

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

JOB NO. 500CK54B

LANDSCAPING IMPROVEMENTS TO THE HANALEI STREAM BANK RESTORATION PROJECT

HANALEI, KAUAI, HAWAII

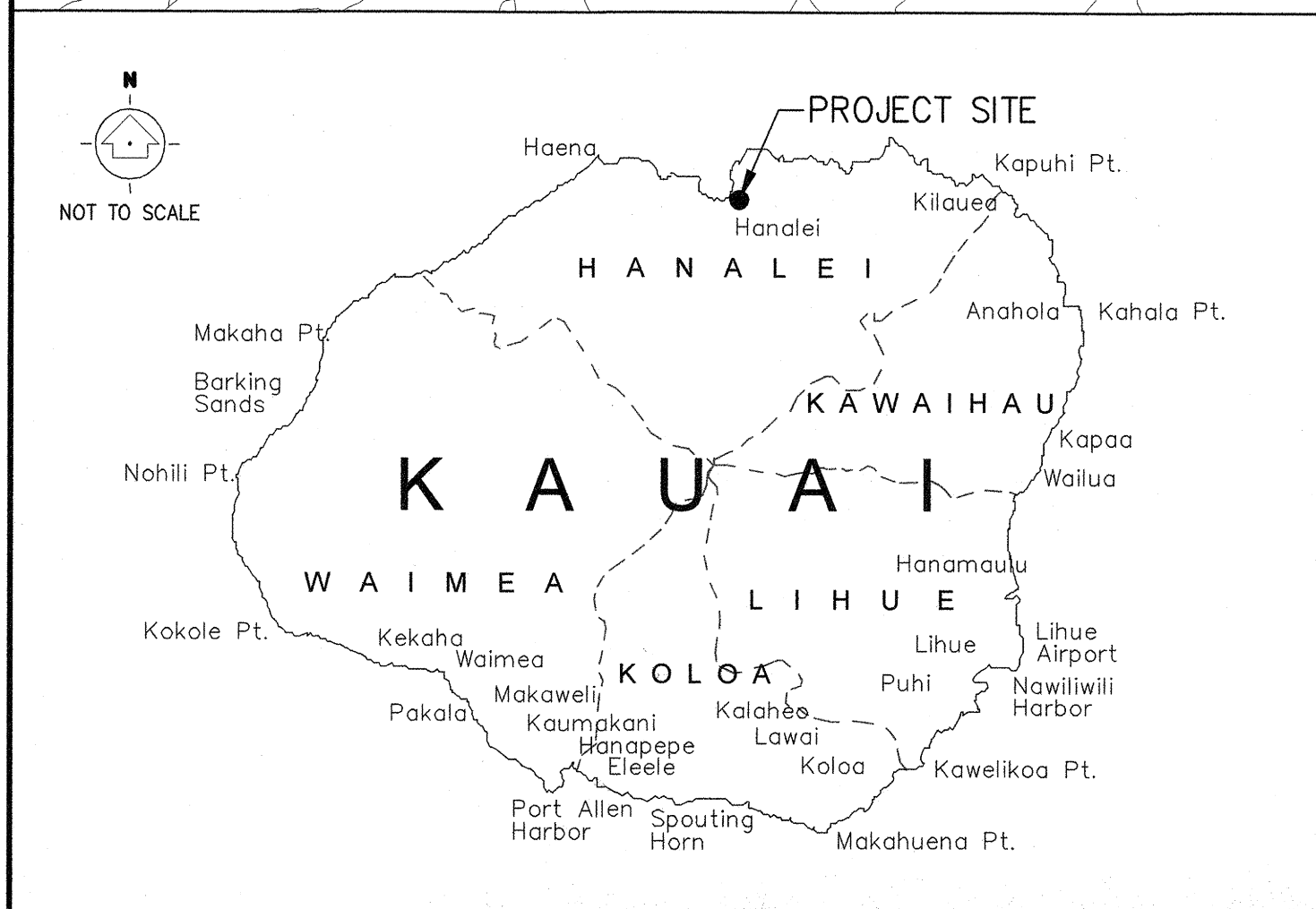
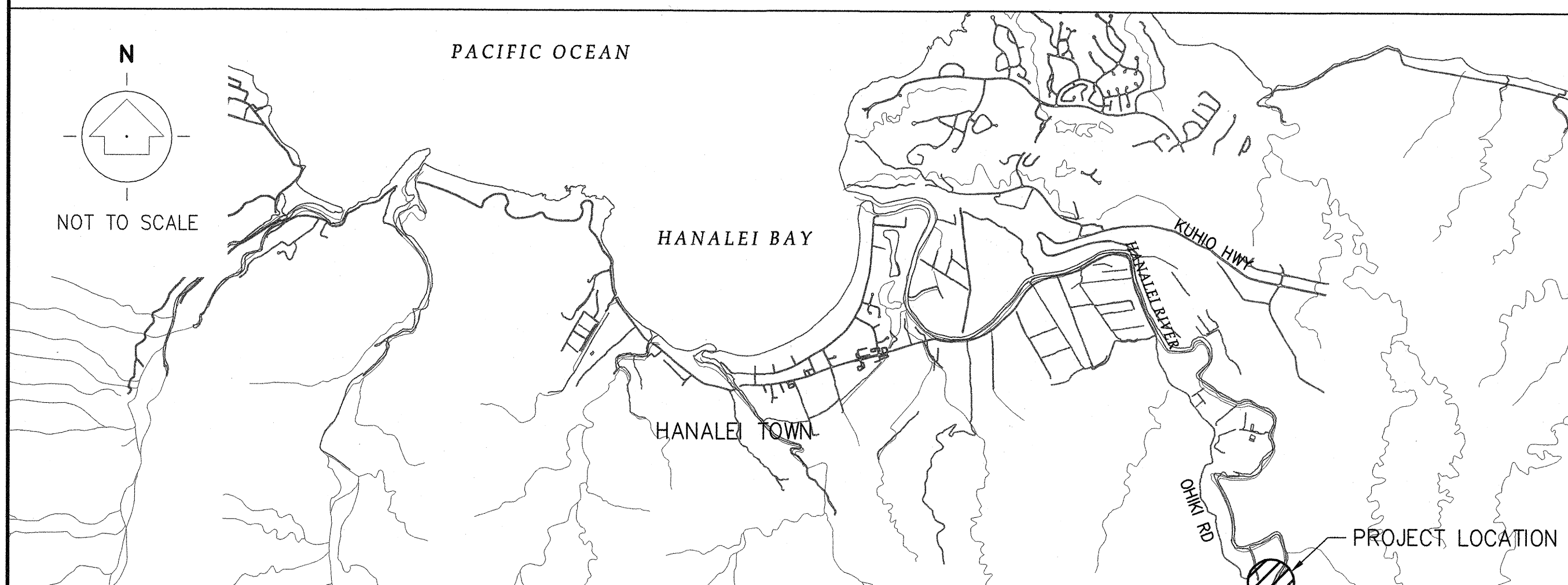
TAX MAP KEY 4-5-002:034

