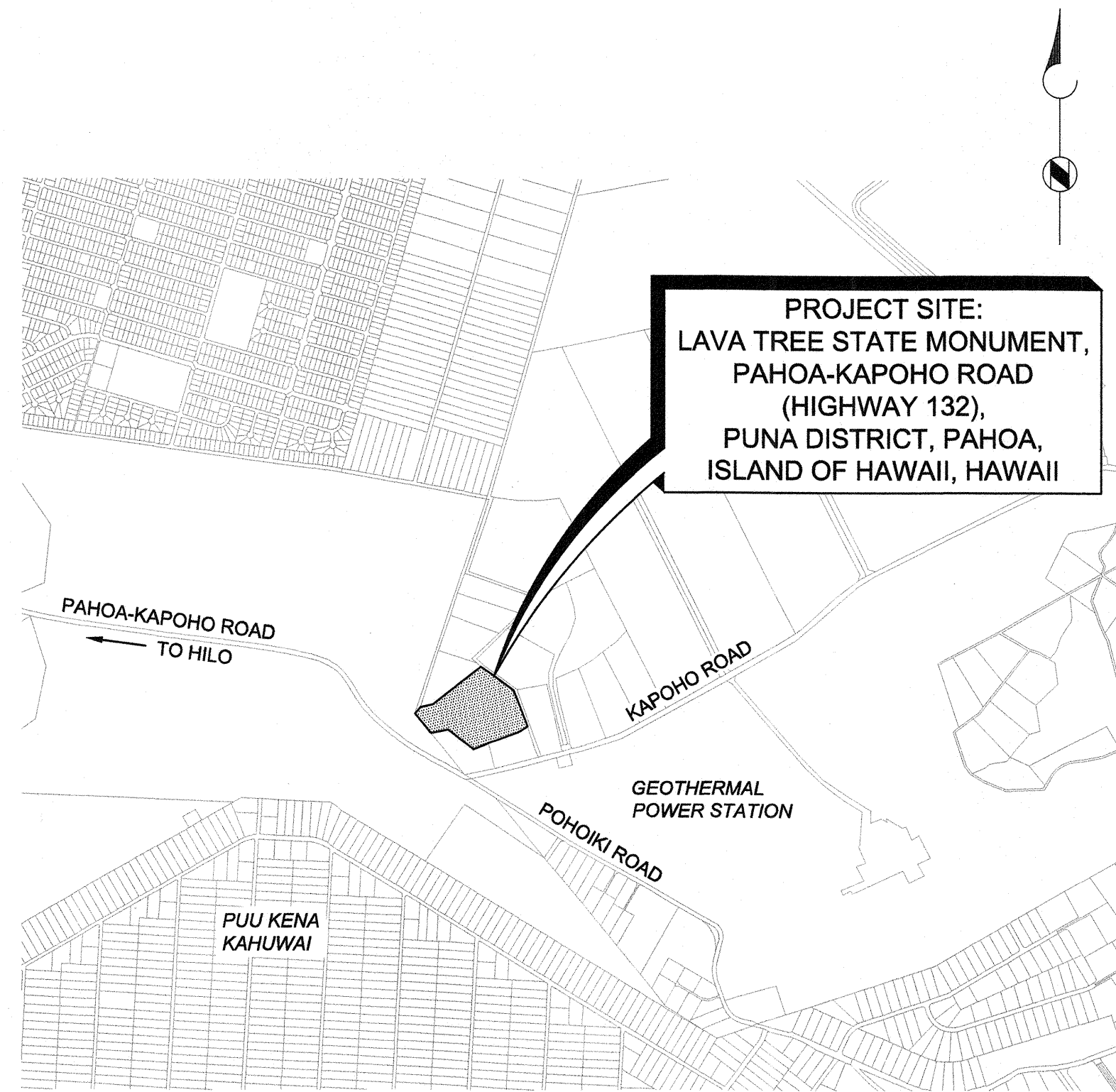


STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

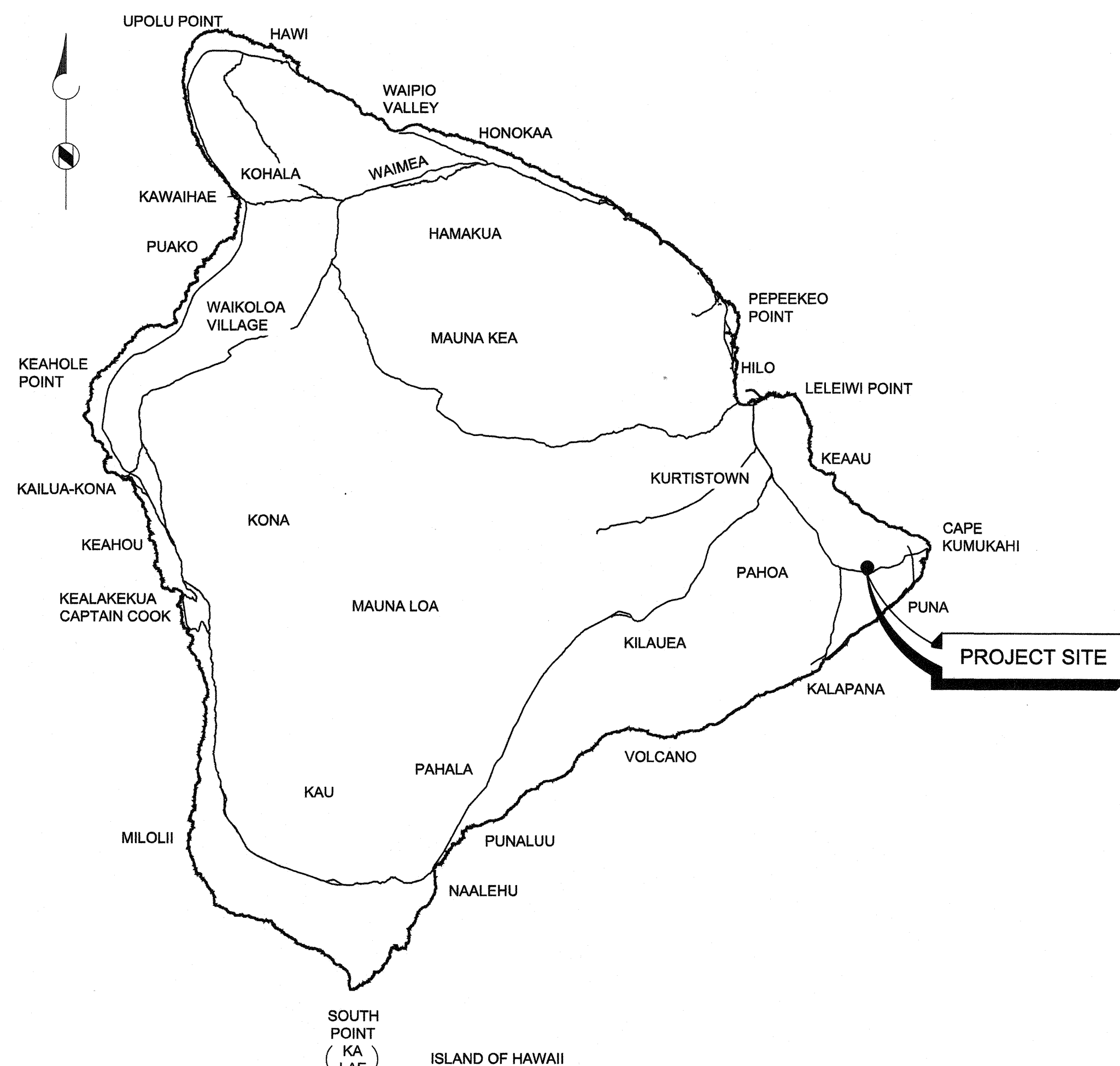
FOR
 DIVISION OF STATE PARKS
 JOB NO. J00CF34B

LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS

PAHOA, HAWAII COUNTY, HAWAII
 TMK: (3) 1-4-001:004



VICINITY MAP
 NOT TO SCALE



LOCATION MAP
 NOT TO SCALE

INDEX OF DRAWINGS

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APPROVED:

CURT A. COTTRELL
 ADMINISTRATOR
 DIVISION OF STATE PARKS
 DEPARTMENT OF LAND AND NATURAL RESOURCES

5.6.16
 DATE

APPROVED:

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

5/6/16
 DATE

DRAWING NO.
 T-1

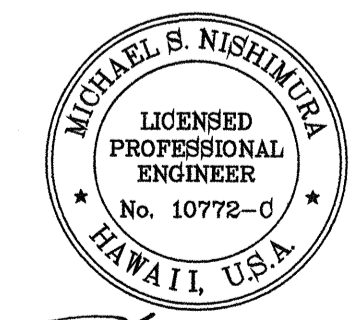
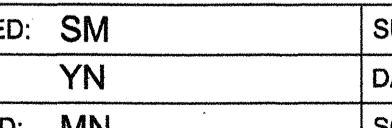
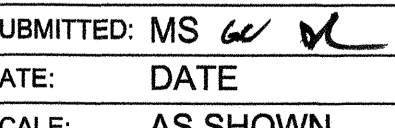
ABBREVIATIONS

LEGEND

A	ABS ABSOLUTE AC ASPHALT CONCRETE ACI AMERICAN CONCRETE INSTITUTE AD AREA DRAIN ADA AMERICANS WITH DISABILITIES ACT ADAAG AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES APPROX APPROXIMATE ARCH ARCHITECTURAL ARV AIR RELEASE VALVE ASME AMERICAN SOCIETY OF MECHANICAL ENGINEERS ASSY ASSEMBLY ASTM AMERICAN SOCIETY FOR TESTING AND MATERIALS AWWA AMERICAN WATER WORKS ASSOCIATION	B	B BOTTOM BC BOTTOM OF CONCRETE BFP BACK FLOW PREVENTER BV BUTTERFLY VALVE BLDG BUILDING BLK BLOCK BM BEAM OR BENCHMARK BMP BEST MANAGEMENT PRACTICES BOT BOTTOM BPS BOOSTER PUMP STATION BUR BUILT UP ROOF BV BUTTERFLY VALVE BW BOTTOM WALL	C	CATV CABLE TELEVISION CB CATCH BASIN CFR CODE OF FEDERAL REGULATIONS CI CAST IRON CIP CAST IRON PIPE CL CHLORINE, CHAIN LINK, CLASS, CENTERLINE OR CLEARANCE CLF CHAIN LINK FENCE CLG CEILING CLR CLEAR CMU CONCRETE MASONRY UNIT CO CLEANOUT COMB COMBINATION CONC CONCRETE CONN CONNECTION CONT CONTINUED OR CONTINUOUS CORP CORPORATION COSA CONTRACTOR OPERATIONS AND STAGING AREA COTG CLEAN-OUT TO GRADE CST CST NAIL CTR CENTER CWLK CONCRETE WALK CY CUBIC YARD	D	D DIAMETER OR DRAIN DB DIRECT BURIED DCAB DISABILITY AND COMMUNICATION ACCESS BOARD DET DETAIL DI DRAIN INLET DIA DIAMETER DIP(S) DUCTILE IRON PIPE OR DUCTILE IRON PIPES DLNR DEPARTMENT OF LAND AND NATURAL RESOURCES DN DOWN DWG(S) DRAWING OR DRAWINGS DWS DEPARTMENT OF WATER SUPPLY DWY DRIVEWAY	E	E EAST E/ELEC ELECTRIC(AL) EA EACH EG EXISTING GRADE E.J. EXPANSION JOINT EL ELEVATION, ELBOW ELEC ELECTRICAL ELEV ELEVATION EXIST EXISTING EW EACH WAY	F	FD FOUND FE FLANGE END FG FINISHED GRADE FH FIRE HYDRANT FIN FINISHED FL FLOWLINE, FLANGE FLG FLANGE FLR FLOOR FM FORCE MAIN FND FOUNDATION FT FEET OR FOOT	G	G GAS OR GATE GAL GALLON GALV GALVANIZED GASCO THE GAS COMPANY GEN GENERAL OR GENERATOR GND GROUND GP GUARD POST, GUY POLE, OR GATE POST GPS GLOBAL POSITIONING SYSTEM GV GATE VALVE	H	H HEIGHT HB HOSE BIBB HDOT HAWAII DEPARTMENT OF TRANSPORTATION HDPE HIGH DENSITY POLYETHYLENE HGT HEIGHT HORIZ HORIZONTAL HP HORSEPOWER HR HOUR HTCO HAWAIIAN TELCOM COMPANY HWY HIGHWAY HYD HYDRANT	I	IBC INTERNATIONAL BUILDING CODE ICV IRRIGATION CONTROL VALVE ID INSIDE DIAMETER OR INTERNAL DIMENSION IN INCH INV INVERT IPT INTERNATIONAL PIPE THREAD IRRG IRRIGATION	J	J JUNCTION	K	KVA KILOVOLT AMP	L	L LENGTH OR LITER LB(S) POUND OR POUND(S) LF LINEAR FEET LG LENGTH OR LONG LOC LOCATION LOG LIMITS OF GRADING LT LEFT	M	MAX MAXIMUM MCC MOTOR CONTROL CENTER MECH MECHANICAL MGN MAGNETIC NAIL MH MANHOLE MIN MINIMUM, MINUTE MISC MISCELLANEOUS MJ MECHANICAL JOINT MON MONUMENT MPH MILES PER HOUR MSDS MATERIAL SAFETY DATA SHEETS MSL MEAN SEA LEVEL MSP MAGNETIC SPIKE MSS MANUFACTURERS STANDARDIZATION SOCIETY	N	N NORTH NE NORTHEAST NEMA NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION N.C. NORMALLY CLOSE N.O. NORMALLY OPEN NO. NUMBER NPT NATIONAL PIPE THREAD NRS NON-RISING STEM NW NORTHWEST	O	OC ON CENTER OD OUTSIDE DIAMETER OF OVERFLOW OR OUTSIDE FACE O/H OVERHEAD OPNG OPENING OSHA OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION OZ OUNCE	P	P POLE, PAGE OR PIPE PAVT PAVEMENT PE POLYETHYLENE PL PROPERTY LINE, PLAIN END PRESS PRESSURE PRV PRESSURE REDUCING VALVE PSF POUNDS PER SQUARE FOOT PSI POUNDS PER SQUARE INCH PSIG POUNDS PER SQUARE INCH GAUGE PSL PEDESTRIAN SIGNAL LIGHT PSV PRESSURE SUSTAINING VALVE PT POINT PVC POLYVINYL CHLORIDE	R	R RADIUS RC REINFORCED CONCRETE RCP REINFORCED CONCRETE PIPE RCRA RESOURCE CONSERVATION AND RECOVERY ACT RD ROUND OR ROAD REF REFERENCE OR REFER REQD REQUIRED RESIL RESILIENT REV REVISION ROW RIGHT OF WAY RT RIGHT R/W RIGHT OF WAY	S	S SEWER, SOUTH, OR SLOPE SCH SCHEDULE SDMH STORM DRAIN MANHOLE SHT SHEET SK SACK SL SLOPE OR STREET LIGHT SLB STREET LIGHT BOX SMH SEWER MANHOLE SPECS SPECIFICATIONS SP. G. SPECIFIC GRAVITY SQ SQUARE SS STAINLESS STEEL ST STATE OR STREET STA STATION STD STANDARD OR STORM DRAINS STL STEEL STRUCT STRUCTURAL SY SQUARE YARD	T	T TOP, TELEPHONE, OR THICKNESS TAI TRAIL ACCESS INFORMATION TBM TEMPORARY BENCHMARK TC TOP OF CONCRETE TEL TELEPHONE LINE TEMP TEMPERATURE OR TEMPORARY TERM TERMINATE OR TERMINATION THK THICK OR THICKNESS THR'D THREADED TK TANK TKM TAX MAP KEY TOP TOP OF PAVEMENT TP TOP OF PIPE TS TOP STEM TV TOP VALVE TW TOP WALL TYP TYPICAL	U	UG UNDERGROUND UP UTILITY POLE UV ULTRAVIOLET	V	V VALVE VERT VERTICAL	W	W WATER W/ WITH WL WATER LINE WM WATER METER WMH WATER MANHOLE WV WATER VALVE	X	X-WALK CROSSWALK	Y	YD YARD
----------	---	----------	--	----------	--	----------	---	----------	--	----------	---	----------	--	----------	--	----------	--	----------	------------	----------	------------------	----------	---	----------	--	----------	---	----------	--	----------	---	----------	---	----------	--	----------	---	----------	---	----------	--------------------------	----------	--	----------	------------------	----------	---------

