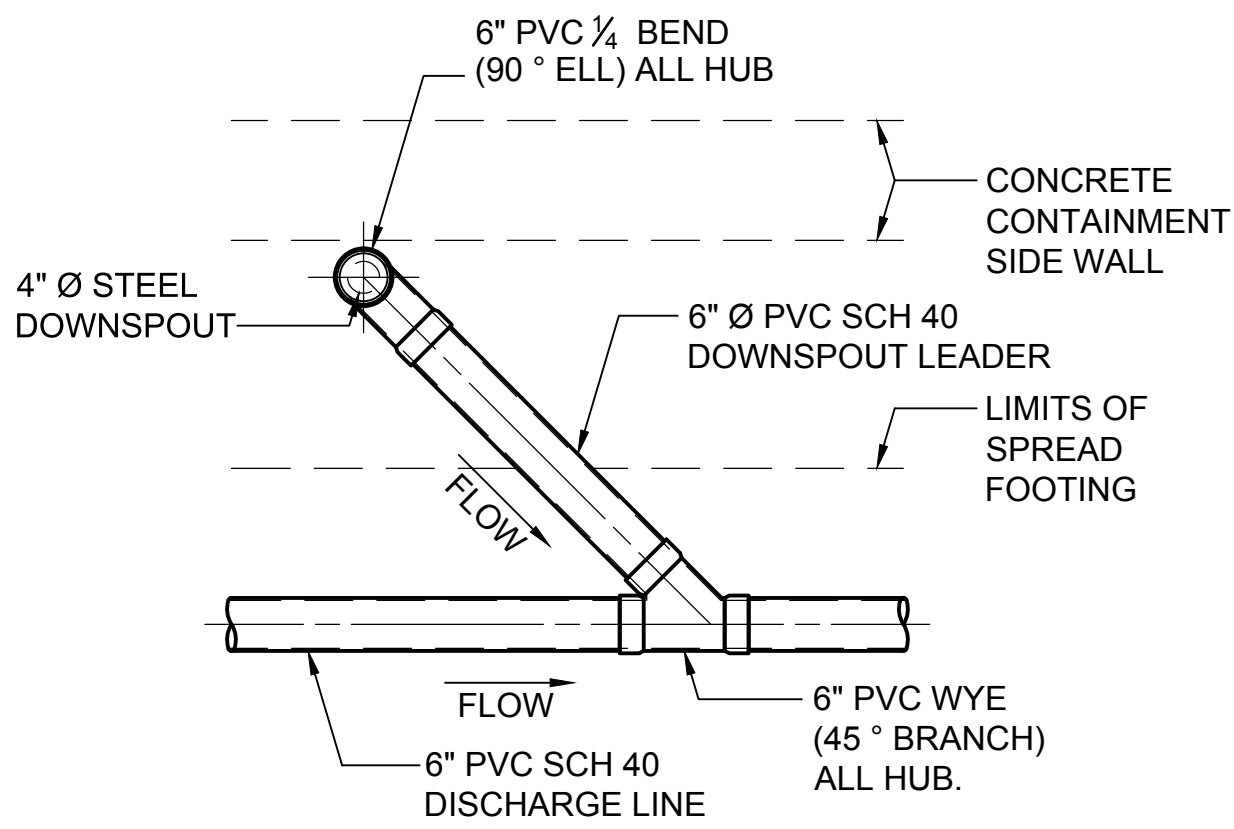
B
C-503



**TYPICAL SOUTH WALL ROOF
LEADER CONNECTION DETAIL**

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

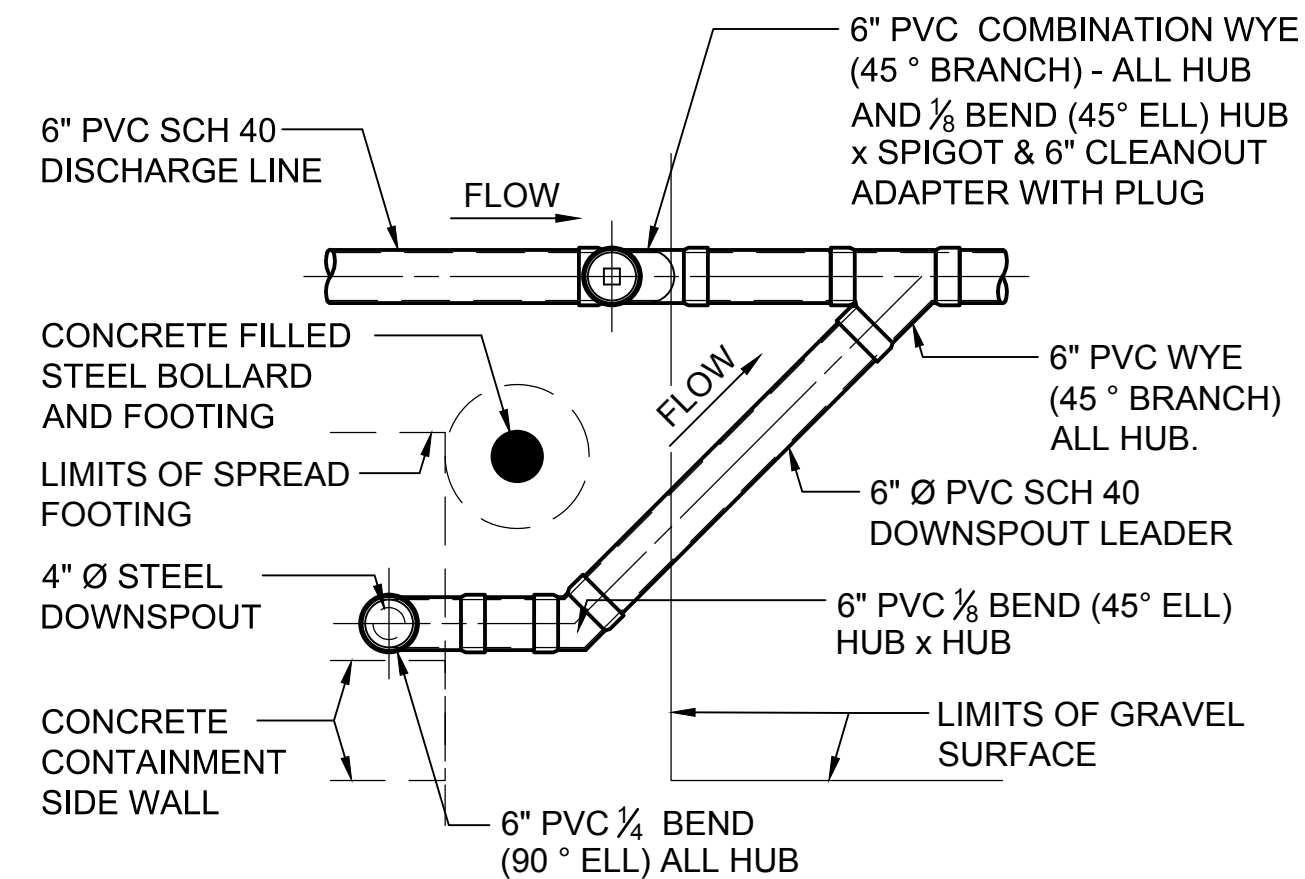
F
C-503



**TYPICAL NORTH ROOF
LEADER CONNECTION DETAIL**

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

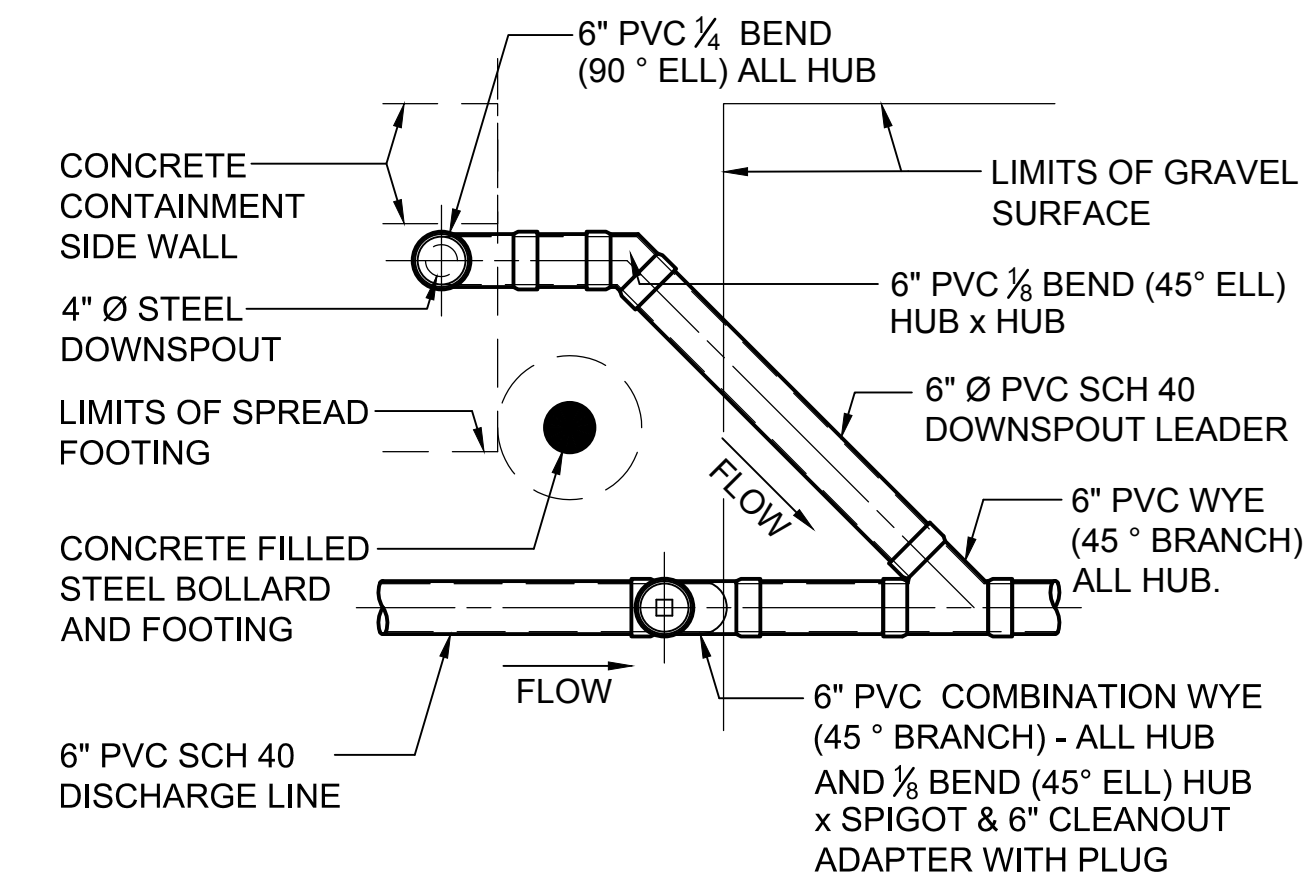
C
C-503



**SOUTH WALL ROOF LEADER @
GRID "A" CONNECTION DETAIL**

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

G
C-503



**NORTH ROOF LEADER @
GRID "A" CONNECTION DETAIL**

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



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

Signature: Dayne Lee Weierbach
Expiration Date of the License: 4-30-2016



Date	DLW	Apr.
04-11-2014	04-11-14	
ISSUED FOR BID	0	
Mark		

Date:	04-11-2014
Design file no.	255222000
Checked by:	UBB
Drawn by:	RWW
Reviewed by:	DLW
Submitted by:	SAC
File name:	2223-C-503

ARMY NATIONAL GUARD
HAWAII

leidos

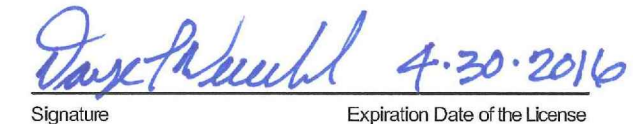
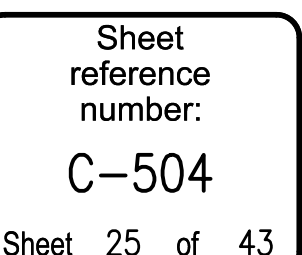
Leidos Engineering LLC
One West Street,
Tulsa, Oklahoma
74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

STORMWATER DETAILS

Sheet
reference
number:
C-503

Sheet 24 of 43



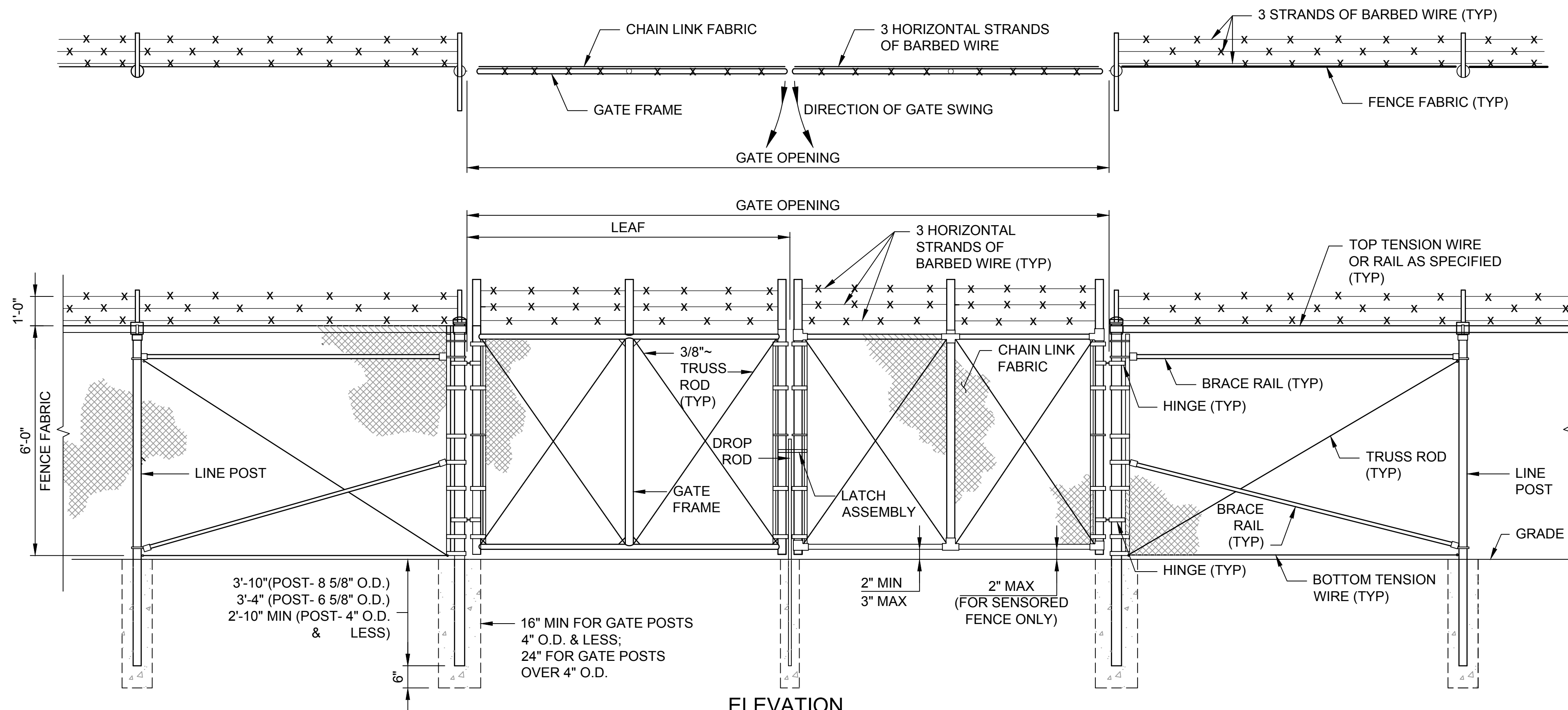
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User: wardm

D

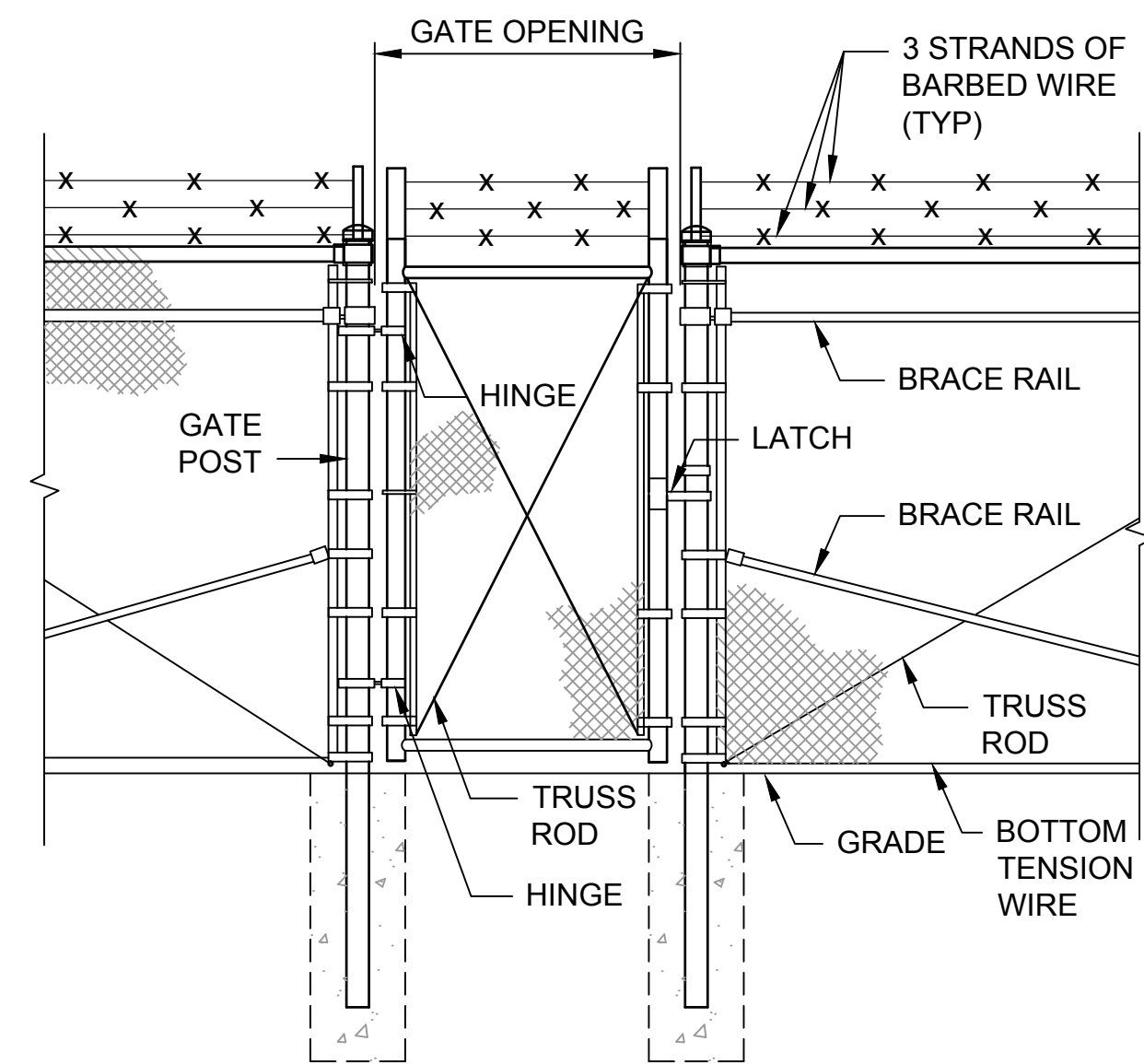
C

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A



1 DOUBLE SWING GATE (TYPE FE6 FENCE)
N.T.S.



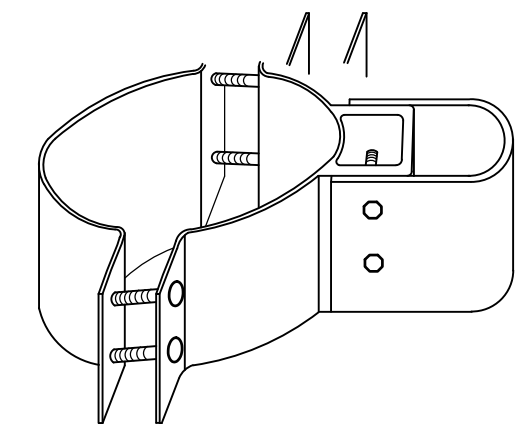
2 PERSONNEL GATE
N.T.S.

