

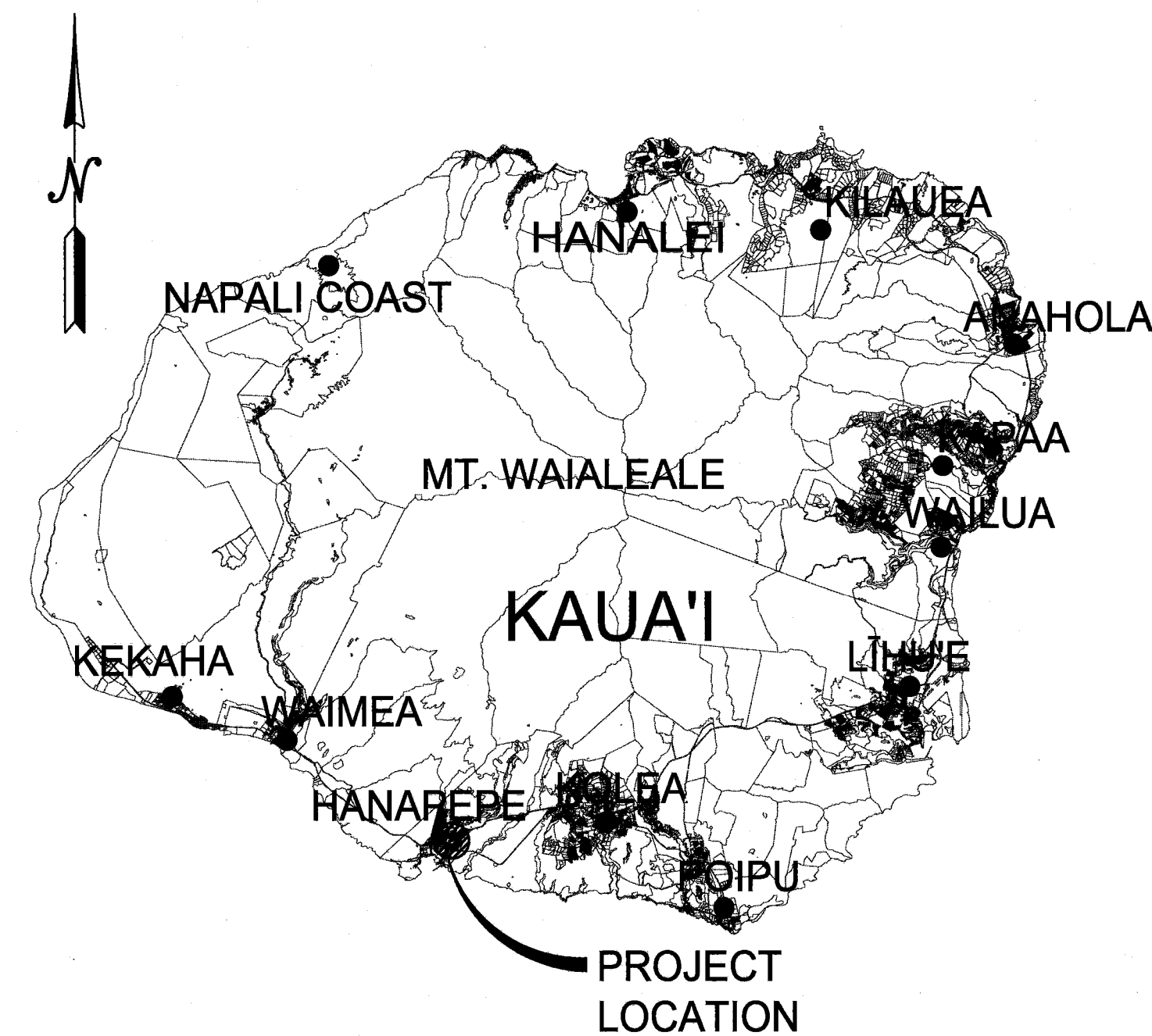
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

FOR
LAND DIVISION

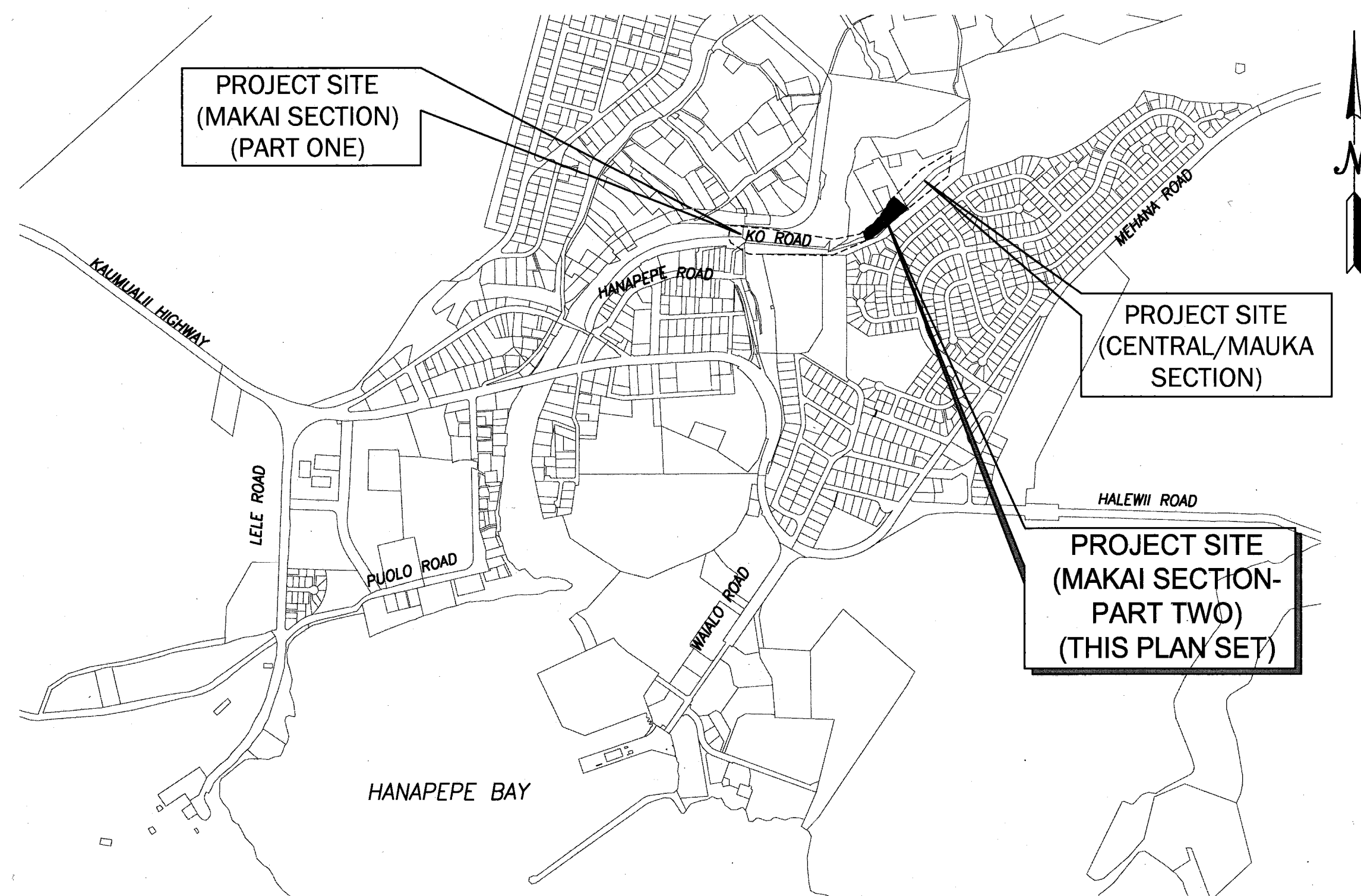
JOB NO. J45CK46A-2

KO ROAD MAKAI PART 2 ROCKFALL MITIGATION

HANAPEPE, KAUAI COUNTY, HAWAII
TMK: (4) 1-9-03: 01, 02, 03 & 04



LOCATION MAP
NOT TO SCALE



VICINITY MAP
NOT TO SCALE

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APPROVED:

CARY S. CHANG, PE
CHIEF ENGINEER
ENGINEERING DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

5/3/16
DATE

RUSSELL Y. TSUJI
ADMINISTRATOR
LAND DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

5/2/16
DATE

DRAWING NO.
T-1

NOTES FOR GENERAL CONSTRUCTION:

- 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" DATED SEPTEMBER 1984 AND ITS AMENDMENTS OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI AND HAWAII. THE STANDARD DETAILS ARE AVAILABLE AT THE COUNTY OF KAUAI CLERK'S OFFICE.
- NO GRADING BETWEEN 7:00 P.M. TO 7:00 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.
- 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.
- 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 SHALL BE RESUBMITTED TO ALL REVIEWING AND APPROVING AGENCIES FOR REVIEW, APPROVAL AND RECERTIFICATION OF THE PLAN.
- ALL GRADING, GRUBBING AND STOCKPILING WORK SHALL BE PERFORMED IN ACCORDANCE WITH COUNTY OF KAUAI ORDINANCE NO. 808.
- 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.
- DURING CLEANING OPERATIONS, THE CONTRACTOR SHALL SUPPLY A WATER TRUCK FOR DUST CONTROL PURPOSED UNTIL VEGETATION HAS RE-ESTABLISHED ITSELF. EXCESS WATER, INCLUDING SILT AND DIRT SHALL NOT BE ALLOWED TO RUN-OFF THE PROPERTY.
- BEST MANAGEMENT PRACTICES (BMP'S) SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY ROCK AND DEBRIS FALLS, SEDIMENTATION, EROSION OR DUST TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
- SURVEYS SHALL BE DONE UNDER THE SUPERVISION OF A LAND SURVEYOR LICENSED IN THE STATE OF HAWAII.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHT TIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 PM TO 4:30 AM. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING BY HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) ON HOW TO HANDLE ANY DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.
- PRIOR TO STARTING ANY EXCAVATION ACTIVITIES, THE CONTRACTOR SHALL CONTACT THE HAWAII ONE CALL CENTER AT 1-866-423-7287.