PREPARED BY:



1001 BISHOP ST, SUITE 1600
HONOLULU, HAWAII 96813

LOCATION MAP



ACCESS PLAN



APPROVALS

C. Chang
CARY S. CHANG, P.E.
CHIEF ENGINEER
ENGINEERING DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

5/13/16
DATE

INDEX TO DRAWINGS

DWG NO.	SHT NO.	DESCRIPTION
T-1	1	TITLE SHEET
C-1	2	GENERAL NOTES
C-2	3	SITE PLAN
C-3	4	TYPICAL SECTION AND DETAILS

NOTES FOR GENERAL CONSTRUCTION

1. ALL CONSTRUCTION WORK IS TO BE CONSTRUCTED IN ACCORDANCE WITH THE PUBLICATIONS "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION 2005" AND ITS AMENDMENTS AND "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION" AND ITS AMENDMENTS. THE STANDARD DETAILS ARE AVAILABLE AT THE COUNTY OF KAUAI CLERK'S OFFICE.
2. NO USE OF MOTORIZED EQUIPMENT BETWEEN 7 P.M. TO 7 A.M. ON ANY GIVEN DAY OR ON SATURDAYS, SUNDAYS AND HOLIDAYS WITHOUT WRITTEN PERMISSION FROM THE COUNTY ENGINEER AND THE STATE DEPARTMENT OF HEALTH.
3. CONTRACTOR TO NOTIFY PUBLIC WORKS DEPARTMENT FIVE (5) BUSINESS DAYS PRIOR TO COMMENCING ANY GRADING WORK. WHEN COMPLETED AND READY FOR FINAL INSPECTION; NOTIFY PUBLIC WORKS DEPARTMENT INSPECTION SECTION.
4. CONSTRUCTION PLANS ARE VALID FOR A PERIOD OF ONE YEAR FROM THE DATE OF APPROVAL; IF CONSTRUCTION DOES NOT COMMENCE WITHIN THIS ONE-YEAR TIME FROM THE DATE OF APPROVAL THE CONSTRUCTION PLANS WILL NEED TO BE RESUBMITTED TO ALL COUNTY AGENCIES FOR REVIEW AND APPROVAL.
5. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
6. DURING CLEANING OPERATIONS, THE CONTRACTOR SHALL SUPPLY A WATER TRUCK FOR DUST CONTROL PURPOSES UNTIL VEGETATION HAS RE-ESTABLISHED ITSELF. EXCESS WATER, INCLUDING SILT AND DIRT SHALL NOT BE ALLOWED TO RUN-OFF THE PROPERTY OR INTO THE STREAM.

BEST MANAGEMENT PRACTICES (BMPs)

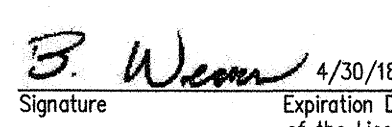
1. THE SITE PLAN ILLUSTRATES MINIMAL/CONCEPTUAL MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS. THESE MEASURES ARE TO BE IMPLEMENTED PRIOR TO THE COMMENCEMENT OF ANY SITE DISTURBANCE. ALL EROSION CONTROL MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
2. CONSTRUCTION WORK SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA. PRE-CONSTRUCTION VEGETATIVE GROUND COVER SHALL NOT BE DESTROYED, REMOVED OR DISTURBED MORE THAN TWENTY (20) CALENDAR DAYS PRIOR TO SITE DISTURBANCE. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY (30) CALENDAR DAYS. PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION SHALL BE APPLIED AS SOON AS PRACTICAL.
3. ALL BMPs SHALL BE INSPECTED AT THE START AND END OF EACH WORK DAY AND REPAIRED AS NECESSARY.
4. THE CONTRACTOR SHALL ENSURE THAT ALL TIRES OF CONSTRUCTION VEHICLES ARE SUFFICIENTLY CLEANED OFF SO THAT DIRT OR DEBRIS IS NOT TRACKED OFF THE CONSTRUCTION SITE.
5. THE CONTRACTOR SHALL ENSURE THAT ROADWAYS WILL BE PROTECTED FROM MUD, DIRT, AND DEBRIS.
6. THE CONTRACTOR SHALL CONSTRUCT FACILITIES TO RETAIN ON-SITE WASTEWATER SUCH AS GROUND WATER, RUNOFF, WASHWATER FROM WASHDOWNS OF CONSTRUCTION EQUIPMENT, AND VEHICLES, ETC. CONSTRUCTION WASTEWATER SHALL BE REMOVED AND DISPOSED OF OFF-SITE, OR ALLOWED TO EVAPORATE AND PERCOLATE INTO THE GROUND.
7. STORM WATER FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED BY USING APPROPRIATE CONTROL MEASURES AS PRACTICAL.
8. DRIP PANS SHALL BE PLACED UNDER ALL VEHICLES AND EQUIPMENT WITHIN THE CHANNEL WHEN THE VEHICLE OR EQUIPMENT IS PLANNED TO BE IDLE FOR MORE THAN ONE (1) HOUR.
9. CONSTRUCT TEMPORARY DIVERSION STRUCTURES WITH MATERIALS FREE OF POTENTIAL POLLUTANTS SUCH AS SOIL, SILT, SAND, CLAY, GREASE, OR OIL, PRIOR TO THE COMMENCEMENT OF CONSTRUCTION WORK.
10. ALL EARTH BASINS, TRAPS, BERMS, DIVERSIONS, WATERWAYS, SWALES, DITCHES AND RELATED STRUCTURES SHOULD BE STABILIZED IMMEDIATELY AFTER THEY ARE BUILT. BEFORE A STORMWATER CONVEYANCE STRUCTURE IS MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED LINING SHALL BE INSTALLED OR ESTABLISHED.
11. ALL BEST MANAGEMENT PRACTICES (BMPs) SHALL NOT BE REMOVED UNTIL PROJECT COMPLETION.
12. AT THE CONCLUSION OF ALL PROJECT WORK, ALL BEST MANAGEMENT PRACTICES SHALL BE REMOVED AND THE AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION, OR BETTER, UPON ACCEPTANCE OF THE PROJECT BY THE OFFICER-IN-CHARGE.

