

**This sheet reflects the construction and details and specifications as constructed in the field.**

**Name:** Harry Sidani  
**Signature:** *Harry Sidani*  
**Date:** 11/14/2017

TRUE NORTH  
 SCALE: 1" = 80 FT.

**LEGEND:**

	FINISH GRADE W/ ELEVATION
	EXISTING GRADE W/ ELEVATION
	SILT FENCE (SEE SHEET 15.02)
	DUST FENCE (SEE SHEET 15.02)
	APPROXIMATE GRADING LIMITS (11.0± ACRES)
	TIRE CLEANING PAD (SEE SHEET 15.02)
	INLET PROTECTION (TO BE INSTALLED AT ALL EXT'G. AND PROPOSED CATCH BASINS)

- NOTES:**
1. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
  2. IF THE CONTRACTOR IS NOT ABLE TO SATISFACTORILY CONTROL DUST EMISSIONS FROM THE PROJECT SITE, ALL CONSTRUCTION WORK SHALL CEASE EXCEPT FOR WATERING AND OTHER STABILIZATION EFFORTS. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL MEET WITH THE DEVELOPMENT SERVICES ADMINISTRATION AND PROVIDE INFORMATION ON THE SOURCE OF WATER FOR DUST CONTROL, AND JUSTIFY THE NUMBER OF WATER TRUCKS TO BE USED DURING THE GRUBBING AND GRADING ACTIVITIES ON THE SITE.
  3. THE EXISTING DRAINAGE PATTERN WITHIN THE EXISTING GULCHES, DITCHES, AND BERMS SHALL BE MAINTAINED UNTIL CONSTRUCTION OF OFFSITE DRAINAGE IMPROVEMENTS HAVE BEEN COMPLETED.
  4. THE CONTRACTOR, IN ADDITION TO ANY FENCING REQUIRED FOR DUST AND EROSION MITIGATION, SHALL INSTALL ANY REQUIRED FENCING, AND IMPLEMENT ANY OTHER MEASURES, AS REQUIRED, TO PROVIDE A SAFE AND SECURE CONSTRUCTION SITE.

REVISION	DESCRIPTION	DATE
1	Revised Per DSA Comments	8/10/16
2	Owner Revised Drainage Plan	6/28/16
3	Revised Grading Limits and Phases	10/15/08
4	Added Grading Limits and Phases	6/25/08



**WARREN S. UNEMORI ENGINEERING, INC.**  
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**KUALONO SUBDIVISION**  
 Keahua, Kula, Maui, Hawaii

TITLE: EROSION CONTROL PLAN		JOB NUMBER: 04004	SHEET: 15.01
DESIGNED BY: DKO	CHECKED BY: RMA		
DRAWN BY: WAN/WIS	APPROVED BY: RMA	DATE: 6-28-16	OF SHEETS: 15