NOTES:

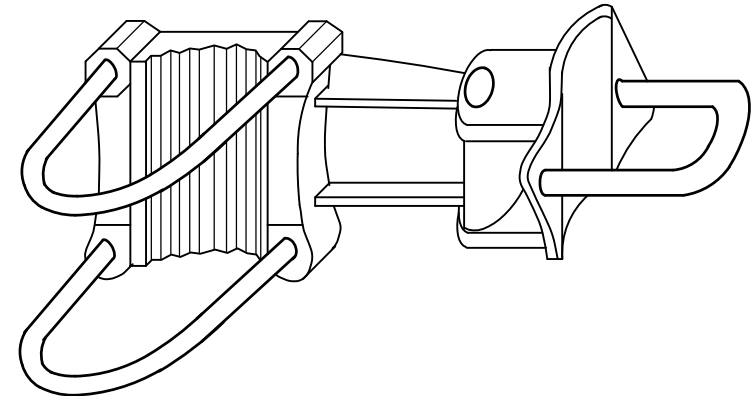
1. DETAILS SHOWN ARE TO CLARIFY REQUIREMENTS AND ARE NOT INTENDED TO LIMIT OTHER TYPE OF FENCE SECTIONS AND METHODS OF INSTALLATION.
2. SWING GATES SHALL BE CONSTRUCTED WITH DROP RODS, PADLOCKS, LATCH ASSEMBLY AND GATE KEEPERS EXCEPT AS NOTED.
3. ALL GATE FRAMES SHALL BE A MINIMUM 1.90" NOMINAL (ROUND) OR 2.00 NOMINAL (SQUARE). GATE FRAMES SHALL BE OF WELDED CONSTRUCTION OR SHALL BE ASSEMBLED USING HEAVY FITTINGS. AT CONTRACTOR'S OPTION A WELDED HORIZONTAL BRACE MAY BE USED IN LIEU OF TRUSS RODS TO BRACE ALL WELDED GATE FRAMES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER RIGID CONSTRUCTION OF ALL GATES SUPPLIED.
4. THE GATE FASTENERS AND HINGE PINS SHALL BE SPOT WELDED TO PRECLUDE REMOVAL.
5. GATES SHALL BE DESIGNATED AS FOLLOWS:
FENCE TYPE - FE5, FE6, ETC.
FENCE HEIGHT - INCHES
TYPE OPENING - SO (SINGLE) DO (DOUBLE)
HINGE - RA (STANDARD) HO (OFFSET)
OPENING - FEET (CLEAR OPENING BETWEEN GATE POSTS)

EXAMPLES: FE6-84-DO-RA-24
FE5-48-SO-HO-6

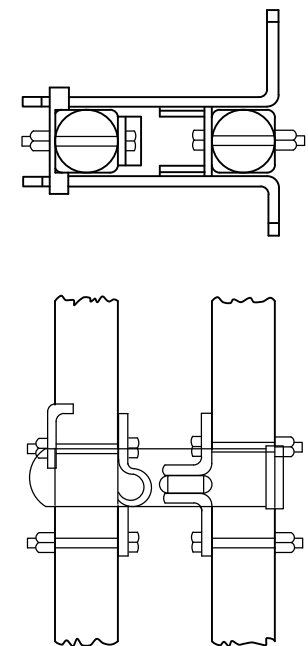
GATE POST SCHEDULE	
GATE LEAF WIDTH (NOMINAL)	OUTSIDE DIMENSION (NOMINAL)
6' OR LESS	2.875" OD 2.5" SQ
MORE THAN 6' TO 13'	4.0" OD



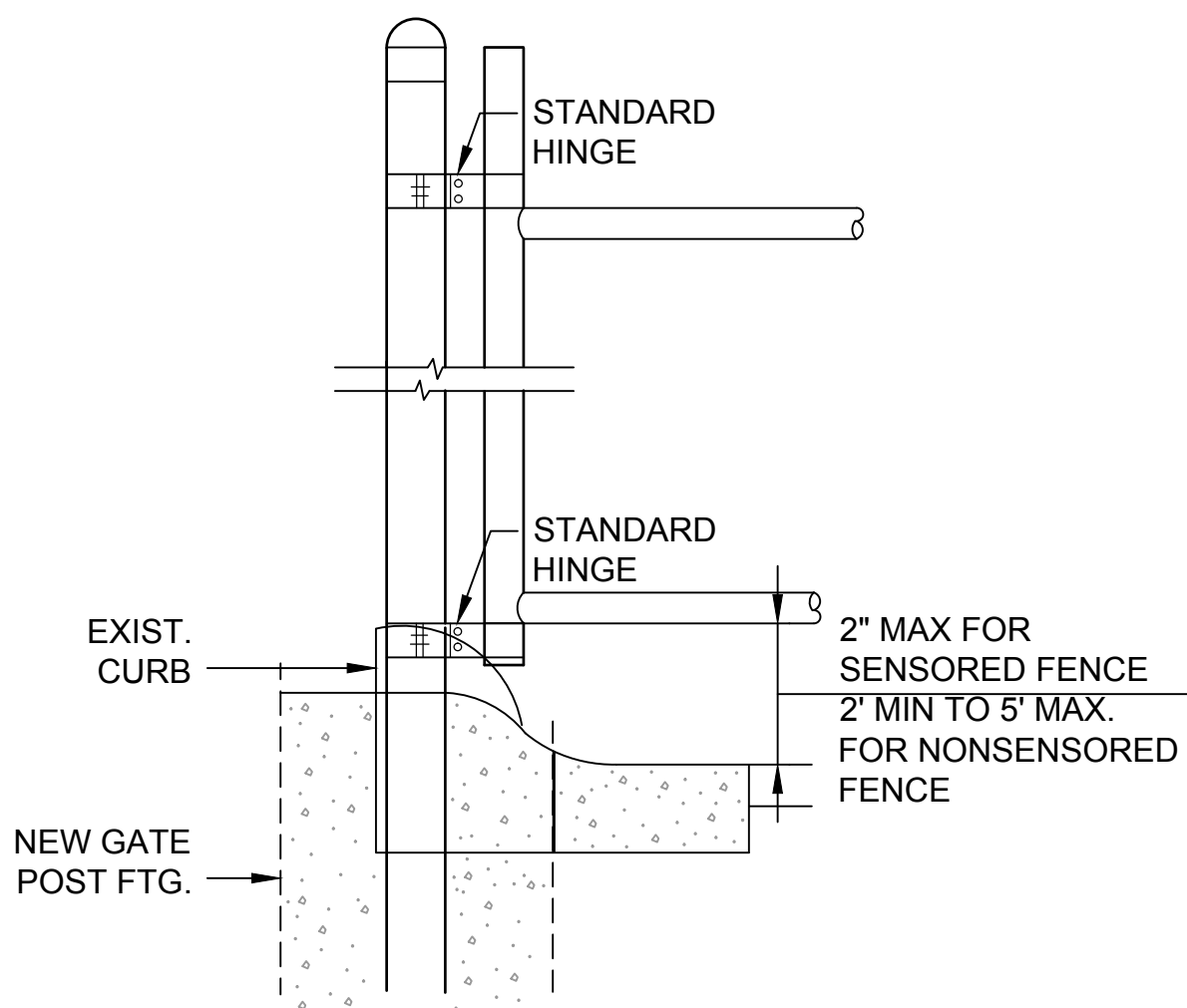
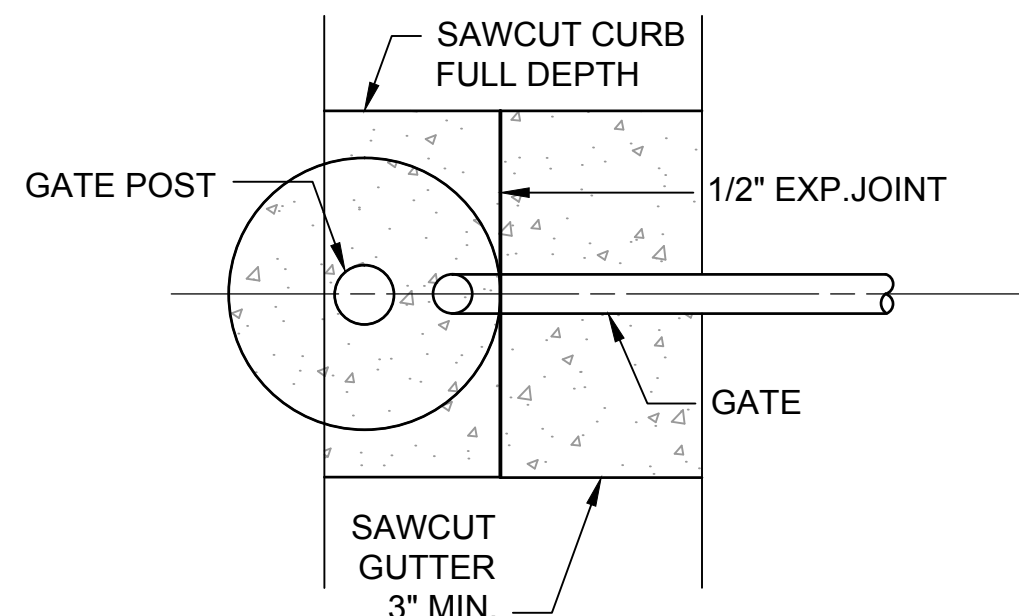
3 STANDARD HINGE
N.T.S.



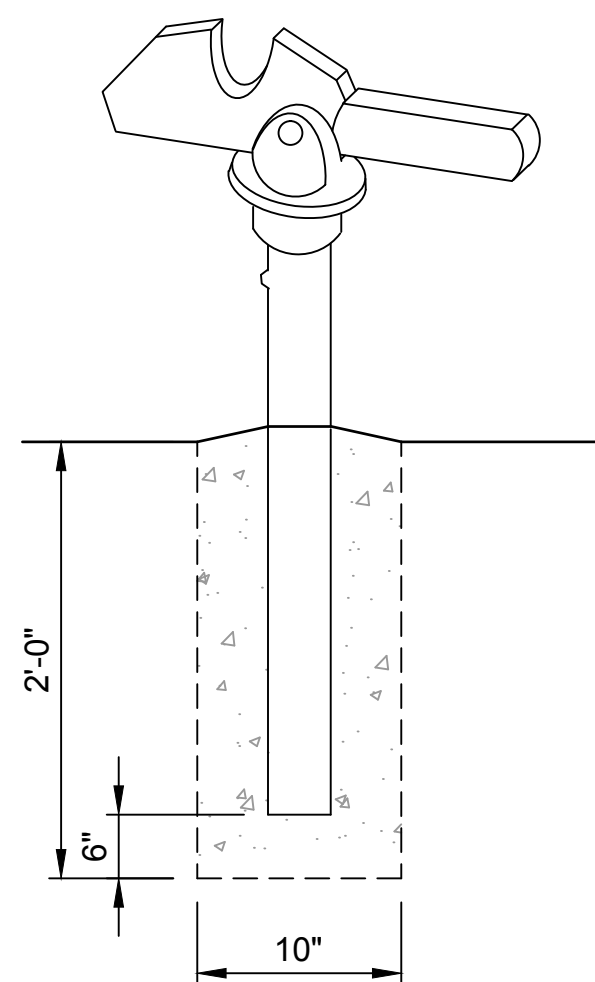
4 OFFSET HINGE
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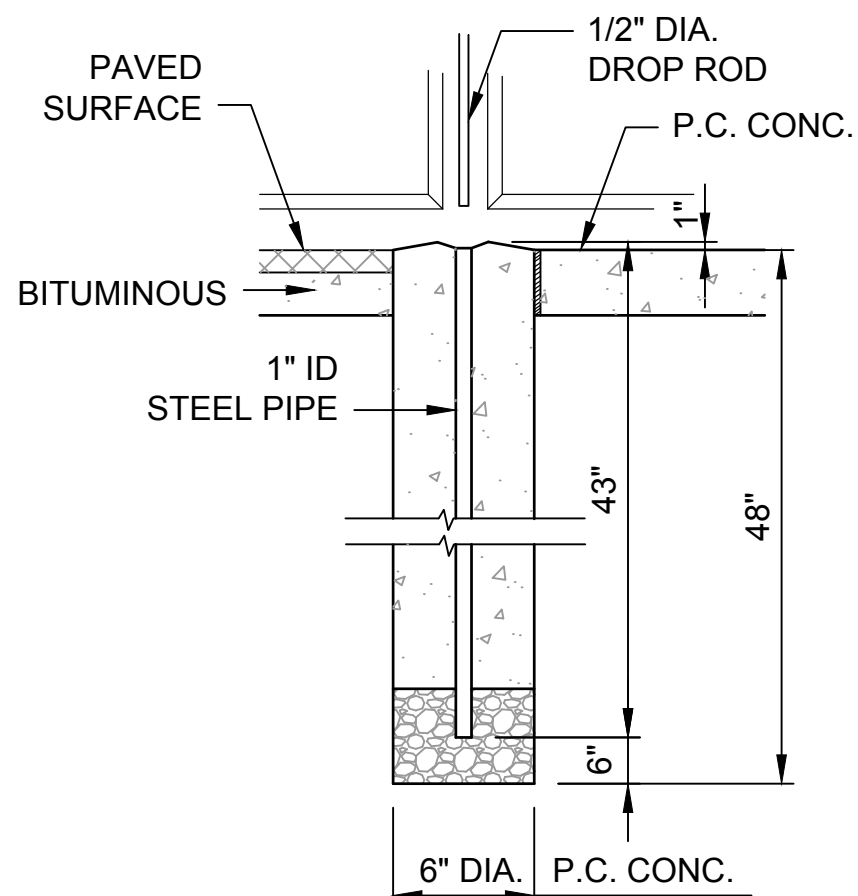
5 LATCH ASSEMBLY
N.T.S.



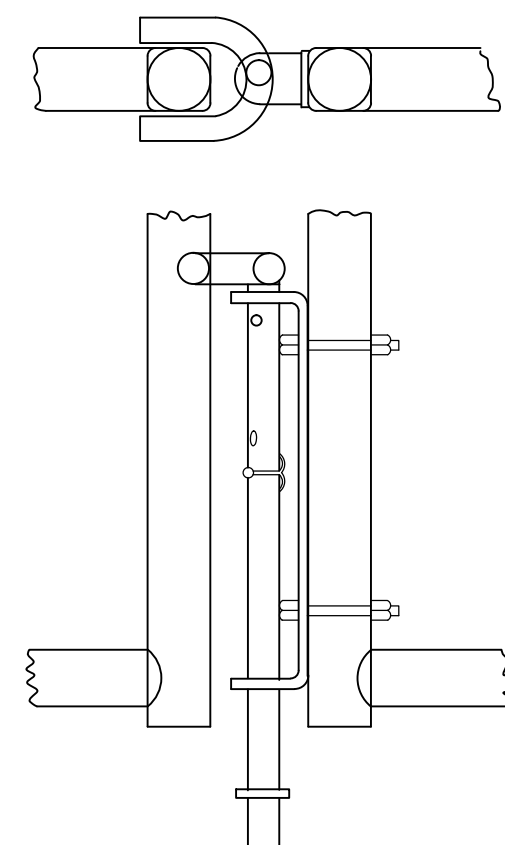
9 GATE POST SECTION @ CURB AND GUTTER
N.T.S.



6 GATE KEEPER
N.T.S.



7 DROP ROD FOUNDATION
N.T.S.



8 DROP ROD ASSEMBLY
N.T.S.



Date	DLW	Apr.
04-11-2014	04-11-14	
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Description		

Designed by: UBB	Checked by: UBB	Date: 04-11-2014
Drawn by: RNW	Reviewed by: DLW	Design file no. 255223000
Submitted by: SAC	File name: 2223-C-506	Drawing code: Tulsa, Oklahoma 74103
ARMY NATIONAL GUARD HAWAII		
leidos		

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

CHAIN LINK GATE DETAILS

Sheet
reference
number:
C-506

Sheet 27 of 43

DAYNE LEE WEIERBRICK
LICENSED
PROFESSIONAL
ENGINEER
No. 15489-C
HAWAII U.S.A.
4-11-2014

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

Signature: Dayne Lee Weierbrick
Expiration Date of the License: 4-30-2016

File name: P:\ECIV\650-TULU\CV\2552223000_USPFO_HL_Baffled20_DESGNM40_CAD\C\2223-C-700.dwg
Date: April 18, 2014 - 1:13pm
User: wardm

STORM WATER MANAGEMENT PLAN

SITE DESCRIPTION

PROJECT LIMITS:

THE PROJECT IS LOCATED AT THE KEAUKAHA MILITARY RESERVATION NEAR HILO, HAWAII. THE PROJECT SITE IS AT THE SOUTHEAST LIMITS OF THE MILITARY RESERVATION, APPROXIMATELY 7250 FEET ALONG PUNA TRAIL SOUTHEAST OF THE CANTONMENT AREA.

PROJECT DESCRIPTION:

THE PROJECT CONSISTS OF GRADING, DRAINAGE, AND SITE PREPARATION TO CONSTRUCT A MILITARY FACILITY CONTAINING A BAFFLED 25 METER ZERO RANGE.

