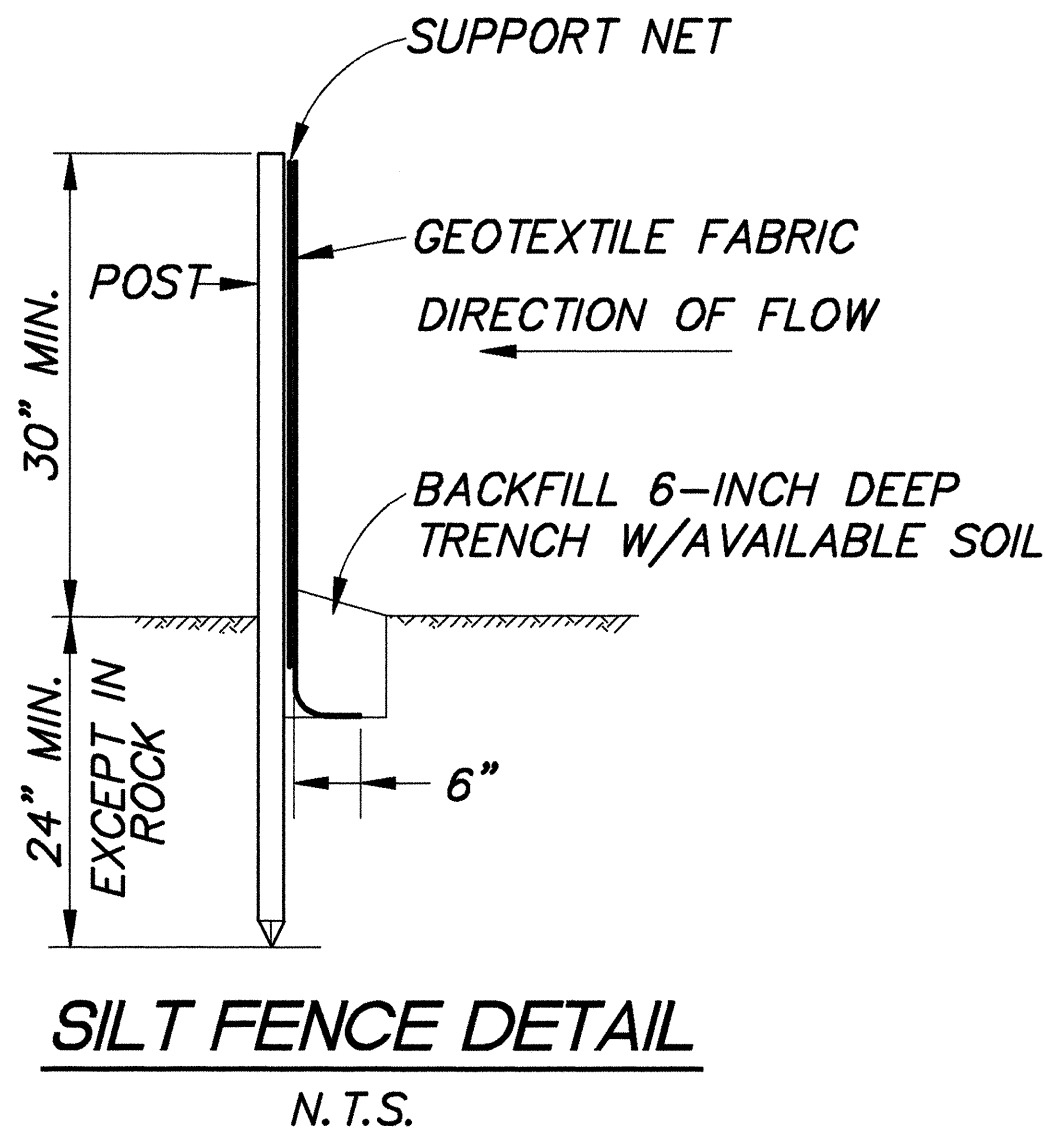