&	AND
#	POUND; NUMBER
△	SURVEY CONTROL POINT
● FG = 630.00	FINISH GRADE SPOT ELEVATION
x 630	EXISTING SPOT ELEVATION
▨	TO BE DEMOLISHED AND/OR REMOVED
↔	LIMITS OF GRADING
▩	CONCRETE
▩	ROCK OUTCROP
▨	NATURAL GROUND OR FINISHED GRADE
— 630 —	FINISHED GRADE CONTOURS
— 632 —	EXISTING GROUND CONTOURS (SCREENED)
— D —	EXISTING DRAINLINE
— W _g —	EXISTING WATERLINE WITH SIZE
⊠	EXISTING WATER METER
—	EXISTING (SCREENED)
↘	SLOPE
~	APPROXIMATE DIRECTION OF ASSUMED SURFACE RUNOFF DRAINAGE FLOW
●	LAVA TREE MOLD
⊙	TREE NAME/TYPE D = approx trunk diameter S = approx spread H = approx height

P:\PROJECTS\HAWAII, STATE OF (H)\146883 ADA_LAVA TREE STATE MONUMENT_HAWAII\CADD2-SHEETS\SIG-GENERAL\146883-SF-G-001.DWG 5/5/2016 YNDDA

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS ABBREVIATIONS AND LEGEND					
		DESIGNED: SM DRAWN: YN CHECKED: MN APPROVED:  APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.		SUBMITTED: MS  DATE: DATE SCALE: AS SHOWN		SHEET NO. G-1	
JOB NO. J00CF34B SHEET NO. 2 OF 14 SHEETS					

GENERAL NOTES

- THE CONTRACTOR SHALL PERFORM APPLICABLE CONSTRUCTION WORK IN ACCORDANCE WITH THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," DATED SEPTEMBER 1984, AS AMENDED, AND "STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION," DATED SEPTEMBER 1986 OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF HAWAII, AND REVISED ORDINANCES, 2005, AS AMENDED, AND "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 2005, OF THE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, STATE OF HAWAII, AS AMENDED.
- THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES KNOWN TO EXIST BY THE ENGINEER FROM HIS/HER SEARCH OF RECORDS ARE INDICATED ON THE PLANS. UNLESS OTHERWISE NOTED, ALL LOCATIONS OF UNDERGROUND UTILITY LINES AND/OR STRUCTURES ARE APPROXIMATE. THE INFORMATION SHOWN, THEREFORE, MAY OR MAY NOT BE REPRESENTATIVE OF ACTUAL FIELD CONDITIONS. THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES MAY OR MAY NOT BE PRESENT AT THE LOCATIONS SHOWN OR OTHER UNDERGROUND UTILITY LINES AND/OR STRUCTURES NOT SHOWN MAY BE PRESENT. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE UNDERGROUND UTILITY LINES AND/OR STRUCTURES AND EXERCISE PROPER CARE WHEN EXCAVATING IN THE AREA. PROTECT EXISTING UTILITIES AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
- PRIOR TO THE START OF EXCAVATION, THE CONTRACTOR SHALL NOTIFY ALL APPLICABLE AGENCIES AND HAVE THEM LOCATE THEIR RESPECTIVE UTILITY LINES IN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL BE HELD RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO AND MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES.
- TOPOGRAPHIC SURVEY WAS CONDUCTED BY INABA ENGINEERING, INC., DATED MAY 8, 2015. BENCHMARK:

BASEPOINT CP-4 (1/2" PIPE-FD)
ELEVATION = 646.20'
REFERENCE DLNR JOB NO. F34C633B, DWG C-3
ASSUMED COORDINATES: 5,000.000 N
5,000.000 E
- EXISTING CONDITIONS AND DIMENSIONS SHOWN ON THE PLANS ARE APPROXIMATE AND OBTAINED FROM TOPOGRAPHIC SURVEY MAP BY INABA ENGINEERING, INC., DATED MAY 8, 2015. FIELD INVESTIGATIONS AND RECORD DRAWINGS. PROSPECTIVE CONTRACTORS SHALL VISIT THE PREMISES AND THOROUGHLY FAMILIARIZE THEMSELVES WITH ALL WORK DETAILS AND CONDITIONS BEFORE SUBMITTING BID. REASONABLE MODIFICATIONS TO INDICATED DIMENSIONS AND ARRANGEMENTS TO SUIT ACTUAL JOB CONDITIONS SHALL NOT CONSTITUTE BASIS FOR REQUESTING OF ADDITIONAL FUNDS FROM THE DLNR.
- PRIOR TO ORDERING MATERIALS AND EQUIPMENT, THE CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS, MATERIALS, SIZES AND DIMENSIONS THAT AFFECT HIS/HER WORK. NOTIFY THE DLNR OF ALL DISCREPANCIES IN WRITING AT LEAST TWO (2) WEEKS PRIOR TO PROCUREMENT.
- VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY BETWEEN THE EXISTING UTILITIES AS SHOWN ON THE DRAWINGS AND IN THE GROUND SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE DLNR FOR CLARIFICATION. CONTRACTOR SHALL NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE DLNR; OTHERWISE, THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION COMPLETED DUE TO SUCH DISCREPANCIES.
- WHEN EXCAVATION IS ADJACENT TO OR UNDER EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
- BACKFILL SHALL BE SANDY OR GRANULAR MATERIAL RAMMED WITH PROPER TOOLS UNTIL COMPACTED FROM 90% TO 95% OF ITS MAXIMUM DENSITY.
- DURING GRADING, BASE COURSE MATERIALS SHALL BE COMPACTED WITH PROPER TOOLS TO 90% TO 95% OF ITS MAXIMUM DENSITY.
- ALL WORK CALLED FOR ON THE PLANS AND NOT ITEMIZED IN THE PROPOSAL AND ALL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL AND INCLUDED IN THE CONTRACTOR'S BID PRICE.
- CONSTRUCTION AREAS ARE LOCATED ALONG A TRAIL. THERE IS NO VEHICULAR ACCESS TO THE CONSTRUCTION AREAS. CONTRACTOR SHALL COORDINATE WITH THE ENGINEER AND SHALL NOT USE LARGE, HEAVY MACHINERY FOR CONSTRUCTION. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL OR BETTER CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENT, LANDSCAPING, STRUCTURES, UTILITIES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL, DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCIDENTAL AND INCLUDED WITHIN THE CONTRACTOR'S BID PRICE.
- PAYMENT FOR RESTORATION OF PAVEMENT AND OTHER CONCRETE STRUCTURES WILL NOT BE MADE DIRECTLY BUT SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE IN THE VARIOUS ITEMS OF THE BID.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH THE APPLICABLE PROVISIONS OF CHAPTER 54, "WATER QUALITY STANDARDS," AND CHAPTER 55, "WATER POLLUTION CONTROL," OF TITLE 11, ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.
- THE CONTRACTOR SHALL PROVIDE TO THE DLNR "AS-BUILT" DRAWINGS OF ALL NEW IMPROVEMENTS UPON COMPLETION OF WORK.
- NON-COMPLIANCE TO ANY OF THE CONTRACT REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHOULD COMMENCE IMMEDIATELY. ALL COSTS INCURRED AS A RESULT OF THE CONTRACTOR'S NON COMPLIANCE SHALL BE BILLED TO THE CONTRACTOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECTED TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
- THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH, SAFETY AND ENVIRONMENTAL QUALITY AND FOR WORKER PROTECTION.
- ALL EXISTING UTILITIES, SERVICE LINES, SUPPLY LINES AND COMMUNICATION LINES SHALL REMAIN IN PLACE AND IN SERVICE THROUGHOUT THE TERM OF THE PROJECT. IF RELOCATION OF EXISTING FACILITIES IS REQUIRED FOR THE CONTRACTOR'S CONVENIENCE, INTERRUPTION OF SERVICE SHALL BE KEPT TO A MINIMUM AND SHALL BE DONE AT THE CONTRACTOR'S EXPENSE AND ONLY WITH THE APPROVAL OF THE DLNR.
- THE CONTRACTOR SHALL PROVIDE CONTINUOUS SAFE ACCESS TO AND FROM ALL DRIVEWAYS AND STREETS.
- THE CONTRACTOR SHALL SECURE ALL NECESSARY LICENSES, PERMITS, APPROVALS AND CLEARANCES, AND SHALL PAY ALL APPLICATIONS, LICENSES, PERMITS AND INSPECTION FEES REQUIRED FOR THE WORK AND SHALL GIVE ALL NOTICES NECESSARY FOR AND INCIDENTAL TO THE PROPER AND LAWFUL EXECUTION OF THE WORK.
- THE CONTRACTOR SHALL MAINTAIN VEHICULAR AND PEDESTRIAN ACCESS TO THE SITE DURING NON WORKING HOURS.
- LAVA TREE STATE MONUMENT SHALL WILL REMAIN OPEN TO THE PUBLIC AND FULLY OPERATIONAL DURING CONSTRUCTION. THE CONTRACTOR SHALL INSTALL ADEQUATE TEMPORARY BARRICADES AND WARNING SIGNS TO PROTECT THE PUBLIC DURING CONSTRUCTION. THE CONTRACTOR SHALL ENSURE THAT THE PUBLIC PARKING AREA, VEHICULAR ACCESS AND PEDESTRIAN WAYS REMAIN UNOBSTRUCTED AND SAFE DURING THE CONSTRUCTION PERIOD. ANY RESTRICTIONS TO PUBLIC ACCESS SHALL BE COORDINATED WITH THE ENGINEER AT LEAST TEN (10) WORKING DAYS IN ADVANCE.
- THE CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS 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 STATE AND COUNTY OF HAWAII HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE STATE.
- 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.
- SHOULD HAZARDOUS MATERIAL BE ENCOUNTERED, THE ENGINEER SHALL BE NOTIFIED AND ALL WORK SHALL BE SUSPENDED UNTIL THE MATERIAL IS PROPERLY REMEDIATED, HANDLED AND DISPOSED OF OFF-SITE IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE TEMPORARY SECURITY COVERS OVER ANY AND ALL OPENINGS CREATED AS A CONSEQUENCE OF THE PROJECT WORK.

- THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE, IDENTIFYING START AND FINISH OF EACH MAJOR TASK, INCLUDING ANY UTILITY SERVICE OUTAGES AND PUBLIC ACCESS DISRUPTIONS TO THE PARK. THE WORK SHALL BE SEQUENCED TO MINIMIZE INTERRUPTION OF UTILITY SERVICE AND/OR PUBLIC ACCESS TO THE PARK. SUBMIT SCHEDULE IN BOTH MICROSOFT PROJECT 2010 (OR LATER VERSION) AND ADOBE ACROBAT FORMATS TO THE DLNR AT LEAST TEN (10) DAYS PRIOR TO START OF WORK. OUTAGES AND PUBLIC ACCESS DISRUPTIONS SHALL BE APPROVED BY THE DLNR.
- IF A LAVA TUBE OR INADVERTENT CULTURAL OR HISTORIC FINDS ARE ENCOUNTERED, STOP WORK IMMEDIATELY AND NOTIFY THE STATE HISTORIC PRESERVATION DIVISION AT 808.692.8015 AND THE ENGINEER. FOR HUMAN REMAINS/BURIALS, THE HAWAII POLICE DEPARTMENT SHALL ALSO BE CONTACTED AT 808.935.3311 OR 808.961.2252.
- THE CONTRACTOR SHALL CALL THE HAWAII ONE-CALL CENTER AT 1.866.423.7287 PRIOR TO EXCAVATION TO ENSURE THAT ALL UNDERGROUND UTILITIES WITHIN DISTURBED AREAS ARE MARKED AND THAT NO LINES ARE IN THE WAY.
- APPROXIMATE EARTHWORK QUANTITIES ARE:

EXCAVATION: 10 CY
FILL: 34 CY
GRADED AREA: 1846 SF
- THE CONTRACTOR SHALL NOT PERFORM ANY CONSTRUCTION ACTIVITY THAT DIRECTLY OR INDIRECTLY RESULTS IN SOIL AND DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATER COURSES. SHOULD SUCH VIOLATIONS OCCUR, THE COST INCURRED FOR ANY REMEDIAL ACTION BY THE ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.

DISABILITY AND COMMUNICATION ACCESS BOARD (DCAB) NOTE

THIS PROJECT SHALL MEET THE ACCESSIBILITY REQUIREMENTS AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAAG).

GRADING NOTES

- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS RESULTING FROM HIS/HER WORK. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE STATE SHALL BE PAYABLE BY THE CONTRACTOR.
- THE CONTRACTOR, AT HIS/HER 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.
- ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND CHAPTER 55, "WATER POLLUTION CONTROL," AND TO THE EROSION AND SEDIMENTATION CONTROL STANDARDS AND GUIDELINES OF THE DEPARTMENT OF PUBLIC WORKS.
- THE CONTRACTOR SHALL SOD, PLANT OR HYDROMULCH ALL SLOPES AND EXPOSED AREAS IMMEDIATELY AFTER THE GRADING WORK HAS BEEN COMPLETED.
- THE CONTRACTOR SHALL INFORM THE ENGINEER 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.
- NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS ANYTIME WITHOUT PRIOR APPROVAL FROM THE STATE. GRADING WORK ON NORMAL WORKING DAYS SHALL BE BETWEEN THE HOURS OF 7:00 AM AND 3:30 PM.
- FILLS SHALL BE PLACED IN HORIZONTAL LAYERS NOT MORE THAN 8" IN LOOSE THICKNESS, MOISTEN AS REQUIRED, AND COMPACTED TO NOT LESS THAN 95 PERCENT RELATIVE DENSITY.
- THE CONTRACTOR SHALL REMOVE ALL VEGETATION BEFORE PLACING FILLS ON NATURAL GROUND SURFACE.
- THE LIMITS OF GRADED AREA SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
- GRADING SHALL BE CONSIDERED INCIDENTAL TO THE CONSTRUCTION AND INSTALLATION OF PROJECT FACILITIES.
- ALL STABILIZED AND GRADED AREAS SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS.
- THE CONTRACTOR SHALL PAY FOR ALL COSTS INCURRED FOR THIS WORK. NO EXTRAS WILL BE CONSIDERED FOR MAINTENANCE PERIOD EXCEEDING SIXTY (60) DAYS.
- TO ALLOW FOR TOPSOIL, CUT AREAS SHALL BE OVEREXCAVATED BY SIX (6) INCHES AND FILL AREAS SHALL BE STOPPED SIX (6) INCHES BELOW GRADES SHOWN.