PROJECT OWNER AND OPERATOR:

USP&FO - HAWAII
USPFO WAREHOUSE
91-1179 ENTERPRISE AVENUE
BUILDING 117
KAPOLEI, HI 96707-2150

SUGGESTED SEQUENCE OF EROSION CONTROL ACTIVITIES:

1. INSTALL STABILIZED CONSTRUCTION ENTRANCES (SCE) AT LOCATIONS SHOWN ON THE PLANS
2. INSTALL SILT FENCE PERIMETER CONTROLS
3. INSTALL SIDE WALLS
4. GRADE REMAINDER OF PROJECT AREAS
5. ONCE RANGE BAFFLES AND RANGE FEATURES ARE IN PLACE, STABILIZE REMAINDER OF OPEN AREAS
6. ONCE ALL AREAS ARE STABILIZED REMOVE SILT FENCE AND SCE'S

SOIL TYPE:

PAHOEHOE LAVA FLOWS

AREA TO BE DISTURBED:

1.5 ACRES

OFFSITE AREA TO BE DISTURBED: (FOR CONTRACTOR USE)

APPROXIMATELY 0.5 ACRES FOR CONTRACTOR USE LAYDOWN AREAS

WEIGHTED RUNOFF COEFFICIENT BEFORE CONSTRUCTION: 0.35 AFTER CONSTRUCTION: 0.55

NAME OF RECEIVING WATERS:

GENERAL SHEET FLOW TO PACIFIC OCEAN

PROJECT LATITUDE AND LONGITUDE:

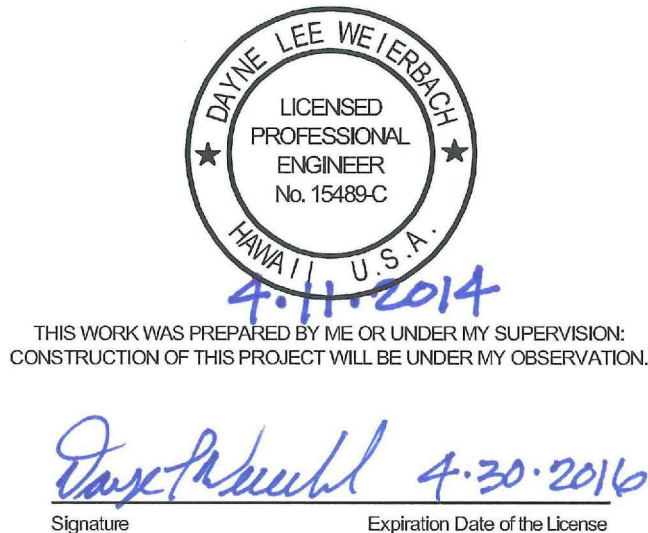
LATITUDE: 19° 41' 55" N
LONGITUDE: 155° 1' 45" W

SOURCE:

USGS 7.5 MINUTE QUADRANGLE MAP - HILO, HAWAII
USGS 7.5 MINUTE QUADRANGLE MAP - KEA'AU RANCH, HAWAII

NOTE:

THIS SHEET SHOULD BE USED IN CONJUNCTION WITH A DRAINAGE MAP THAT ILLUSTRATES THE DRAINAGE CHARACTERISTICS AND RECEIVING WATERS FOR THIS PROJECT.



EROSION AND SEDIMENT CONTROLS

SOIL STABILIZATION PRACTICES:

- _____ TEMPORARY SEEDING
- ☒ PERMANENT SODDING, SPRIGGING OR SEEDING
- _____ VEGETATIVE MULCHING
- _____ SOIL RETENTION BLANKET
- _____ PRESERVATION OF EXISTING VEGETATION

NOTE:

TEMPORARY EROSION CONTROL METHODS MUST BE USED ON ALL DISTURBED AREAS WHERE CONSTRUCTION ACTIVITIES HAVE CEASED FOR OVER 21 DAYS. METHODS USED WILL BE AS SHOWN ON PLANS, OR AS DIRECTED BY THE ENGINEER.

STRUCTURAL PRACTICES:

- ☒ STABILIZED CONSTRUCTION EXIT
- ☒ TEMPORARY SILT FENCE
- _____ TEMPORARY SILT DIKES
- _____ TEMPORARY BALE BARRIERS
- _____ DIVERSION, INTERCEPTOR OR PERIMETER DIKES
- _____ DIVERSION, INTERCEPTOR OR PERIMETER SWALES
- _____ ROCK FILTER DAMS
- _____ TEMPORARY SLOPE DRAIN
- _____ PAVED DITCH W/DITCH LINER PROTECTION
- _____ TEMPORARY DIVERSION CHANNELS
- _____ TEMPORARY SEDIMENT BASINS
- _____ TEMPORARY SEDIMENT TRAPS
- _____ TEMPORARY SEDIMENT FILTERS
- _____ TEMPORARY SEDIMENT REMOVAL
- _____ RIP RAP
- _____ INLET SEDIMENT FILTER
- _____ TEMPORARY BRUSH SEDIMENT BARRIERS
- _____ SANDBAG BERMS
- _____ TEMPORARY STREAM CROSSINGS

OFFSITE VEHICLE TRACKING:

- ☒ HAUL ROADS DAMPENED FOR DUST CONTROL
- ☒ LOADED HAUL TRUCKS TO BE COVERED WITH TARPULIN
- ☒ EXCESS DIRT ON ROAD REMOVED DAILY

NOTES:

EROSION/TEMPORARY DUST CONTROL:

1. DURING CONSTRUCTION, PREVENTATIVE MEASURES SHALL BE USED TO CONTROL FORESEEABLE DUST, EROSION, OR SEDIMENTATION PROBLEMS WHICH MAY ARISE AS THE JOB PROGRESSES.
2. DRAINAGE SYSTEMS AS SHOWN ON THE CONSTRUCTION PLANS SHALL BE CONSTRUCTED AS EARLY AS PRACTICALLY POSSIBLE.
3. ALL FILL, SUBBASE AND BASE MATERIAL, PLACED WITHIN THE PROJECT AREA SHLL BE SUBSTANTIALLY COMPACTED BY THE END OF THE DAY.
4. THE CONTRACTOR SHALL CONDUCT ITS GRADING OPERATIONS SO THAT EXCAVATION, EMBANKMENT, AND IMPORTED MATERIAL SHALL BE DAMPENED WITH WATER DURING THE GRADING OPERATIONS AT ALL TIMES.
5. WATER TRUCK AND/OR TEMPORARY SPRINKLERS SHALL BE AVAILABLE ON THE JOB SITE AT ALL TIMES TO ENSURE BARE EARTH DOES NOT CREATE A DUST PROBLEM.
6. FUGITIVE DUST AND SOLID WASTE DISPOSAL DURING GRUBBING AND GRADING ACTIVITIES SHALL MEET REQUIREMENTS OF ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60, AIR POLLUTION CONTROL, AND CHAPTER 58, SOLID WASTE MANAGEMENT CONTROL.

THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR THE FOLLOWING:

MAINTENANCE AND INSPECTION:

ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING ORDER FROM THE BEGINNING OF CONSTRUCTION UNTIL AN ACCEPTABLE VEGETATIVE COVER IS ESTABLISHED. INSPECTION BY THE CONTRACTOR AND ANY NECESSARY REPAIRS SHALL BE PERFORMED ONCE EVERY 7 CALENDAR DAYS AND WITHIN 24 HOURS AFTER ANY STORM EVENT GREATER THAN 0.5 INCH AS RECORDED BY A NON-FREEZING RAIN GAUGE TO BE LOCATED ON SITE. POTENTIALLY ERODIBLE AREAS, DRAINAGE WAYS, MATERIAL STORAGE, STRUCTURAL DEVICES, CONSTRUCTION ENTRANCES AND EXITS ALONG WITH EROSION AND SEDIMENT CONTROL LOCATIONS ARE EXAMPLES OF SITES THAT NEED TO BE INSPECTED.

WASTE MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF CONSTRUCTION WASTE MATERIAL IS REQUIRED BY THE CONTRACTOR. MATERIALS INCLUDE STOCKPILES, SURPLUS, DEBRIS AND ALL OTHER BY-PRODUCTS FROM THE CONSTRUCTION PROCESS. PRACTICES INCLUDE DISPOSAL, PROPER MATERIALS HANDLING, SPILL PREVENTION AND CLEANUP MEASURES. CONTROLS AND PRACTICES SHALL MEET THE REQUIREMENTS OF ALL FEDERAL, STATE AND LOCAL AGENCIES.

HAZARDOUS MATERIALS:

PROPER MANAGEMENT AND DISPOSAL OF HAZARDOUS WASTE MATERIALS IS REQUIRED. THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING: MANUFACTURER'S RECOMMENDATIONS, STATE AND FEDERAL REGULATIONS TO ENSURE CORRECT HANDLING, DISPOSAL, SPILL PREVENTION AND CLEANUP MEASURES. EXAMPLES INCLUDE BUT ARE NOT LIMITED TO: PAINTS, ACIDS, CLEANING SOLVENTS, CHEMICAL ADDITIVES, CONCRETE CURING COMPOUNDS AND CONTAMINATED SOILS.

GENERAL NOTES:

1. A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) SHALL BE PREPARED BY THE CONTRACTOR TO COMPLY WITH THE HAWAII POLLUTION DISCHARGE ELIMINATION SYSTEM REGULATIONS. THIS PLAN SHALL BE INITIATED DURING THE CONSTRUCTION PHASE, AND SHALL BE AVAILABLE ON THE JOB SITE ALONG WITH COPIES OF THE NOTICE OF INTENT (NOI) FORMS THAT NEED TO BE FILED BY THE CONTRACTOR WITH THE HAWAII STATE DEPARTMENT OF HEALTH. ALL NECESSARY FEES SHALL BE PAID FOR BY THE CONTRACTOR. THE PLAN MUST BE KEPT CURRENT WITH UP-TO-DATE AMENDMENTS DURING THE PROGRESSION OF THE PROJECT. ALL CONTRACTOR OFF-SITE OPERATIONS ASSOCIATED WITH THE PROJECT MUST BE DOCUMENTED IN THE SWPPP, I.E., BORROW PITS, WORK ROADS, DISPOSAL SITES, ETC. THE BASIC GOAL OF STORM WATER MANAGEMENT IS TO IMPROVE WATER QUALITY BY REDUCING POLLUTANTS IN STORM WATER DISCHARGES. RUNOFF FROM CONSTRUCTION SITES HAS A POTENTIAL FOR POLLUTION DUE TO EXPOSED SOILS AND THE PRESENCE OF HAZARDOUS MATERIALS USED IN THE CONSTRUCTION PROCESS. THE PREVENTION OF SOIL EROSION, CONTAINMENT OF HAZARDOUS MATERIALS AND/OR THE INTERCEPTION OF THESE POLLUTANTS BEFORE LEAVING THE CONSTRUCTION SITE ARE THE BEST PRACTICES FOR CONTROLLING STORM WATER POLLUTION. THE SWPPP SHALL BE IN ACCORDANCE WITH THE HAWAII NPDES GENERAL PERMIT (CHAPTER 11-55) CONDITION.
2. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY DEMOLITION OR EARTH MOVING WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. ALL EROSION CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY.
4. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.
5. CONSTRUCT TEMPORARY CONSTRUCTION EGRESS/INGRESS AREA AT LOCATIONS SHOWN ON THIS DRAWING. ALL VEHICLES EXITING THE SITE ARE TO BE WASHED DOWN PRIOR TO EXIT. CONSTRUCTION ENTRANCE AREA MAY BE ADJUSTED TO FIT THE CONTRACTOR'S OPERATIONS.
6. CONSTRUCT PERIMETER PROTECTION (SILT FENCE OR COMPOST FILTER SOCK) SEE DETAILS THIS DRAWING.
7. AT THE END OF THE GRADING OPERATION AND AT THE COMPLETION OF PROJECT, EXISTING DRAIN INLETS AND DRAIN MANHOLES SURROUNDING THE PROJECT SITE SHALL BE INSPECTED AND ANY ACCUMULATED SEDIMENT AND DEBRIS FOUND IN THE DRAIN INLETS AND DRAIN MANHOLES SHALL BE REMOVED. FLUSHING INTO THE DRAIN INLETS AND DRAIN MANHOLES IS PROHIBITED.
8. THE CONTRACTOR SHALL ENSURE THAT EXISTING ROADWAYS USED TO ACCESS THE PROJECT ARE CLEANED OF ALL DEBRIS, TRASH, DIRT, MUD, ETC. AT THE END OF EACH WORK DAY.

GENERAL NOTES (CONT):

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.
10. GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES:
 - A. MATERIAL MANAGEMENT PRACTICES SHALL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF. AN EFFORT SHALL BE MADE TO STORE ONLY ENOUGH PRODUCT AS IS REQUIRED TO DO THE JOB.
 - B. ALL MATERIALS STORED ONSITE SHALL BE STORED IN A NEAT, ORDERLY MANNER IN THEIR APPROPRIATE CONTAINERS AND IF POSSIBLE UNDER A ROOF OR OTHER ENCLOSURE.
 - C. PRODUCTS SHALL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABEL.
 - D. SUBSTANCES SHALL NOT BE MIXED WITH ONE ANOTHER UNLESS RECOMMENDED BY THE MANUFACTURER.
 - E. WHENEVER POSSIBLE, THE ENTIRE CONTAINER CONTENTS WILL BE USED UP PRIOR TO DISPOSAL OF THE CONTAINER.
 - F. MANUFACTURER'S RECOMMENDATIONS FOR PROPER USE AND DISPOSAL SHALL BE FOLLOWED.
 - G. THE CONTRACTOR SHALL CONDUCT A DAILY INSPECTION TO ENSURE PROPER USE AND DISPOSAL OF MATERIALS ONSITE.
 - H. CONCRETE TRUCK CHUTE WASH WATER WILL BE DISCHARGED TO A DESIGNATED AREA WHERE COMMINGLING WITH STORM WATER WILL BE PREVENTED BY CUT-OFF DITCH OR PERIMETER BERM. WATER SHALL NOT BE DISCHARGED IN THE DRAINAGE SYSTEM OR WATERS OF THE UNITED STATES. THE CONTRACTOR SHALL CLEAN DISPOSAL SITE AS REQUIRED OR AS REQUESTED BY THE CONTRACTING OFFICER.
11. THE FINAL LIFT OF EACH DAY'S WORK SHALL BE COMPACTED TO PREVENT EROSION OF FILL MATERIAL.
12. ANY DIRT OR GRASSED AREA DISTURBED SHALL BE RESTORED BY SEEDED HYDROMULCH. THE GRASS SHALL BE FULLY ESTABLISHED AT COMPLETION OF PROJECT.
13. STABILIZATION SHALL BE ACCOMPLISHED BY TEMPORARILY OR PERMANENTLY PROTECTING THE DISTURBED SOIL SURFACE FROM RAINFALL IMPACTS AND RUNOFF WITH PLANTING OR GRAVEL FOR STABILIZATION WITH PLANTING. TEMPORARY IRRIGATION SHALL BE INSTALLED TO FACILITATE GROWTH. DO NOT OVERWATER.
14. FERTILIZER AND PESTICIDE APPLICATION SHALL NOT OCCUR DURING HEAVY RAINS, OR IF HEAVY RAINS ARE ANTICIPATED DURING THE WORKDAY.
15. ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY, FOR EXAMPLE, WEEKLY IN DRY PERIODS AND WITHIN TWENTY-FOUR HOURS AFTER ANY RAINFALL OF 0.5 INCHES OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED RAINFALL DAILY CHECKING IS NECESSARY. THE CONTRACTOR SHALL MAINTAIN RECORDS OF CHECKS AND REPAIRS.
16. IF HEAVY RAINS ARE PROJECTED DURING A WORKDAY, ALL CONTROL STRUCTURES SHALL BE INSPECTED IMMEDIATELY AND REINFORCED AS NECESSARY.
17. THE CONTRACTOR SHALL MAINTAIN RECORDS OF THE DURATION AND ESTIMATED VOLUME OF STORM WATER DISCHARGE(S).
18. A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE.
19. CONTRACTORS AND SUBCONTRACTORS SHALL BE TRAINED ON THE BEST MANAGEMENT PRACTICES.
20. SANITARY AND SEPTIC WASTES SHALL BE COLLECTED FROM ON-SITE FACILITIES ON A REGULAR BASIS BY A LICENSED HAULER. SANITARY AND SEPTIC FACILITIES SHALL NOT BE LOCATED NEAR WATERCOURSES.
21. DUST CONTROL WITH WATER SPRAY (BY TRUCK OR TEMPORARY SPRINKLERS) SHALL BE INSTALLED AS NEEDED. DO NOT OVERWATER.
21. PERIMETER PROTECTION SHALL BE CLEARED OF SILT IMMEDIATELY FOLLOWING THE END OF ANY RAINFALL THAT CAUSES SILT BUILDUP.
22. LOCATE STOCKPILES, INCLUDING WASTE AND SOIL, MATERIALS, CONCRETE WASH, AND TIRE WASH AWAY FROM CONCENTRATED DRAINAGE FLOWS, DRAINAGE SWALES AND INLETS.