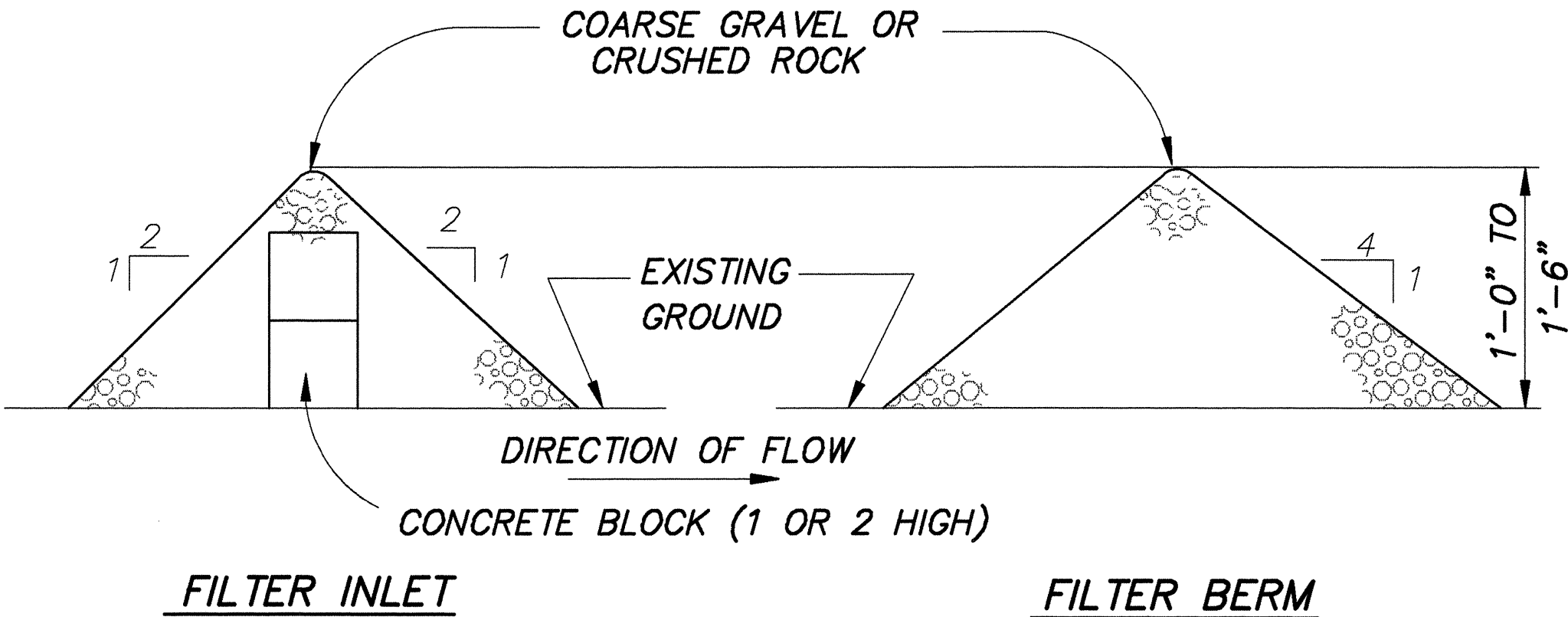