**BEST MANAGEMENT PRACTICES**

**1. EROSION AND SEDIMENT CONTROL PRACTICES**

- A. CONSTRUCTION MANAGEMENT**
- 1) GRADING OPERATIONS SHALL BE PLANNED SO AS TO MINIMIZE TIME OF CONSTRUCTION.
  - 2) GRADING OPERATIONS SHALL BE PLANNED SO AS TO MINIMIZE SIZE OF THE DISTURBED AREA. THE AREA GRUBBED SHALL NOT EXTEND BEYOND WHAT WILL ACTUALLY BE REQUIRED FOR GRADING.
  - 3) THE PROJECT GRADING LIMITS SHALL BE STAKED PRIOR TO THE START OF CONSTRUCTION.
  - 4) UPON COMPLETION OF GRADING ALL EXPOSED AREAS WILL BE GRASSED AS REQUIRED.
- B. STABILIZATION TECHNIQUES**
- 1) EXISTING GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN 30 CALENDAR DAYS PRIOR TO THE START OF GRADING OPERATIONS.
  - 2) AREAS THAT REMAIN UNFINISHED FOR MORE THAN 21 CALENDAR DAYS WILL BE HYDROMULCHED (WITH SEED) TO PROVIDE TEMPORARY SOIL STABILIZATION BY NO LATER THAN THE 14TH DAY AFTER LAST DISTURBANCE.
  - 3) AFTER ACHIEVING FINISHED GRADES, ALL SLOPES AND EXPOSED AREAS SHALL BE PERMANENTLY STABILIZED BY HYDROMULCHING WITH GRASS SEED AS SOON AS PRACTICABLE.
- C. STRUCTURAL CONTROLS**
- 1) SILT FENCES OR FILTER BERMS SHALL BE CONSTRUCTED ALONG THE ENTIRE DOWNSTREAM SIDE OF THE ACTIVE CONSTRUCTION ZONE IN AREAS WHERE ONSITE RUNOFF FLOWS INTO ADJOINING PROPERTIES. FILTER BAGS SHALL BE PLACED AT ALL EXISTING CURB-INLET CATCH BASIN OPENINGS TO REMOVE SILT FROM THE ONSITE RUNOFF.
- D. INSPECTION AND MAINTENANCE PROCEDURES**
- 1) ALL CONTROL MEASURES SHALL BE INSPECTED AND REPAIRED AS NECESSARY. INSPECTIONS SHALL BE PERFORMED AT LEAST WEEKLY IN DRY PERIODS, AND WITHIN 24 HOURS AFTER ANY RAINFALL 0.5 INCHES OR GREATER OVER A 24-HOUR PERIOD. CONTROL MEASURES SHALL BE CHECKED DAILY DURING PERIODS OF PROLONGED RAINFALL.
- E. SCHEDULE FOR IMPLEMENTING CONTROLS**
- 1) EROSION AND SEDIMENT CONTROL MEASURES WILL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN, AND WILL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
  - 2) THE FOLLOWING GENERAL ORDER SHOULD BE USED:
    - A. INSTALLATION OF TIRE CLEANING PAD.
    - B. INSTALLATION OF SILT FENCE AND FILTER BERMS.
    - C. GRADING MAY PROCEED.

**2. DUST CONTROLS**

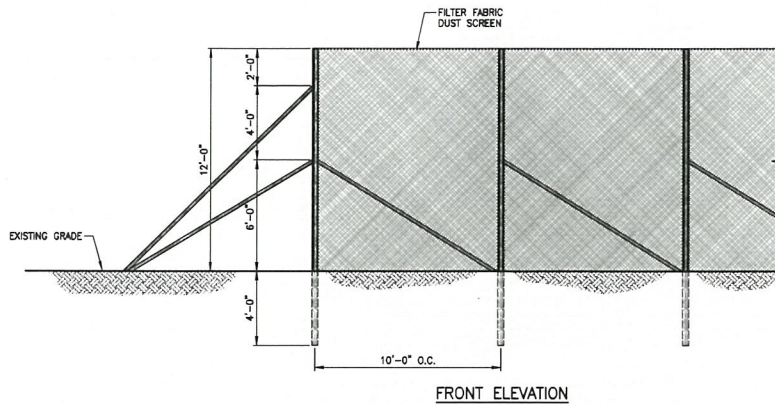
- THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST. THE FOLLOWING MITIGATIVE MEASURES WILL BE INCORPORATED:
- USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
  - CONSTRUCT DUST FENCES IF NECESSARY ALONG PROJECT SITE BOUNDARIES AFFECTED BY PREVAILING WIND DIRECTION.
  - STATION A WATER TRUCK ON SITE AT ALL TIMES DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES OR WHEREVER NEEDED ON THE CONSTRUCTION SITE. WINDSHIELD AND WINDMIRROR MOUNTED DUST CONTROL ON ACTIVE CONSTRUCTION ZONES SHALL ALSO BE APPLIED AT END OF DAY.
  - GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITIES HAVE CEASED FOR THE DAY AND ON WEEKENDS.