ENVIRONMENTAL NOTES

1. IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
2. IN ACCORDANCE WITH CHAPTER 11-55, WATER POLLUTION CONTROL AND CHAPTER 11-54, WATER QUALITY STANDARDS, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE BMPs TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENTS, DEBRIS AND OTHER WATER POLLUTANT INTO STATE WATERS IS PROVIDED AT ALL TIMES.
3. IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIAL, DEMOLITION WASTE AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.
4. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM THIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER OR THE STATE SHALL BE PAYABLE BY THE CONTRACTOR.
5. BEST MANAGEMENT PRACTICES (BMPs) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.

ABBREVIATIONS

A.C.	ASPHALT CONCRETE
APPROX	APPROXIMATE
BB	BOTTOM OF BANK
BC	BOTTOM OF CURB
B	BASELINE
BOT	BOTTOM
C	CENTER LINE
CLSM	CONTROLLED LOW STRENGTH MATERIAL
CONC	CONCRETE
CP	CONTROL POINT
CY	CUBIC YARD
D	DIAMETER OR DRAIN
DEMO	DEMOLISH
DIA	DIAMETER
DOT	DEPARTMENT OF TRANSPORTATION
DWG	DRAWING
E.	EAST
ELEV.	ELEVATION
EQ.	EQUAL
EXIST	EXISTING
FG	FINISH GRADE
FT	FEET
FTG	FOOTING
FW	FILTER WEAVE
GALV	GALVANIZED
GI	GALVANIZED IRON
H	HEIGHT
IN	INCH
INV	INVERT
LB	POUND
LF	LINEAR FEET
LT.	LEFT
MIN	MINIMUM
MISC	MISCELLANEOUS
ML	MATCHLINE
M.S.L.	MEAN SEA LEVEL
N.	NORTH
ND	NOMINAL DIMENSION
NO.	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OHWM	ORDINARY HIGH WATER MARK
O/S	OFFSET
OZ	OUNCE
P	PROPERTY LINE
PSI	POUNDS PER SQUARE INCH
PVC	POLYVINYL CHLORIDE
PVMT	PAVEMENT
RT.	RIGHT
S.F.	SQUARE FEET
STA.	STATION
TB	TOP OF BANK
TMK	TAX MAP KEY
TW	TOP WALL
TYP	TYPICAL

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LANDSCAPING IMPROVEMENTS TO THE HANAIEI STREAM BANK RESTORATION PROJECT HANAIEI, KAUAI, HAWAII GENERAL NOTES					
DESIGNED: NKW		SUBMITTED:			
DRAWN: NKW		DATE: MAY 2016			
CHECKED: ARN, BCW		SCALE: AS NOTED			
APPROVED:  Signature: Brandon C. Weather Expiration Date of the License: 4/30/18		MAY 13 2016 DATE		DRAWING NO. C-1	