HISTORICAL PRESERVATION NOTES:

- SHOULD HISTORIC REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL CORDON OFF THE AREA AND IMMEDIATELY NOTIFY THE PLANNING DEPARTMENT AT (808) 241-4050 AND THE STATE HISTORIC PRESERVATION DIVISION AT (808) 692-8015, WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND THE APPROPRIATE MITIGATION MEASURES IF NECESSARY. IF HUMAN BURIALS ARE FOUND, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE COUNTY OF KAUAI POLICE DEPARTMENT.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES:

- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY.
- 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 AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR'S ATTENTION IS DIRECTED TO TITLE 11, HAWAII ADMINISTRATIVE RULES, CHAPTER 46, "COMMUNITY NOISE CONTROL" IN WHICH MAXIMUM ALLOWABLE NOISE LEVELS HAVE BEEN SET. IF THE CONSTRUCTION ACTIVITIES FOR THIS PROJECT WILL EXCEED THE ALLOWABLE NOISE LEVELS, THE CONTRACTOR WILL BE REQUIRED TO OBTAIN A PERMIT FROM THE DIRECTOR OF THE DEPARTMENT OF HEALTH. THE CONTRACTOR SHALL OBTAIN A COPY OF CHAPTER 46 AND BECOME FAMILIAR WITH THE NOISE LEVEL RESTRICTIONS AND THE PROCEDURES FOR OBTAINING A PERMIT FOR CONSTRUCTION ACTIVITIES.

NOTES FOR CONSTRUCTION WITHIN COUNTY RIGHT-OF-WAY:

- ALL DAMAGED PAVEMENT SHALL BE RESTORED TO ITS ORIGINAL CONDITION IN ACCORDANCE WITH COUNTY OF KAUAI, "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2005" AND ITS AMENDMENTS, WITH 2" MINIMUM HOT MIXED ASPHALT CONCRETE PAVEMENT (STATE DESIGN MIX V) AND 8" MINIMUM BASE COURSE AND THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984", AS AMENDED BY THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU, AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
- THE CONTRACTOR SHALL PROVIDE, INSTALL, MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION AND FOR THE CONVENIENCE AND SAFETY OF THE PUBLIC TRAFFIC. ALL SUCH PROTECTIVE FACILITIES, AND PRECAUTIONS TO BE TAKEN SHALL CONFORM WITH RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND U.S. FEDERAL HIGHWAY ADMINISTRATION MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS DATED 2009 AND ITS AMENDMENTS.
- THE CONTRACTOR SHALL, WHENEVER NECESSARY, PROPERLY SHEET AND BRACE ALL EXCAVATIONS TO RENDER IT SECURE.
- A. DRIVEWAYS SHALL BE KEPT OPEN UNLESS OWNERS OF THE ABUTTING LOTS USING THESE RIGHT-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
B. ALL WORK INCLUDING REPAIR OF DAMAGED PAVEMENT AND SHOULDERS SHALL BE INSPECTED AND APPROVED BY THE DEPARTMENT OF PUBLIC WORKS. ALL UNAPPROVED WORK SHALL BE CONSIDERED UNACCEPTABLE AND SHALL BE REWORKED AND CORRECTED AS DIRECTED BY THE DEPARTMENT OF PUBLIC WORKS, AT THE CONTRACTOR'S EXPENSE.
C. DAMAGED SHOULDERS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN EXISTING CONDITION.
D. WORK ON A PUBLIC STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:00 A.M. TO 3:30 P.M. MONDAY THROUGH FRIDAY, EXCEPT ON HOLIDAYS RECOGNIZED BY THE COUNTY OF KAUAI, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF KAUAI.
E. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPENED TO PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC.
F. NO MATERIAL AND/OR EQUIPMENT SHALL BE STOCKPILED OR OTHERWISE STORED WITHIN COUNTY RIGHT-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE COUNTY ENGINEER.
G. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS SO AS TO OFFER THE LEAST POSSIBLE OBSTRUCTIONS AND INCONVENIENCE TO THE PUBLIC AND HE SHALL HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAT HE CAN PROSECUTE PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC.
H. ALL EXISTING DRAINAGE FLOW CONDITIONS SHALL BE MAINTAINED.
- THE OWNER SHALL RETAIN THE SERVICES OF A GEOTECHNICAL ENGINEER FOR QUALITY CONTROL INCLUDING ANCHOR TESTING, SCALING, ETC. CONTRACTOR SHALL FULLY COOPERATE WITH ENGINEER PER PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL HOLD A PRE-CONSTRUCTION MEETING WITH THE CONSTRUCTION INSPECTION AND DESIGN SECTION OF THE DEPARTMENT OF PUBLIC WORKS BEFORE COMMENCING ANY WORK.
- THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION TO PRESERVE BENCHMARKS (SURVEY MONUMENTS) WHENEVER THE CENTER OF A SURVEY MONUMENT IS LESS THAN THREE (3) FEET FROM THE EDGE OF CONSTRUCTION. THE CONTRACTOR SHALL RETAIN A LICENSED SURVEYOR TO REFERENCE THE LOCATION OF SAID SURVEY MONUMENT.
- BENCHMARKS THAT ARE DISTURBED OR DESTROYED SHALL BE RESTORED UNDER A LICENSED LAND SURVEYOR'S DIRECTION. COPIES OF FIELD NOTES, DESCRIPTIONS AND NEW VALUES OF THE NEW BENCH MARK SHALL BE SENT TO THE DEPARTMENT OF PUBLIC WORKS SURVEY SECTION FOR REVIEW AND APPROVAL PRIOR TO FINAL ACCEPTANCE OF THE PROJECT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL OVERTIME OR NIGHT WORK PAYMENTS FOR COUNTY'S STAFF AND INSPECTION PERSONNEL INCLUDING CONSULTANTS WHEN THE CONTRACT REQUIRES OVERTIME OR NIGHT WORK TO BE PERFORMED, OR DIRECTS THE CONTRACTOR TO WORK ADDITIONAL SHIFTS OR OVERTIME FOR COUNTY'S CONVENIENCE.
- IF SYSTEM CONDITIONS REQUIRE NON-EMERGENCY NIGHTTIME WORK DURING THE AUTUMN SEABIRD FALL SEASON (SEPTEMBER 15 THROUGH DECEMBER 15), USE OF LIGHTING SHALL BE RESTRICTED BETWEEN 9:00 PM TO 4:30 AM. IF LIGHTING OF THE WORK AREA IS REQUIRED IN SUCH SITUATION, ALL LIGHTS SHALL BE SHIELDED (MINIMUM LIGHT SPILL TOWARDS THE SKY) AND DIRECTED DOWNWARDS TO THE MAXIMUM EXTENT PRACTICABLE. MINIMUM REQUIREMENTS FOR LIGHTING FOR HIOSH AND OSHA SHALL BE PROVIDED AND ASSURED BY THE CONTRACTOR. THE CONTRACTOR SHALL TRAIN ALL EMPLOYEES WORKING AT NIGHT (RECORDS RETAINED BY THE CONTRACTOR) IN HOW TO HANDLE ANY RETRIEVED DOWNED BIRDS AND SHALL HAVE APPROPRIATE EQUIPMENT AS APPROVED BY SAVE OUR SHEARWATERS (SOS) ON SITE TO HOLD AND TRANSPORT ANY RETRIEVED BIRDS TO AN SOS FACILITY. THIS REQUIREMENT DOES NOT ALLOW LIGHTING AS MAY BE RESTRICTED BY OTHER GOVERNMENT AGENCIES.