**3. OTHER POLLUTION CONTROL PRACTICES**

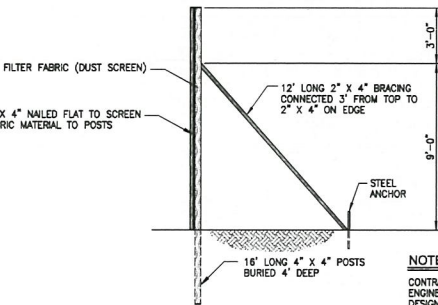
- CONTRACTOR SHALL INSTALL DANDY BEAVER DAM OR DANDY BAG (OR APPROVED EQUAL) AT ALL NEW AND EXISTING INLETS AND DISCHARGE POINTS WHICH MAY RECEIVE RUNOFF FROM CONSTRUCTION ACTIVITY.
- MAINTENANCE AND FUELING OF CONSTRUCTION EQUIPMENT SHALL BE PERFORMED ONLY IN DESIGNATED AREAS ENCLOSED BY A CONTAINMENT BERM CONSTRUCTED SO AS TO CONTAIN SPILLS AND PREVENT STORM WATER RUNOFF FROM CARRYING POLLUTANTS INTO DOWNSTREAM PROPERTIES.

**OPERATION AND MAINTENANCE PLAN FOR BMPs**

1. A SPECIFIC INDIVIDUAL FROM THE CONTRACTOR SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON THE PROJECT SITE.
2. DURING EACH INSPECTION, THE FOLLOWING AREAS WILL BE INSPECTED:
  - CLEARED, GRADED, OR EXCAVATED AREAS
  - STORMWATER CONTROLS (PERMETER CONTROL, BASINS, INLETS, EXIT POINTS)
  - POLLUTION PREVENTION PRACTICES
  - MATERIAL, WASTE, OR BORROW AREAS
  - EQUIPMENT STORAGE AND MAINTENANCE AREAS
  - STABILIZED AREAS
3. WHEN SIGNIFICANT RAINFALL OCCURS, BMPs SHALL BE CONTINUALLY MONITORED AND MAINTAINED. CONSTRUCTION EQUIPMENT SHALL BE MOBILIZED AS NECESSARY TO INSTALL EMERGENCY CONTROL MEASURES. AFTER STORM EVENTS, BMPs SHALL BE EVALUATED AND NEW BMPs SHALL BE DEPLOYED IN AREAS OF INEFFECTIVE BMPs.
4. IRRIGATION AND MAINTENANCE OF THE PERENNIAL VEGETATION SHALL BE PROVIDED.



**FRONT ELEVATION**

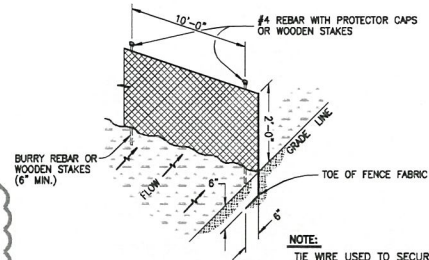


**SIDE ELEVATION**

**DETAIL - DUST FENCE**

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

**NOTE:**  
CONTRACTOR SHALL BE RESPONSIBLE FOR RETAINING A STRUCTURAL ENGINEER (LICENSED TO PRACTICE IN THE STATE OF HAWAII) TO DESIGN DUST FENCE AND SHALL SUBMIT STAMPED AND SIGNED DRAWINGS FOR DUST FENCE TO ENGINEER AND COUNTY OF MAUI FOR REVIEW AND APPROVAL, AND FOR SECURING ALL REQUIRED AGENCY PERMITS.