Date	DLW	Apr.
04-11-2014	04-11-14	Date
ISSUED FOR BID	0	Year
DESCRIPTION		

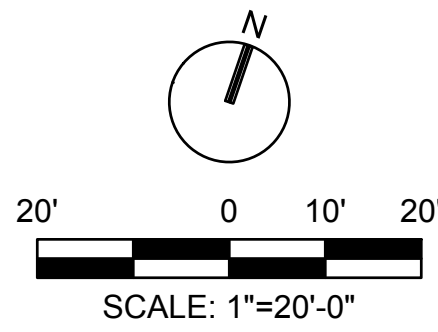
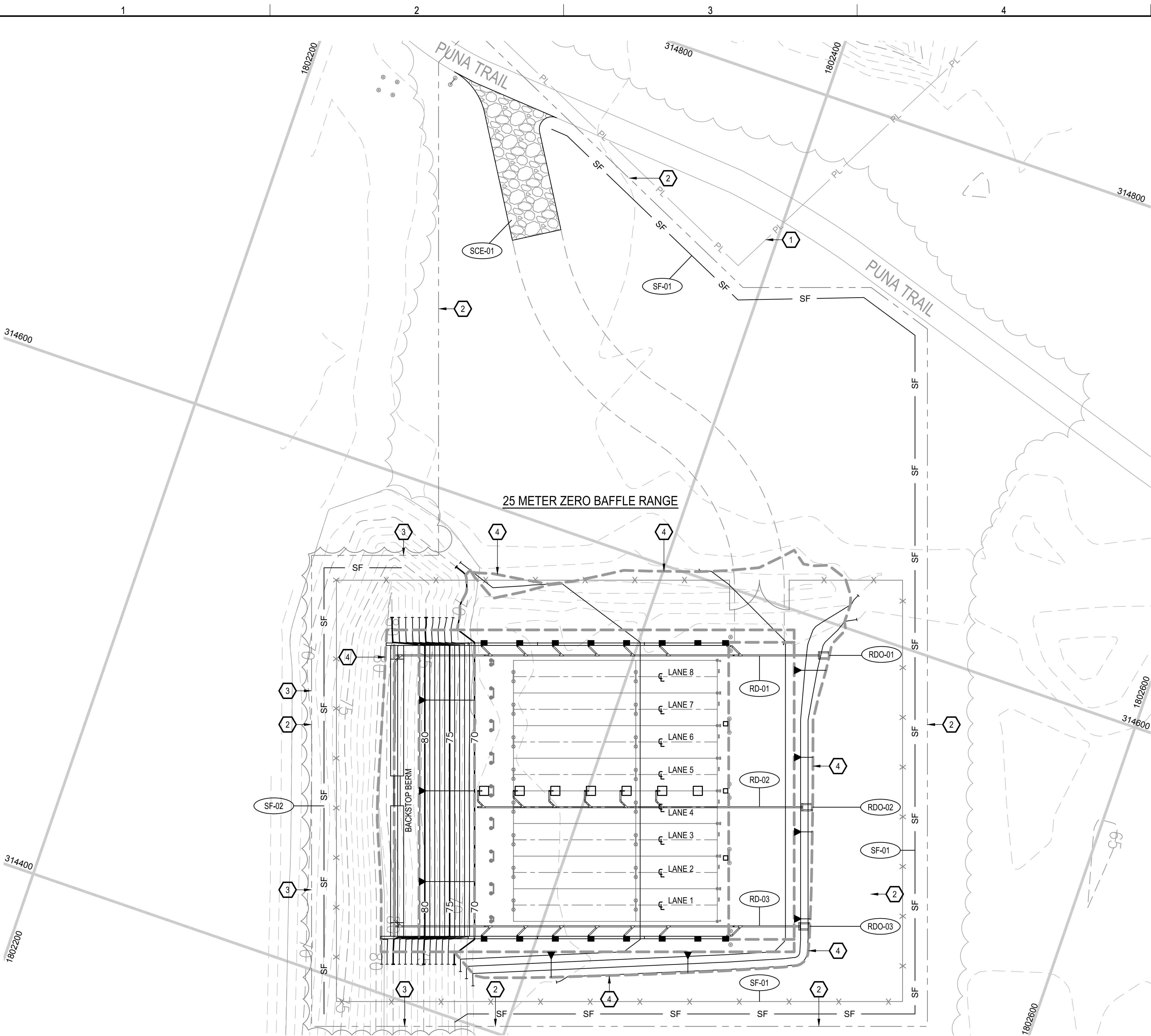
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	Drawn by: RWV	Reviewed by: DLW	Design file no. 2552223000
		Submitted by: SAC	Drawing code: DLW
			File name: 2223-C-700

KEAUKAHA MILITARY RESERVATION 25 METER FULLY CONTAINED SDZ RANGE	EROSION CONTROL NOTES
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Sheet reference number: C-700
Sheet 28 of 43

File name: P:\EC\1650-TULIC\255223000_USRFO_HL_Baffled20_DESGN\40_CAD\C\2223-C-711.dwg
Date: April 16, 2014 - 1:13pm
User: wardm

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KEYNOTES:

- 1 KMR PROPERTY LINE
- 2 LIMITS OF DISTURBANCE
- 3 TREE/VEGETATION LINE (LIMITS OF CLEARING)
- 4 GRADING LIMITS

BMP LEGEND:

- SF-XX SILT FENCE
RE: A/C-751
- SCE-XX STABILIZED CONSTRUCTION
ENTRANCE RE: B/C-751
- RDO-XX ROOF DRAIN OUTLET
RE: A/C-504
- RD-XX ROOF DRAIN
RE: C-503

EROSION CONTROL STRUCTURE DRAINAGE AREAS	
STRUCTURE	AREA (AC.)
SF-01	1.41
SF-02	0.07



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

Dayne Lee Weierbach 4-30-2016
Signature Expiration Date of the License

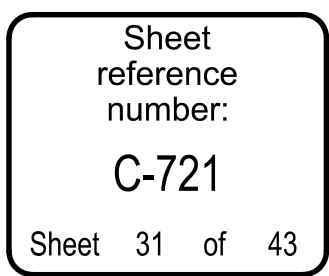
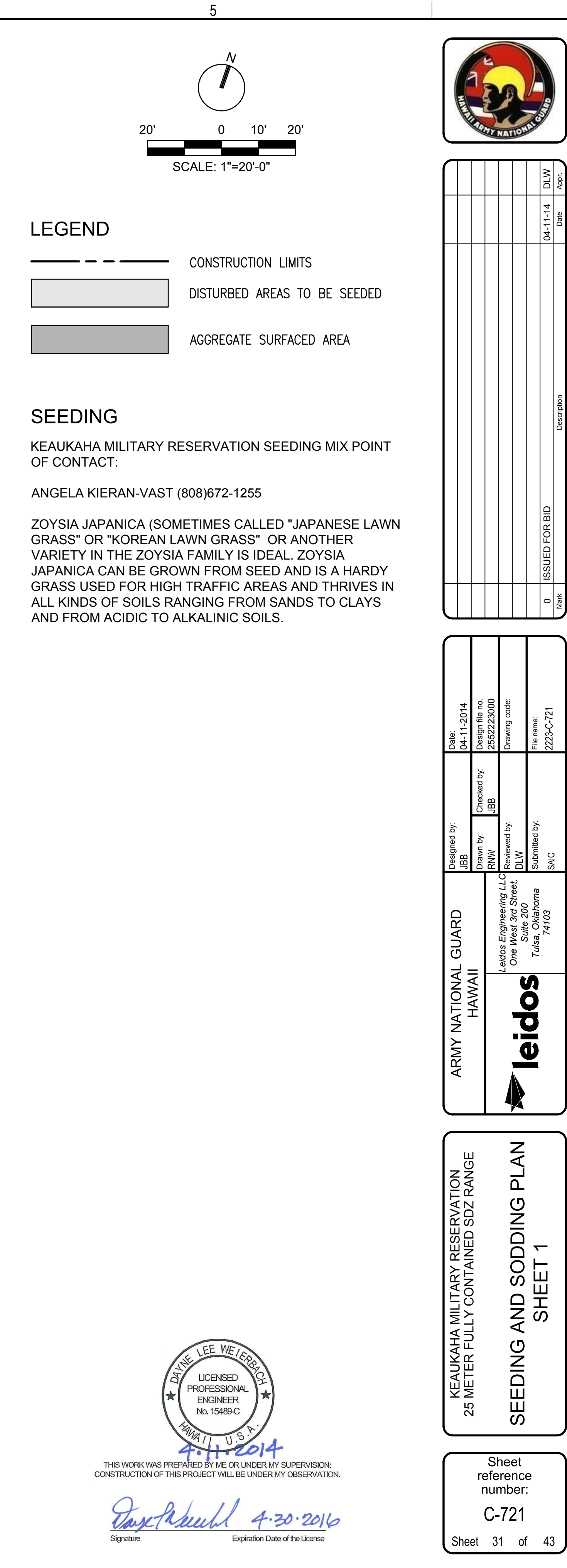


Date	Mark	Description
04-11-14	DLW	ISSUED FOR BID
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Designed by: JBB	Checked by: JBB	Date: 04-11-2014
Drawn by: RWV	Reviewed by: DLW	Design file no: 255223000
Submitted by: SAC		Drawing code: 2223-C-711
ARMY NATIONAL GUARD HAWAII		File name: 2223-C-711

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE
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EROSION AND SEDIMENT
CONTROL PLAN SHEET 1

Sheet
reference
number:
C-711
Sheet 30 of 43



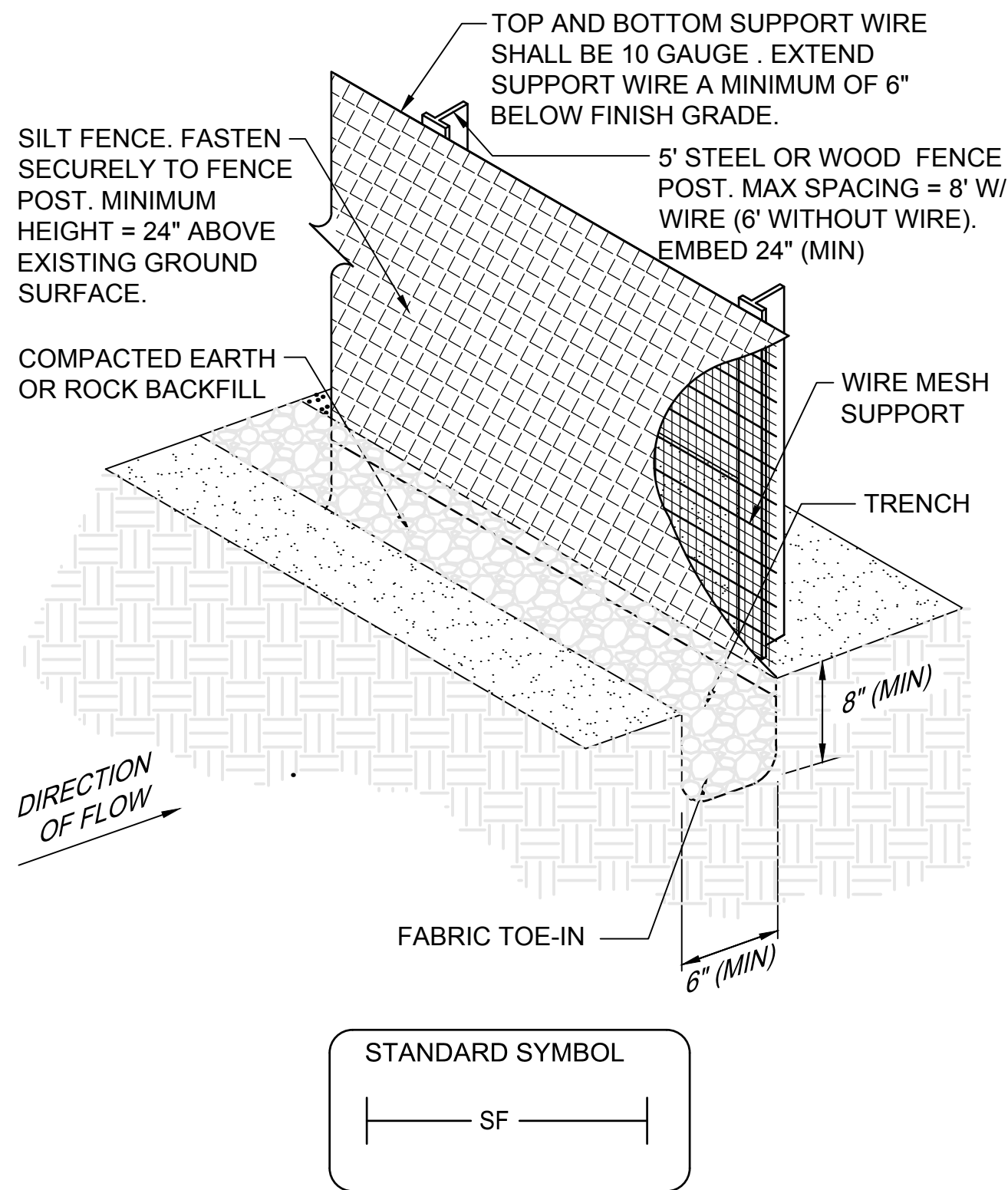
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Date: April 16, 2014 - 1:13pm
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SEDIMENT FENCE (SILT FENCE) INSTALLATION DETAIL
NOT TO SCALE

FILTER FABRIC SPECIFICATIONS

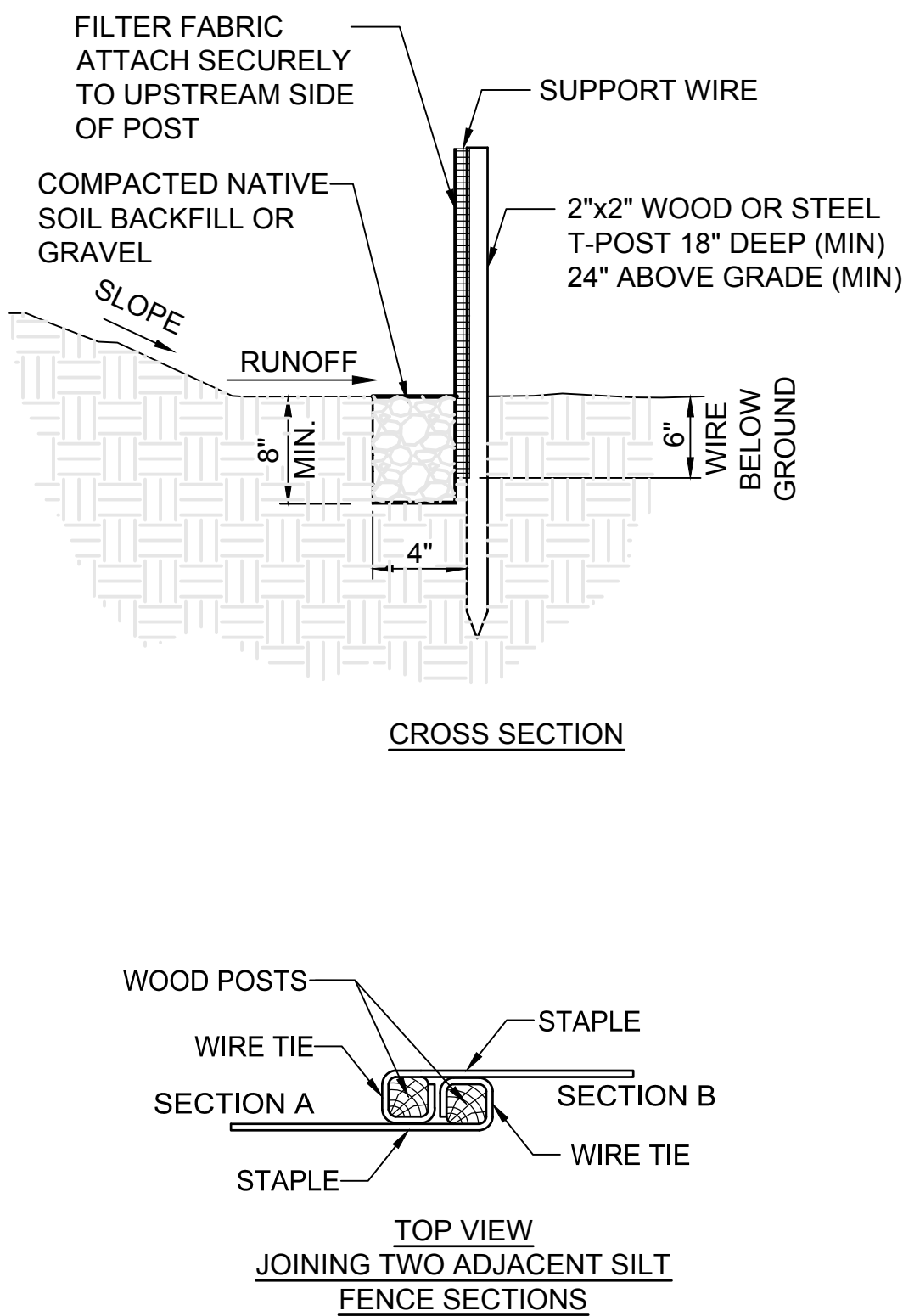
SILT FENCE SHALL BE CONSTRUCTED OF A WOVEN, POLYPROPYLENE, POLYESTER OR POLYIMIDE MATERIAL THAT SHALL BE RESISTANT TO ULTRA- VIOLET DEGRADATION AND ROT. THE EDGES OF THE WOVEN FABRIC SHALL BE SEALED OR SELVAGED TO PREVENT RAVELING. THE FABRIC SHALL EXHIBIT THE FOLLOWING PHYSICAL PROPERTIES WHEN SAMPLED AND TESTED USING THE SPECIFIED METHODS.

PROPERTY	TEST METHODS	VALUES
GRAB TENSILE	ASTM D-4632	100 LB. (MIN.)
ELONGATION @ YIELD	ASTM D-4632	10-40% (MAX.)
TRAPEZOID TEAR	ASTM D-4533	50 LB. (MIN.)
UV RESISTANCE	ASTM D-4355	80% (MIN.)
APPARENT OPENING SIZE	ASTM D-4751	20-50 US SIEVE
PERMITIVITY 1/SEC	ASTM D-4491	0.1 (MIN.)

PREFABRICATED FENCE SYSTEMS MAY BE USED PROVIDED THEY MEET ALL THE MATERIAL REQUIREMENTS.

EROSION CONTROL MEASURES SHALL REMAIN UNTIL A STAND OF VEGETATIVE GROUND COVER OF 70% OR GREATER COVERAGE IS ESTABLISHED.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.
Signature: *Davine Lee Weierbach* 4-30-2016
Expiration Date of the License: 4-30-2016



CURBLESS ROADWAY PLAN VIEW

GRAVEL CONSTRUCTION ENTRANCE/EXIT DETAIL
NOT TO SCALE

BEST MANAGEMENT PRACTICES (BMP'S)

POLLUTION THROUGH STORM RUNOFF IS INTENSIFIED AT CONSTRUCTION SITES DUE TO THE REMOVAL OF THE NATURAL GROUND COVER OF THE SITE AS WELL AS THE INTRODUCTION OF HAZARDOUS CHEMICALS AND WASTES TO THE AREA. MEASURES ARE REQUIRED BOTH DURING CONSTRUCTION AND AFTER THE COMPLETION OF CONSTRUCTION TO STABILIZE THE SITE. STABILIZATION OF THE SITE DURING CONSTRUCTION ACTIVITIES CONSISTS OF THE INSTALLATION OF TEMPORARY OR PERMANENT MEASURES TO PREVENT EROSION OR TO INTERCEPT SEDIMENT PRIOR TO IT LEAVING THE SITE. THIS CAN BE ACCOMPLISHED THROUGH THE USE OF GROUND COVER MULCHING, PAVING, SILT FENCES, AND SEDIMENT BASINS ALONG WITH CONSTRUCTION METHODS TO REDUCE THE DISTURBED AREAS OF CONSTRUCTION.

CONSTRUCTION SPECIFICATIONS

- FENCE POSTS SHALL BE A MINIMUM OF 5'-0" LONG DRIVEN 24" MINIMUM INTO THE GROUND. STEEL POSTS WILL BE STANDARD T OR U SECTION WEIGHTING NOT LESS THAN 1.00 POUND PER LINEAR FOOT.
- GEOTEXTILE SHALL BE FASTENED SECURELY TO EACH FENCE POST WITH WIRE TIES AT TOP AND MID-SECTION AND SHALL MEET THE DEFINED FILTER FABRIC SPECIFICATIONS.
- WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED, FOLDED AND WIRE TIED TO PREVENT SEDIMENT BYPASS.
- SILT FENCE SHALL BE INSPECTED AFTER EACH RAINFALL EVENT AND MAINTAINED WHEN BULGES OCCUR OR WHEN SEDIMENT ACCUMULATION REACHED 50% OF THE FABRIC HEIGHT.

MANNER OF CONSTRUCTION

- PLACE THE BOTTOM 1FT OF FABRIC IN 8-INCH DEEP TRENCH LAPPING TOWARD THE UPSLOPE SIDE.

MANNER OF CONSTRUCTION (CONT.)