SLOPE SCALING NOTES:

- SLOPE SCALING ACTIVITIES, INCLUDING REMOVING DEBRIS FROM THE SITE AT THE END OF THE SLOPE SCALING SHIFT, SHALL BE CONDUCTED WITHIN THE TIMES AND DURATION SPECIFIED IN THE CONTRACT DOCUMENTS.
- THE CONTRACTOR SHALL SUBMIT A WORK PLAN FOR APPROVAL BY THE ENGINEER. THE WORK PLAN SHALL INCLUDE TEMPORARY MEASURES TO PROVIDE ROCK FALL FROM ENTERING THE RIVER.
- EACH SLOPE SCALING CREW SHALL CONSIST OF ONE SCALING SUPERVISOR AND TWO (2) EXPERIENCED SLOPE SCALERS.
- THE CONTRACTOR SHALL DETERMINE THE NUMBER OF SLOPE SCALING CREWS TO EMPLOYED ON THIS PROJECT BASED ON THE EXTENT OF THE SLOPE SCALING TO PERFORMED AND THE DURATION AVAILABLE FOR PERFORMANCE OF THE WORK.
- SLOPE SCALING WORK SHALL BEGIN ONLY AFTER PUBLIC PROTECTION MEASURES ARE PUT IN PLACE AT THE BEGINNING OF EACH SLOPE SCALING SHIFT. THE CONTRACTOR SHALL PROTECT THE PUBLIC FROM ANY ROCKFALL HAZARDS AT ALL TIMES DURING THE CONTRACTOR'S ACTIVITIES BY INSTALLING TEMPORARY IMPACT FENCES, BARRICADES, OR INTERMITTENT ROAD CLOSURES. TEMPORARY PROTECTION MEASURES ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- START SLOPE SCALING AT THE TOP OF THE SLOPE AND PROCEED DOWN SLOPE, REMOVING LOOSE ROCK AND OTHER DEBRIS AS THE WORK PROGRESSES. ALL MATERIAL ON THE SLOPE FACE THAT IS LOOSE, HANGING OR CREATES A SAFETY HAZARD TO THE PUBLIC MUST BE REMOVED OR STABILIZED, TO THE ENGINEER'S SATISFACTION, DURING OR ON COMPLETION OF THE SECTION OF SLOPE.
- UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER, THE CONTRACTOR SHALL EXERCISE EXTRA CARE IN THE SLOPE SCALING WORK AND SHALL AVOID OVER-STEEPENING THE SLOPE FACE THAT MAY CAUSE INSTABILITY OF THE SLOPE FACE. IF DURING THE SLOPE SCALING WORK, THE CONTRACTOR ENCOUNTERS UNSAFE SLOPE CONDITIONS THAT MAY CONSTITUTE A POTENTIAL SLIDE, IMMEDIATELY NOTIFY THE ENGINEER.
- BLOCKS OF ROCKS OR DEBRIS THAT HANG UP ON THE SLOPE DURING SCALING OPERATION SHALL BE REMOVED UPON COMPLETION OF THE FIRST PASS OF THE SLOPE SCALING. THE CONTRACTOR SHALL CONTINUE SCALING OF THE SLOPES UNTIL THE SLOPE SCALING HAS BEEN COMPLETED TO THE SATISFACTION OF THE ENGINEER.
- LOOSE BOULDERS WITH LARGEST DIMENSION NOT EXCEEDING 4.0 FEET ARE CONSIDERED PART OF SCALING OPERATION. SUCH BOULDERS SHALL BE SCALED, REMOVED FROM THE PROJECT SITE, OR STABILIZED AS DIRECTED BY THE ENGINEER.
- THE CONTRACTOR SHALL CLEAR THE AREA OF ROCKS AND DEBRIS AT THE END OF EACH SLOPE SCALING SHIFT.
- REMOVED ROCKS AND DEBRIS SHALL BE DISPOSED OF IN AN OFF-SITE DISPOSAL LOCATION IN COMPLIANCE WITH LOCAL REQUIREMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AN ACCEPTABLE WASTE SITE, SECURE ANY PERMITS AND COMPLY WITH ALL LAWS AND REQUIREMENTS.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
		STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION			
		KO ROAD MAKAI PART 2 ROCKFALL MITIGATION TMK:(4) 1-9-03: 01, 02, 03 & 04 Hanapepe, Kauai County, Hawaii			
		GENERAL NOTES - 1			
		LYON45 North King Street, Suite 501 Honolulu, HI 96817-1506 Phone: (808) 586-8821 E-mail: aaron@lyonllc.com			
		DESIGNED: DRAWN: R/JG CHECKED: APPROVED: <i>Cy Ly</i> CHIEF ENGINEER	SUBMITTED: <i>✓</i> DATE: 04-25-2016 SCALE: MAY - 2 2016 DATE: _____		
		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.			DRAWING NO. C-1.1

GRADING NOTES:

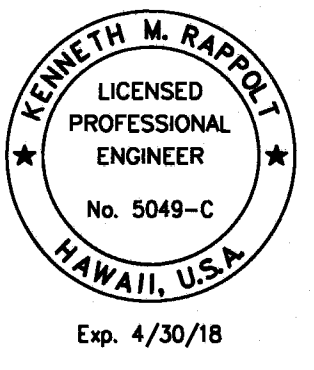

1. ALL GRADING, GRUBBING, AND STOCKPILING WORK SHALL BE DONE IN ACCORDANCE WITH THE COUNTY OF KAUAI ORDINANCE NO. 808, AS AMENDED, AND THE CONTRACT SPECIFICATIONS.
2. NO GRADING WORK BETWEEN 7:00 P.M. TO 7:00 A.M. ON ANY GIVEN DAY OR SATURDAYS, SUNDAYS OR HOLIDAYS WITHOUT WRITTEN PERMISSION FROM THE COUNTY ENGINEER AND THE STATE DEPARTMENT OF HEALTH.
3. ISSUANCE OF A GRADING, GRUBBING OR STOCKPILE PERMIT SHALL BE DEEMED TO INCLUDE THE RIGHT OF THE COUNTY ENGINEER OR HIS REPRESENTATIVE TO ENTER UPON THE PROPERTY TO INSPECT OPERATIONS.
4. 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 SHALL BE AT NO ADDITIONAL COST TO THE OWNER AND COUNTY OF KAUAI.
5. ANY REMAINING SEDIMENT AND DEBRIS IN WATERWAYS AND DRAINAGE FACILITIES SHALL BE REMOVED UPON COMPLETION OF GRADING OPERATION.
6. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATER COURSES OUTSIDE WORK LIMITS. SHOULD SUCH VIOLATIONS OCCUR, THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE COUNTY ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
7. 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" AND THE SEDIMENT AND EROSION CONTROL ORDINANCE OF THE COUNTY OF KAUAI.
8. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 47, "WATER POLLUTION CONTROL" AND CHAPTER 37A, "WATER QUALITY STANDARDS" CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, AND ALL SUBSEQUENT AMENDMENTS.
9. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE SEDIMENT AND EROSION CONTROL ORDINANCE TO PREVENT VIOLATION 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.
10. IN ACCORDANCE WITH CHAPTER 43, SECTION 7, AIR POLLUTION REGULATIONS OF THE STATE DEPARTMENT OF HEALTH, BURNING OF GRUBBED MATERIAL ON THE PROJECT SITE SHALL NOT BE PERMITTED.
11. GRUBBED MATERIAL, DEMOLITION WASTES, AND CONSTRUCTION WASTES SHALL BE DISPOSED OF AT AN AUTHORIZED SITE HAVING A DEPARTMENT OF HEALTH SOLID WASTE MANAGEMENT PERMIT AND SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY OF KAUAI. THE DISPOSAL SITE SHALL ALSO COMPLY WITH THE SEDIMENT AND EROSION CONTROL ORDINANCE NO. 808. THE CONTRACTOR SHALL INFORM THE COUNTY ENGINEER OF THE LOCATION OF THE DISPOSAL SITE(S). THE DISPOSAL SITE(S) MUST ALSO FULFILL THE REQUIREMENTS OF THE SEDIMENT AND EROSION CONTROL ORDINANCE.
12. 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 LOCATION AND DEPTH OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING 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.
13. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATER 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.
14. ALL 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.
15. 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.
16. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.
17. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
18. 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 PERMITTEE. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
19. FOR BENCH MARK, SEE SHEET C-2 OVERALL SITE PLAN AND PHASING.

ABBREVIATIONS:

AC, A/C	ASPHALTIC CONCRETE	MH	MANHOLE
APPROX	APPROXIMATE	MIN	MINIMUM
ARV	AIR RELIEF VALVE	M/N	METER NUMBER
⊙	AT	MON	MONUMENT
		MSL	MEAN SEA LEVEL
BV	BOTTOM VERTICAL	MTR	METER
BVC	BEGIN VERTICAL CURVE	MULT	MULTIPLE
BF	BOTTOM OF FOOTING		
		O/S	OFFSET
⊕	CENTERLINE	PC	POINT OF CURVATURE
C&C	CITY AND COUNTY	PT	POINT OF TANGENCY
CI	CAST IRON	PL	PROPERTY LINE
CL	CLASS	PAVT	PAVEMENT
CLR	CLEARANCE	PI	POINT OF INTERSECTION
CO	CLEANOUT	PIVC	POINT OF INTERSECTION OF VERTICAL CURVE
CONC	CONCRETE	PROF	PROFILE
CONN	CONNECTION	PSI	PER SQUARE INCH
CORP	CORPORATION	PVC	POLYVINYL CHLORIDE
CU	COPPER		
CRM	CEMENT RUBBLE MASONRY	RPM	RAISED PAVEMENT MARKING
		RCP	REINFORCED CONCRETE PIPE
D	DRAIN	RD	ROAD
DEFL	DEFLECTION	RECONN	RECONNECT
DET	DETAIL	REINF	REINFORCED
DI	DUCTILE IRON, DRAIN INLET	REQ'D	REQUIRED
DIP	DUCTILE IRON PIPE	RT	RIGHT
DMH	DRAIN MANHOLE	R/W	RIGHT-OF-WAY
DOW	DEPARTMENT OF WATER	S	SLOPE, SPREAD
DPW	DEPARTMENT OF PUBLIC WORKS	SDMH	STORM DRAIN MANHOLE
DRWY	DRIVEWAY	SHT	SHEET
DT	DETENTION BASIN	SL	STREET LIGHT
		ST	STREET
E	EAST, ELECTRICAL	STA	STATION
ED	EXIST DRAIN	STD	STANDARD
ELEV	ELEVATION	STRUCT	STRUCTURAL
EVC	END VERTICAL CURVE		
EW	EXIST WATER	TE	TOP ELEVATION
EXIST, EX	EXIST, EXISTING	TMK	TAX MAP KEY
		TS	TOP STEM
FH	FIRE HYDRANT	TV	TOP VERTICAL
		TYP	TYPICAL
GV	GATE VALVE		
		UC	UNDERGROUND CABLE
HGL	HYDRAULIC GRADE LINE	UE	UNDERGROUND ELECTRICAL
HT, H	HEIGHT	UT	UNDERGROUND TELEPHONE
HP	HIGH POINT		
HORIZ/HOR	HORIZONTAL	VB	VALVE BOX
HTCO	HAWAIIAN TELCOM	VC	VERTICAL CURVE
HY, HYD	HYDRANT	V, VERT	VERTICAL
INV	INVERT	W	WATER, WEST
IPT	INTERNAL PIPE THREAD	W/	WITH
		WL	WATER LINE
JKT	JACKET	WM	WATER METER
		WMH	WATER MANHOLE
L	LENGTH	WP	WORKING PRESSURE
LAT	LATERAL	WV	WATER VALVE
LF	LINEAR FEET	WVHH	WATER VALVE HAND HOLE
LP	LIGHT POLE / LOW POINT		
LT	LEFT		