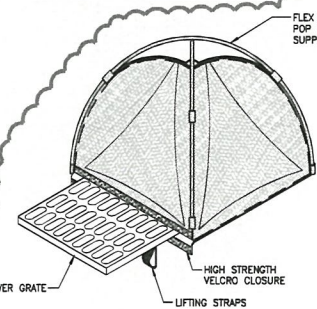


**DETAIL - SILT FENCE**

NOT TO SCALE

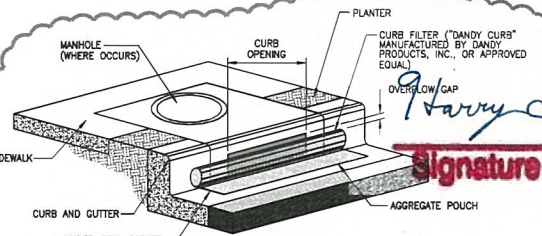
**NOTES:**

1. CONTRACTOR SHALL INSPECT & MAINTAIN DANDY POP INLET PROTECTION SYSTEM ON A REGULAR BASIS TO ENSURE PROPER FUNCTION TO KEEP SILT, SEDIMENT AND CONSTRUCTION DEBRIS OUT OF THE STORM WATER SYSTEM. THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM PANELS AND SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER/INSPECTOR (FOR OIL AND SEDIMENT MODEL); REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION; DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
2. THE DANDY POP INLET PROTECTION UNIT SHALL ENCLOSE THE DRAIN INLET GRATE WITH THE GEOTEXTILE FABRIC.
3. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR REVIEW & APPROVAL PRIOR TO ORDERING MATERIALS.