P:\PROJECTS\HAWAII, STATE OF (H1)\146833 ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEETS\G-GENERAL\146833-SF-G-002.DWG 5/5/2016 YNODA

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS					
GENERAL NOTES					
DESIGNED: SM		SUBMITTED: MS <i>gc</i>			
DRAWN: YN		DATE: DATE			
CHECKED: MN		SCALE: AS SHOWN			
APPROVED: <i>[Signature]</i>					SHEET NO.
APRIL 30, 2018					MAY - 6 2016
EXPIRATION DATE OF THE LICENSE					DATE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.					G-2
JOB NO. J00CF34B SHEET NO. 3 OF 14 SHEETS					

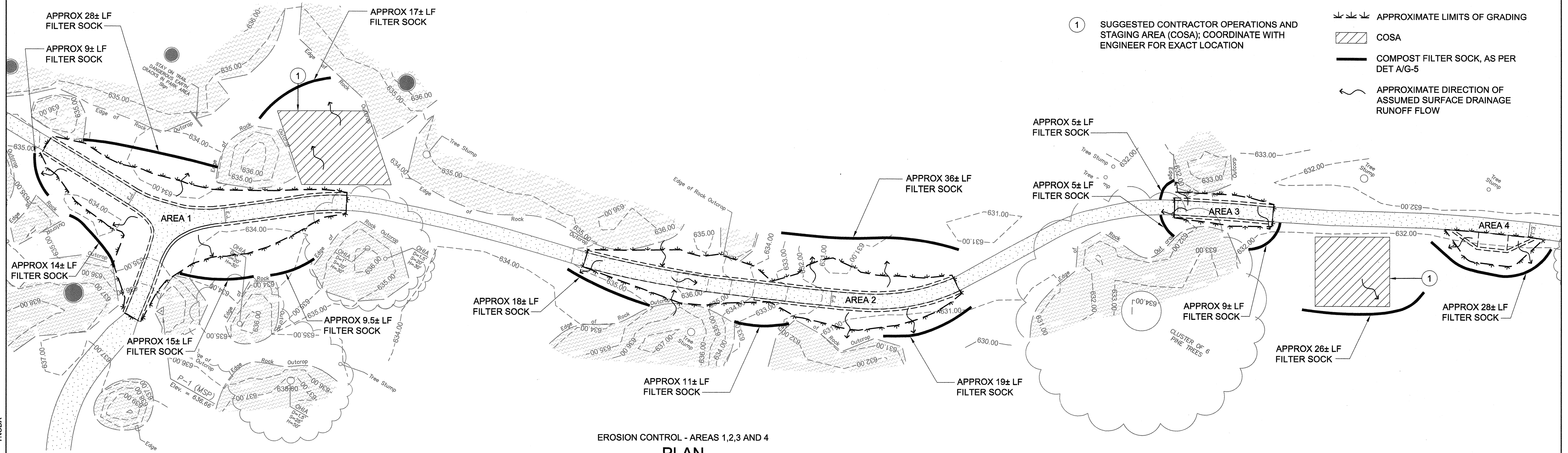
P:\PROJECTS\HAWAII, STATE OF (H)\146893 ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEETS\CIVIL\146893-SF-LT-G-003_ERO1.DWG 5/9/2016 YNODA

KEY NOTES

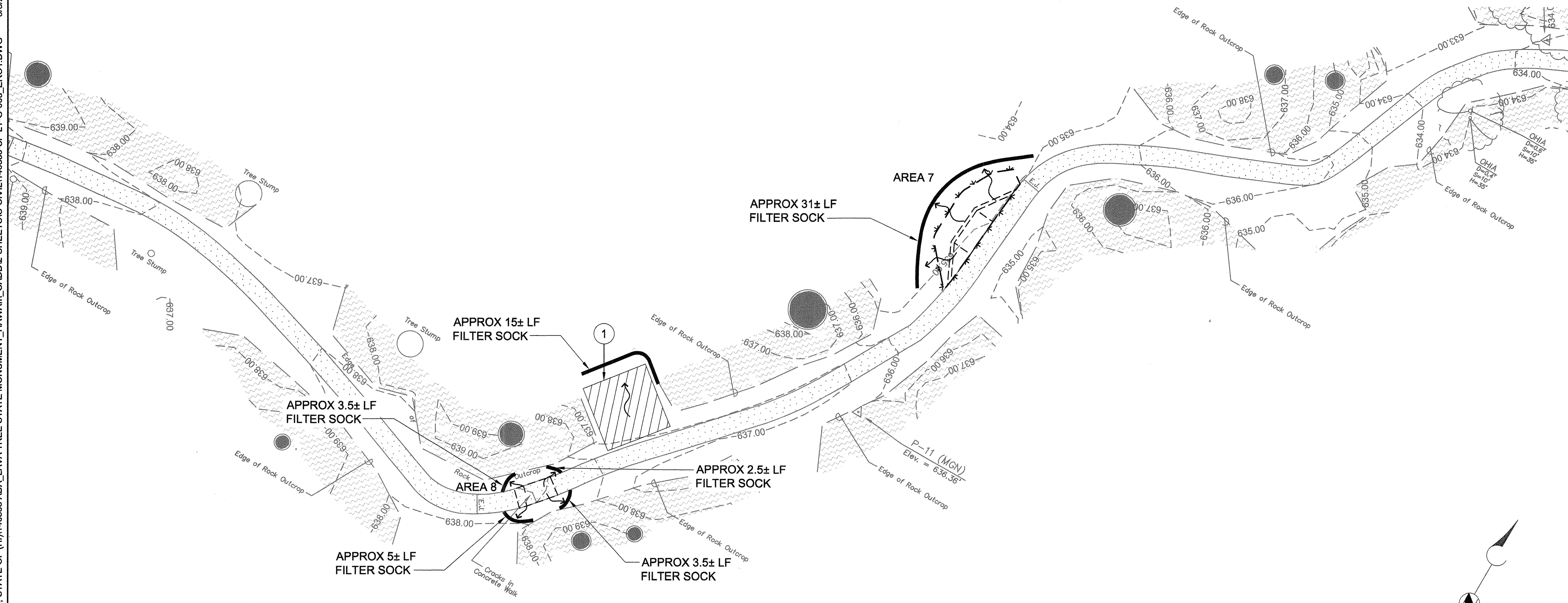
- ① SUGGESTED CONTRACTOR OPERATIONS AND STAGING AREA (COSA); COORDINATE WITH ENGINEER FOR EXACT LOCATION

LEGEND

- APPROXIMATE LIMITS OF GRADING
- COSA
- COMPOST FILTER SOCK, AS PER DET A/G-5
- APPROXIMATE DIRECTION OF ASSUMED SURFACE DRAINAGE RUNOFF FLOW

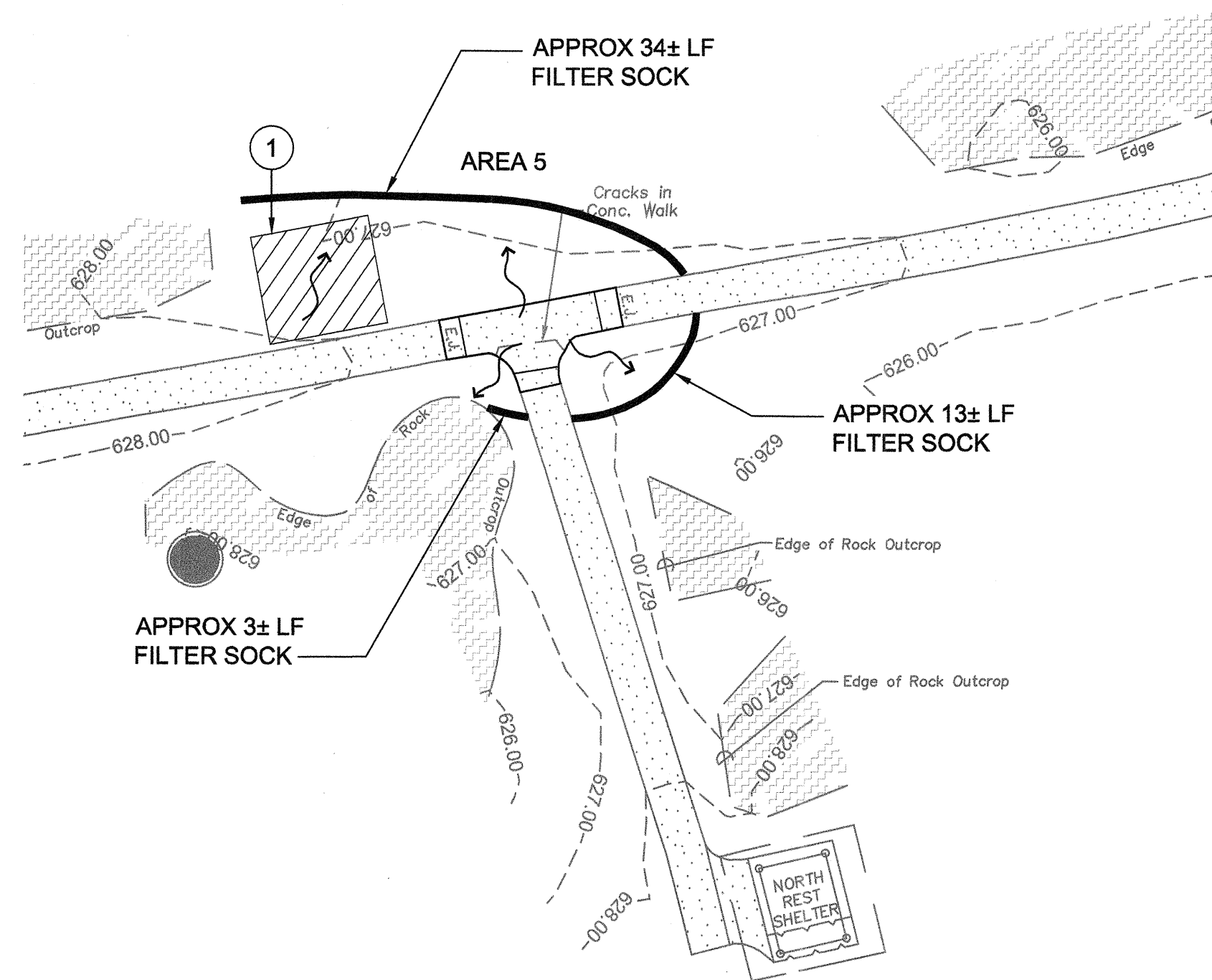


EROSION CONTROL - AREAS 1,2,3 AND 4
PLAN
SCALE: 1" = 10'

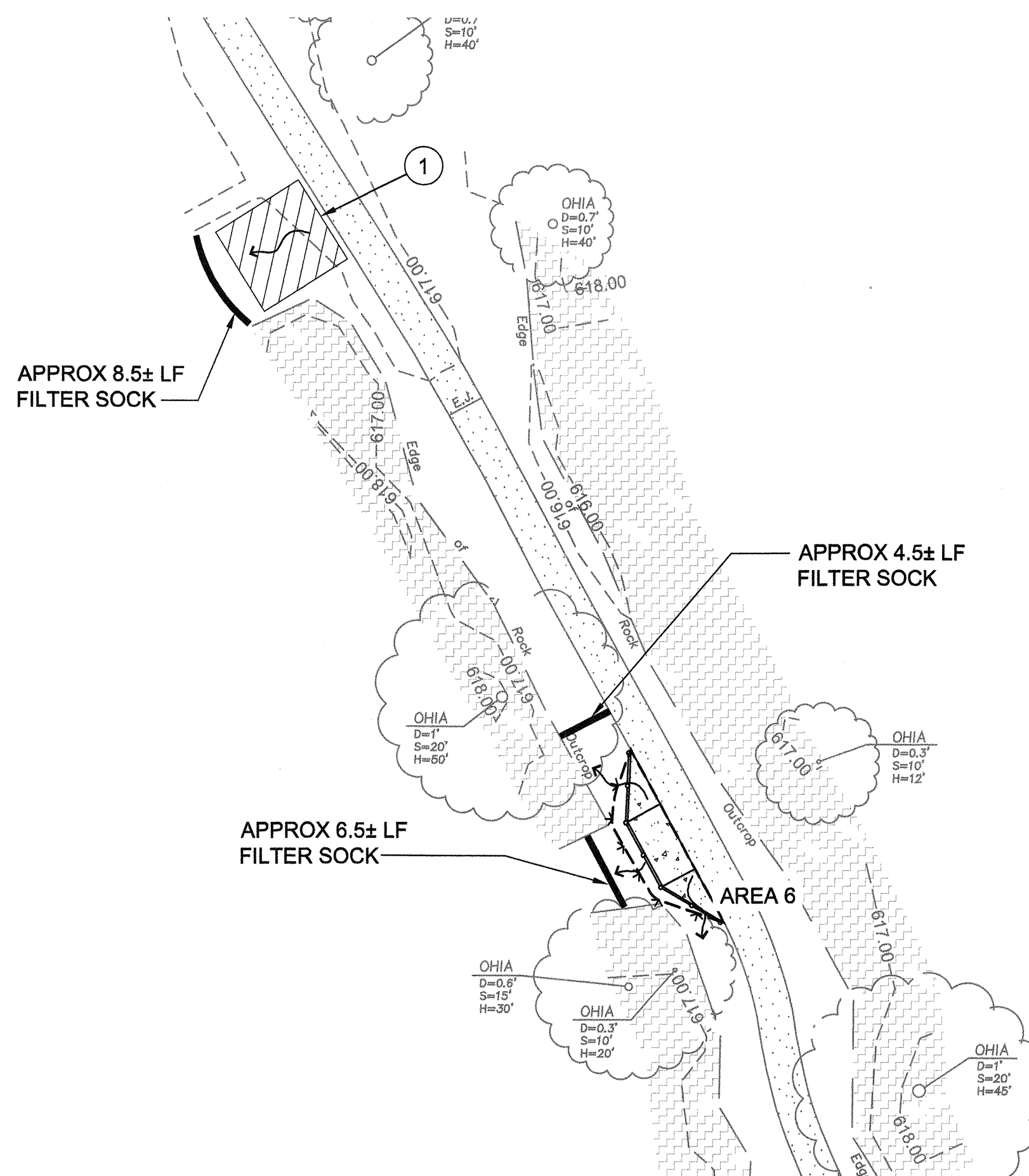


EROSION CONTROL - AREAS 7 AND 8
PLAN
SCALE: 1" = 10'