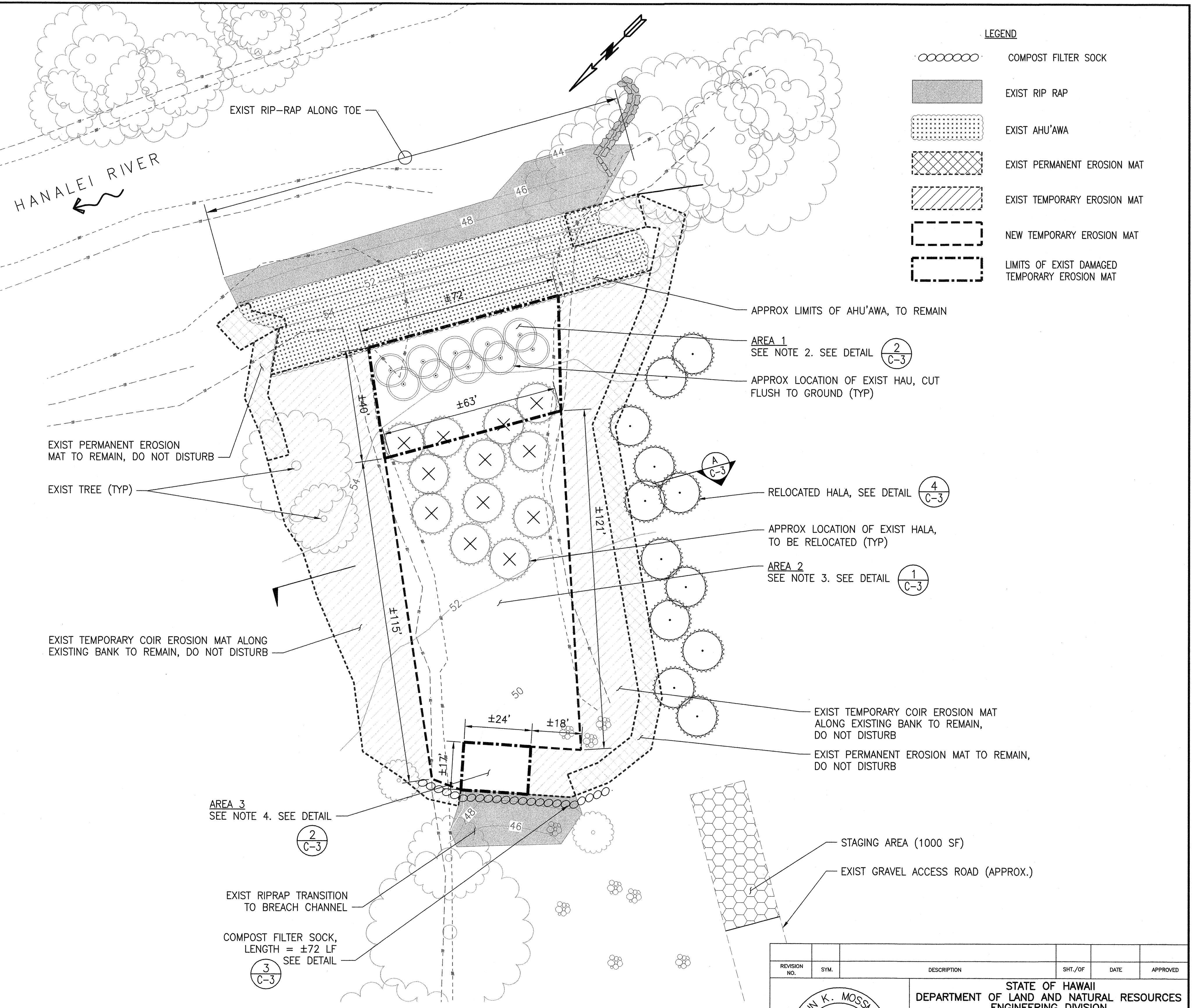
LEGEND

- COMPOST FILTER SOCK
- EXIST RIP RAP
- ▨ EXIST AHU'AWA
- ▩ EXIST PERMANENT EROSION MAT
- ▧ EXIST TEMPORARY EROSION MAT
- ▭ NEW TEMPORARY EROSION MAT
- ▭ LIMITS OF EXIST DAMAGED TEMPORARY EROSION MAT

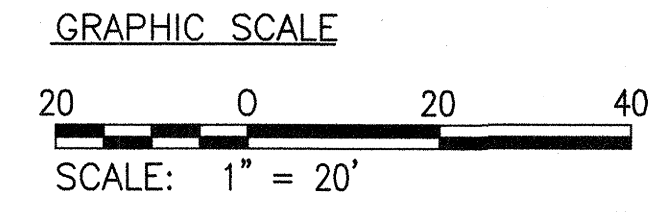
NOTES:

1. EXISTING EROSION MAT LOCATIONS AS SHOWN ON PLAN ARE APPROXIMATE AND MAY NOT REFLECT THE EXACT LOCATIONS IN THE FIELD. CONTRACTOR SHALL COORDINATE ACTUAL LOCATIONS OF THE SPECIFIED EROSION MAT AREAS IN THE FIELD WITH THE ENGINEER PRIOR TO THE START OF WORK.
2. AREA 1:
REMOVE DAMAGED EXISTING TEMPORARY COIR EROSION CONTROL MAT, STAPLES, AND LOOSE DEBRIS. CUT EXIST HAU FLUSH TO GROUND, ROOTS TO REMAIN IN PLACE. BACKFILL EXISTING GROUND TO LEVEL SUBGRADE, INSTALL 12" TOP SOIL, INSTALL NEW TEMPORARY COIR EROSION CONTROL MAT, INSTALL GRASS SEED HYDRO-MULCH.
3. AREA 2:
UNDAMAGED EXISTING TEMPORARY COIR EROSION CONTROL MAT TO REMAIN, INSTALL 12" TOP SOIL, INSTALL NEW TEMPORARY COIR EROSION CONTROL MAT, INSTALL GRASS SEED HYDRO-MULCH.
4. AREA 3:
REMOVE DAMAGED EXISTING TEMPORARY COIR EROSION CONTROL MAT, STAPLES, AND LOOSE DEBRIS. BACKFILL EXISTING GROUND TO LEVEL SUBGRADE, INSTALL 12" TOP SOIL, INSTALL NEW TEMPORARY COIR EROSION CONTROL MAT, INSTALL GRASS SEED HYDRO-MULCH.
5. UNMATERIALIZED EROSION MAT SHALL REMAIN IN PLACE. DAMAGED EROSION MAT SHALL BE COMPLETELY REMOVED. LIMITS OF REMOVED EROSION MAT SHALL BE APPROVED BY THE ENGINEER IN THE FIELD.
6. AVOID DAMAGING THE EXISTING STREAM BANK (BOTH SIDES OF BREACH).
7. THE CONTRACTOR SHALL INSPECT THE CONDITIONS OF THE EXISTING GRAVEL ACCESS ROAD WITH THE ENGINEER PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR SHALL RESTORE ANY DAMAGES TO THE EXISTING GRAVEL ACCESS ROAD DURING CONSTRUCTION TO ORIGINAL CONDITIONS OR BETTER, AND WILL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
8. THE CONTRACTOR SHALL RESTORE THE STAGING AREA TO ORIGINAL CONDITIONS OR BETTER.
9. PERFORM WORK IN ACCORDANCE WITH ALL APPLICABLE LAWS, CODES, AND REGULATIONS REQUIRED BY AUTHORITIES HAVING JURISDICTION OVER SUCH WORK AND PROVIDE FOR ALL INSPECTIONS AND PERMITS REQUIRED BY FEDERAL, STATE AND LOCAL AUTHORITIES IN FURNISHING, TRANSPORTING AND INSTALLING MATERIAL.
10. THE CONTRACTOR SHALL INSPECT AND ACCEPT THE CONDITION OF THE SITE BEFORE COMMENCING WITH ANY WORK. IF NOT ACCEPTABLE NOTIFY THE OFFICER-IN-CHARGE IN WRITING.
11. PLANT ESTABLISHMENT AND MAINTENANCE SHALL BE PROVIDED BY THE LANDSCAPE CONTRACTOR FOR A TWELVE (12) MONTH PERIOD, STARTING FROM WRITTEN NOTIFICATION BY OFFICER-IN-CHARGE AFTER ACCEPTANCE OF PRE-MAINTENANCE INSPECTION. REFER TO SPECIFICATIONS.
12. THE GRASS MIXTURE FOR HYDRO-MULCH SHALL BE AS FOLLOWS:
PER 1000-GALLON TANK:
COMMON BERMUDA GRASS SEED - 20 LBS./LOAD
ANNUAL RYE GRASS SEED - 10 LBS./LOAD
HYDRO-MULCH FIBER - 250 LBS./LOAD
13. TEMPORARY IRRIGATION TO SUPPORT NEW GRASSED AREAS SHALL BE INSTALLED FOR A PERIOD UP TO TWELVE (12) MONTHS, STARTING FROM PRE-MAINTENANCE INSPECTION AND ENDING UPON FINAL INSPECTION AND NOTIFICATION OF ACCEPTANCE BY OFFICER-IN-CHARGE.