GRADING NOTES

1. ALL GRADING WORK SHALL BE DONE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 13, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEDIMENT CONTROL, OF THE REVISED ORDINANCE OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT BY HAWAII GEOTECHNICAL GROUP, INC. dba WALTER LUM ASSOC., AND C.W. ASSOC. dba GEOLABS-HAWAII DATED 5/12/94 AND APRIL 1994 RESPECTIVELY.
2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCK, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE COSTS INCURRED FOR ANY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN CHAPTER 11-60, "AIR POLLUTION CONTROL".
4. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM DAMAGING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A FILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE SITE.
6. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED AS SOON AS FINAL GRADES HAVE BEEN ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE PLANTED.
7. FILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEYED AND BENCHED.
8. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR GRADING PERMIT IS MADE. THE BORROW/DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
9. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE CHIEF ENGINEER, PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH HAWAII ADMINISTRATIVE RULES, CHAPTER 11-43, "COMMUNITY NOISE CONTROL FOR OAHU".
10. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
11. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN HAWAII ADMINISTRATIVE RULES, CHAPTER 11-55, "WATER POLLUTION CONTROL" AND CHAPTER 11-54, "WATER QUALITY STANDARDS" AND IF APPLICABLE, THE NPDES PERMIT FOR THE PROJECT.
12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTH MOVING PHASE OF THE GRADING IS INITIATED.
13. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN-PLACE AND ESTABLISHED.
14. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER TEMPORARY EROSION CONTROL PROCEDURES FOR APPROVAL PRIOR TO THE APPLICATION FOR GRADING PERMIT.
15. EXCAVATION MATERIAL ON SITE WHICH WILL BE EXPOSED FOR MORE THAN 7 DAYS SHALL BE COVERED WITH PLASTIC SHEETS WITHIN 2 DAYS OF PLACEMENT OR AS DIRECTED BE THE ENGINEER.
16. SILT FENCES SHALL BE INSTALLED ALONG THE EDGES OF OPEN CHANNELS AND DITCHES, BOTTOM OF NEW AND EXISTING SLOPES IN ORDER TO FILTER SEDIMENT FROM RUNOFF, BEFORE RUNOFF ENTERS THE CHANNELS AND DITCHES.
17. CONTRACTOR SHALL OBTAIN A GRADING PERMIT FROM THE CITY PRIOR TO THE COMMENCEMENT OF GRADING WORK.
18. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
19. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHOULD COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE BILLED TO THE PERMITEE. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
20. BENCH MARKS ARE REFERRED TO MEAN SEA LEVEL DATUM AND SHALL BE FURNISHED AND ESTABLISHED BY STATE DEPARTMENT OF TRANSPORTATION.

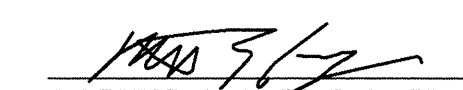


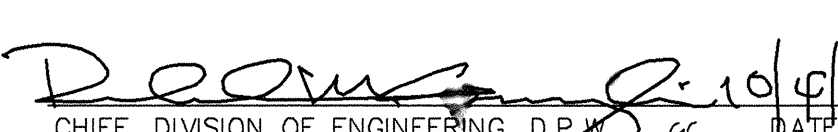
* SOME MANUFACTURERS ONLY SUPPLY SILT FENCE WITH WOODEN POSTS. PRECAUTIONS SHALL BE TAKEN TO AVOID DAMAGES FROM DRIVING INTO HARD GROUND OR TERMITES.

ESTIMATED IN-PLACE EARTHWORK QUANTITIES

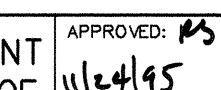
EXCAVATION = 99,910 C.Y.
EXCAVATION OF UNSUITABLE MATERIAL = 15,600 C.Y.
EMBANKMENT (IMPORTED BORROW) = 35,870 C.Y.
AREA OF GRADING: 18.5 Acres

1. THE EARTHWORK QUANTITIES ARE APPROXIMATE AND ARE SHOWN FOR PERMIT PURPOSE ONLY. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AND VERIFY THE FIGURES ABOVE.
2. THE EARTHWORK QUANTITIES ARE COMPUTED TO FINISH GRADE AS SHOWN ON THE GRADING PLAN. QUANTITIES HAVE BEEN ADJUSTED FOR NEW PAVEMENT STRUCTURE AND SUBDRAINS. NO CORRECTIONS HAVE BEEN MADE FOR CLEARING AND GRUBBING AND FOR 6" TOP SOIL.