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
<p>STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION</p> <p>LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS</p> <p>EROSION CONTROL PLAN - AREAS 1-4, 7 AND 8</p>					
DESIGNED: SM		SUBMITTED: MS			
DRAWN: YN		DATE: DATE			
CHECKED: MN		SCALE: AS SHOWN			
APPROVED:		APRIL 30, 2018		SHEET NO.	
EXPIRATION DATE OF THE LICENSE		MAY - 6 2016		G-3	
JOB NO. J00CF34B		SHEET NO. 4 OF 14 SHEETS			



EROSION CONTROL - AREA 5
PLAN
 SCALE: 1" = 10'



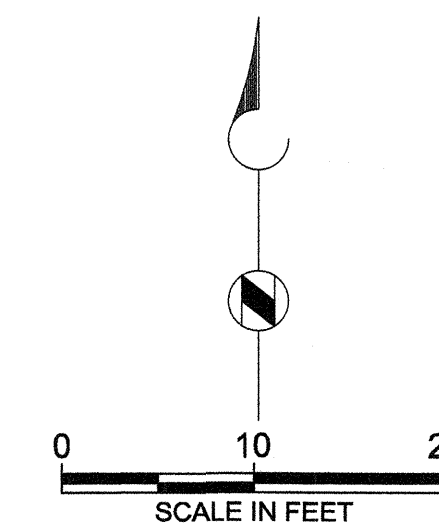
EROSION CONTROL - AREA 6
PLAN
 SCALE: 1" = 10'

KEY NOTES

- ① SUGGESTED CONTRACTOR OPERATIONS AND STAGING AREA (COSA); COORDINATE WITH ENGINEER FOR EXACT LOCATION

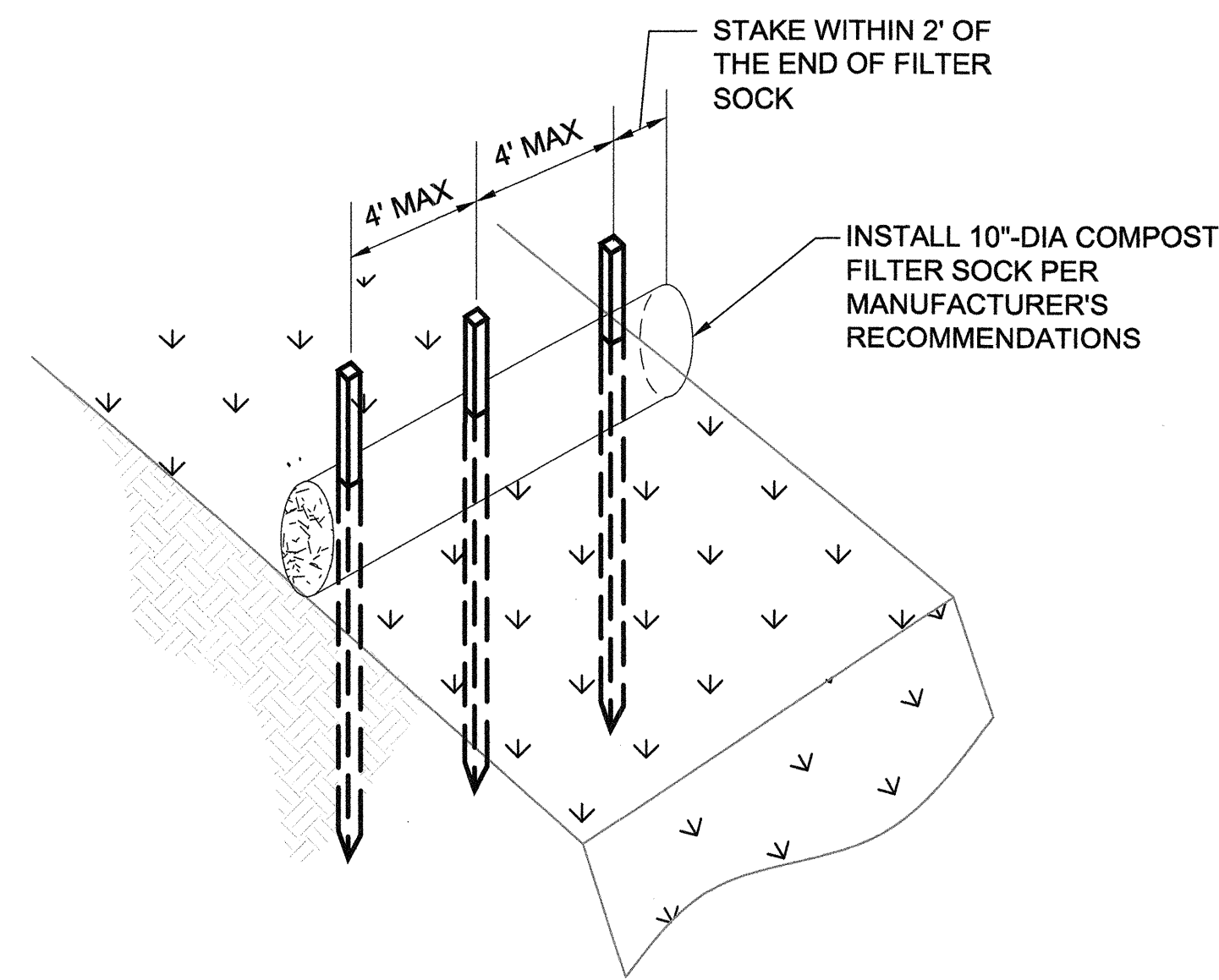
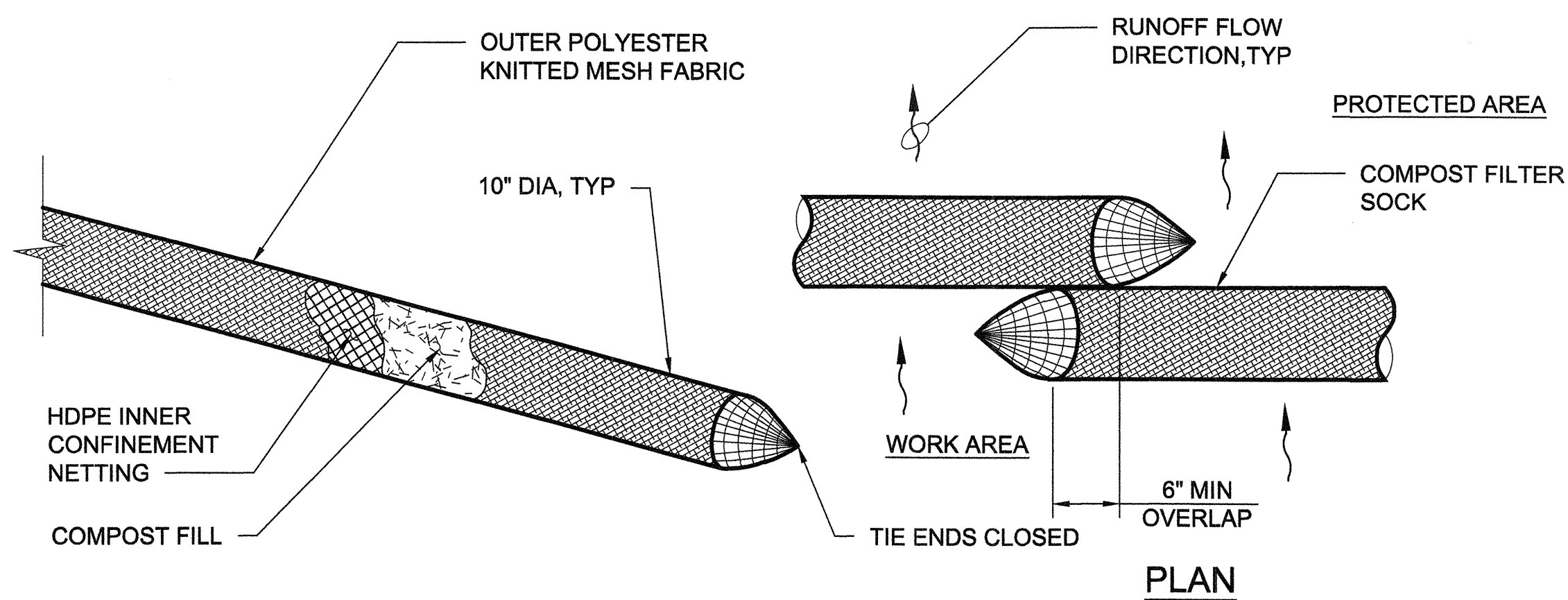
LEGEND

- APPROXIMATE LIMITS OF GRADING
- COMPOST FILTER SOCK, AS PER DET A/G-5
- ▨ COSA
- ~ APPROXIMATE DIRECTION OF ASSUMED SURFACE DRAINAGE RUNOFF FLOW

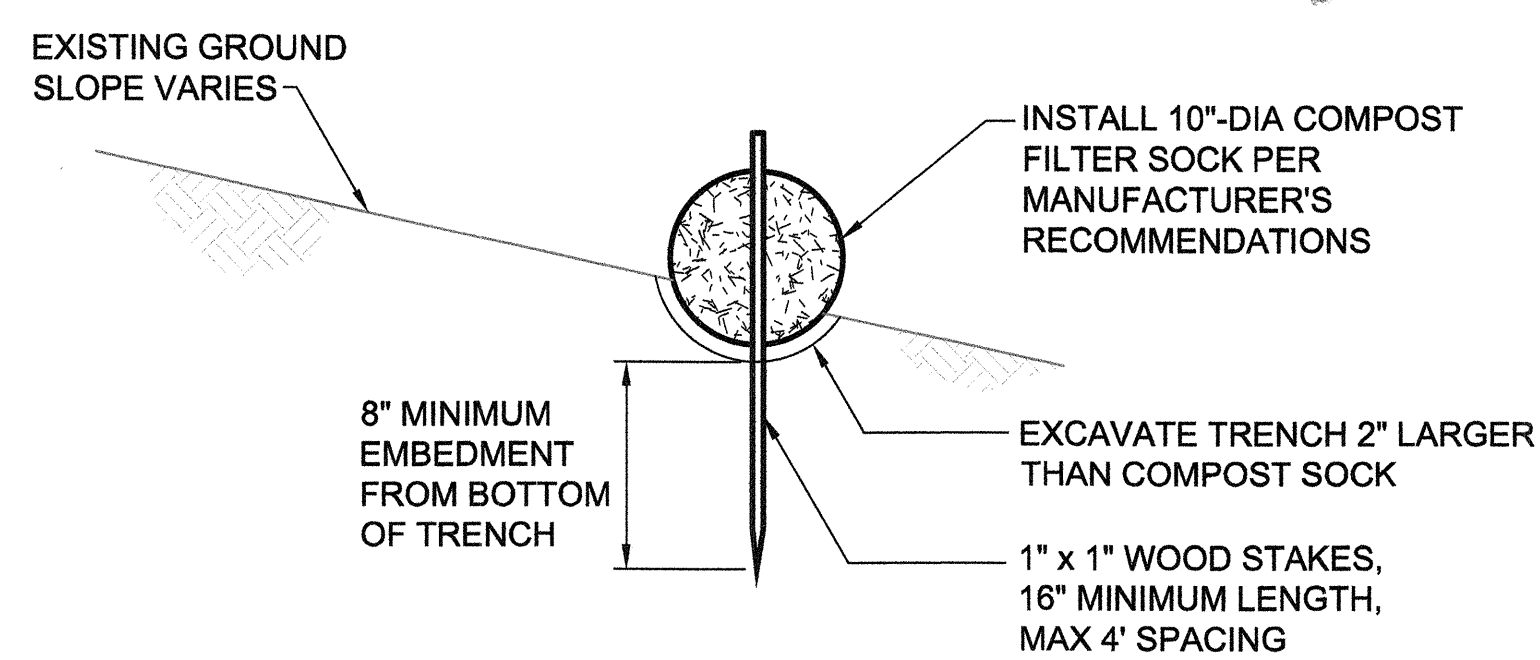


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS EROSION CONTROL PLAN - AREAS 5 AND 6					
		DESIGNED: SM DRAWN: YN CHECKED: MN APPROVED: <i>[Signature]</i> CHIEF ENGINEER		SUBMITTED: MS <i>[Signature]</i> DATE: DATE SCALE: AS SHOWN APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE	
			SHEET NO. G-4		
JOB NO. J00CF34B			SHEET NO. 5 OF 14 SHEETS		

P:\PROJECTS\HAWAII, STATE OF (H)\148833 ADA_LAVA TREE STATE MONUMENT_HAWAII\CADD2-SHEETS\CIVIL\148833-SF-LT-G-05_EROSION DET-NOTES.DWG 5/4/2016 YNODA