LEGENDS:

-----	PROPERTY LINE
×12.320	SPOT ELEVATION, EXISTING
----- 25 -----	EXIST. CONTOUR MAJOR
----- 20 -----	EXIST. CONTOUR MINOR
~~~~~	RUNOFF FLOW

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
		STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION <b>KO ROAD MAKAI PART 2 ROCKFALL MITIGATION</b> TMK:(4) 1-9-03: 01, 02, 03 & 04 Hanapepe, Kauai County, Hawaii			
		GENERAL NOTES - 2			
					
DESIGNED: <i>[Signature]</i>		SUBMITTED: <i>[Signature]</i>			
DRAWN: R/JG		DATE: 04-25-2016			
CHECKED: <i>[Signature]</i>		SCALE:			
APPROVED: <i>[Signature]</i>		DATE: MAY - 2 2016		DRAWING NO. C-1.2	
CHIEF ENGINEER					

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

JOB NO. J45CK46A-2 SHEET NO. 3 OF 7 SHEETS



GENERAL NOTES:

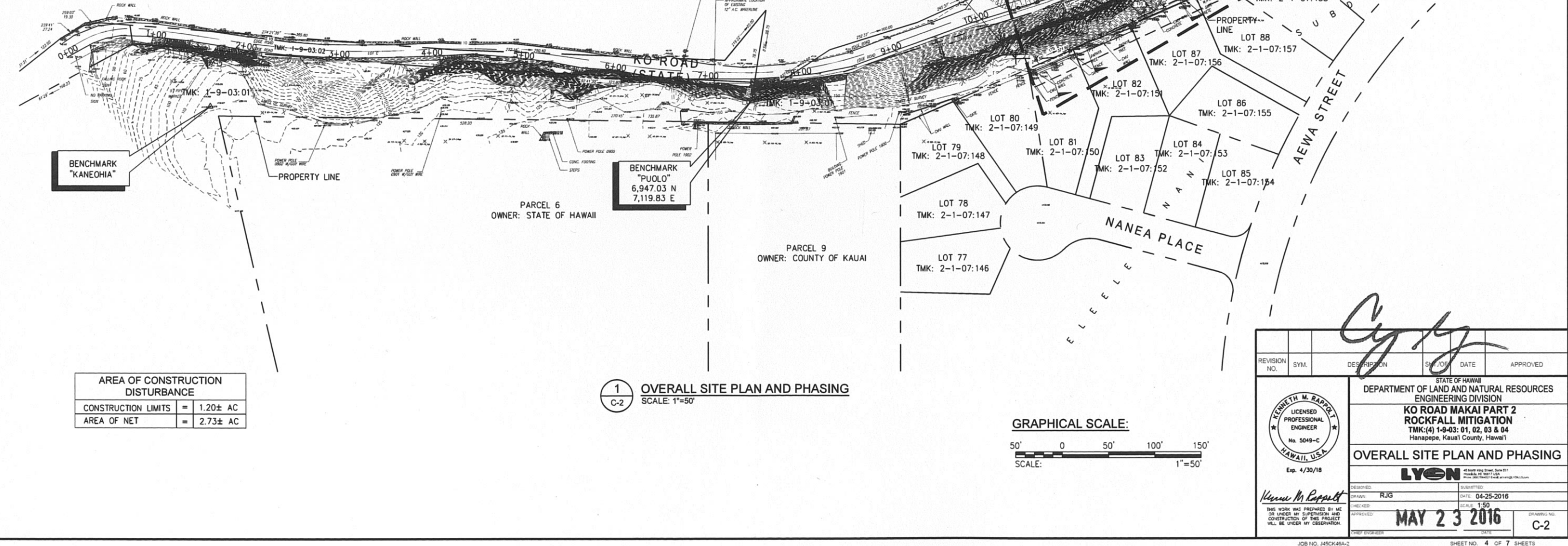
1. CONTRACTOR SHALL LIMIT CONSTRUCTION ACTIVITY TO THE CONSTRUCTION ZONE SHOWN ON THE DRAWINGS OR ALLOWED BY THE CONTRACTING OFFICER. CONTRACTOR SHALL RESTORE ALL DAMAGED AREAS TO CONDITIONS EQUAL TO OR BETTER THAN CONDITIONS AT THE START OF CONSTRUCTION.
2. TOPOGRAPHIC SURVEYS WERE CONDUCTED BY ESAKI SURVEYING & MAPPING, INC. IN JANUARY 2011. ORIGIN OF AZIMUTHS AND COORDINATES ARE REFERRED TO STATE PLANE NAD 83, ZONE 4. DATUM IS MEAN SEA LEVEL.
3. THE CONTRACTOR SHALL TAKE MEASURES TO ALLOW TRAFFIC ON THE CROSS ROAD DURING CONSTRUCTION, INCLUDING, BUT NOT LIMITED TO DEVELOPING, IMPLEMENTING AND MAINTAINING TRAFFIC CONTROL MEASURES APPROVED BY COUNTY.
4. CONTRACTOR SHALL PROTECT OR RESTORE ALL SURFACE AND SUBSURFACE UTILITIES, (E.G. GAS WELLS, GAS PROBES, FENCES, MONITORING WELLS, ETC.) AND OTHER FACILITIES ENCOUNTERED DURING CONSTRUCTION, WHETHER SHOWN ON THE DRAWINGS OR NOT.