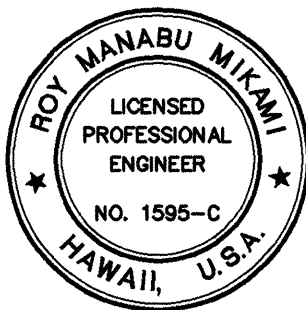
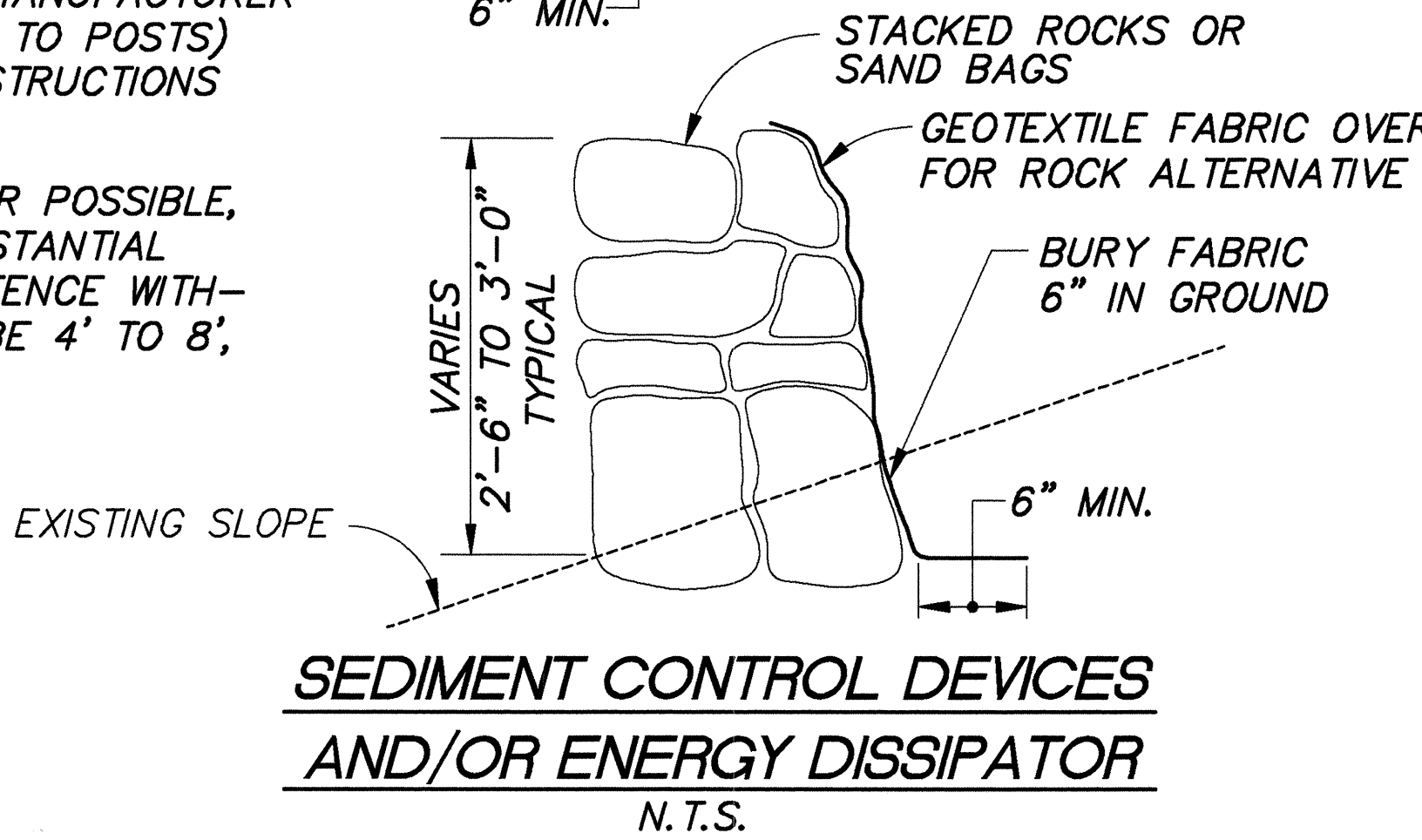
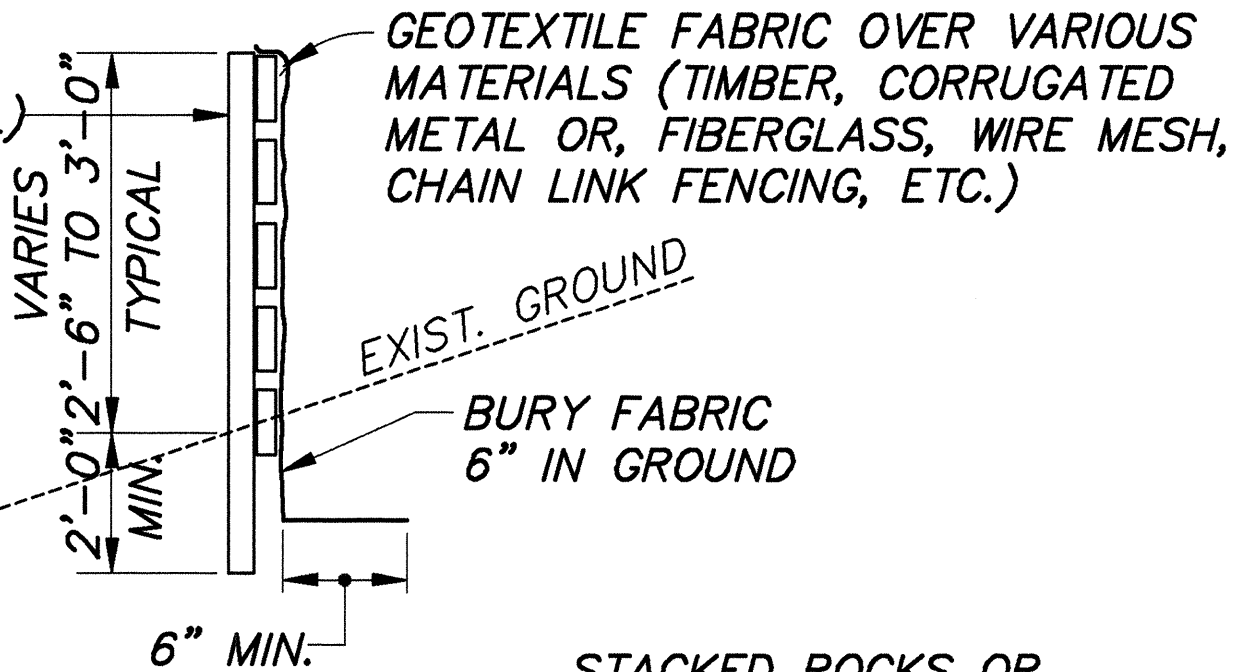