STAKE REQUIRED	
SOCK LENGTH (FT)	STAKES REQUIRED FOR EACH SOCK
25	8
20	6
12	4



ENTRENCHING AND STAKING DETAILS

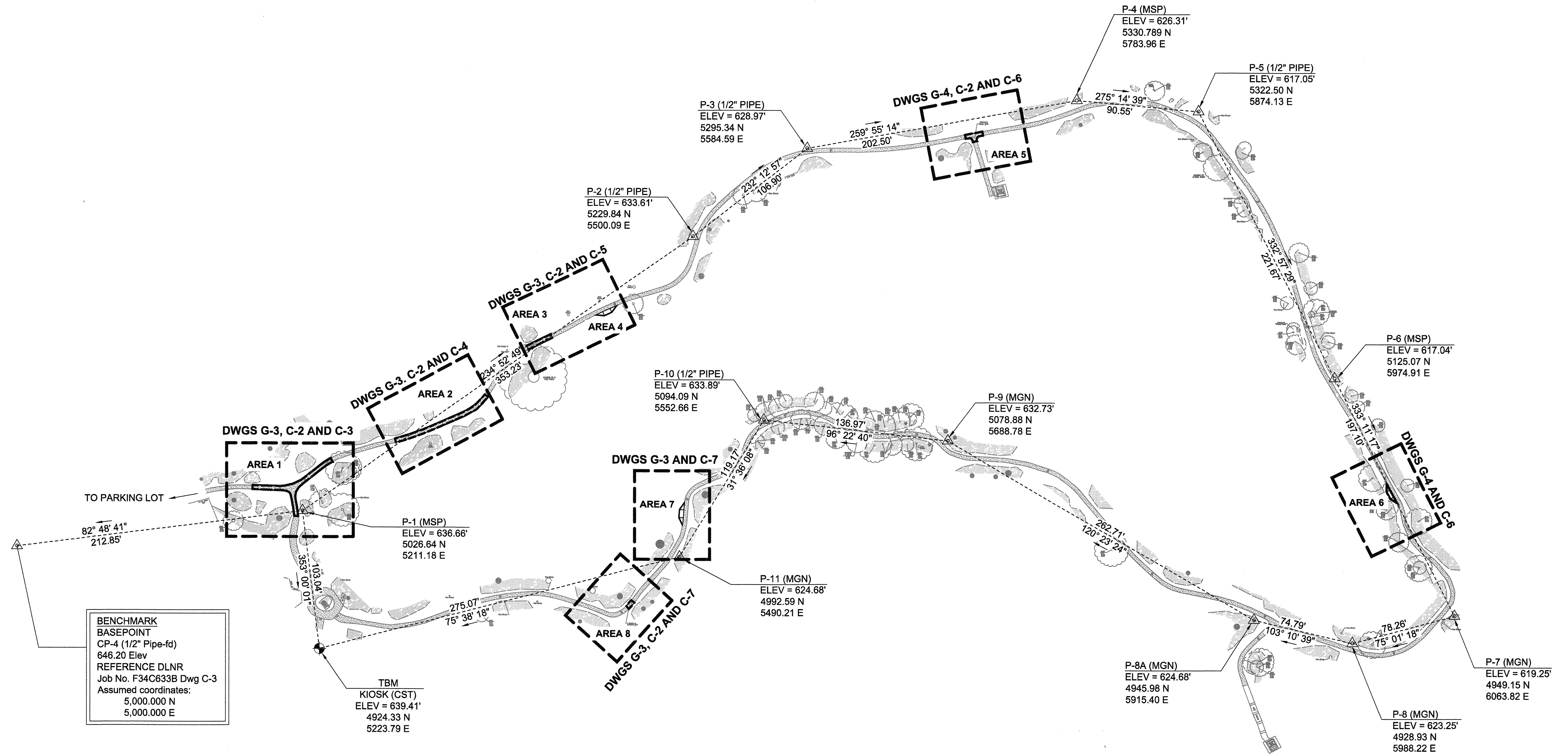
COMPOST FILTER SOCK
DETAIL
 A
 VAR
 NOT TO SCALE

EROSION AND SEDIMENT CONTROL NOTES AND BMP REQUIREMENTS

1. THE CONTRACTOR SHALL TRAIN HIS/HER EMPLOYEES AND SUBCONTRACTORS ON THE SOIL EROSION AND SEDIMENT CONTROL BMPs.
2. A SPECIFIC INDIVIDUAL APPOINTED BY THE CONTRACTOR SHALL BE DESIGNATED TO BE RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL BMPs ON THIS PROJECT.
3. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF THE PERSONS RESPONSIBLE FOR THE INSPECTION, MAINTENANCE AND REPAIR OF THE SOIL EROSION AND SEDIMENT CONTROL BMPs.
4. AN INSPECTION AND MAINTENANCE REPORT SHALL BE GENERATED FOR EACH INVESTIGATION, AND THE REPORTS KEPT ON FILE.
5. WHERE APPLICABLE AND FEASIBLE, THE BMPs TO CONTROL SOIL EROSION AND SEDIMENT AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION ACTIVITIES ARE INITIATED AND SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
6. BMPs SHALL BE EMPLOYED AT ALL TIMES TO THE MAXIMUM EXTENT PRACTICABLE TO PREVENT DAMAGE BY SEDIMENTATION TO STREAMS, WATERCOURSES, NATURAL AREAS AND THE PROPERTY OF OTHERS.
7. THE CONTRACTOR SHALL PROVIDE ADDITIONAL SOIL EROSION AND SEDIMENT CONTROL BMPs AS NEEDED WHERE CONTRACTOR TRAVELS OR WORKS BEYOND THE CONSTRUCTION LIMITS.
8. IF HEAVY RAINS ARE PROJECTED DURING A WORKDAY, ALL SOIL EROSION AND SEDIMENT CONTROL BMPs THAT ARE A PART OF THIS PROJECT SHALL BE INSPECTED IMMEDIATELY AND REINFORCED AS NECESSARY.
9. ALL SOIL EROSION AND SEDIMENT CONTROL BMPs SHALL BE CHECKED AND REPAIRED AS NECESSARY; FOR EXAMPLE, WEEKLY IN DRY PERIODS AND WITHIN TWENTY-FOUR HOURS AFTER ALL 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.
10. USE ROLL-OFF DUMPSTERS AS A TEMPORARY CONTAINER FOR DISPOSAL OF CONSTRUCTION WASTES, AND DEMOLITION WASTES. DUMPSTERS SHALL BE LEAK-PROOF AND SHALL NOT BE OVERFILLED TO THE LEVEL WHERE THEIR COVERS CANNOT BE FULLY SHUT.
11. DISPOSAL AREAS SHALL NOT BE CLOSE TO THE DIRECTION OF STORMWATER RUNOFF INTO ANY RECEIVING STATE WATER.
12. GOOD HOUSEKEEPING SHALL BE UTILIZED TO ENSURE PROTECTION OF PEDESTRIAN AND VEHICULAR ACCESS WAYS FROM MUD, DIRT AND DEBRIS.
13. THE CONTRACTOR SHALL ENSURE THAT ALL TIRES OF CONSTRUCTION VEHICLES ARE SUFFICIENTLY CLEANED SO THAT DIRT OR DEBRIS IS NOT TRACKED OFF THE CONSTRUCTION SITE. WASHING OFF TIRES WITH WATER WILL NOT BE ACCEPTABLE UNLESS THE RUNOFF IS CONTAINED AND DOES NOT ENTER THE STORMDRAIN SYSTEM ADJOINING PROPERTIES, OR ONTO THE COUNTY OR STATE RIGHT OF WAY.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS EROSION CONTROL NOTES AND DETAILS					
		DESIGNED: SM DRAWN: YN CHECKED: MN APPROVED: <i>[Signature]</i> APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE			
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.		SUBMITTED: MS <i>[Signature]</i> DATE: DATE SCALE: AS SHOWN		SHEET NO. G-5	
JOB NO. J00CF34B SHEET NO. 6 OF 14 SHEETS					

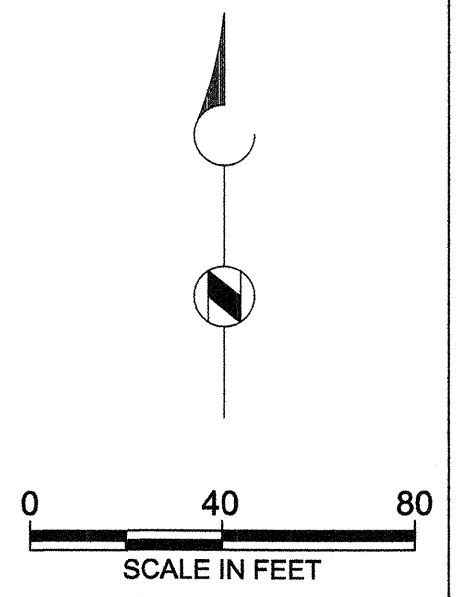
P:\PROJECTS\HAWAII, STATE OF (H)\146833 ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEETS\CIVIL\146833-SF-LT-C-01.DWG 5/5/2016 YNDDA



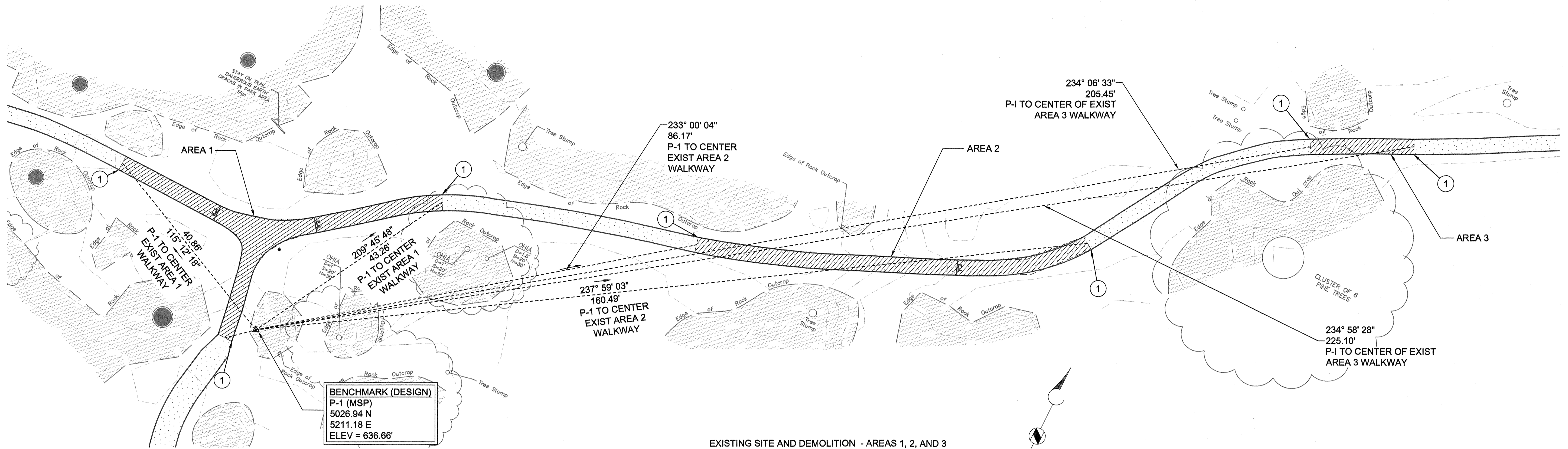
**BENCHMARK
BASEPOINT**
CP-4 (1/2" Pipe-fd)
646.20 Elev
REFERENCE DLNR
Job No. F34C633B Dwg C-3
Assumed coordinates:
5,000.000 N
5,000.000 E

TBM
KIOSK (CST)
ELEV = 639.41'
4924.33 N
5223.79 E

OVERALL PLAN AND KEY MAP
PLAN
SCALE: 1" = 40'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS					
OVERALL PLAN AND KEY MAP					
DESIGNED: SM		SUBMITTED: MS <i>g</i>			
DRAWN: YN		DATE: DATE			
CHECKED: MN		SCALE: AS SHOWN			
APPROVED:		SHEET NO.		C-1	
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. APRIL 30, 2016 EXPIRATION DATE OF THE LICENSE		 CHIEF ENGINEER		MAY - 6 2016 DATE	
		JOB NO. J00CF34B SHEET NO. 7 OF 14 SHEETS			



EXISTING SITE AND DEMOLITION - AREAS 1, 2, AND 3
PLAN
 SCALE: 1" = 10'