- BACKFILL WITH COMPACTED EARTH OR GRAVEL AS SHOWN. TO REDUCE MAINTENANCE, EXCAVATE A SHALLOW SEDIMENT STORAGE AREA ON UP SLOPE SIDE OF FENCE WHERE SEDIMENTATION IS EXPECTED.
- PROVIDE GOOD ACCESS TO DEPOSITION AREAS FOR CLEAN-OUT AND MAINTENANCE.
- DO NOT INSTALL SEDIMENT FENCE ACROSS INTERMITTENT OR PERMANENT STREAMS, CHANNELS, OR ANY LOCATION WHERE CONCENTRATED FLOW IS ANTICIPATED.

INSPECTIONS

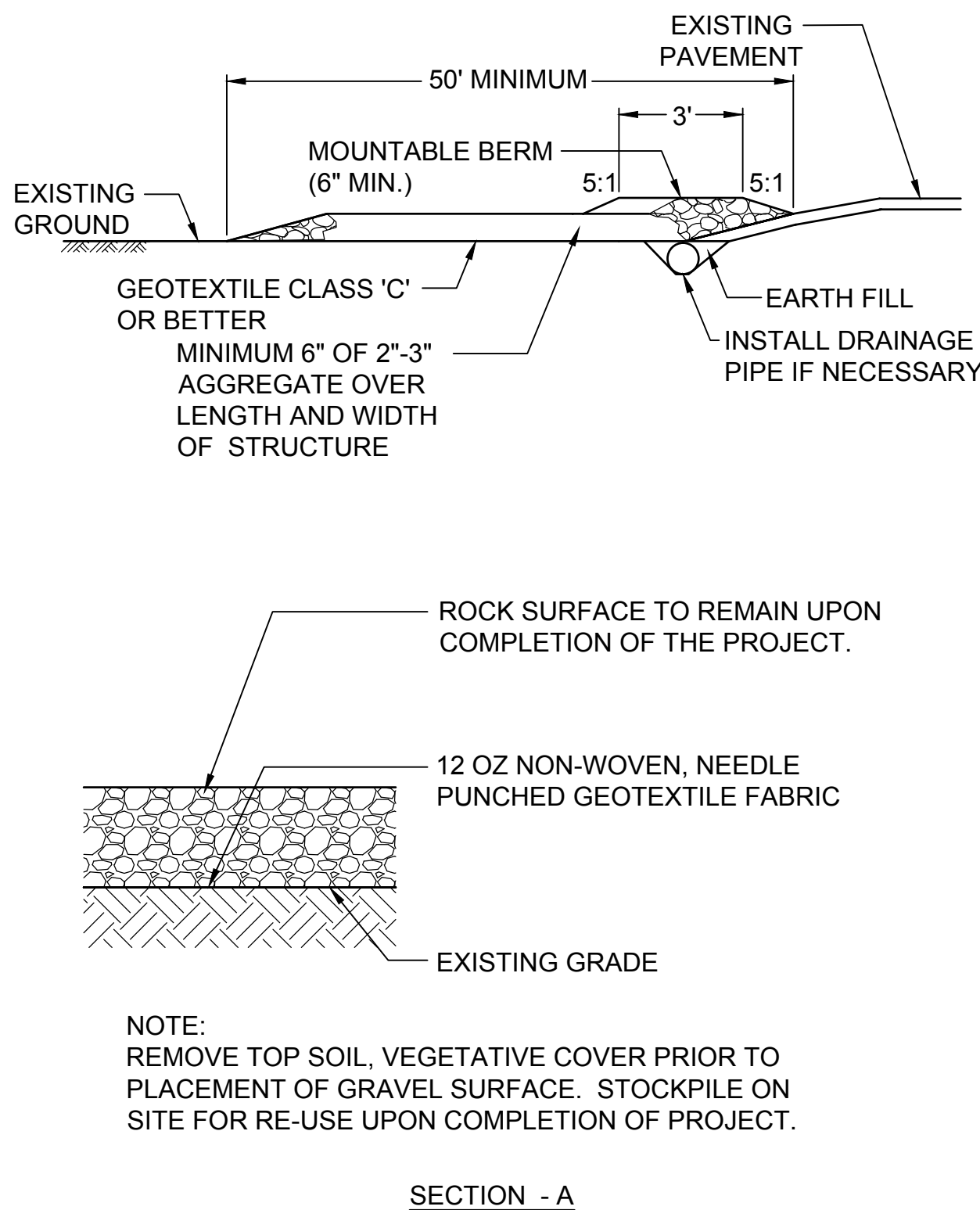
INSPECTIONS SHALL BE PERFORMED EVERY SEVEN (7) DAYS OR AFTER OF A RAINFALL EVENT OF 0.5 INCHES OR GREATER

MAJOR ITEMS TO BE OBSERVED DURING INSPECTIONS INCLUDE:

- LOCATION OF DISCHARGES OF SEDIMENT OR OTHER POLLUTANTS
- LOCATION OF BEST MANAGEMENT PRACTICES (BMP'S) THAT ARE IN NEED OF MAINTENANCE
- LOCATION OF BMP'S WHICH ARE NOT PERFORMING, FAILED TO OPERATE, OR WERE INADEQUATE
- LOCATIONS WHERE ADDITIONAL BMP'S ARE NEEDED.

CONSTRUCTION NOTES:

- LENGTH - MINIMUM OF 50'
- WIDTH - 20' MINIMUM, SHOULD BE FLARED AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
- 12oz NON-WOVEN, NEEDLE PUNCHED, GEOTEXTILE FABRIC SHALL BE PLACED OVER THE EXISTING GROUND PRIOR TO PLACING STONE.
- STONE - CRUSHED AGGREGATE (CLASS "A" STONE) SHALL BE PLACED AT LEAST 8" DEEP OVER THE LENGTH AND WIDTH OF THE ENTRANCE.
- SURFACE WATER - ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (TGCE/E) SHALL BE PIPED THROUGH THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PIPE INSTALLED THROUGH THE STABILIZED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (TGCE/E) SHALL BE PROTECTED WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 6" OF STONE OVER THE PIPE. PIPE HAS TO BE SIZED ACCORDING TO THE DRAINAGE. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY A PIPE WILL NOT BE NECESSARY. PIPE SHOULD BE SIZED ACCORDING TO THE AMOUNT OF RUNOFF TO BE CONVEYED. A 6" MINIMUM WILL BE REQUIRED.
- LOCATION - A TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (TGCE/E) SHALL BE LOCATED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE. VEHICLES LEAVING THE SITE MUST TRAVEL OVER THE ENTIRE LENGTH OF THE STABILIZED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE/EXIT (TGCE/E).



Date	DLW	Apr.
04-11-2014	04-11-14	
ISSUED FOR BID	0	

Designed by: JBB	Checked by: JBB	Date: 04-11-2014
Drawn by: RNW	Reviewed by: DLW	Design file no: 255223000
Submitted by: SAC	File name: 2228-C-751	Drawing code: 255223000

ARMY NATIONAL GUARD HAWAII

leidos

Leidos Engineering LLC
One West Street, Suite 200
Tulsa, Oklahoma 74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

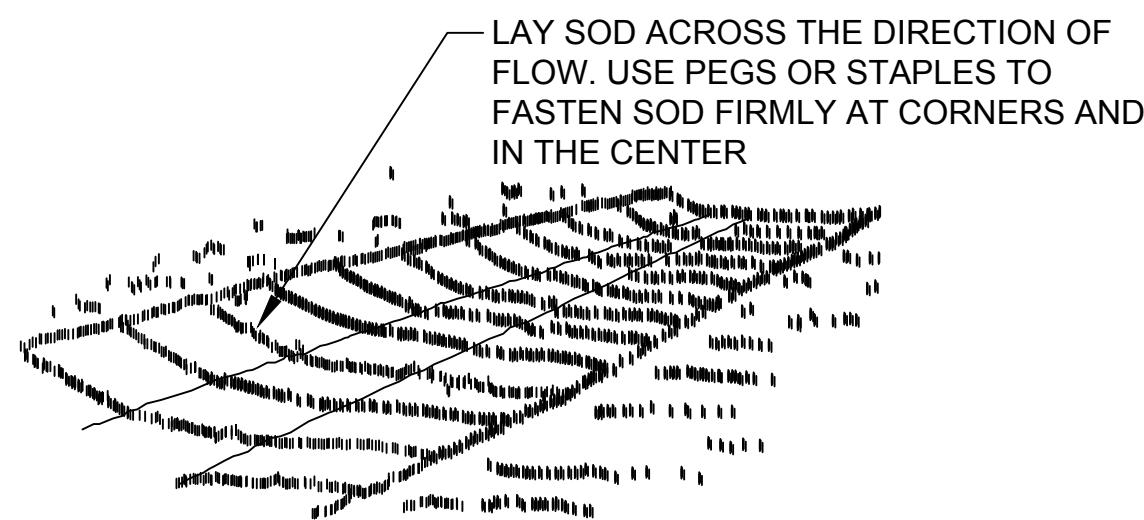
EROSION AND SEDIMENT
CONTROL DETAILS SHEET 1

Sheet
reference
number:
C-751

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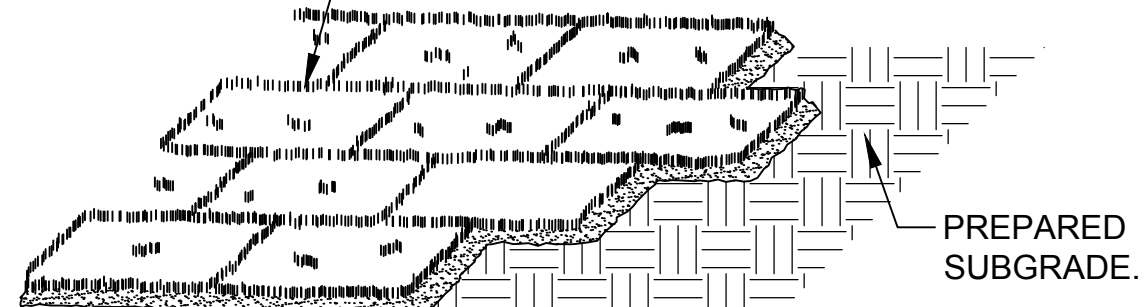
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Date: April 16, 2014 - 1:13pm
User: wardm

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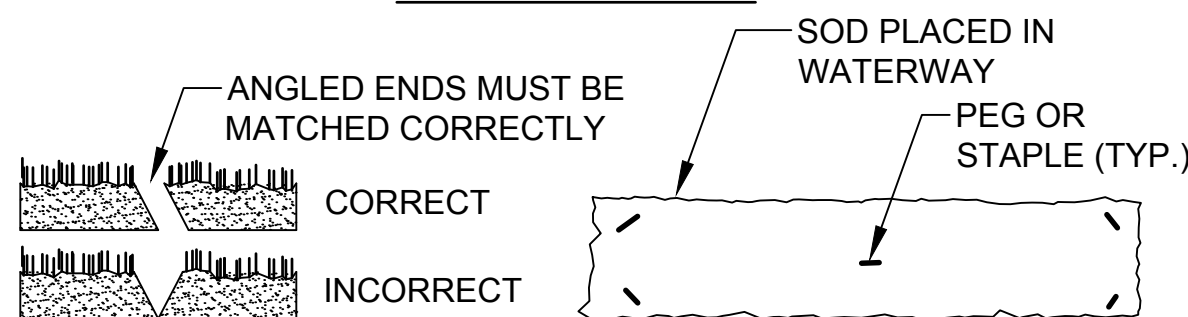


SODDED WATERWAY

LAY SOD IN A STAGGERED PATTERN WITH STRIPS BUTTED TIGHTLY AGAINST EACH OTHER. A SHARPENED MASONS TROWEL CAN BE USED TO TUCK DOWN THE ENDS AND TRIM PIECES.



SOD PLACEMENT



BUTT JOINTING

SOD SECURING DETAIL

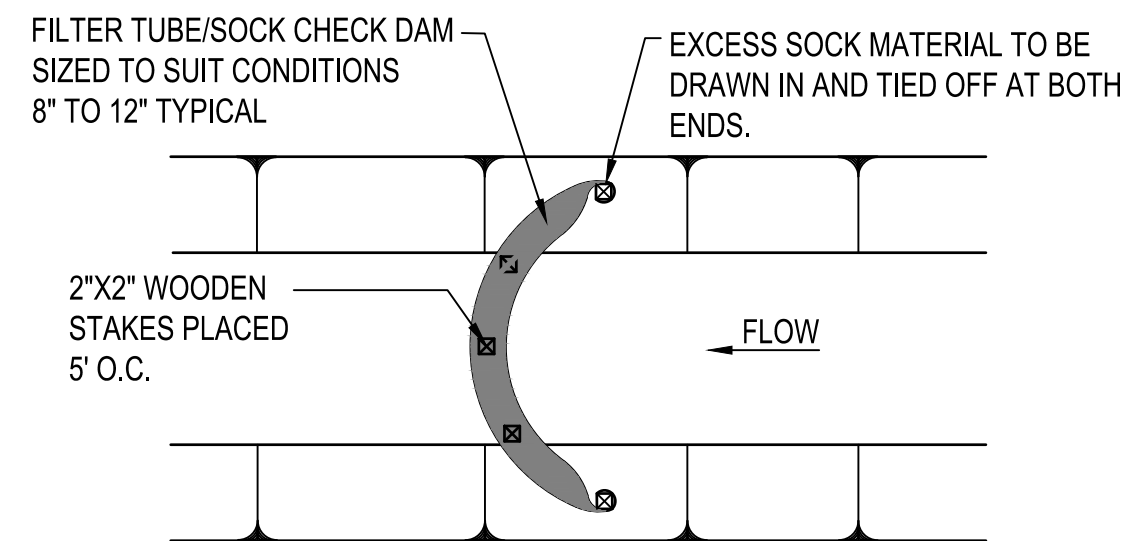
A
C-752

SOD INSTALLATION DETAIL

NOT TO SCALE

C

B



NOTES:

1. ALL MATERIAL TO MEET FILTER TUBE/SOCK SPECIFICATIONS\
2. CHECK DAM SHOULD BE USED IN AREAS THAT DRAIN 10 ACRES OR LESS.
3. SEDIMENT SHOULD BE REMOVED FROM BEHIND CHECK DAM ONCE THE ACCUMULATED HEIGHT HAS BEEN REACHED 1/2 THE HEIGHT OF THE CHECK DAM.
4. CHECK DAM CAN BE DIRECT SEEDED AT THE TIME OF INSTALLATION.

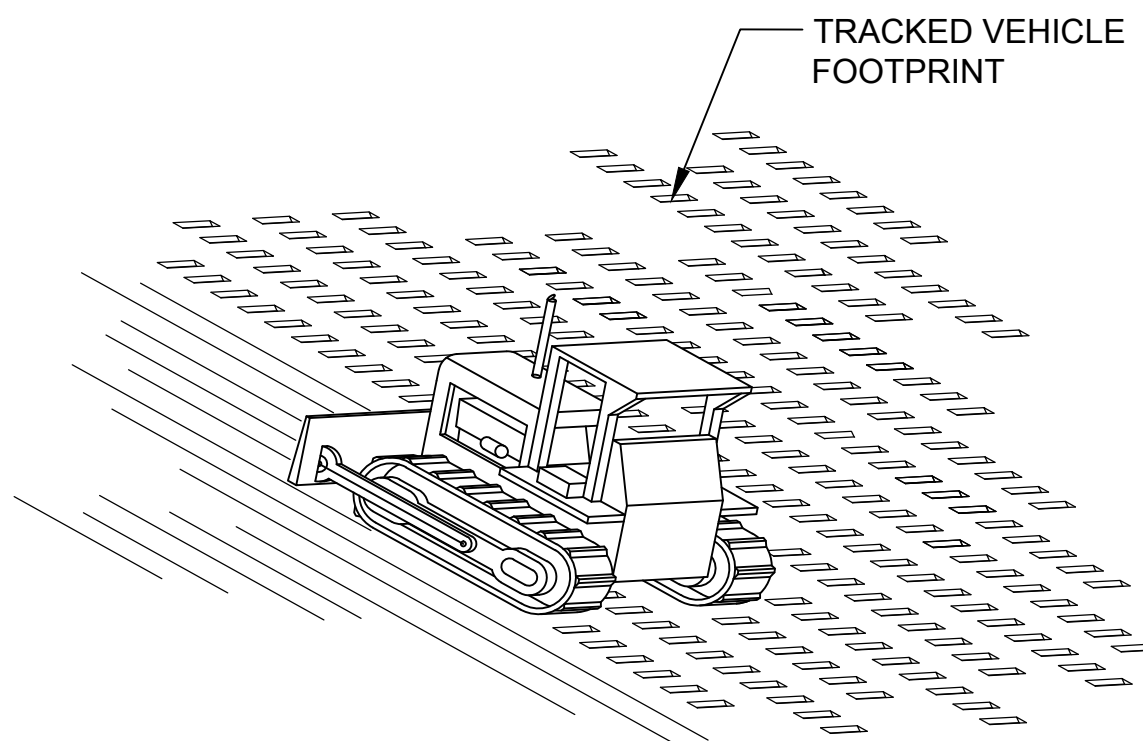
E
C-752

FILTER TUBE/SOCK CHECK DAM INSTALLATION DETAIL

NOT TO SCALE

A

2



CONSTRUCTION NOTES

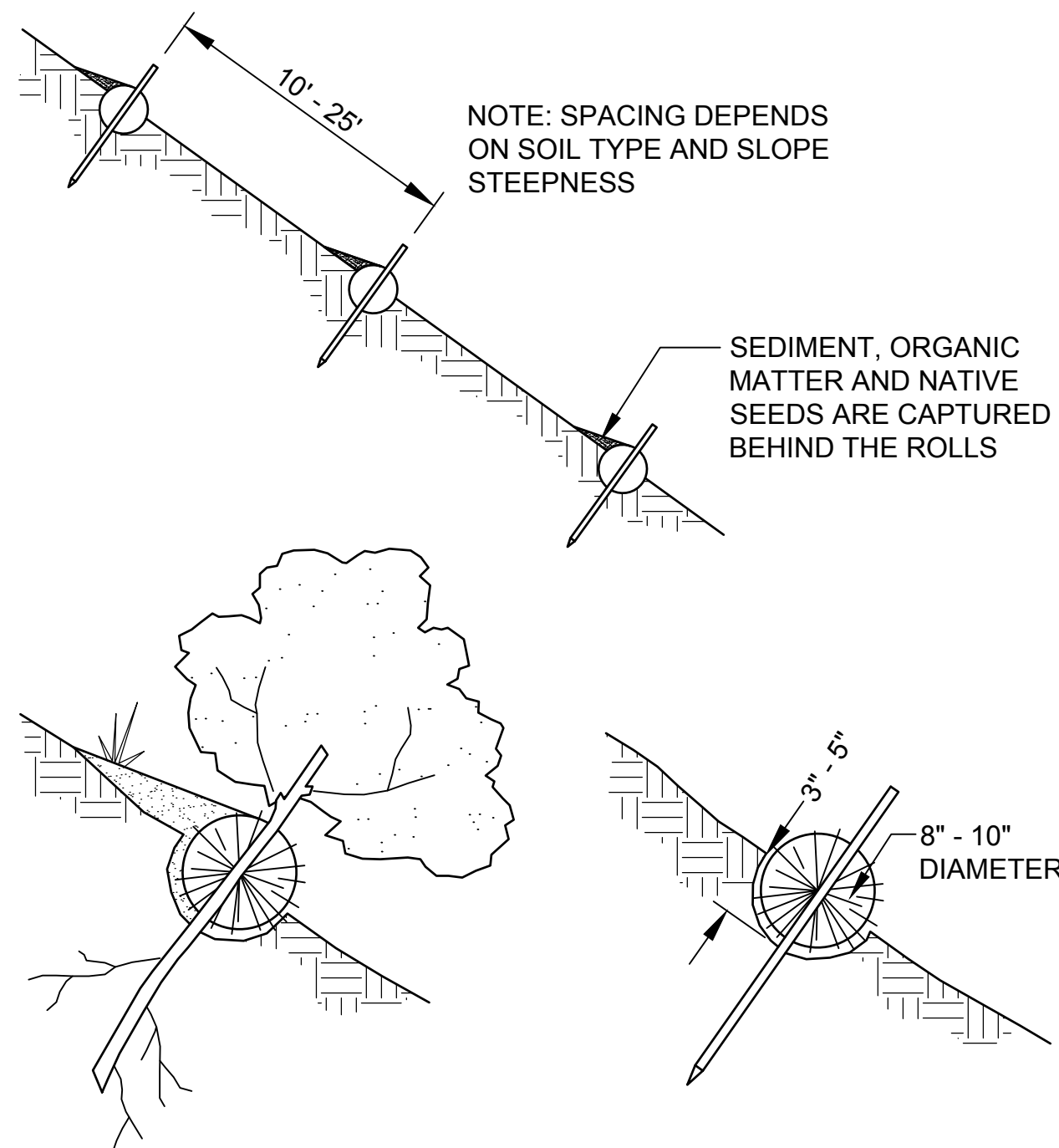
1. TRACK DISTURBED AREAS PERPENDICULAR TO THE NATURAL CONTOUR TO PROVIDE GROOVES TO CAPTURE SEED, RAINFALL AND SLOW RUNOFF.