5. THE LOCATION AND ELEVATIONS OF UNDERGROUND OR EXPOSED EXISTING STRUCTURES AND UTILITIES ARE NOT WARRANTED TO BE EXACT NOR IS IT WARRANTED THAT ALL UNDERGROUND OR EXPOSED STRUCTURES AND UTILITIES ARE SHOWN. CONTRACTOR SHALL INCLUDE ALL INFORMATION FOR ALL UNDERGROUND OR EXPOSED STRUCTURES AND UTILITIES ENCOUNTERED DURING CONSTRUCTION OF THE WORK IN THE RECORD DRAWINGS.
6. CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTING AND MAINTAINING ALL SEDIMENTATION AND EROSION CONTROL MEASURES DURING CONSTRUCTION. CONTRACTOR SHALL REMOVE AND DISPOSE OF THESE CONTROL MEASURES, IN ACCORDANCE WITH THE SPECIFICATIONS.
7. THE LOCATION OF EXISTING FEATURES SHOWN ON THE DRAWINGS ARE APPROXIMATE ONLY. CONTRACTOR SHALL CONFIRM LOCATIONS AS REQUIRED TO COMPLETE THE WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY CONTRACTING OFFICER OF ANY DISCREPANCIES.

EROSION CONTROL NOTES:

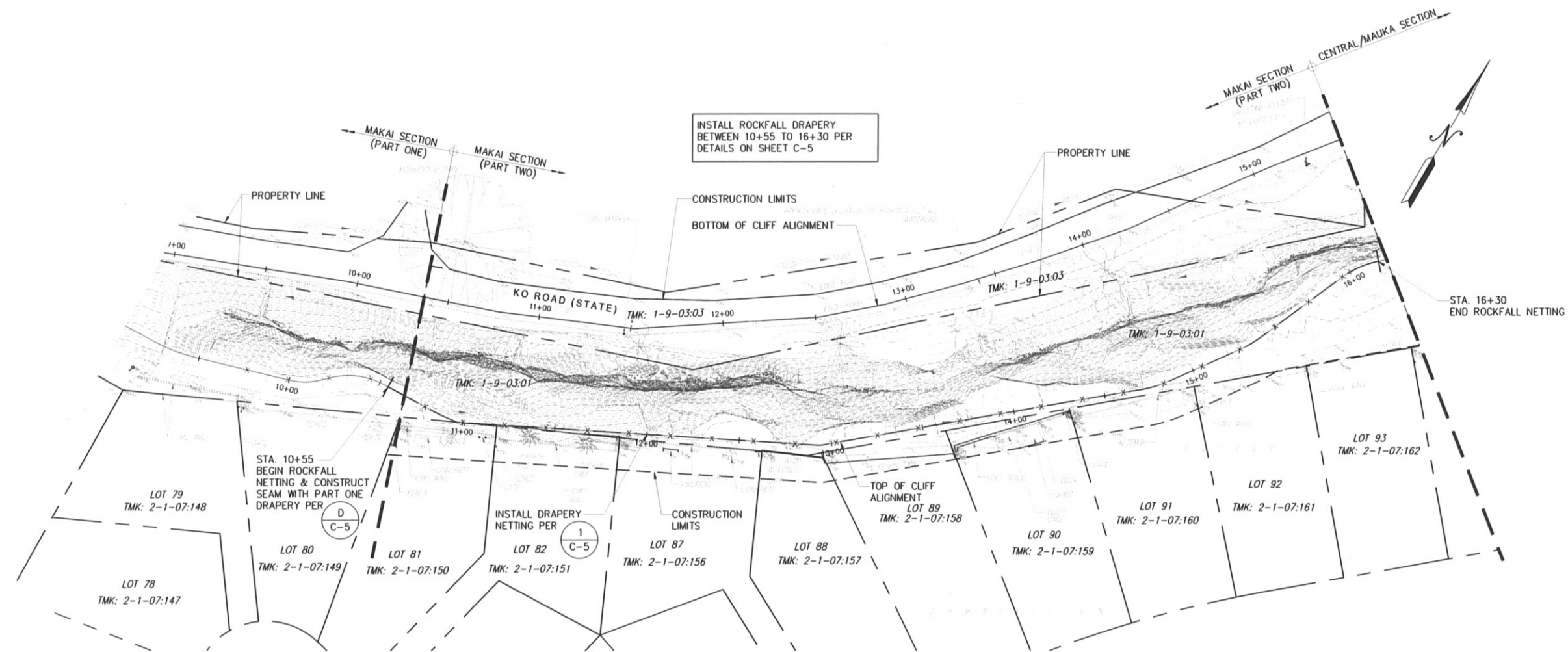
1. MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION WORK IS INITIATED. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED, REPAIRED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND SHALL BE INCIDENTAL AND INCLUDED WITHIN THE CONTRACTOR'S BID.
2. INSTALL SILT FENCING ALONG KO ROAD, ON THE HANAPEPE RIVER SIDE, BEFORE STARTING ANY OTHER CONSTRUCTION.
3. PROTECT STORM DRAIN INLETS FROM CONSTRUCTION RUNOFF USING SILT FENCING OR SILT SOCKS.
4. CONSTRUCTION SHALL BE SEQUENCED TO MINIMIZE THE EXPOSURE TIME OF CLEARED SURFACE AREA.
5. SILT SOCKS SHALL BE USED DURING ANCHOR DRILLING AND ANCHOR INSTALLATION. SILT SOCKS SHALL BE USED AT THE TOP OF THE CLIFF, IN A SEMI-CIRCULAR CONFIGURATION, ON THE DOWN-HILL SIDE OF THE ANCHOR LOCATION, DRILLING RIG AND CONCRETE MIXER. SECURE SOCKS USING WOODEN STAKES OR OTHER SUITABLE MEANS. SILT SOCKS SHALL BE USED ALONG THE KO ROAD EDGE, BELOW THE DRILLING AND CONCRETE MIXING TO PREVENT WATER FROM GETTING ON TO KO ROAD.
6. TEMPORARY SOIL STABILIZATION, INCLUDING APPROPRIATE VEGETATION OR EROSION CONTROL MATTING, SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN THIRTY (30) CALENDAR DAYS.