LEGEND

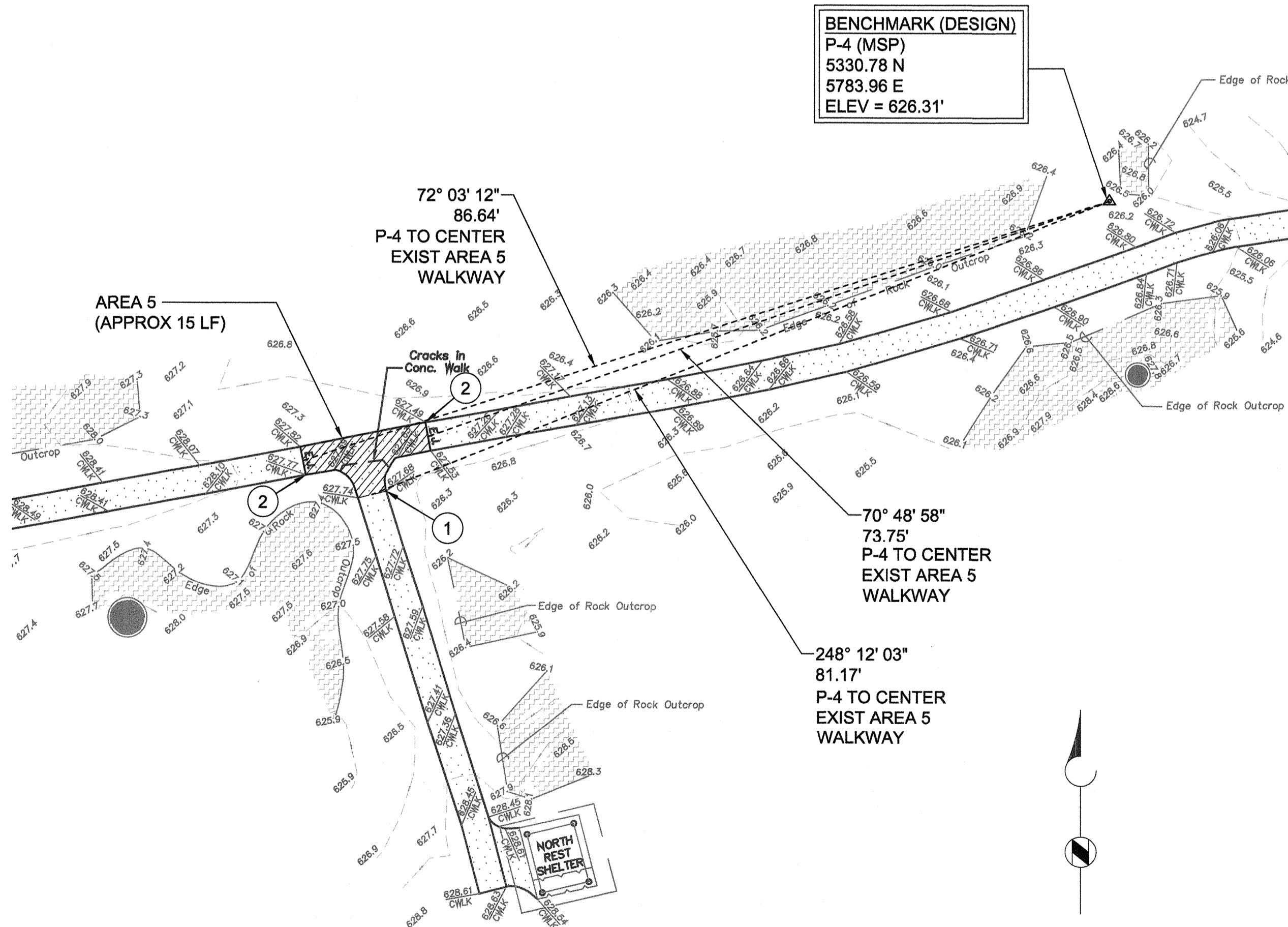
- DEMOLISH AND REMOVE
- LAVA TREE MOLD
- ROCK OUTCROP

KEY NOTES

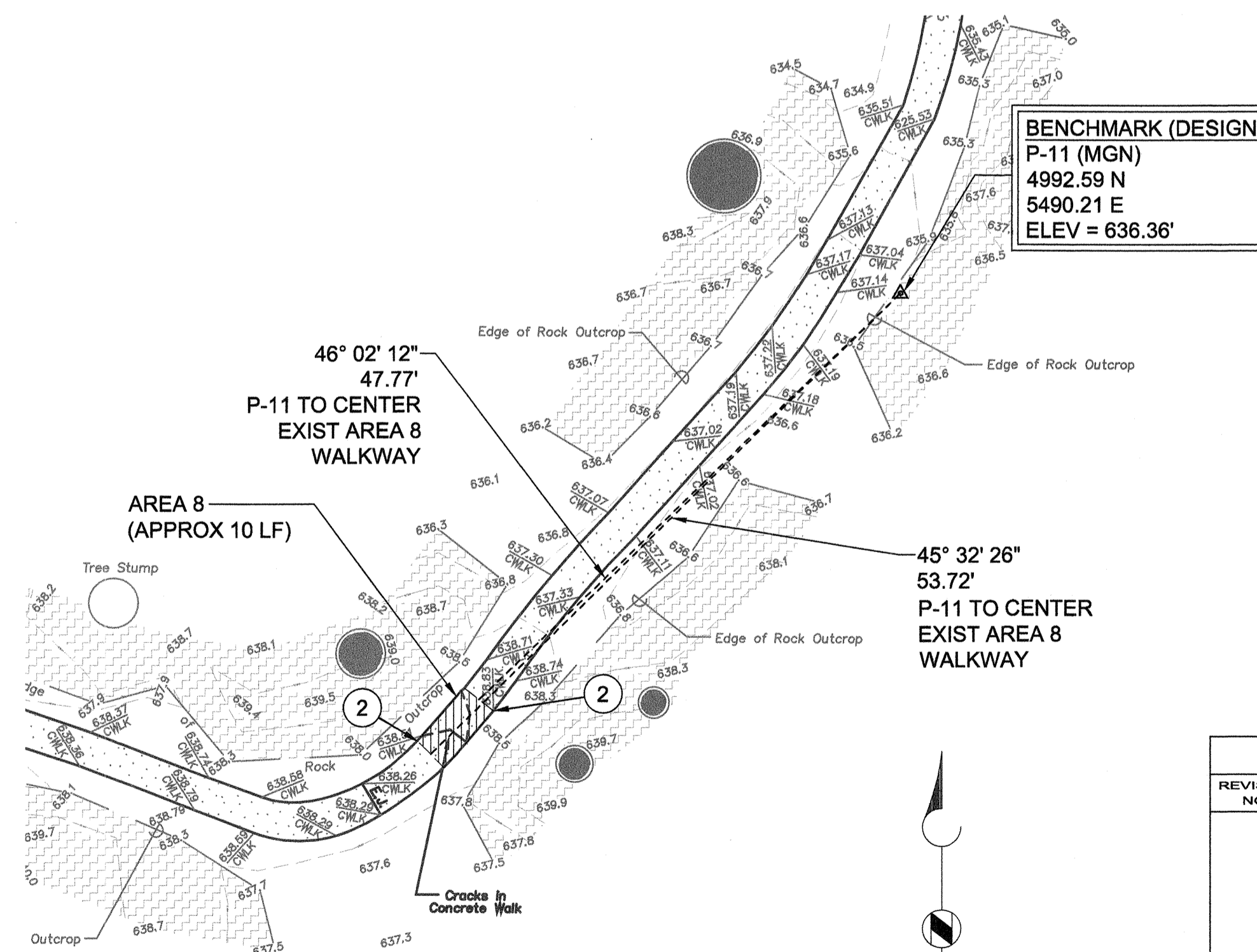
- 1 THE CONTRACTOR SHALL SAWCUT THE EXISTING CONCRETE WALKWAY AS SHOWN ON THE PLANS NEAT AND ORTHOGONAL.
- 2 THE CONTRACTOR SHALL REMOVE ENTIRE CRACKED WALKWAY PANELS TO THE NEAREST EXISTING JOINTS.

NOTES

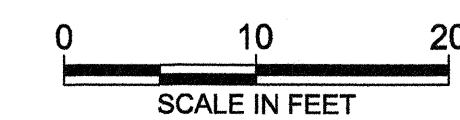
REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.



EXISTING SITE AND DEMOLITION - AREA 5
PLAN
 SCALE: 1" = 10'



EXISTING SITE AND DEMOLITION - AREA 8
PLAN
 SCALE: 1" = 10'

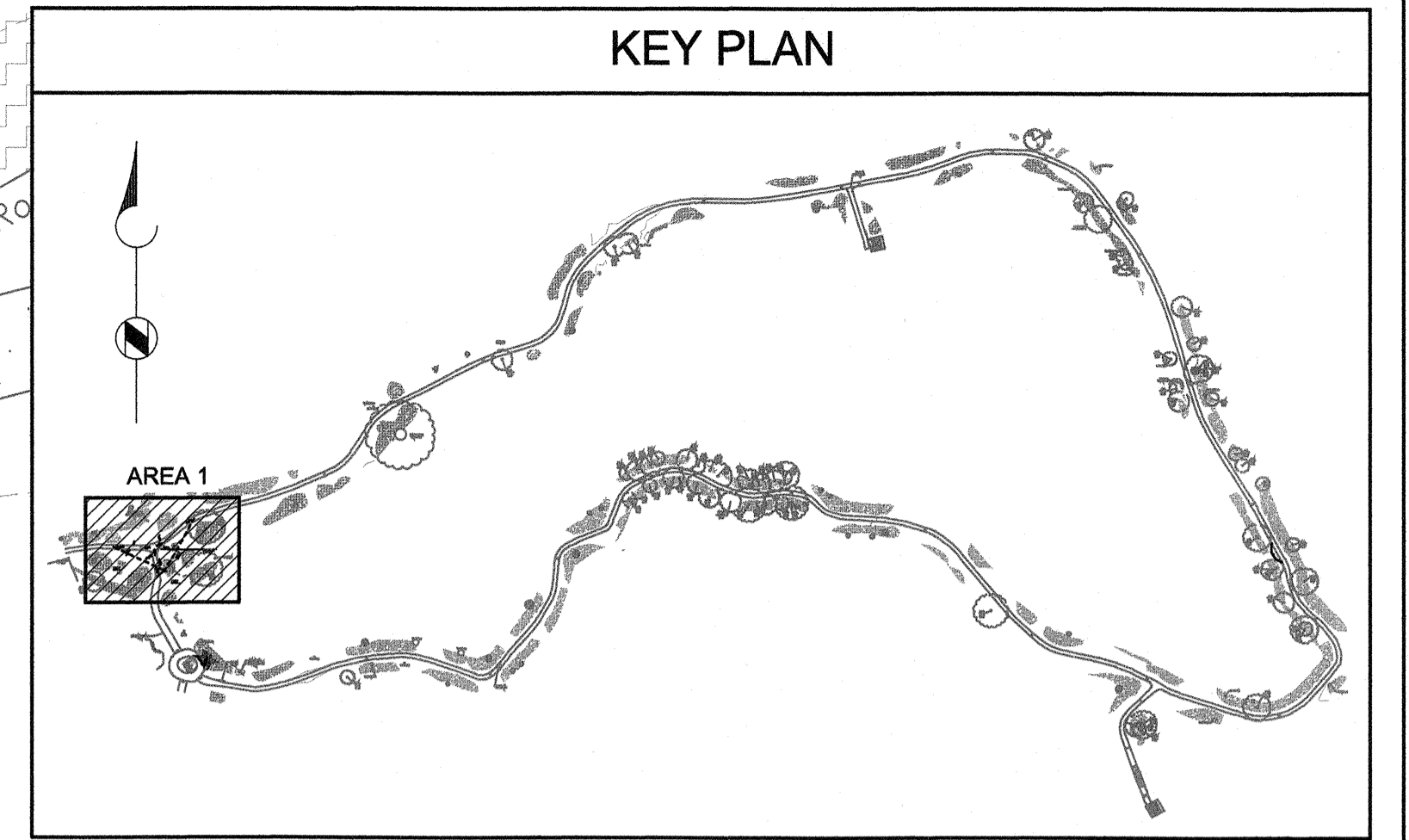


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS EXISTING CONDITION AND DEMOLITION PLAN					
		DESIGNED: SM DRAWN: YN CHECKED: MN APPROVED: <i>[Signature]</i> CHIEF ENGINEER		SUBMITTED: MS <i>[Signature]</i> DATE: DATE SCALE: AS SHOWN SHEET NO. C-2	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE					
JOB NO. J00CF34B SHEET NO. 8 OF 14 SHEETS					

PROJECT: HAWAII, STATE OF (H)146893 ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEET\3-CIVIL\146893-SF-LT-C-003.DWG 5/6/2016 YNDDA

KEY NOTE

- ① CONNECT TO EXIST CONC WALKWAY WITH EXPANSION JOINT AS PER DET C/C-8; PROVIDE SMOOTH, FLUSH, CONTINUOUS SURFACE TRANSITION

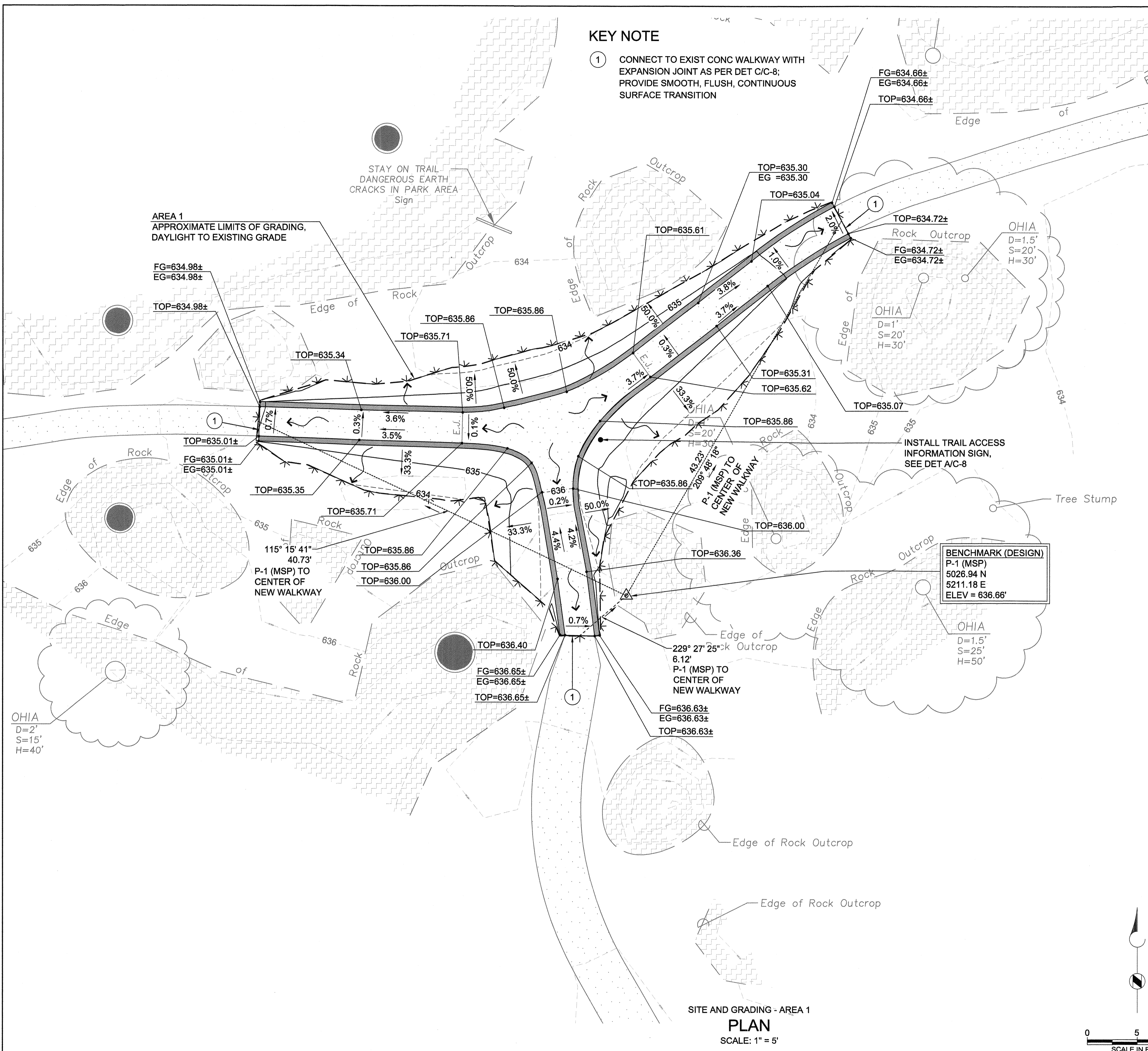


LEGEND

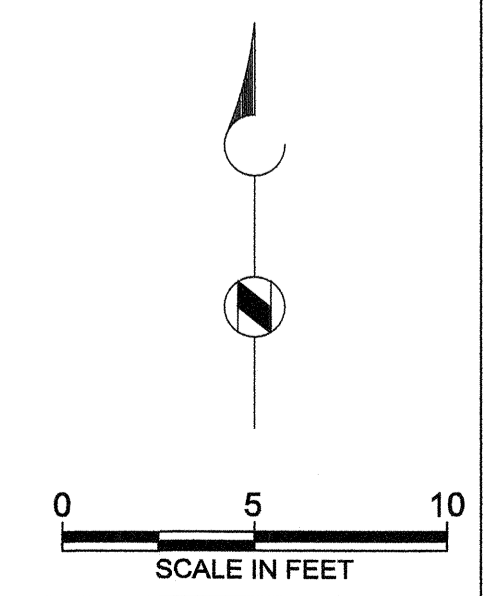
- 616 — EXISTING CONTOUR LINE
- 616 — NEW CONTOUR LINE
- ▬ 6" WIDE GRASS BUFFER
- LAVA TREE MOLD
- APPROXIMATE LIMITS OF GRADING
- ▨ CONCRETE PAVEMENT
- ▩ ROCK OUTCROP

GENERAL NOTES:

- THIS PROJECT INCLUDES ALTERATIONS TO AN EXISTING TRAIL AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAG). ALL NEW CONSTRUCTION SHALL COMPLY WITH THE TRAIL REQUIREMENTS OF THE PROPOSED HODAAG.
- SLOPES WITHIN THE CONCRETE WALKWAY SHALL NOT EXCEED A 5% RUNNING SLOPE AND A 2% CROSS SLOPE.
- UNLESS OTHERWISE NOTED, A FLAT, 6-INCH WIDE, GRASS BUFFER WILL BE LOCATED ON EACH SIDE OF THE RECONSTRUCTED CONCRETE WALKWAY.
- THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NEEDED TO DAYLIGHT TO EXISTING EARTHWORK GRADES TO AVOID LAVA ROCK FEATURES WHETHER OR NOT SHOWN ON THE PLANS. HE/SHE SHALL ASK THE ENGINEER FOR SITUATION-SPECIFIC CLARIFICATION IF UNCERTAIN.
- CONCRETE WALKWAY SLABS SHALL BE 3-FOOT WIDE MINIMUM (CLEAR WIDTH) AND 5-FOOT LONG OR OF SHORTENED LENGTH TO MATCH TO EXISTING, UNLESS OTHERWISE NOTED. SEE DET B/C-8 FOR CONCRETE WALKWAY SECTION.
- CONCRETE WALKWAY JOINTS SHALL BE CONSTRUCTED PER HDOT-HWY STD PLANS D-15.
- REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.