B
C-752

SURFACE ROUGHENING DETAIL

NOT TO SCALE

3



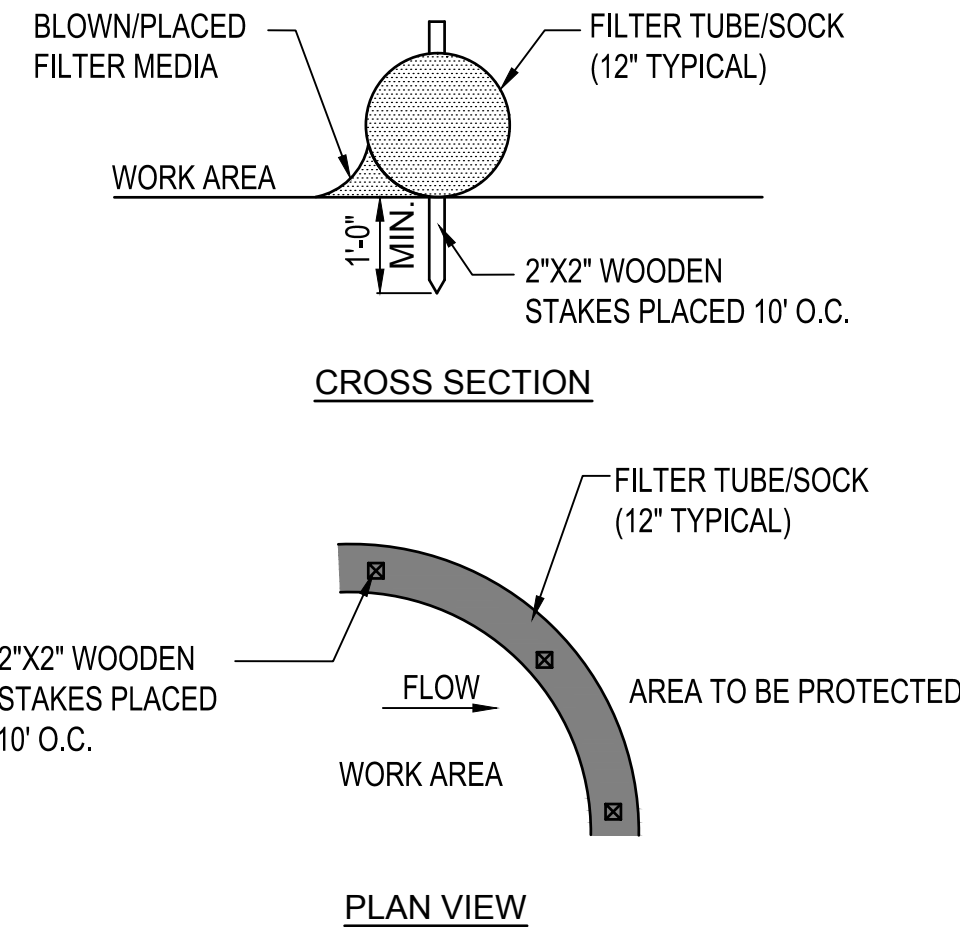
LIVE STAKE

1"x1" STAKE

STRAW WATTLE INSTALLATION DETAIL

NOT TO SCALE

4



NOTES:

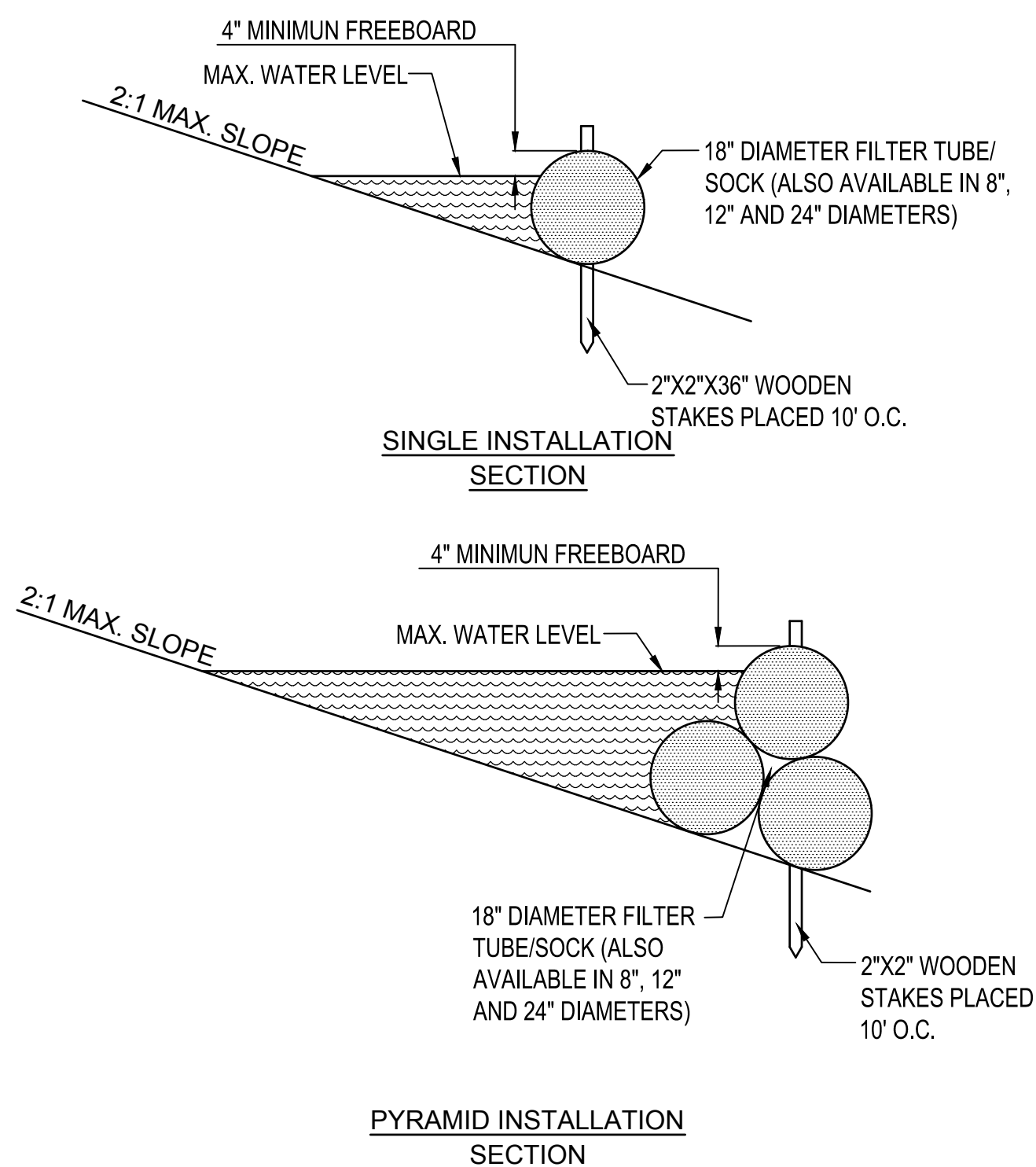
1. ALL MATERIAL TO MEET FILTER TUBE/SOCK SPECIFICATIONS.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
3. MAY TAKE THE PLACE OF SILT FENCE AT THE DISCRETION OF THE CONTRACTOR WITH THE APPROVAL FROM THE ENGINEER.
4. WHERE FILTER TUBES/SOCKS ARE LOCATED ON PAVED AREAS, SECURE FILTER TUBE/SOCK PLACEMENT WITH SAND BAGS.
5. FILTER TUBE/SOCK MAY BE USED IN LIEU OF SILT FENCE AT THE DISCRETION OF THE CONTRACTOR

C
C-752

FILTER TUBE/SOCK SEDIMENT CONTROL INSTALLATION DETAIL

NOT TO SCALE

5



D
C-752

FILTER TUBE/SOCK CHECK DAM SECTION DETAIL

NOT TO SCALE



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

Signature: Dayne Lee Weierbach
Expiration Date of the License: 4-30-2016



Date	DLW	Apr.
04-11-14		
0	ISSUED FOR BID	
0	Mark	

Designed by: JBB	Checked by: JBB	Date: 04-11-2014
Drawn by: RNW	Reviewed by: DLW	Design file no: 2552223000
Submitted by: SAC		Drawing code: 2223-C-752
File name: 2223-C-752		

ARMY NATIONAL GUARD
HAWAII

leidos

Leidos Engineering LLC
One West Street,
Tulsa, Oklahoma
74103

KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE

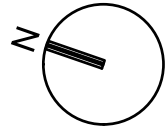
EROSION AND SEDIMENT
CONTROL DETAILS SHEET 2

Sheet
reference
number:
C-752

Sheet 33 of 43

CONCRETE NOTES

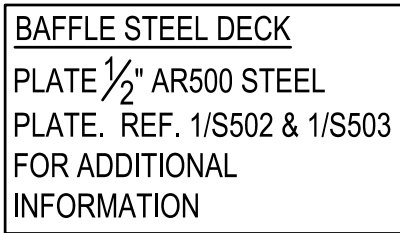
Sheet 34 of



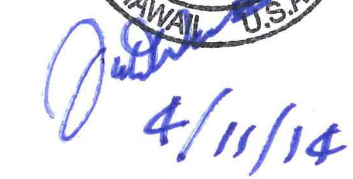
4/11/14
EXPIRES: 6/30/16

PLAN NOTES:

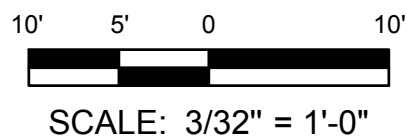
1. TOP OF CONCRETE PEDESTAL VARIES. REFER TO 2/S-201 AND CIVIL FOR ACTUAL ELEVATION. REFER TO DETAILS FOR TOP OF FOOTING ELEVATION.
2. REFER TO SHEET S-001 FOR GENERAL NOTES AND DESIGN CRITERIA.
3. REFER TO SHEET S-501 FOR COLUMN AND FOUNDATION SCHEDULES.



1. REFER TO 2/S-201 FOR TOP OF STEEL ELEVATIONS.
2. REFER TO SHEET S-001 FOR GENERAL NOTES AND DESIGN CRITERIA.
3. PAINT ALL EXPOSED STEEL WITH ANTI-CORROSIVE PAINT. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

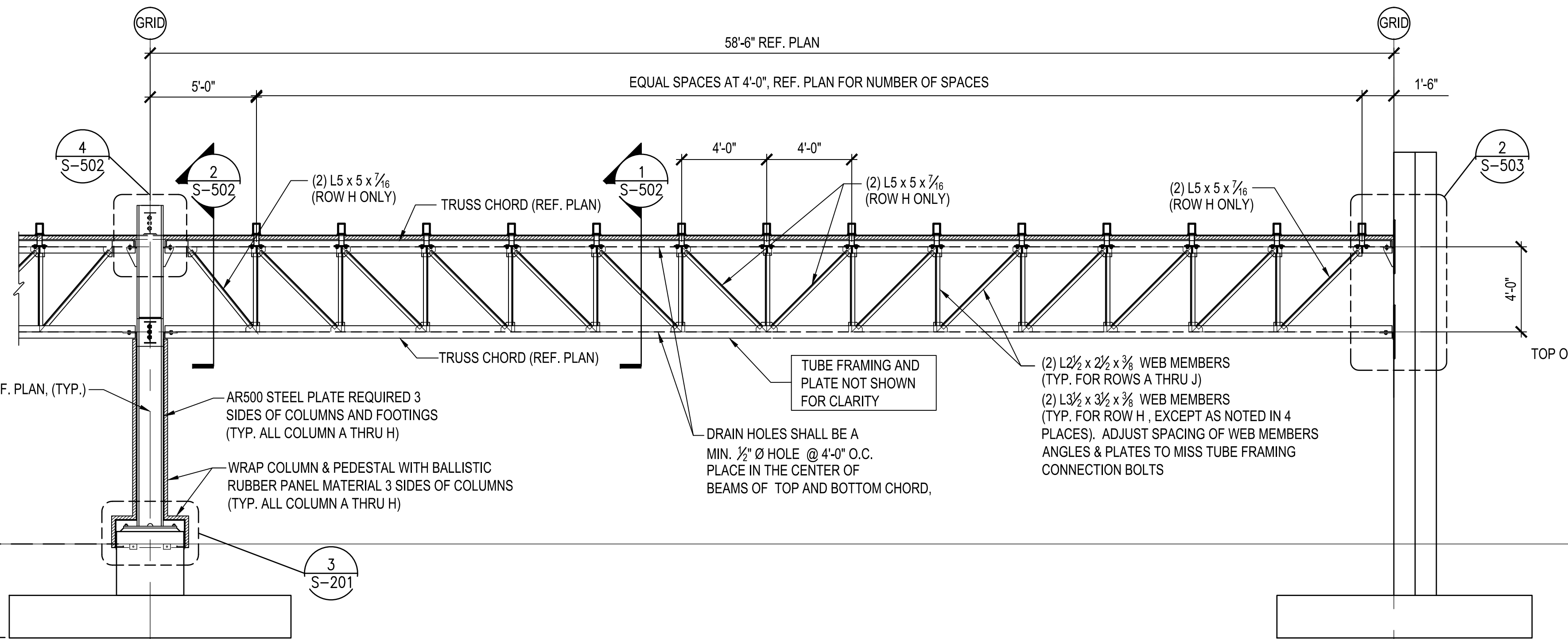


EXPIRES: 6/30/16

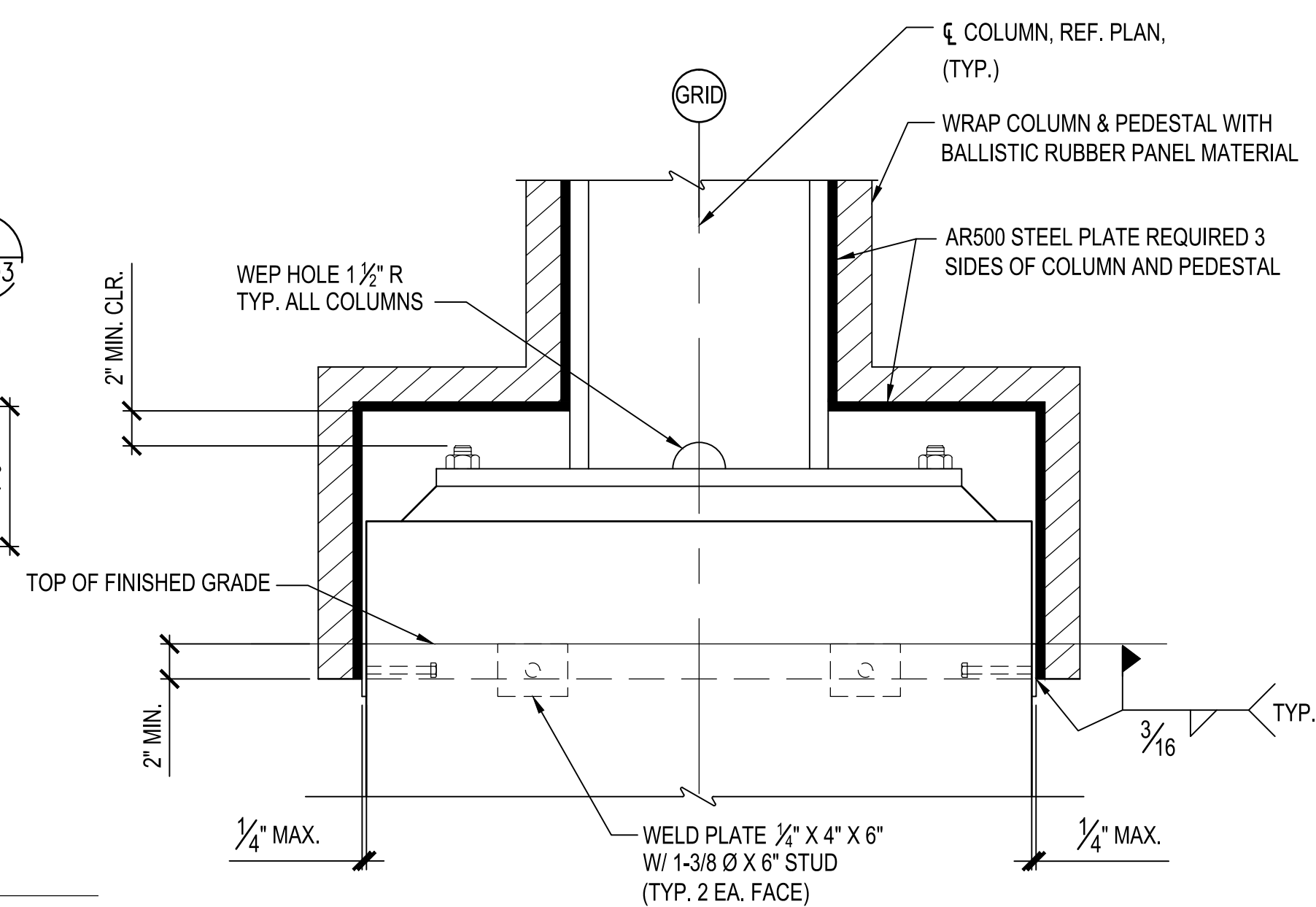


File name: P:\E011650-TULCIV\2552223000_USPFO_HL_Baffle\20_DESIGN\40_CAD\2552223-S-201.dwg
Date: April 18, 2014 - 1:14pm
User: wardm