**DETAIL - "DANDY POP" INLET PROTECTION SYSTEM**

NOT TO SCALE



**DETAIL - CURB INLET PROTECTION**

NOT TO SCALE

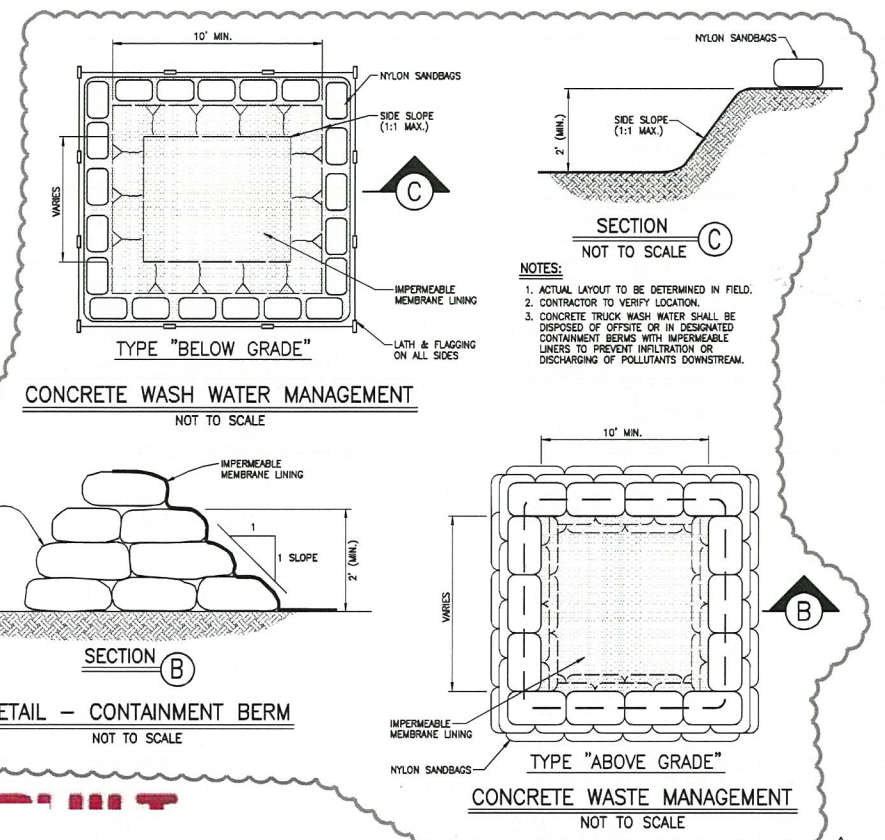
**NOTES:**

1. INSTALLATION:
  - 1.1 PLACE DANDY CURB INLET PROTECTION UNIT ON GROUND WITH AGGREGATE POUCH ON STREET SIDE NEAR INLET IT WILL BE INSTALLED ON.
  - 1.2 WHERE OIL AND SEDIMENT MODEL IS REQUIRED, TO INSTALL OR REPLACE ABSORBENT, PLACE ABSORBENT SOCK IN POUCH.
  - 1.3 FILL POUCH WITH AGGREGATE SUCH AS #5-7, 8'S OR SIMILAR TO A LEVEL (AT LEAST 1/2 FULL) THAT WILL KEEP UNIT IN PLACE DURING A RAIN EVENT AND CREATE A SEAL BETWEEN THE DANDY CURB AND THE SURFACE OF THE STREET. RESEAL VELCRO ACCESS.
  - 1.4 CENTER THE UNIT AGAINST CURB OR MEDIAN INLET OPENING SO THAT THE CURB SIDE OF THE UNIT CREATES A SEAL WITH THE CURB OR MEDIAN BARRIER AND INLET STRUCTURE. THERE WILL BE APPROXIMATELY TWELVE (12) INCHES OF THE INLET PROTECTION UNIT OVERHANGING ON EACH SIDE OF THE OPENING. IF THE UNIT IS NOT INSTALLED IN THIS MANNER, IT WILL NOT FUNCTION PROPERLY.
2. MAINTENANCE:
  - 2.1 THE CONTRACTOR SHALL REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM SURFACE AND VICINITY OF UNIT AFTER EACH RAIN EVENT OR AS DIRECTED BY ENGINEER. THE CONTRACTOR SHALL DISPOSE OF UNIT NO LONGER IN USE AT AN APPROPRIATE RECYCLING OR SOLID WASTE FACILITY.
  - 2.2 WHERE OIL AND SEDIMENT MODEL IS REQUIRED, REMOVE AND REPLACE ABSORBENT WHEN NEAR SATURATION.
  - 2.3 ALTERNATIVE CURB INLET PROTECTION WILL BE SUBJECT TO REVIEW AND APPROVAL BY COUNTY AND ENGINEER.

**This sheet reflects the on sheet and details and specifications as constructed in the field.**

*Signature*

**Date**  
11/14/2017



**CONCRETE WASH WATER MANAGEMENT**

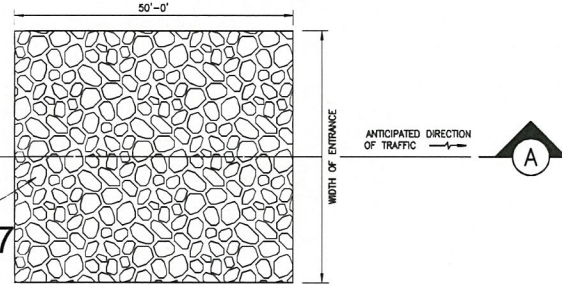
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**DETAIL - CONTAINMENT BERM**

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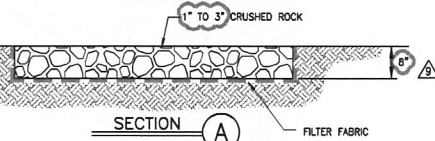
**CONCRETE WASTE MANAGEMENT**

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**PLAN**

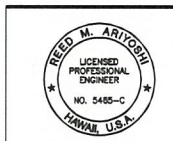
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**SECTION A**

**DETAIL - TIRE CLEANING PAD**

NOT TO SCALE



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**KUALONO SUBDIVISION**

Keahua, Kula, Maui, Hawaii

**TITLE EROSION CONTROL NOTES AND DETAILS**

DESIGNED BY DKO	CHECKED BY RMA	DATE 04/04	SHEET 15.02
DRAWN BY WAN/WIS	APPROVED BY RMA	JOB NUMBER 6-28-16	OF SHEETS 6
SCALE AS NOTED	DATE		