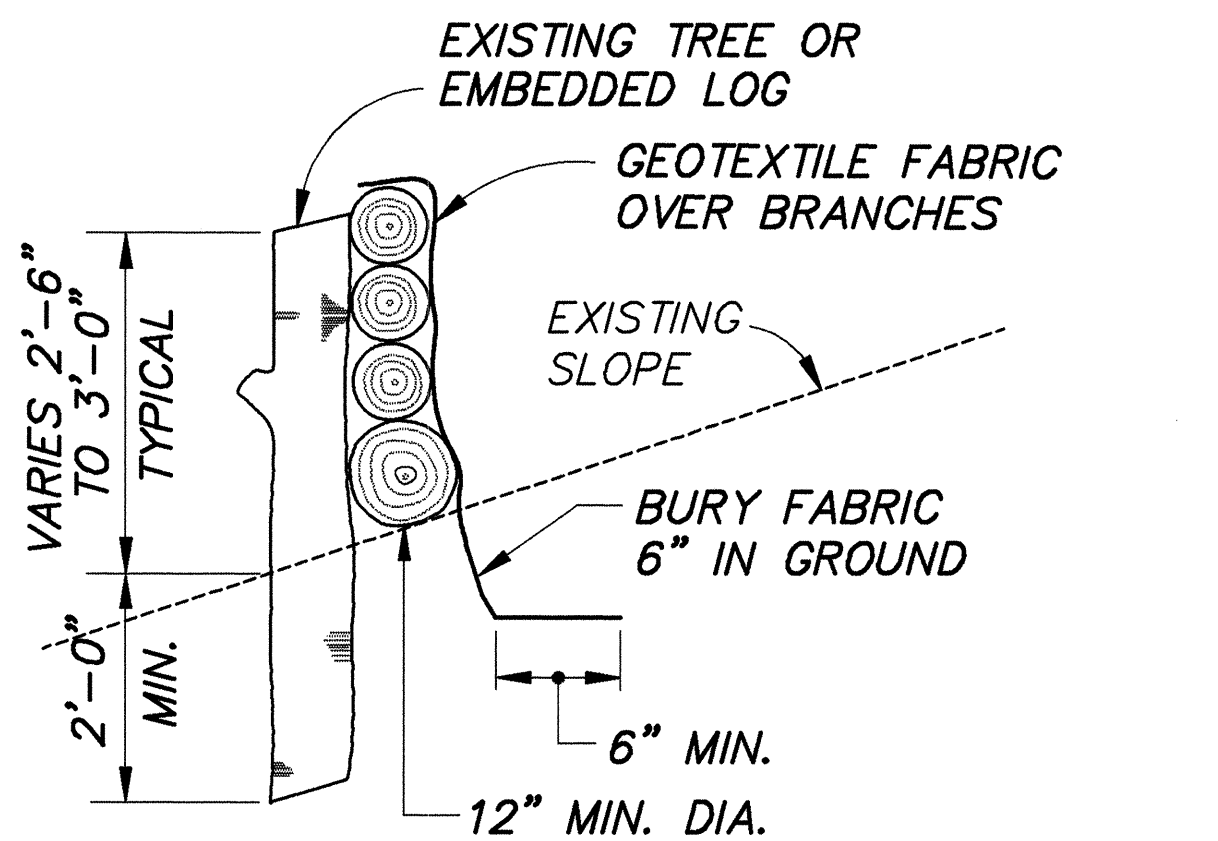
APPROVED:  10/5/94
DIRECTOR & CHIEF ENGINEER, D.P.W. DATE