7. STORM WATER RUNOFF FLOWING TOWARD THE CONSTRUCTION AREA SHALL BE DIVERTED, USING APPROPRIATE CONTROL MEASURES.
8. CONTRACTOR TO REMOVE DAILY, PRIOR TO AND AFTER THE DAY'S WORK, ALL SOIL AND LOOSE DEBRIS ON AND ALONG THE ROAD AND HILLSIDE.
9. CONTROL DUST GENERATED BY CONSTRUCTION VEHICLES AND ACTIVITIES, USING WATER OR OTHER APPROPRIATE MEASURES.

TRAFFIC CONTROL NOTES:

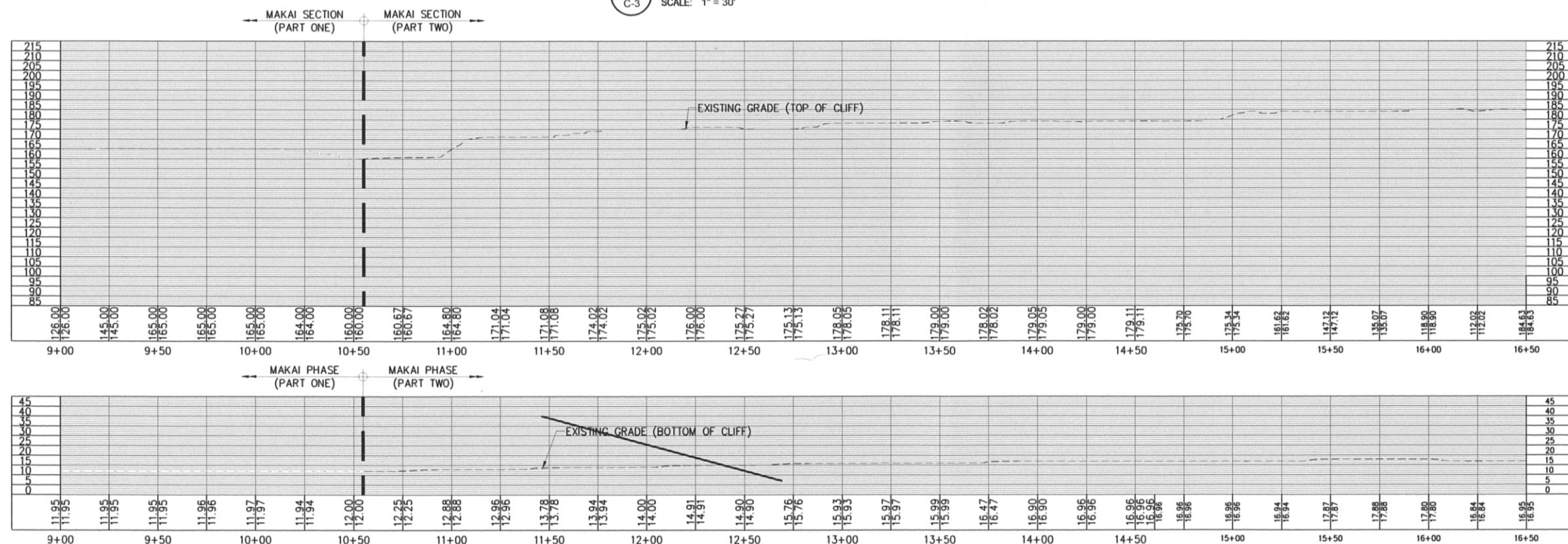
1. CONTRACTOR SHALL DEVELOP AND SUBMIT FOR APPROVAL A TRAFFIC CONTROL PLAN.
2. TRAFFIC SHALL BE REASONABLY ACCOMMODATED. CONTRACTOR SHALL PROVIDE TIMELY NOTICE TO UP-RIVER RESIDENCE.
3. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
4. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FURTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA. SIGNS SHALL MEET COUNTY STANDARDS AND INCLUDE "ROAD WORK AHEAD", "ONE LANE ROAD AHEAD" (WHEN APPROPRIATE), SIGN WITH PICTURE OF A FLAGMAN AHEAD. SIGNS SHALL BE SPACED 250 FEET APART. TAPER LENGTH SHALL BE 200 FEET WITH MINIMUM SIX CHANNELIZING DEVICES. CONES AND DELINEATORS SHALL BE SPACED AT A MAXIMUM DISTANCE OF 20 FEET APART.
5. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN-SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATIONS AT ALL TIMES.
6. WHEN REQUIRED BY THE COUNTY OF KAUAI, AN ADVERTISEMENT SHALL BE PLACED IN THE NEWSPAPER BY THE CONTRACTOR FOR ANY LANE CLOSURE. THE ADVERTISEMENT SHALL BE MADE ONE (1) WEEK BEFORE ANY LANE CLOSURE.
7. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE, THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLAN, SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED AT THE END OF THE WORK DAY AND UPON COMPLETION OF WORK.
8. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
9. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES, NO LONGER NEEDED, TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN REVERSE ORDER OF INSTALLATION.
10. REPLACE PERMANENT TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.







1 PLAN - BOTTOM & TOP OF CLIFF (STA.10+55 TO STA. 16+30)  
SCALE: 1" = 30'

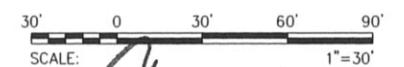


2 PROFILE - BOTTOM & TOP OF CLIFF (STA.10+55 TO STA. 16+30)  
SCALE: 1" = 30'

LEGENDS:

- x — x — ROCKFALL DRAPERY NETTING
- — — — — PROPERTY LINE
- — — — — CONSTRUCTION LIMITS
- — — — — EXISTING CONTOUR MINOR
- — — — — EXISTING CONTOUR MAJOR

GRAPHICAL SCALE:



REVISION NO.	SYM.	DESCRIPTION	SHT.	DATE	APPROVED

Tim Blackwood

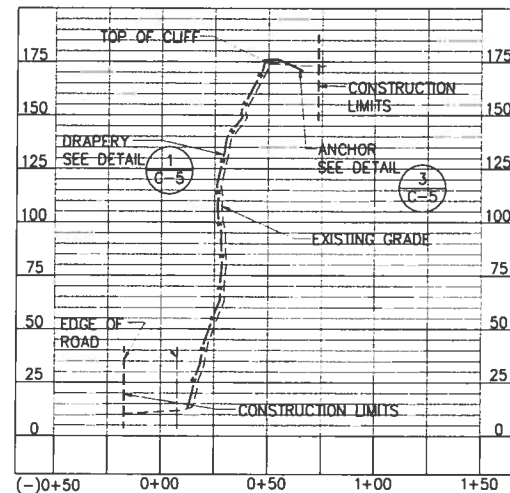
STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
**KO ROAD MAKAI PART 2  
ROCKFALL MITIGATION**  
TMK:(4) 1-9-03: 01, 02, 03 & 04  
Hanalei, Kauai County, Hawaii

**LYON**

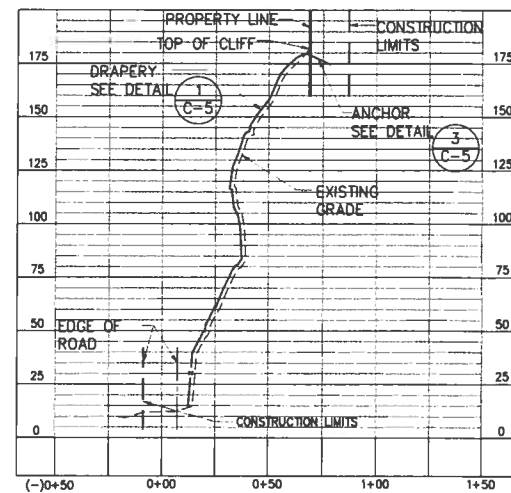
DESIGNED: TB  
CHECKED: MS  
DATE: 04-25-2016

**MAY 23 2016**

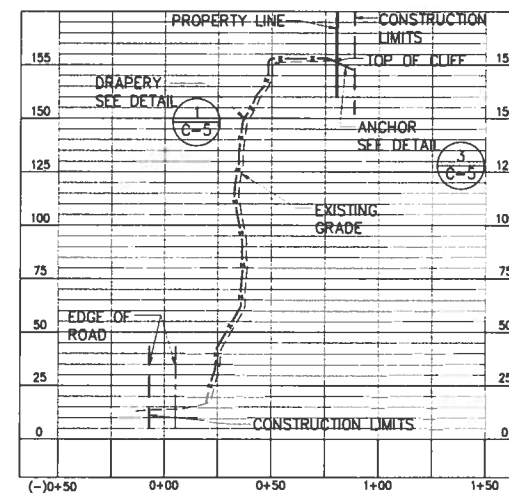
C-3



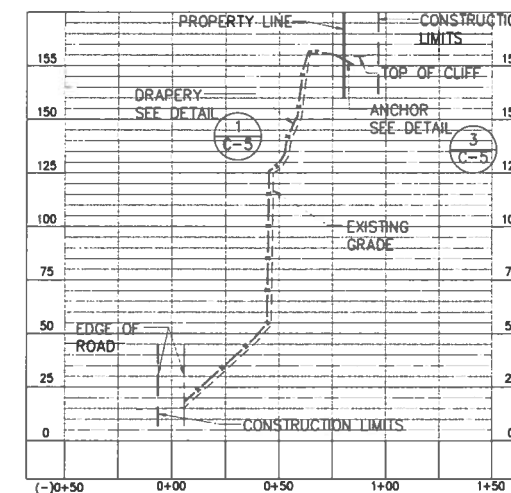
**A @ STA. 10+37**  
C-4 SCALE: 1"=40'



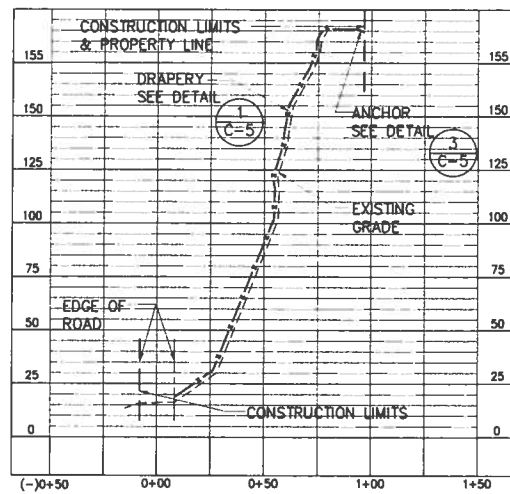
**B @ STA. 11+00**  
C-4 SCALE: 1"=40'



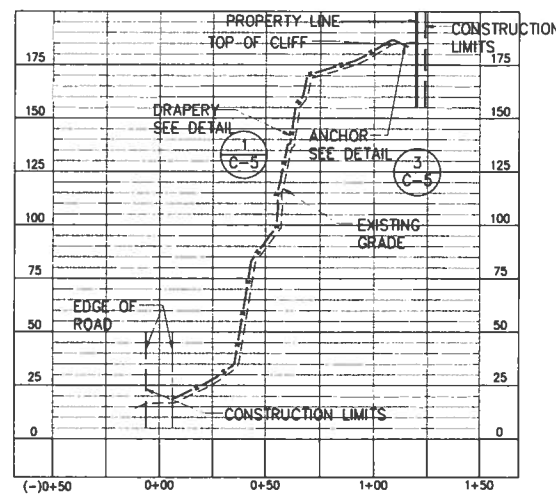
**C @ STA. 12+00**  
C-4 SCALE: 1"=40'



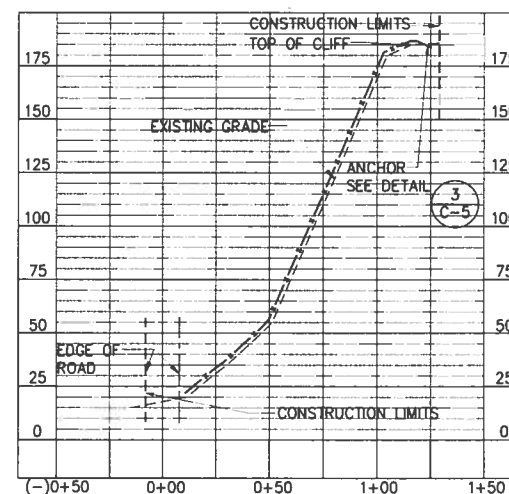
**D @ STA. 13+00**  
C-4 SCALE: 1"=40'



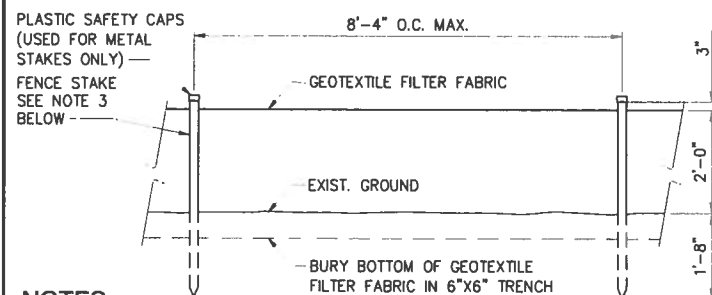
**E @ STA. 14+00**  
C-4 SCALE: 1"=40'



**F @ STA. 15+00**  
C-4 SCALE: 1"=40'



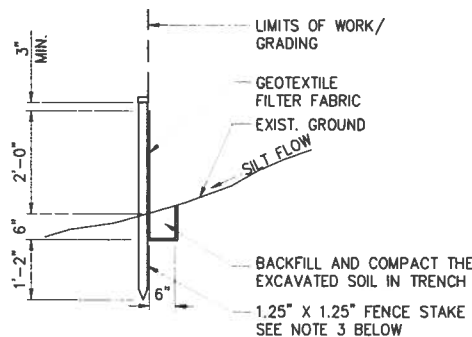
**G @ STA. 15+40**  
C-4 SCALE: 1"=40'



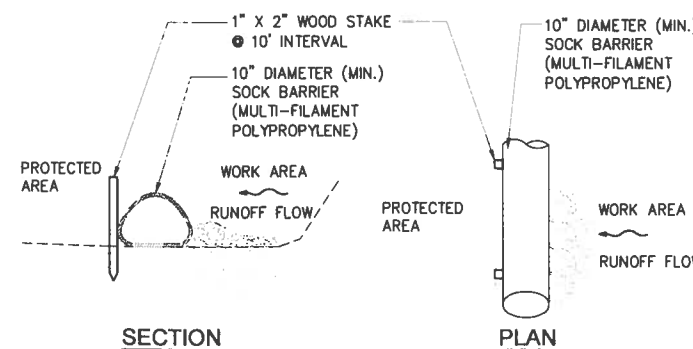
**NOTES:**

1. THE FILTER FABRIC SHALL BE MINIMUM OF 36 INCHES WIDE.
2. IF SILT FENCE IS OBTAINED FROM MANUFACTURER AS PACKAGE (I. E. FABRIC ATTACHED TO POST) THE MANUFACTURER'S INSTALLATION INSTRUCTION SHALL BE ADHERED TO.