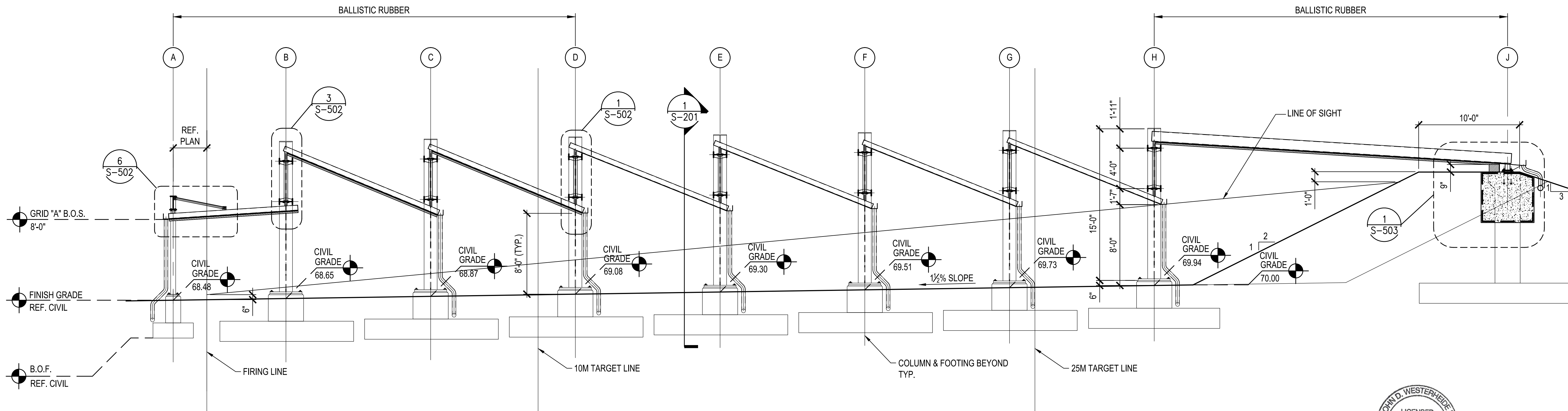
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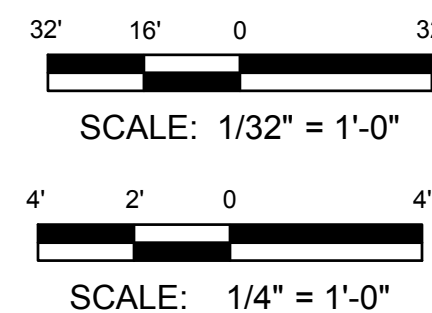
1 TYPICAL TRUSS ELEVATION @ RANGE Baffles
SCALE: 1/4" = 1'-0"



3 COLUMN BASE COVER DETAIL
SCALE: 3/4" = 1'-0"



2 25 METER ZERO RANGE Baffle SECTION
SCALE: 3/16" = 1'-0"



- NOTES:
- REFER TO CIVIL FOR ADDITIONAL GRADING INFORMATION AND TARGET LOCATIONS.
 - VERIFY ALL CIVIL GRADES SHOWN WITH CIVIL DRAWINGS.



4/15/14
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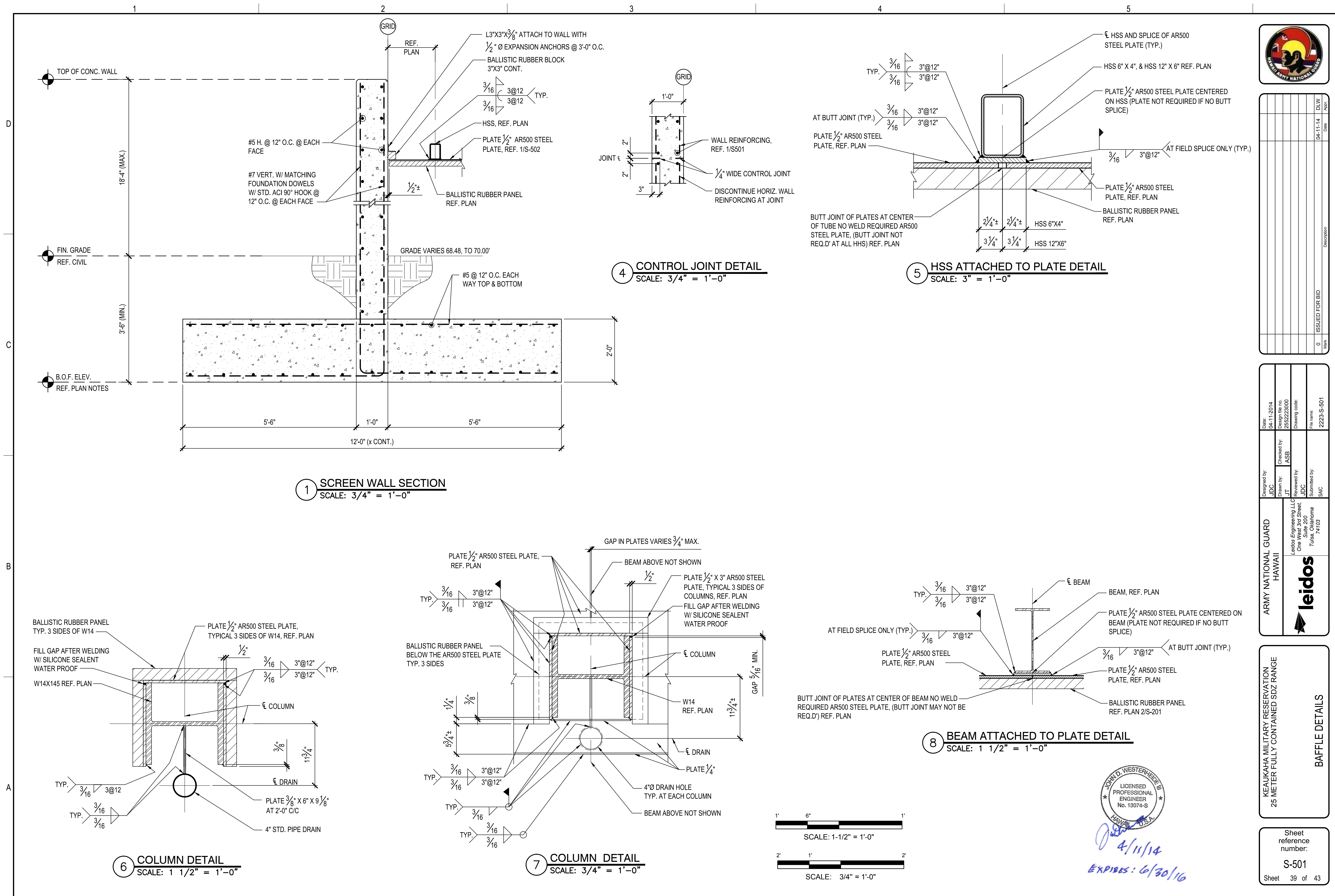
Date	DLW	Apr.
04-11-14	0	ISSUED FOR BID
0	Mark	

Designed by:	DS	Drawn by:	RS	Checked by:	DS	Date:	04-11-2014
Reviewed by:	JDC	Reviewed by:	JDC	Design file no:	2552223000	File name:	2223-S-201
Submitted by:	SAC	Submitted by:	SAC	Drawing code:			
ARMY NATIONAL GUARD HAWAII		Leidos Engineering LLC		One West Street, Suite 2000			
		Tulsa, Oklahoma		74103			

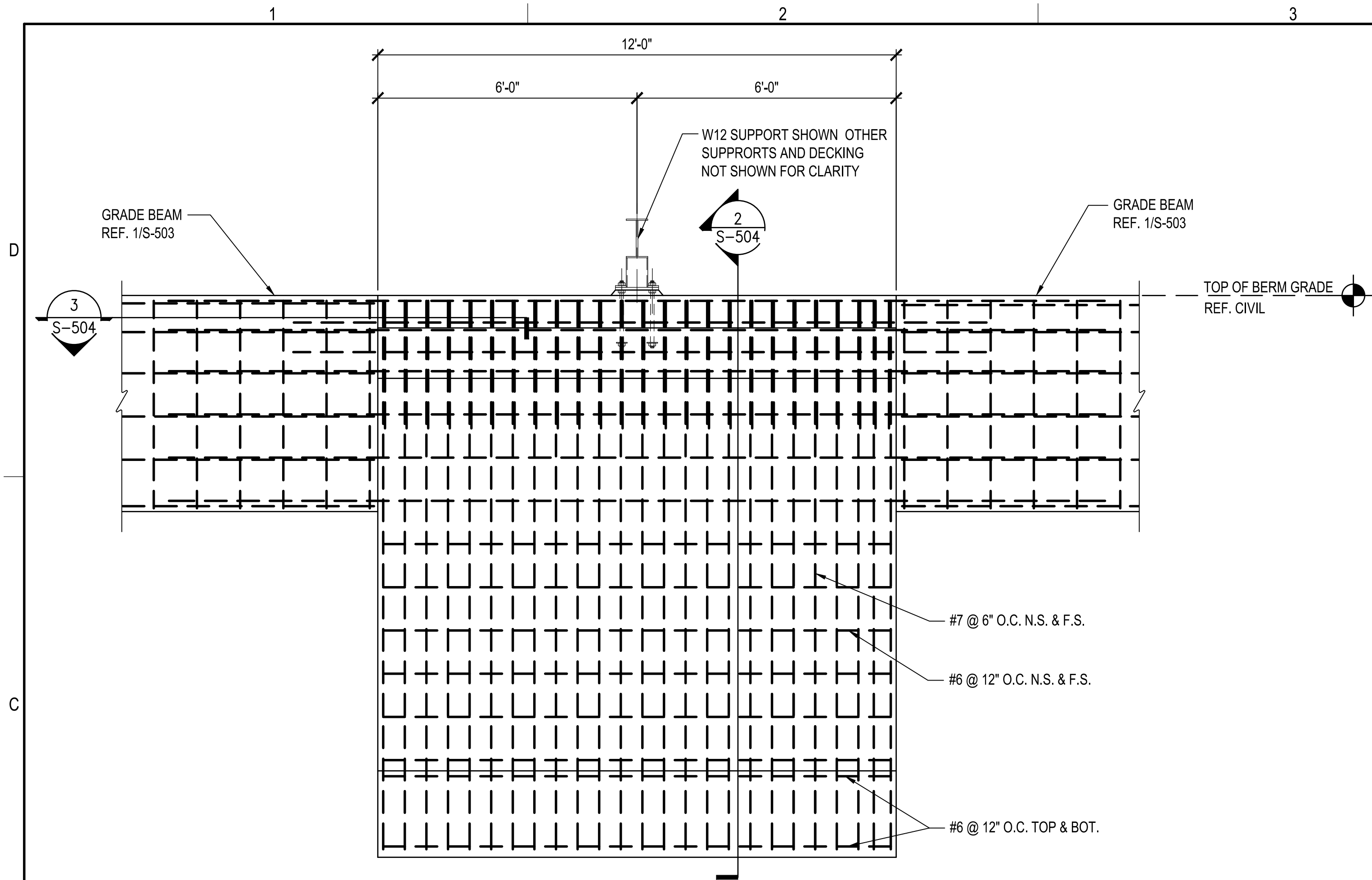
KEAUKAHA MILITARY RESERVATION
25 METER FULLY CONTAINED SDZ RANGE
25 METER ZERO RANGE
BAFFLE RANGE ELEVATION

Sheet reference number:
S-201
Sheet 38 of 43

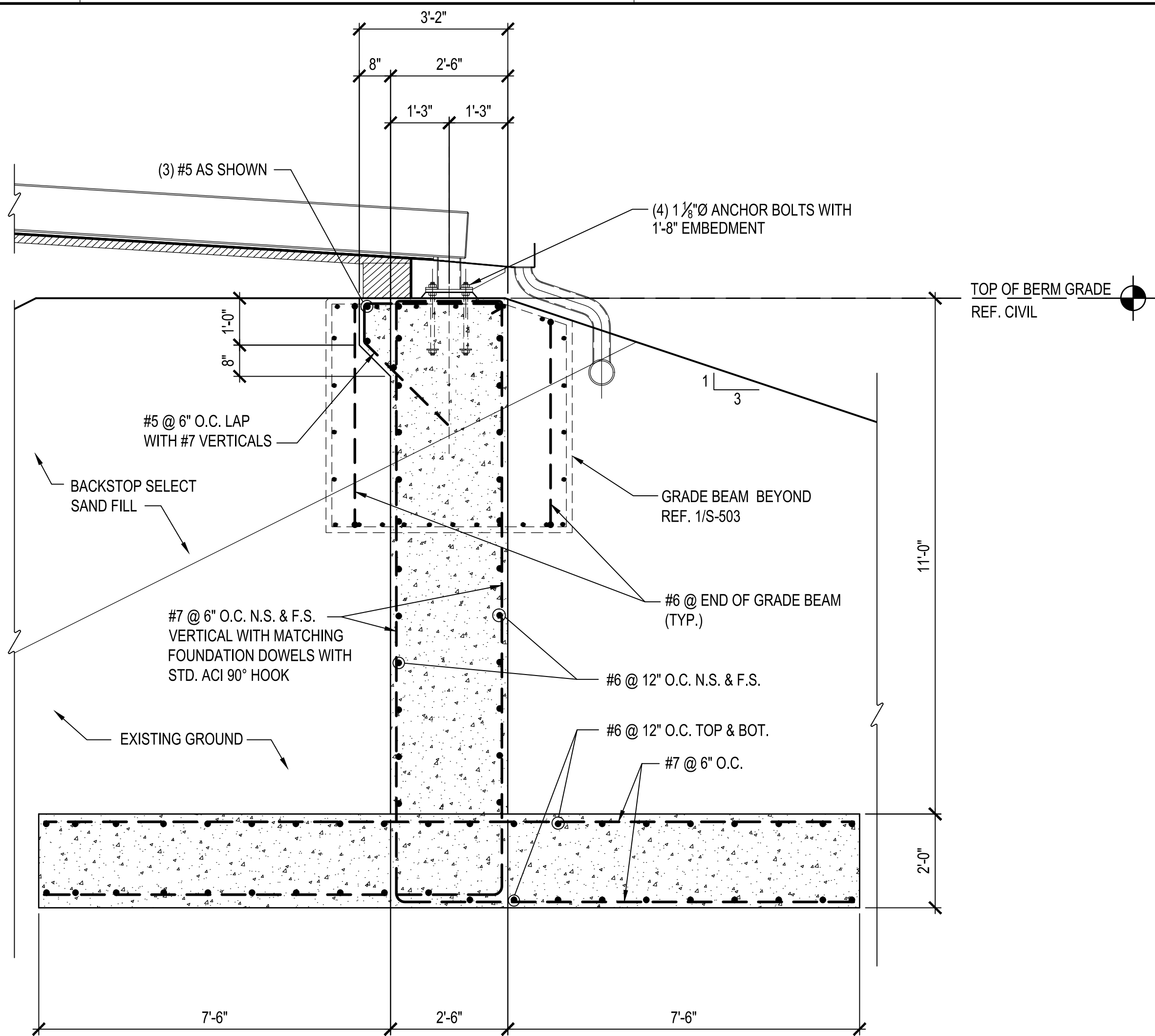
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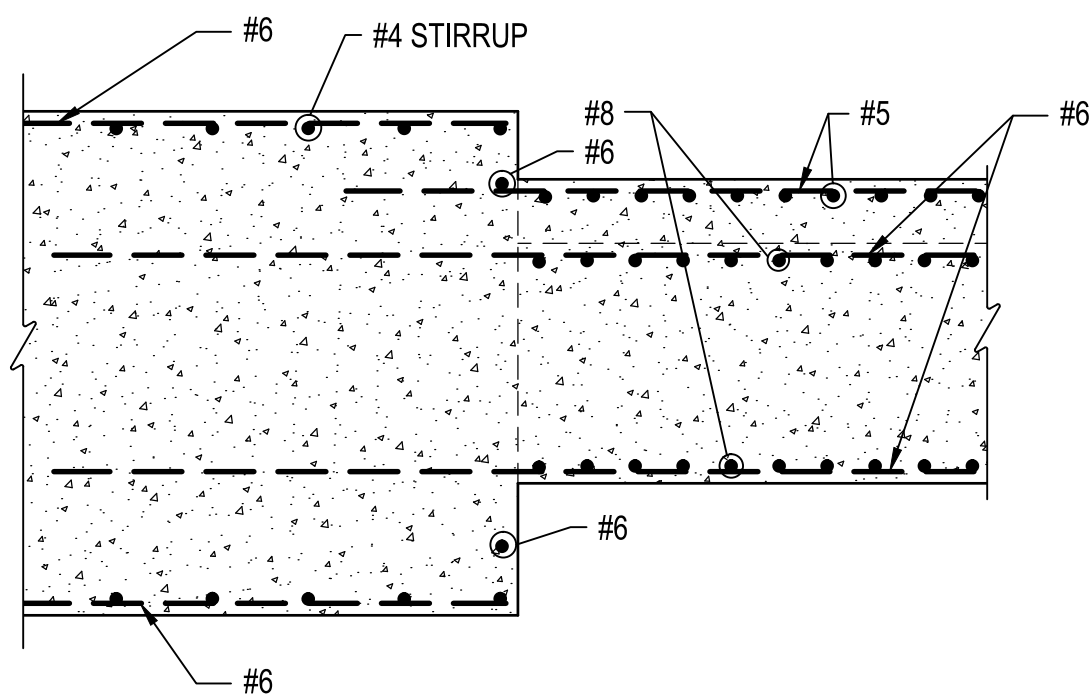
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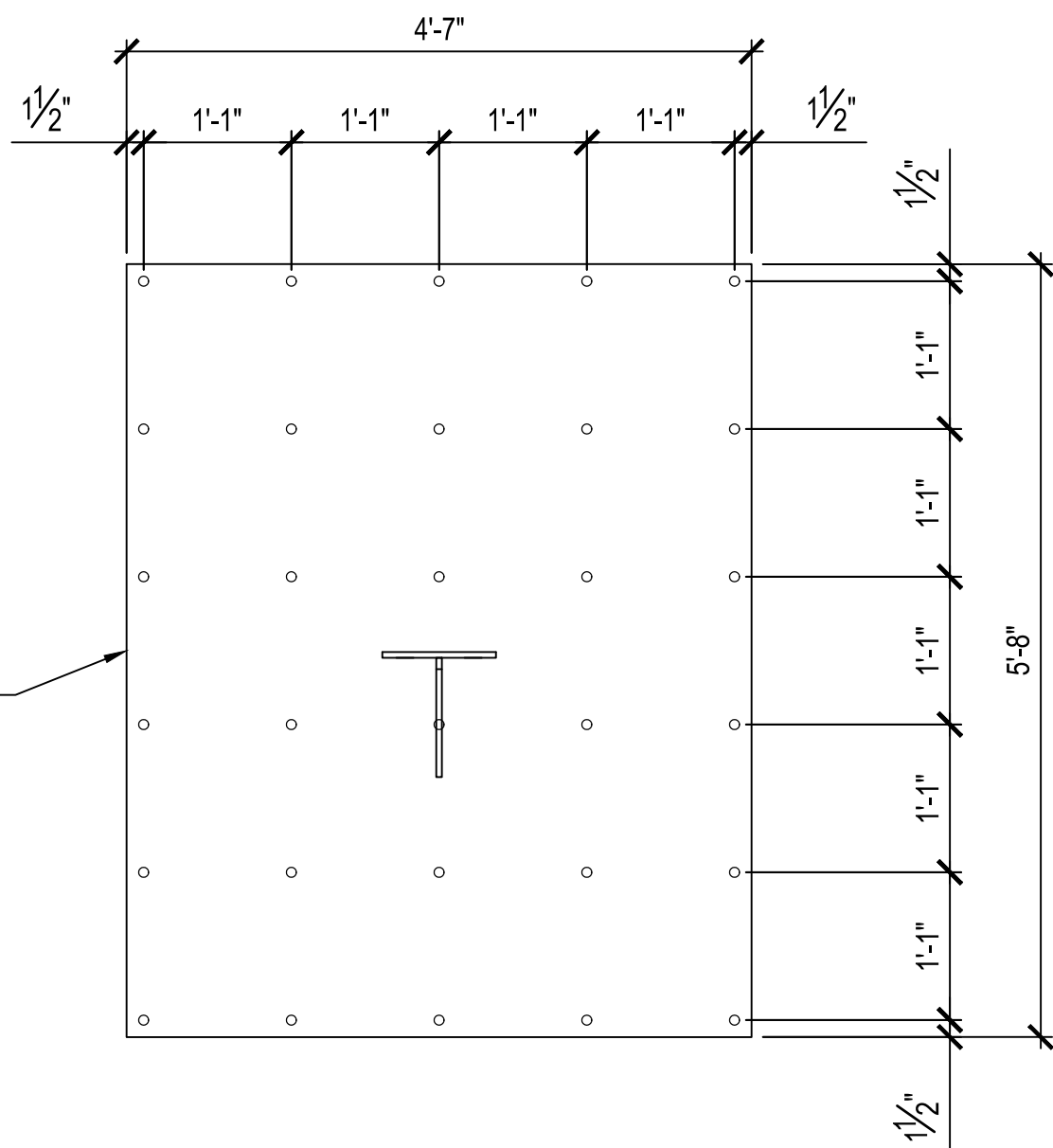
1 RETAINING WALL ELEVATION
SCALE: 1/2" = 1'-0"