QUANTITY	COMMON / BOTANICAL NAME	SIZE & REMARKS
+/-9,700 S.F.	COMMON BERMUDA GRASS / ANNUAL RYE GRASS MIX	HYDRO-MULCH (METHOD)
+/-12	HALA / PANDANUS TECTORIUS	25 GALLON CAN. 6' OVERALL HEIGHT



SITE PLAN
SCALE: 1" = 20'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED

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

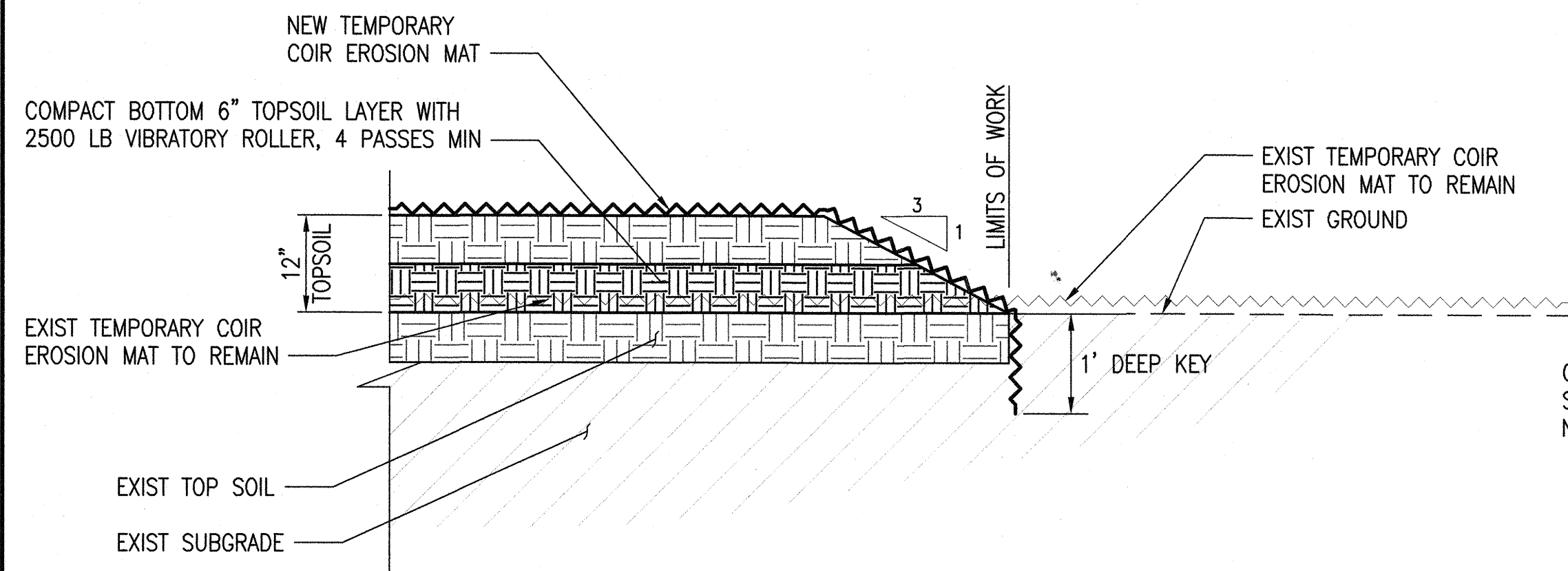
John K. Mossman
Signature
4/30/18
Expiration Date of the License

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

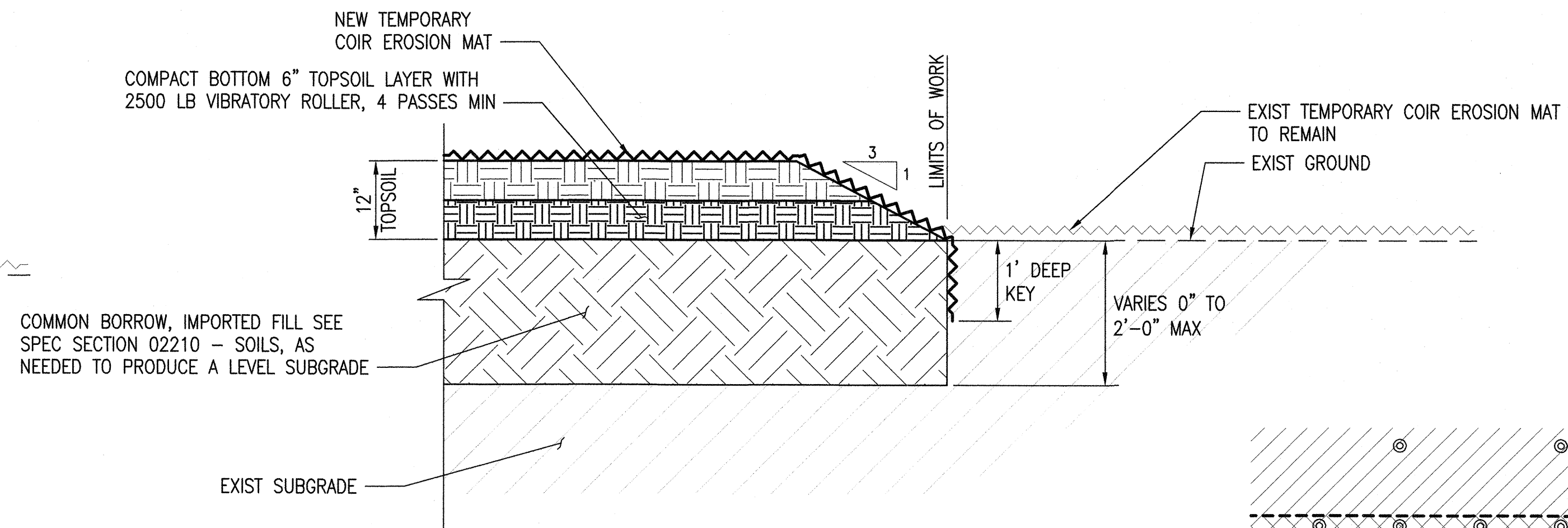
LANDSCAPING IMPROVEMENTS TO THE
HANALEI STREAM BANK RESTORATION PROJECT
HANALEI, KAUAI, HAWAII