3. FENCE STAKES MAY BE WOOD OR METAL, MUST BE CAPABLE OF SUPPORTING ANTICIPATED LOADS.

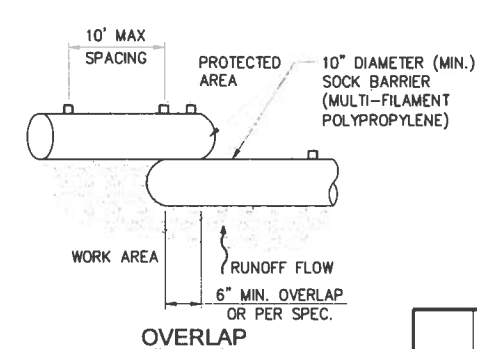
**H SILT FENCE ALONG KO ROAD HANAPEPE RIVER SIDE**  
C-4 NOT TO SCALE



**2 EROSION CONTROL DETAIL**  
C-4 AS SHOWN



**I EROSION CONTROL SILT SOCK ALONG KO ROAD, HILL SIDE**  
C-4 NOT TO SCALE



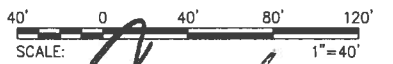
**OVERLAP**

- NOTE:**
1. SEE EROSION CONTROL NOTE 5, DRAWING NO. C-2

**LEGENDS:**

- ROCKFALL DRAPERY NETTING
- EDGE OF ROAD
- CONSTRUCTION LIMITS

**GRAPHICAL SCALE:**



REVISION NO.	SYM.	DESCRIPTION	SHT. OF	DATE	APPROVED

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION  
**KO ROAD MAKAI PART 2  
ROCKFALL MITIGATION**  
TMK(4) 1-4-03: 01, 02, 03 & 04  
Hanalei, Kauai County, Hawaii

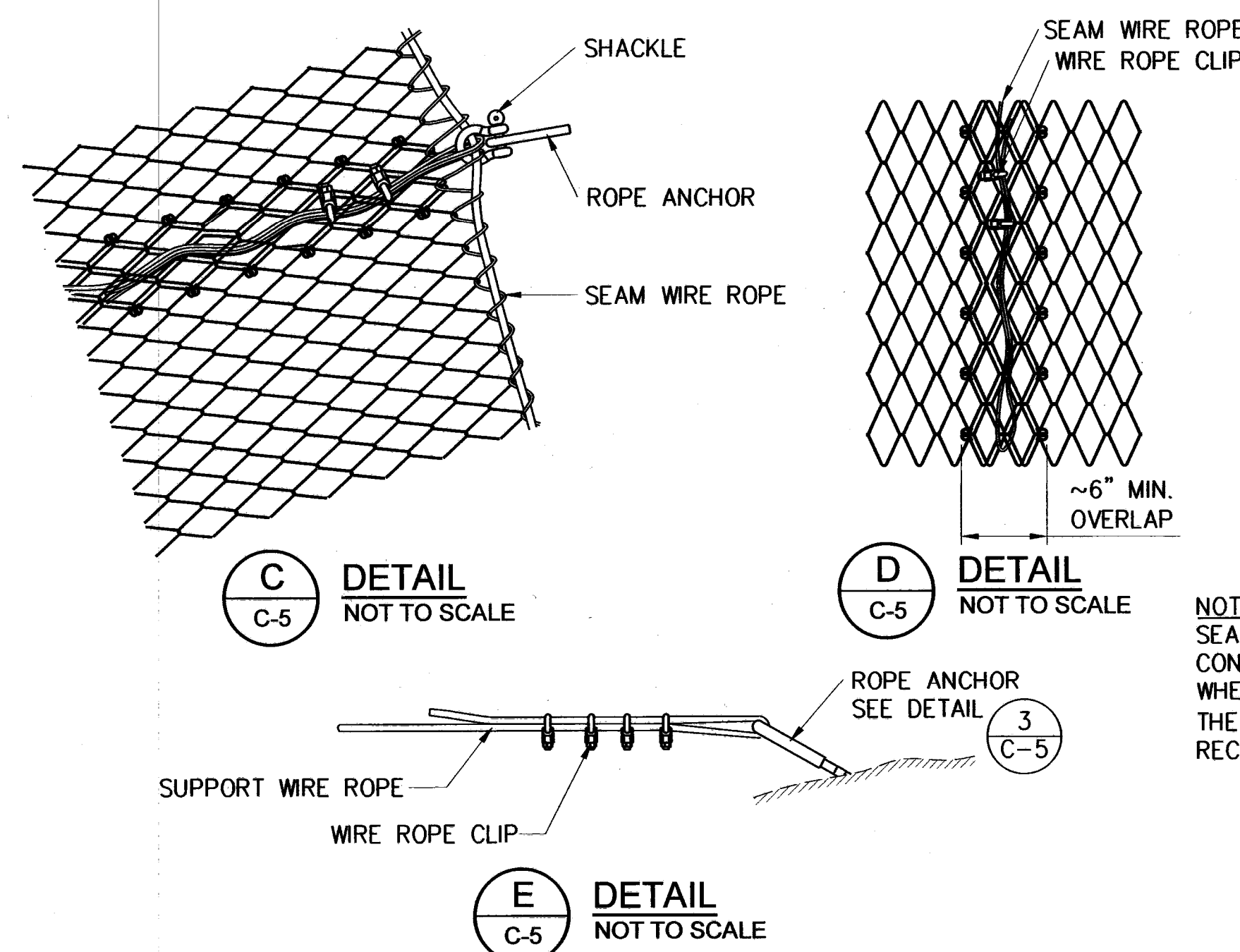
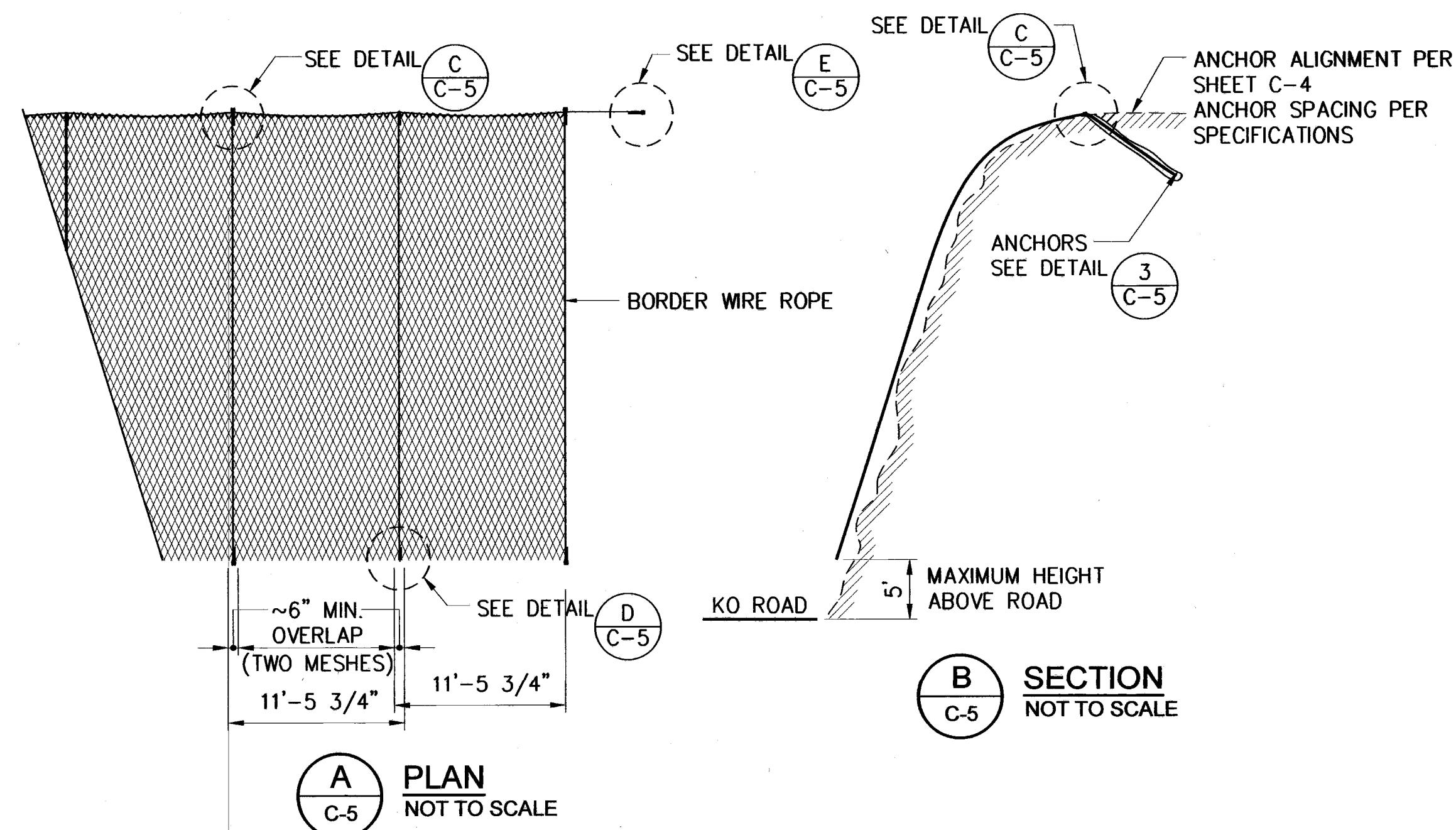
**CROSS SECTIONS**

**LYON**

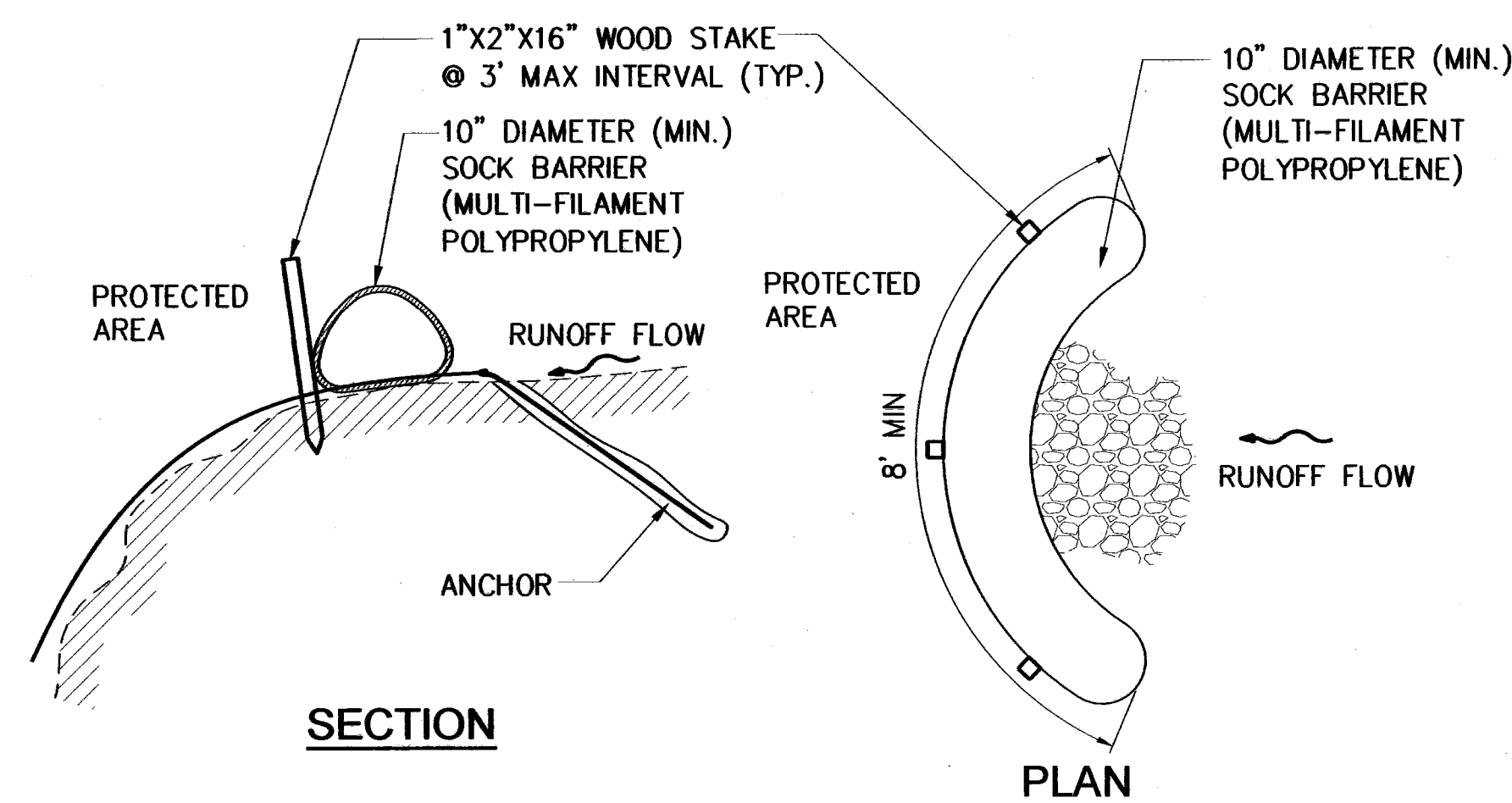
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

**MAY 23 2016**

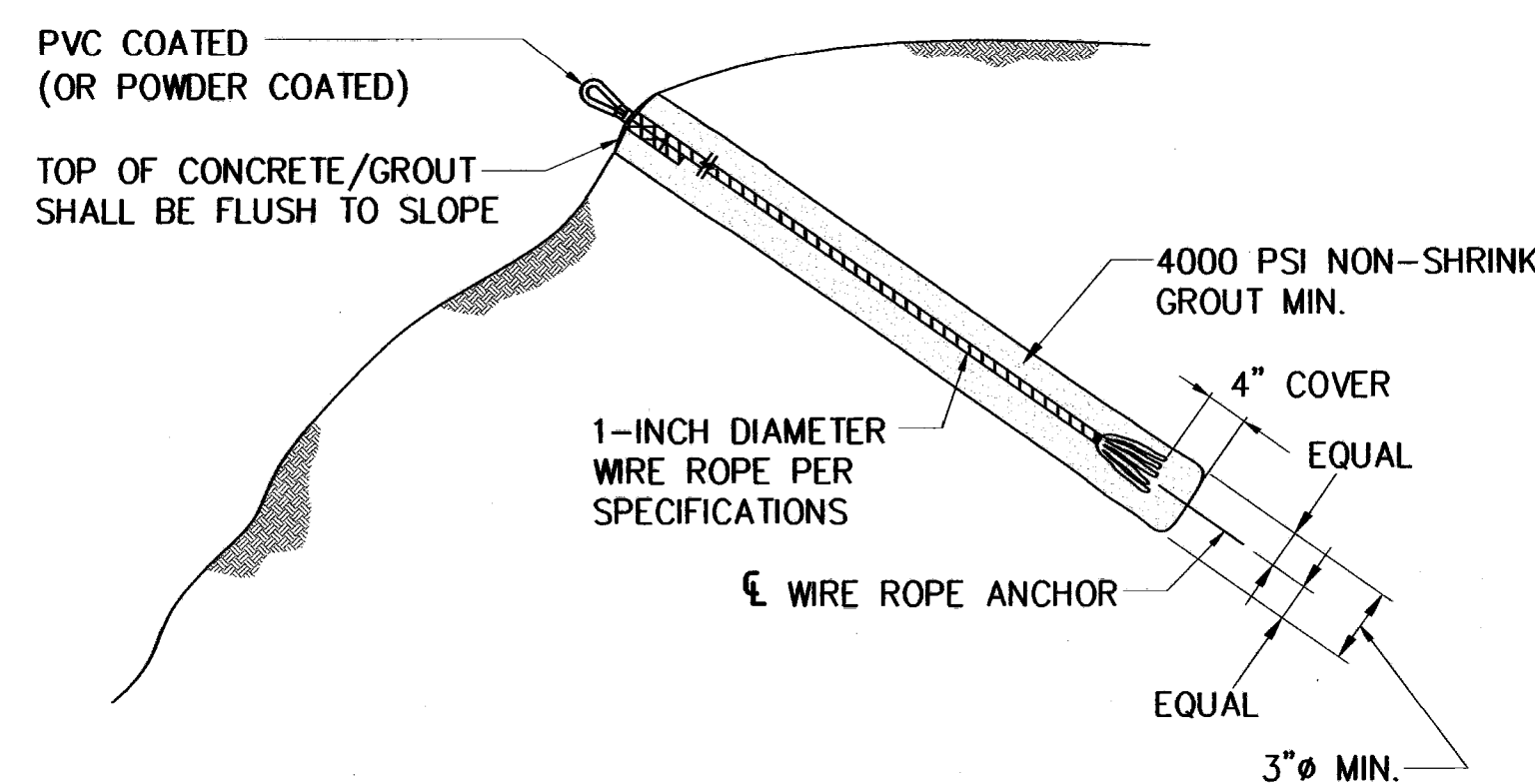
C-4



**1 TYPICAL ROCKFALL DRAPE DETAILS**  
SCALE: AS SHOWN



**2 EROSION CONTROL SILT SOCK AT ANCHOR LOCATIONS (MOVE WITH WORK)**  
C-5 NOT TO SCALE



**3 WIRE ROPE ANCHOR DETAIL (SIDE VIEW)**  
C-5 NOT TO SCALE

NOTE: SEAM CONNECTIONS MAY CONSIST OF T3 CLIPS ONLY WHERE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS

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

STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
ENGINEERING DIVISION

**KO ROAD MAKAI PART 2  
ROCKFALL MITIGATION**  
TMK:(4) 1-9-03: 01, 02, 03 & 04  
Hanalei, Kauai County, Hawaii

**ROCKFALL NETTING DETAILS**

**LYON**

DESIGNED: TB  
DRAWN: MS  
CHECKED: [Signature]  
APPROVED: [Signature]  
DATE: 04-25-2016

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

DATE: MAY - 2 2016

DRAWING NO: C-5