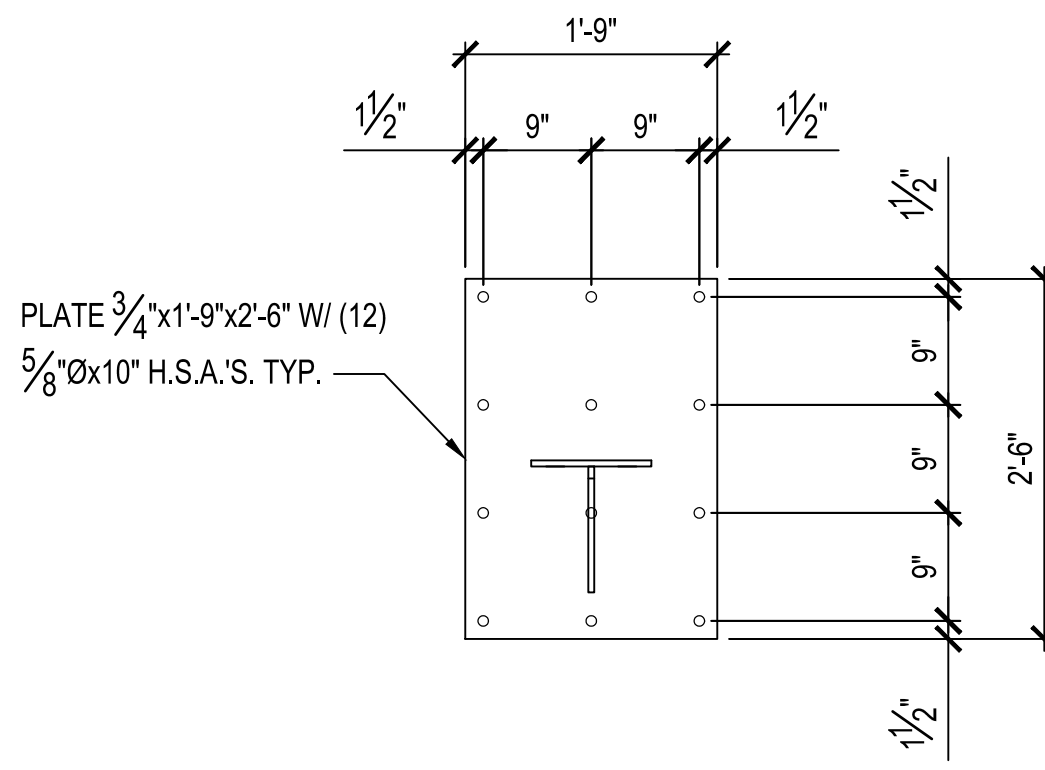
2 RETAINING WALL SECTION
SCALE: 1/2" = 1'-0"



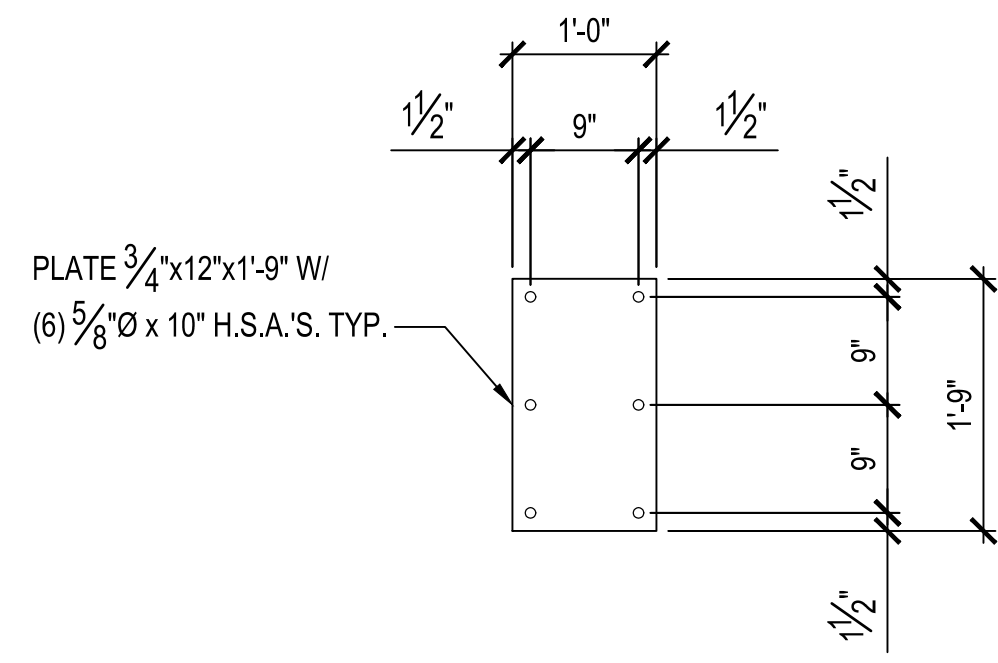
3 SECTION RETAINING WALL AND GRADE BEAM
SCALE: 1/2" = 1'-0"



TOP CHORD GRID H



TOP CHORD GRID A THRU G



BOTTOM CHORD FOR GRID A THRU H



4/11/14
EXPIRES: 6/30/16



Date	DLW	Apr.
04-11-2014	0	ISSUED FOR BID
04-11-14	0	Mark

Designed by: DS	Drawn by: RS	Checked by: DS	Reviewed by: DS	Submitted by: SAC
Date: 04-11-2014	Design file no: 255223000	Drawing code: S-504	File name: S-504 BAFFLE DETAILS	

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KEAUKAHA MILITARY RESERVATION 25 METER FULLY CONTAINED SDZ RANGE	BAFFLE DETAILS

Sheet reference number: S-504
Sheet 42 of 43

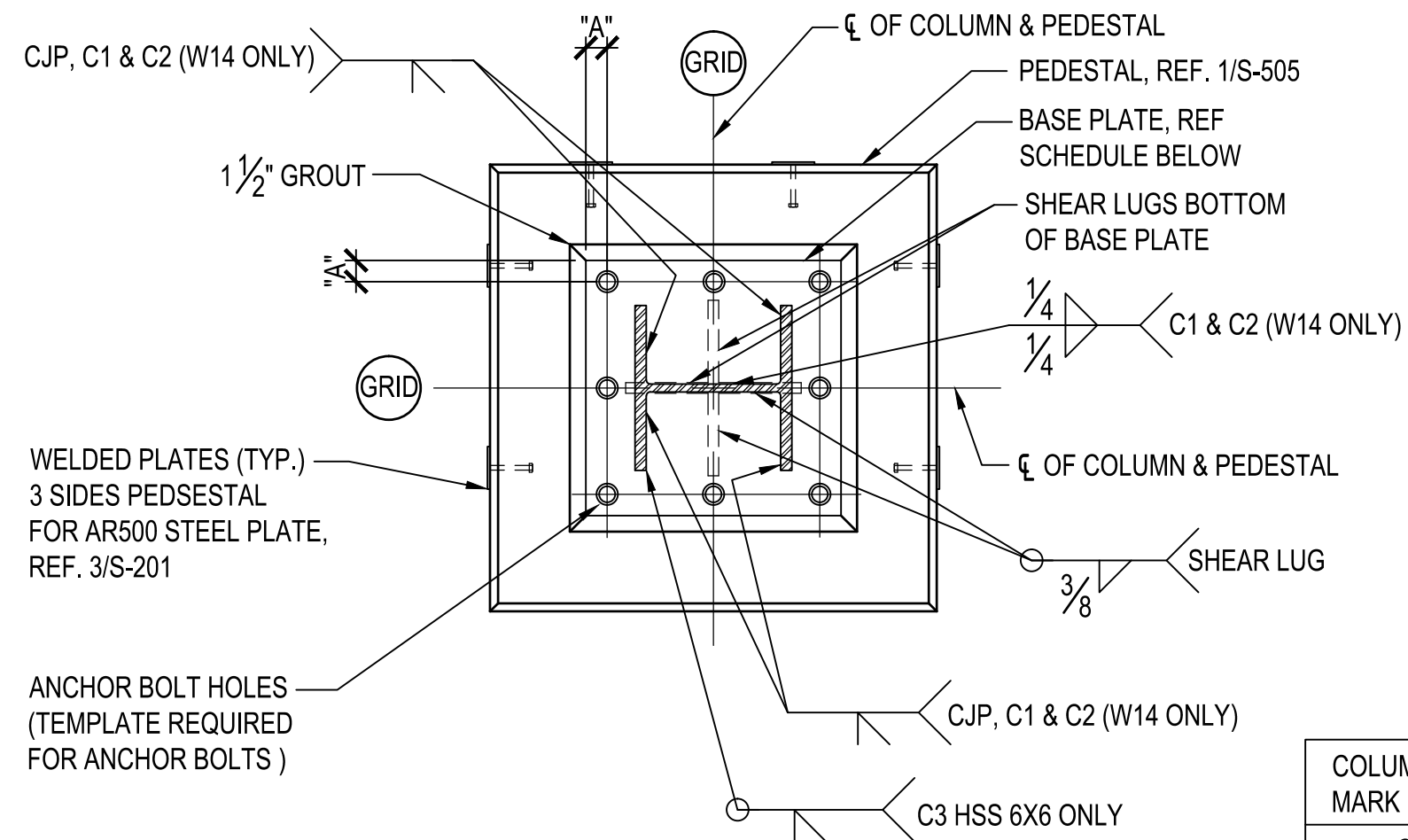
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Date: April 18, 2014 - 1:14pm

D

C

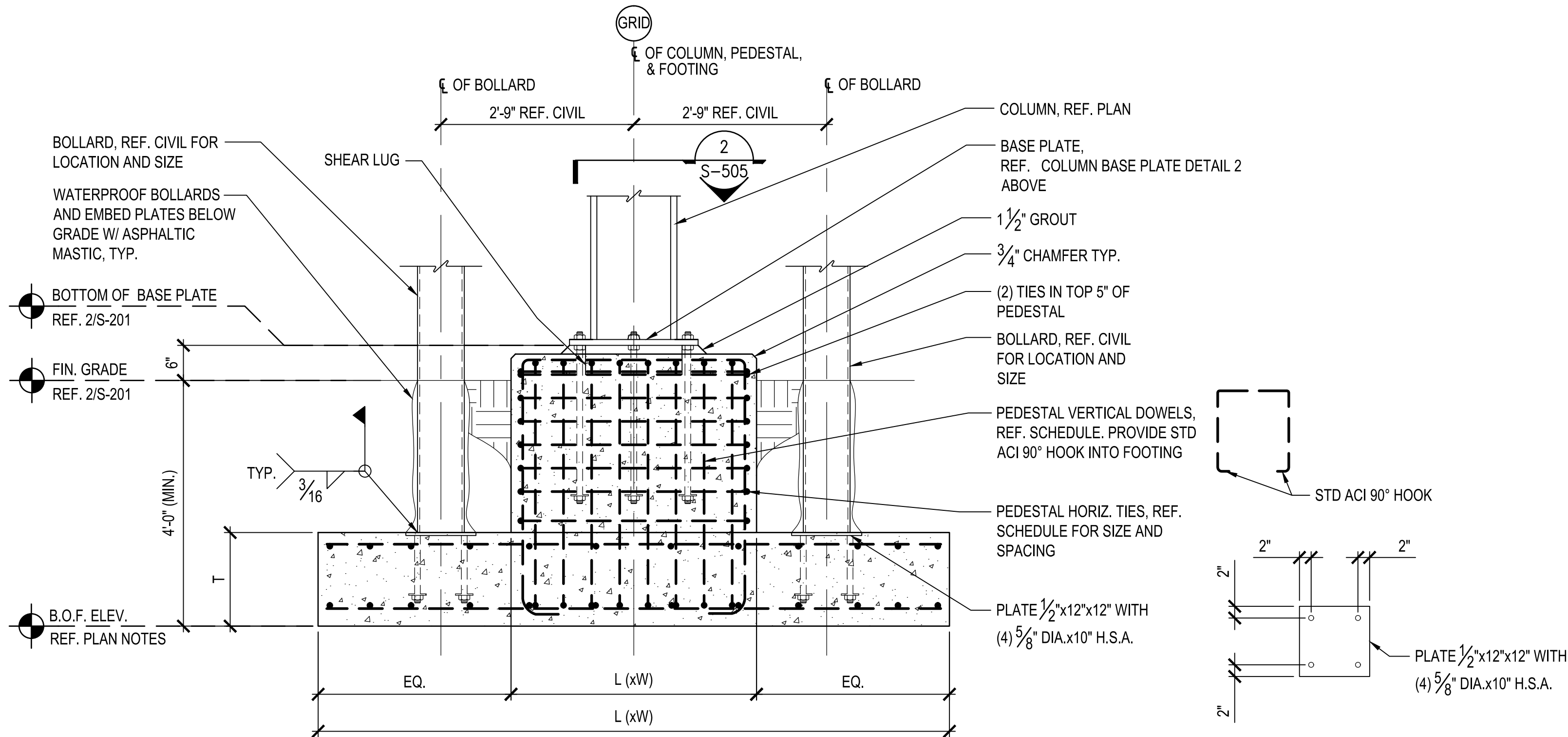
B

A



2 COLUMN BASE PLATE DETAIL
SCALE: 3/4" = 1'-0"

COLUMN MARK	COLUMN SIZE	BASE PLATE SIZE (TxLxW)	ANCHOR BOLTS	EDGE DIST. "A"	NOTES
C1	W14X145	PL 2 3/4"x24"x2'-0"	(8) 1 3/4"Øx2'-0" EMBED	2"	1
C2	W14X145	PL 2 1/2"x24"x2'-0"	(8) 1 3/4"Øx2'-0" EMBED	2"	1
C3	HSS 6x6x1/2	PL 1"x14"x1'-2"	(4) 1 1/2"Øx2'-0" EMBED	2"	1
SHEAR LUG S C1 & C2		PL 1 1/8"x5 1/2"x1'-4 1/2"			



FOOTING MARK	FOOTING SIZE (LxWxT)	REINFORCING	PEDESTAL SIZE (LxW)	VERT. DOWEL	HORIZ. TIES
F1	13'-3"x13'-3"x2'-0"	(12) #7 EW T&B	3'-6"x3'-6"	(16) #7 SEE NOTE 2	#4 AT 6" O.C.
F2	13'-0"x13'-0"x2'-0"	(13) #7 EW T&B	3'-6"x3'-6"	(16) #7 SEE NOTE 2	#5 AT 6" O.C.
F3	7'-0"x7'-0"x1'-6"	(5) #7 EW T&B	1'-8"x1'-8"	(8) #7 SEE NOTE 3	#3 AT 6" O.C.

1 COLUMN FOOTING SECTION
SCALE: 3/4" = 1'-0"

- NOTES:
- MEASURE ANCHOR BOLT EMBEDMENT FROM TOP OF CONCRETE PEDESTAL. REFER TO S-001 FOR ADDITIONAL INFORMATION.
 - 16 U-SHAPED VERTICAL REBAR, 8 EACH SIDE FOR FOOTING MARKED F1 AND F2.
 - 8 U-SHAPED VERTICAL REBAR, 4 EACH SIDE FOR FOOTING MARKED F3.



4/11/14
EXPIRES: 6/30/16



Date	DLW	Apr.
04-11-14	0	ISSUED FOR BID
04-11-14	0	Mark

Designed by: JDC	Checked by: ASB	Date: 04-11-2014
Drawn by: JT	Reviewed by: JDC	Design file no: 2552223000
Submitted by: SAC	File name: 2223-S-505	Drawing code:
ARMY NATIONAL GUARD HAWAII	Leidos Engineering LLC One West Street, Tulsa, Oklahoma 74103	

KEAUKAHA MILITARY RESERVATION 25 METER FULLY CONTAINED SDZ RANGE	BAFFLE DETAILS
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Sheet reference number: S-505	Sheet 43 of 43
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