SITE PLAN

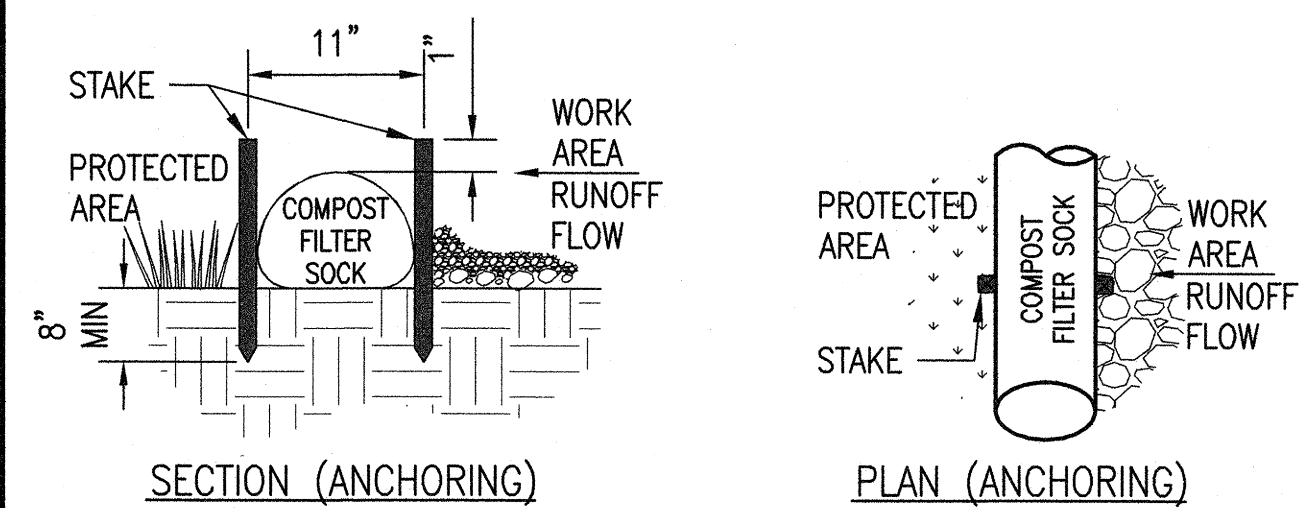
DESIGNED: NKW	SUBMITTED:
DRAWN: NKW	DATE: MAY 2016
CHECKED: ARN, BCW	SCALE: AS NOTED
APPROVED: <i>[Signature]</i>	DRAWING NO. C-2
CHIEF ENGINEER	MAY 13 2016 DATE