 10/5/94
CHIEF, DIVISION OF ENGINEERING, D.P.W. (For Grading only) DATE

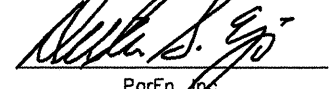
** SIGNATURES HAVE BEEN DIGITIZED

11/06/95	REVISED EXCAVATION, EMBANKMENT (IMPORTED BORROW) AND AREA OF GRADING QUANTITIES.	APPROVED:  11/24/95 D.O.E.
7/13/94	REVISED GRADING NOTES.	
6/07/94	REVISED EXCAVATION OF UNSUITABLE AND IMPORTED BORROW QUANTITIES.	
DATE	REVISION	

FED. ROAD DIS. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(26)	1994	ADD. 30	238



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
 Roy Manabu Mikami
P.E., Inc.
dba PARK ENGINEERING

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
 Dexter S. Eji
P.E., Inc.
dba PARK ENGINEERING

SIGNATURE HAS BEEN DIGITIZED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
GRADING NOTES
EROSION AND SEDIMENT CONTROL MEASURES
KAHEKILI HIGHWAY WIDENING
Likelike Hwy. to Vicinity of Haiku Road
F.A. PROJECT NO. NH-083-1(26)
SCALE: AS NOTED DATE: APRIL 1994
SHEET No. C10 OF C19 SHEETS
AS-BUILT C.O. ADD. 30

DATE	DATE	DATE	DATE	DATE	DATE
DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY	DESIGNED BY
CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY	CHECKED BY
ORIGINAL PLAN	ORIGINAL PLAN	ORIGINAL PLAN	ORIGINAL PLAN	ORIGINAL PLAN	ORIGINAL PLAN
NO.	NO.	NO.	NO.	NO.	NO.