1 UNDAMAGED AREAS (AREA 2)
C-3 NOT TO SCALE

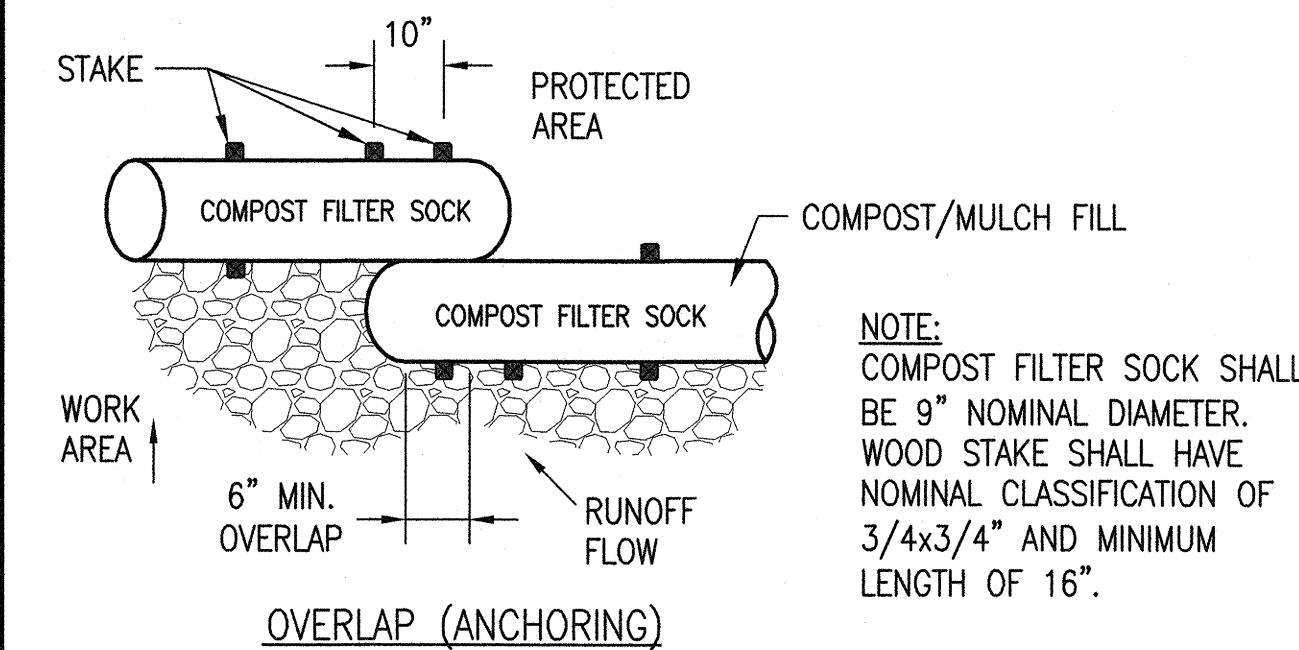


2 DAMAGED AREAS (AREAS 1 & 3)
C-3 NOT TO SCALE

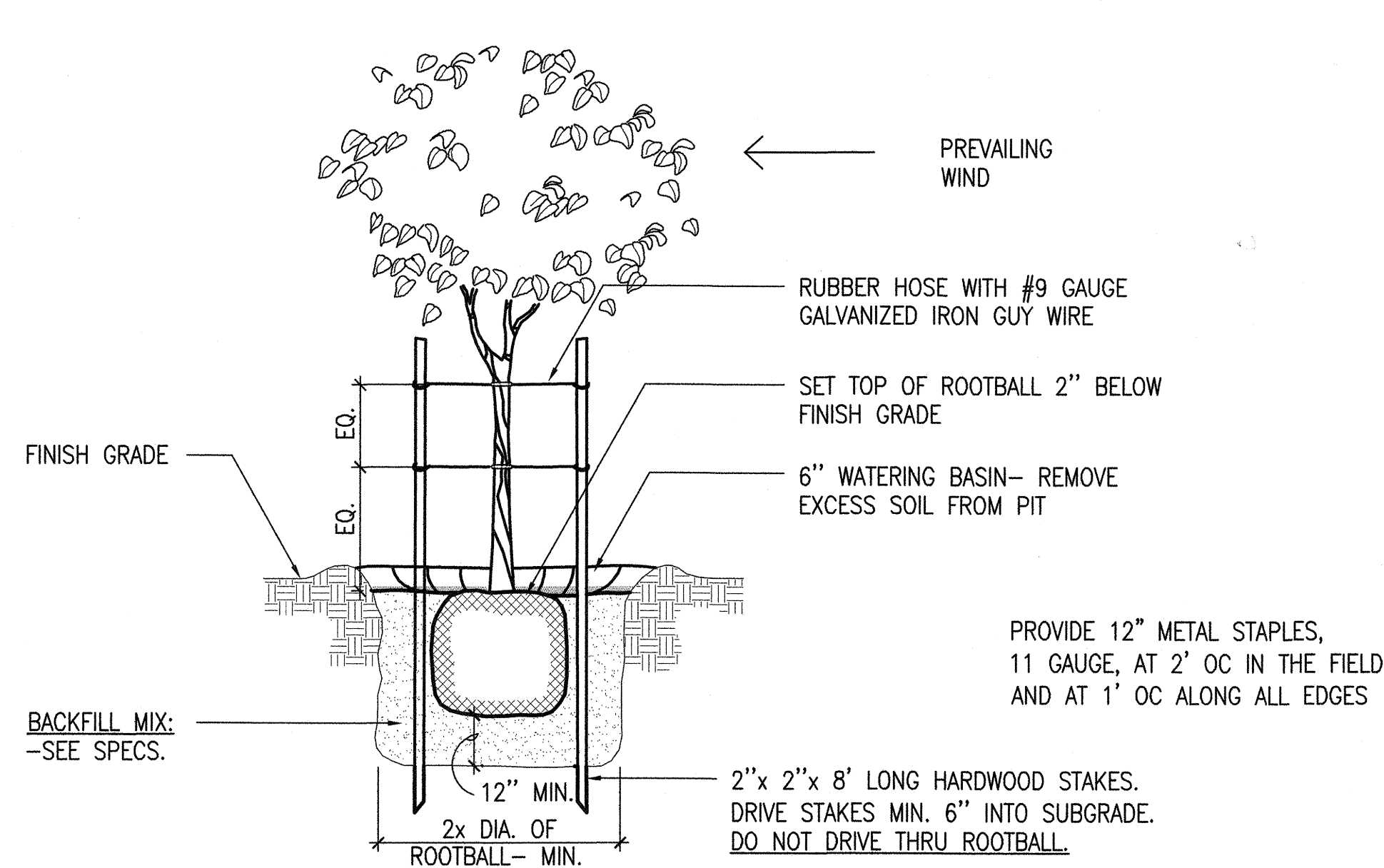


COMPOST FILTER SOCK NOTES:

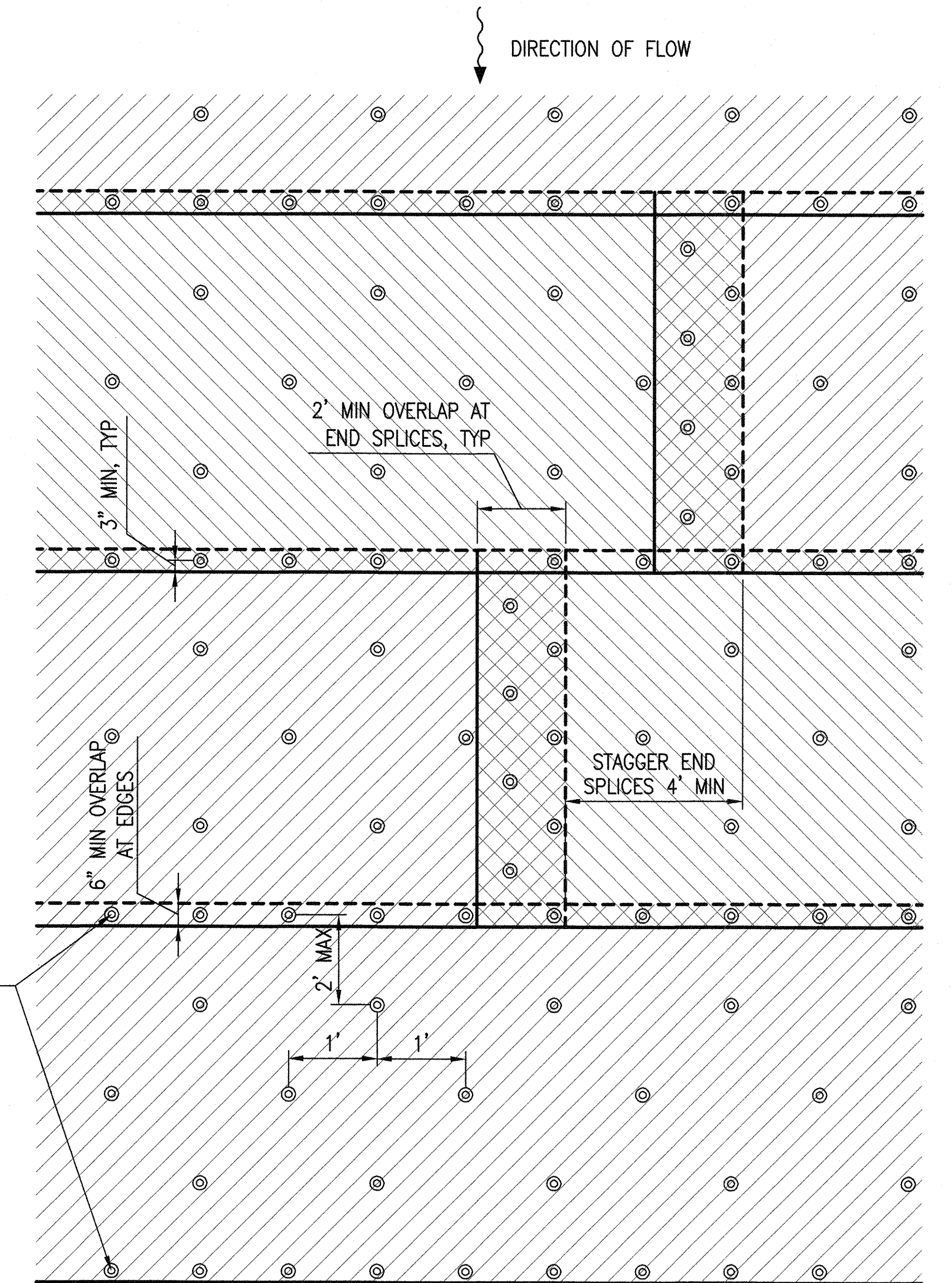
- INSTALLATION:
 - FOR MULTI-SOCK USE, PLACE SOCKS END-TO-END AND INTERLOCK THE ENDS.
 - ANCHOR FILTER SOCKS TO GROUND USING STAKES AS SHOWN. WHERE STAKING IS NOT POSSIBLE, HEAVY CONCRETE BLOCKS SHALL BE USED BEHIND THE FILTER SOCK FOR STABILIZATION DURING RAINFALL EVENTS.
- MATERIAL FOR COMPOST SOCKS MAY BE LEFT AT THE SITE AND USED AS A SOIL AMENDMENT.
- INSPECTION & MAINTENANCE: PROPERLY MAINTAIN ALL EROSION CONTROL FEATURES. INSPECT, REMOVE DEBRIS COLLECTED, AND MAKE NECESSARY REPAIRS TO ALL EROSION CONTROL MEASURES AT THE FOLLOWING INTERVALS:
 - WEEKLY DURING DRY PERIODS,
 - WITHIN 24 HOURS OF ANY RAINFALL OF 0.5 INCH OR GREATER WHICH OCCURS IN A 24-HOUR PERIOD,
 - DAILY DURING PERIODS OF PROLONGED RAINFALL,
 - WHEN EXISTING EROSION CONTROL MEASURES ARE DAMAGED OR NOT OPERATING PROPERLY AS SPECIFIED BY THE OFFICER-IN-CHARGE.
- REMOVE ALL ACCUMULATED SEDIMENT AND DEBRIS FROM VICINITY OF FILTER SOCK(S) AFTER EACH STORM EVENT, OR WHENEVER THE SEDIMENT HAS ACCUMULATED MORE THAN 1/3 OF THE SOCK HEIGHT.



3 COMPOST FILTER SOCK
C-3 NOT TO SCALE

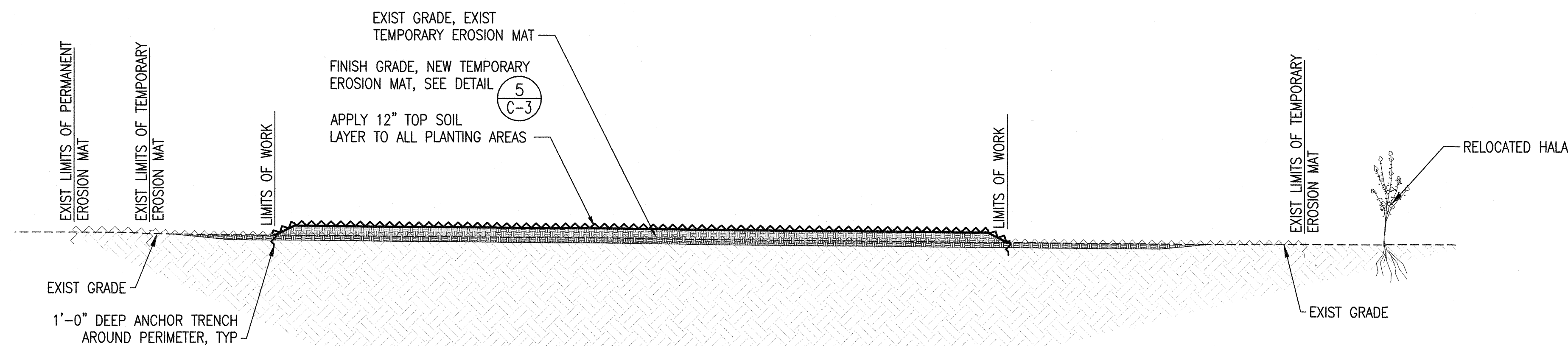


4 TREE PLANTING DETAIL
C-3 NOT TO SCALE



- NOTE:
- EROSION CONTROL MAT SHALL BE LAPPED IN DIRECTION OF FLOW (DOWNSTREAM EROSION CONTROL MAT SPlice SHALL BE INSTALLED FIRST, FOLLOWED BY UPSTREAM SPLICES).

5 TEMPORARY EROSION MAT LAYOUT
C-3 NOT TO SCALE



A TYPICAL SECTION ACROSS EXISTING EARTHEN BERM
C-3 NOT TO SCALE

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LANDSCAPING IMPROVEMENTS TO THE HANAIEI STREAM BANK RESTORATION PROJECT HANAIEI, KAUAI, HAWAII TYPICAL SECTION AND DETAILS					
DESIGNED: NKW			SUBMITTED:		
DRAWN: NKW			DATE: MAY 2016		
CHECKED: ARN, BCW			SCALE: AS NOTED		
APPROVED: <i>B. Weom</i> Signature			DRAWING NO. C-3		
4/30/18 Expiration Date of the License			MAY 13 2016 DATE		