SITE AND GRADING - AREA 1
PLAN
SCALE: 1" = 5'



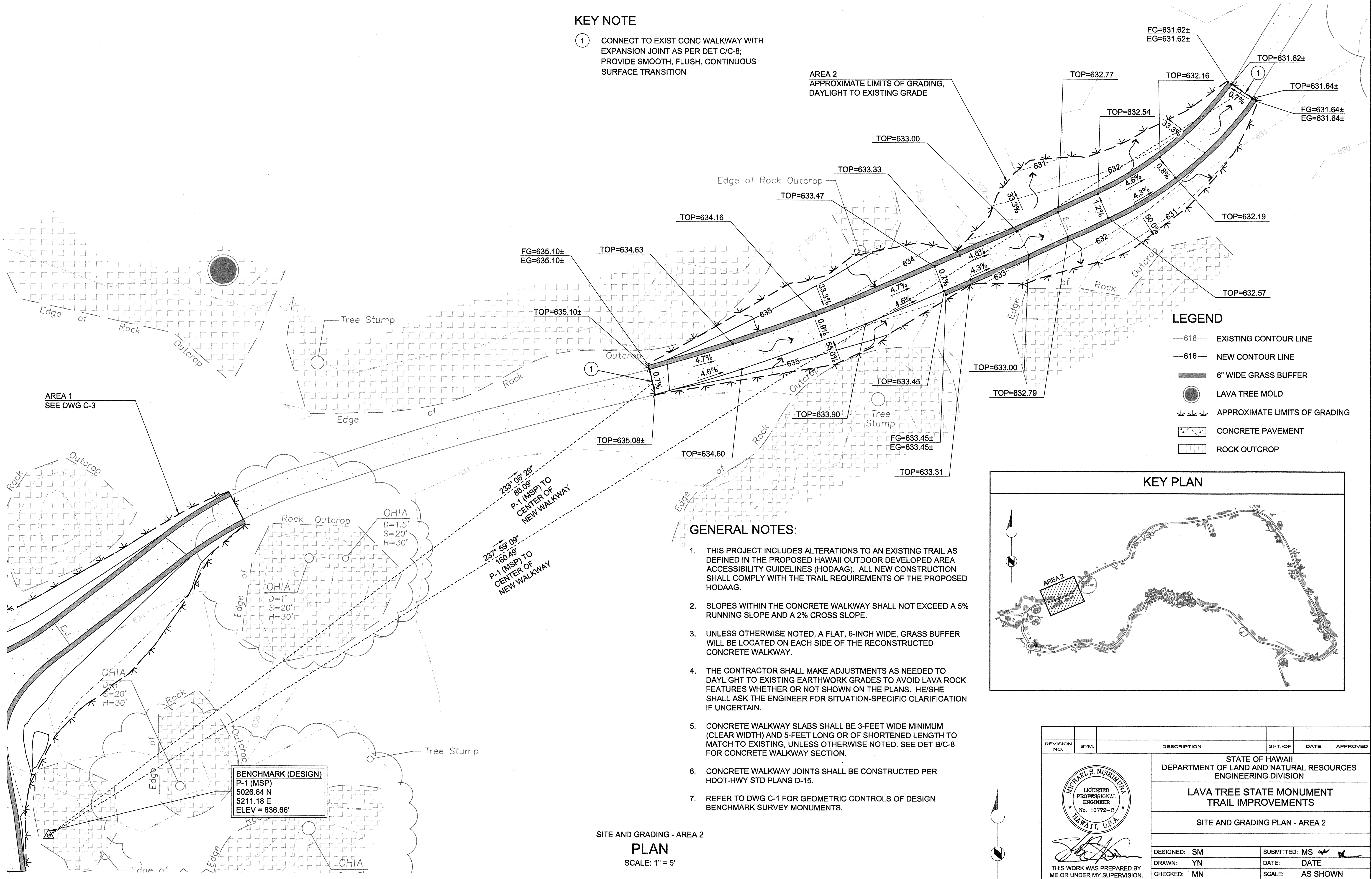
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS					
SITE AND GRADING PLAN - AREA 1					
DESIGNED: SM		SUBMITTED: MS			
DRAWN: YN		DATE: DATE			
CHECKED: MN		SCALE: AS SHOWN			
APPROVED:		APRIL 30, 2018		SHEET NO.	
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.		EXPIRATION DATE OF THE LICENSE		DATE	
CHIEF ENGINEER		MAY - 6 2016		C-3	
JOB NO. J00CF34B			SHEET NO. 9 OF 14 SHEETS		

PIPROJECTS\HAWAII, STATE OF (HII)\46833 ADA_LAVA TREE STATE MONUMENT_HAWAII\CADD2-SHEETS\CIVIL\146833-SF-LT-C-004.DWG 5/6/2016 YNODA

KEY NOTE

- 1 CONNECT TO EXIST CONC WALKWAY WITH EXPANSION JOINT AS PER DET C/C-8; PROVIDE SMOOTH, FLUSH, CONTINUOUS SURFACE TRANSITION

AREA 2
APPROXIMATE LIMITS OF GRADING,
DAYLIGHT TO EXISTING GRADE

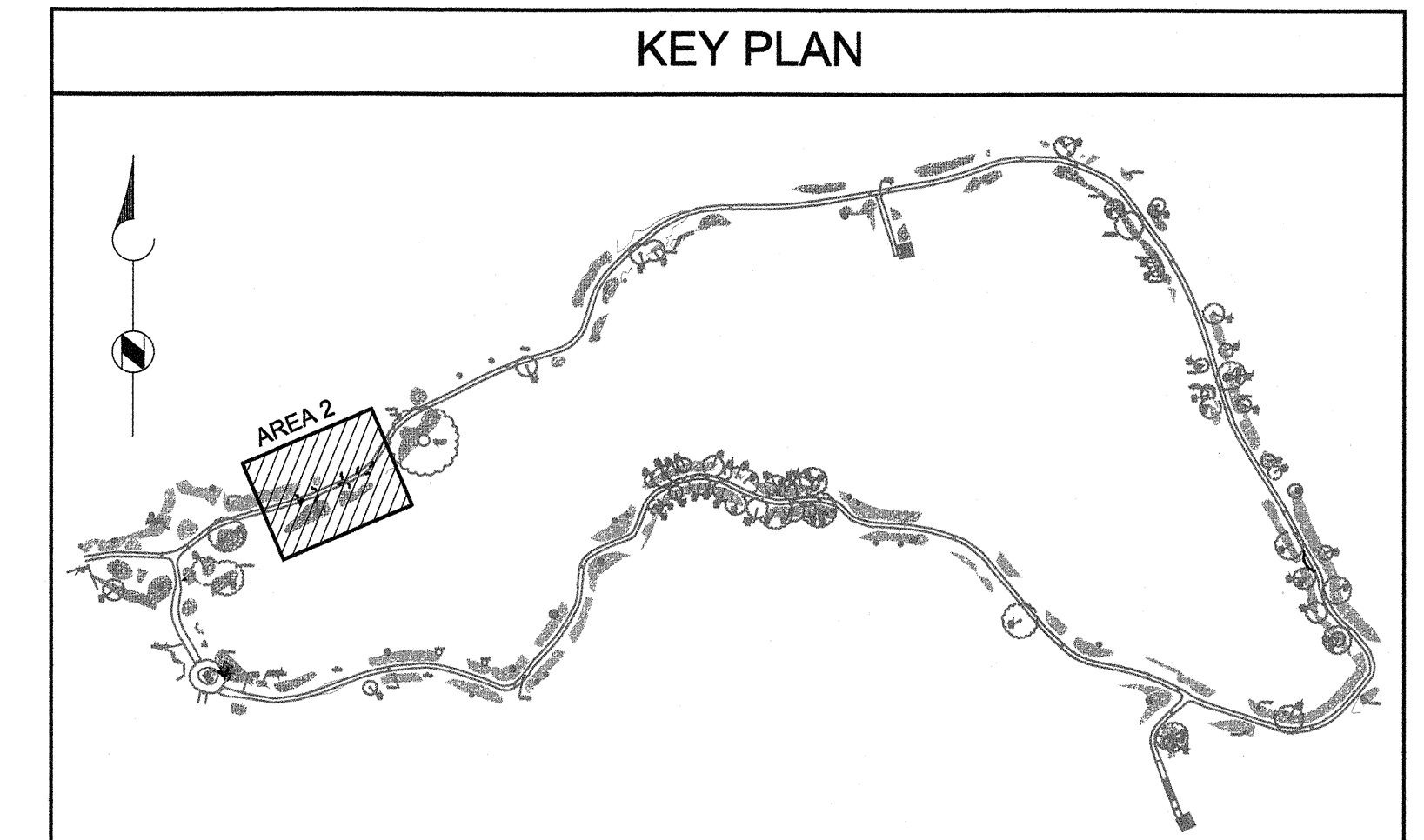


LEGEND

- 616 EXISTING CONTOUR LINE
- 616 NEW CONTOUR LINE
- 6" WIDE GRASS BUFFER
- LAVA TREE MOLD
- APPROXIMATE LIMITS OF GRADING
- CONCRETE PAVEMENT
- ROCK OUTCROP

GENERAL NOTES:

- THIS PROJECT INCLUDES ALTERATIONS TO AN EXISTING TRAIL AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAG). ALL NEW CONSTRUCTION SHALL COMPLY WITH THE TRAIL REQUIREMENTS OF THE PROPOSED HODAAG.
- SLOPES WITHIN THE CONCRETE WALKWAY SHALL NOT EXCEED A 5% RUNNING SLOPE AND A 2% CROSS SLOPE.
- UNLESS OTHERWISE NOTED, A FLAT, 6-INCH WIDE, GRASS BUFFER WILL BE LOCATED ON EACH SIDE OF THE RECONSTRUCTED CONCRETE WALKWAY.
- THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NEEDED TO DAYLIGHT TO EXISTING EARTHWORK GRADES TO AVOID LAVA ROCK FEATURES WHETHER OR NOT SHOWN ON THE PLANS. HE/SHE SHALL ASK THE ENGINEER FOR SITUATION-SPECIFIC CLARIFICATION IF UNCERTAIN.
- CONCRETE WALKWAY SLABS SHALL BE 3-FOOT WIDE MINIMUM (CLEAR WIDTH) AND 5-FOOT LONG OR OF SHORTENED LENGTH TO MATCH TO EXISTING, UNLESS OTHERWISE NOTED. SEE DET B/C-8 FOR CONCRETE WALKWAY SECTION.
- CONCRETE WALKWAY JOINTS SHALL BE CONSTRUCTED PER HDOT-HWY STD PLANS D-15.
- REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.



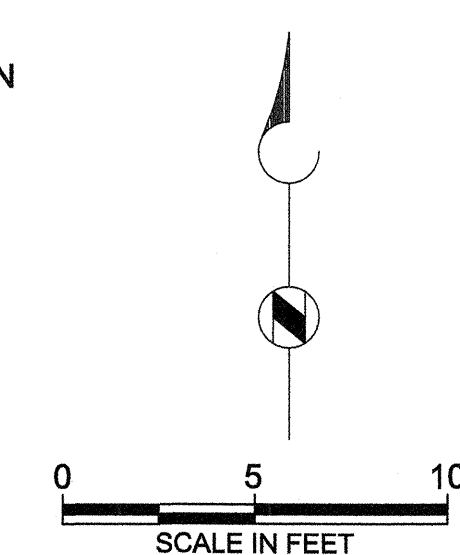
SITE AND GRADING - AREA 2
PLAN
SCALE: 1" = 5'

BENCHMARK (DESIGN)
P-1 (MSP)
5026.64 N
5211.18 E
ELEV = 636.66'

233° 08' 29"
88.09'
P-1 (MSP) TO
CENTER OF
NEW WALKWAY

237° 59' 09"
160.49'
P-1 (MSP) TO
CENTER OF
NEW WALKWAY

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS SITE AND GRADING PLAN - AREA 2					
DESIGNED: SM		SUBMITTED: MS			
DRAWN: YN		DATE: DATE			
CHECKED: MN		SCALE: AS SHOWN			
APPROVED:		APRIL 30, 2018		SHEET NO.	
CHIEF ENGINEER		EXPIRATION DATE OF THE LICENSE		DATE	
		MAY - 6 2016		C-4	
JOB NO. J00CF34B			SHEET NO. 10 OF 14 SHEETS		



KEY NOTE

- ① CONNECT TO EXIST CONC WALKWAY WITH EXPANSION JOINT AS PER DET C/C-8; PROVIDE SMOOTH, FLUSH, CONTINUOUS SURFACE TRANSITION

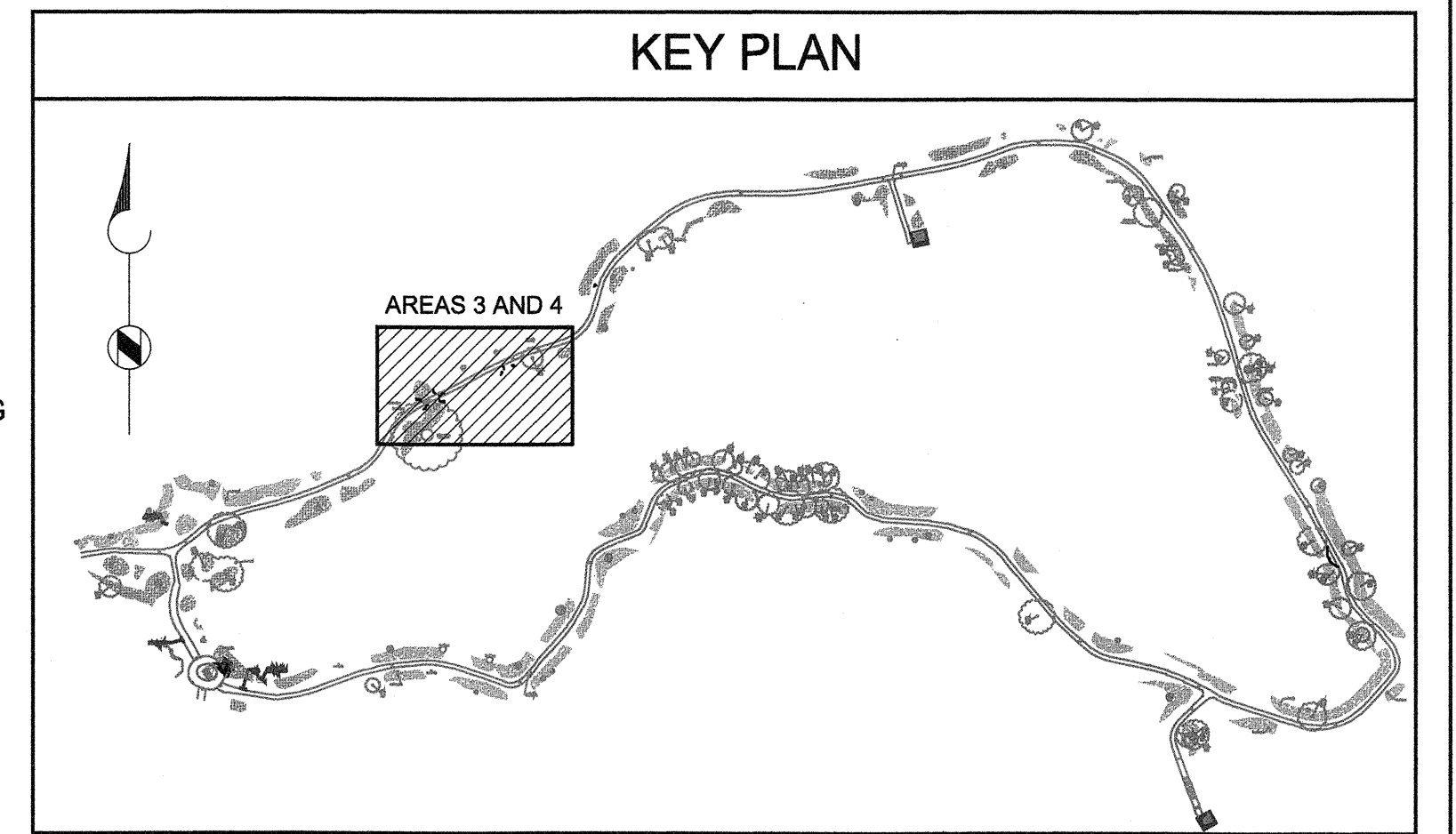
GENERAL NOTES:

- THIS PROJECT INCLUDES ALTERATIONS TO AN EXISTING TRAIL AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAG). ALL NEW CONSTRUCTION SHALL COMPLY WITH THE TRAIL REQUIREMENTS OF THE PROPOSED HODAAG.
- SLOPES WITHIN THE CONCRETE WALKWAY SHALL NOT EXCEED A 5% RUNNING SLOPE AND A 2% CROSS SLOPE.
- UNLESS OTHERWISE NOTED, A FLAT, 6-INCH WIDE, GRASS BUFFER WILL BE LOCATED ON EACH SIDE OF THE RECONSTRUCTED CONCRETE WALKWAY.
- THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NEEDED TO DAYLIGHT TO EXISTING EARTHWORK GRADES TO AVOID LAVA ROCK FEATURES WHETHER OR NOT SHOWN ON THE PLANS. HE/SHE SHALL ASK THE ENGINEER FOR SITUATION-SPECIFIC CLARIFICATION IF UNCERTAIN.
- CONCRETE WALKWAY SLABS SHALL BE 3-FEET WIDE MINIMUM (CLEAR WIDTH) AND 5-FEET LONG OR OF SHORTENED LENGTH TO MATCH TO EXISTING, UNLESS OTHERWISE NOTED. SEE DET B/C-8 FOR CONCRETE WALKWAY SECTION.
- CONCRETE WALKWAY JOINTS SHALL BE CONSTRUCTED PER HDOT-HWY STD PLANS D-15.
- REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.

LEGEND

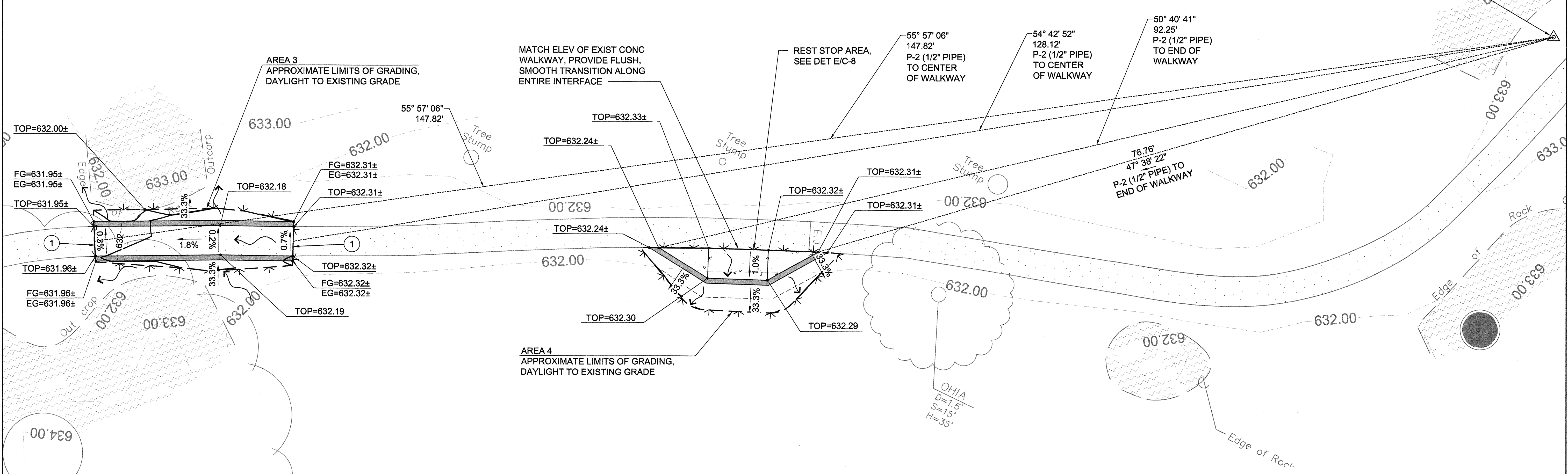
- 616 — EXISTING CONTOUR LINE
- 616 — NEW CONTOUR LINE
- 6" WIDE GRASS BUFFER
- LAVA TREE MOLD
- ↓ ↓ ↓ APPROXIMATE LIMITS OF GRADING
- CONCRETE PAVEMENT
- ROCK OUTCROP

KEY PLAN

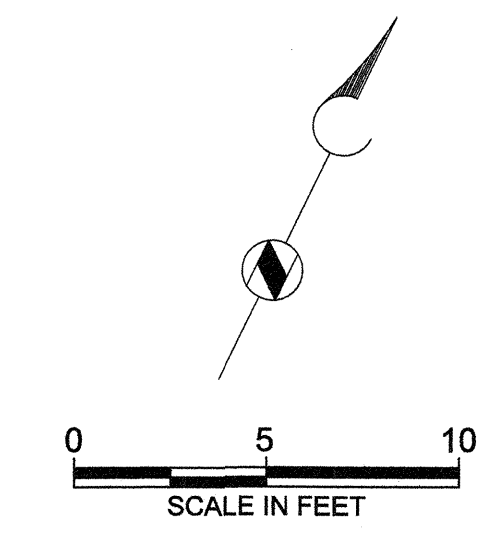


BENCHMARK (DESIGN)
P-2 (1/2" PIPE)
5229.84 N
5500.10 E
ELEV = 633.61'

P:\PROJECTS\HAWAII, STATE OF (H)\146893.ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEET\SC-CIVIL\146893-SF-LT-C-005.DWG 5/6/2016 YNDDA

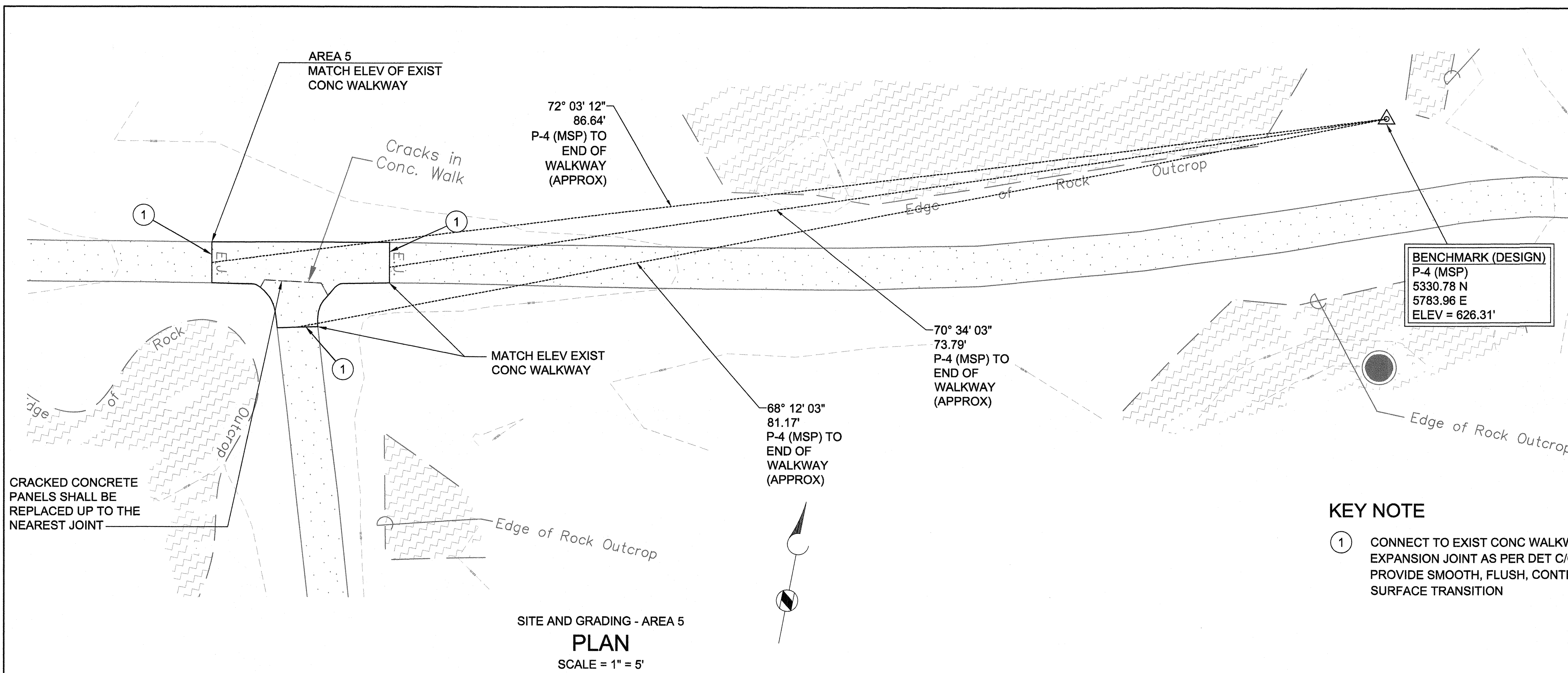


SITE AND GRADING - AREAS 3 AND 4
PLAN
 SCALE: 1" = 5'

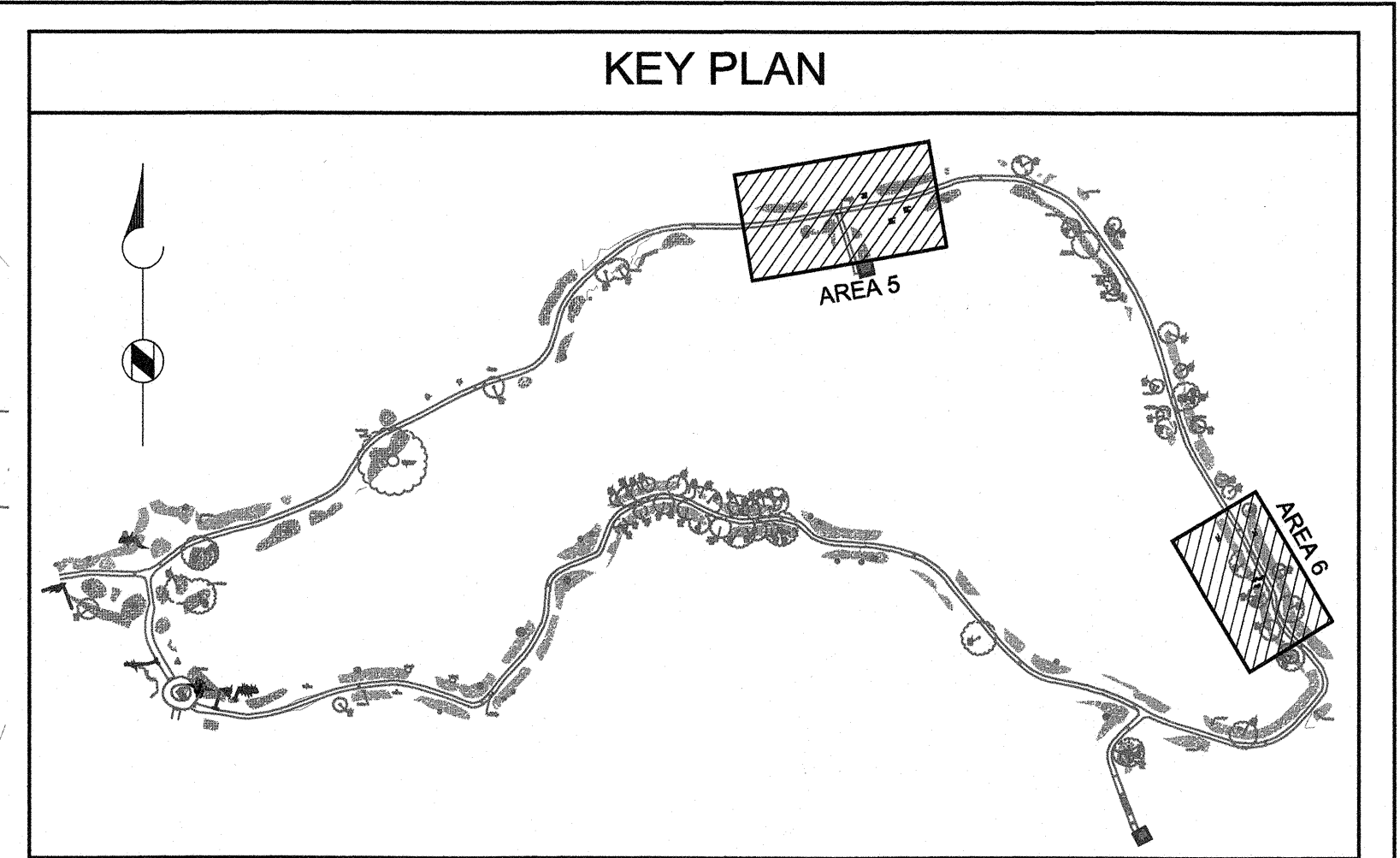


REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS SITE AND GRADING PLAN - AREAS 3 AND 4					
DESIGNED: SM	SUBMITTED: MS <i>al</i>				
DRAWN: YN	DATE: DATE				
CHECKED: MN	SCALE: AS SHOWN				
APPROVED:	SHEET NO.				
APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE		MAY - 6 2016 DATE		C-5	
JOB NO. J00CF34B SHEET NO. 11 OF 14 SHEETS					

P:\PROJECTS\HAWAII, STATE OF (H)\146883 ADA_LAVA TREE STATE MONUMENT - HAWAII_CADD\2-SHEETS\CIVIL\146883-SF-LT-C-06.DWG 5/6/2016 YNODA



SITE AND GRADING - AREA 5
PLAN
 SCALE = 1" = 5'



LEGEND

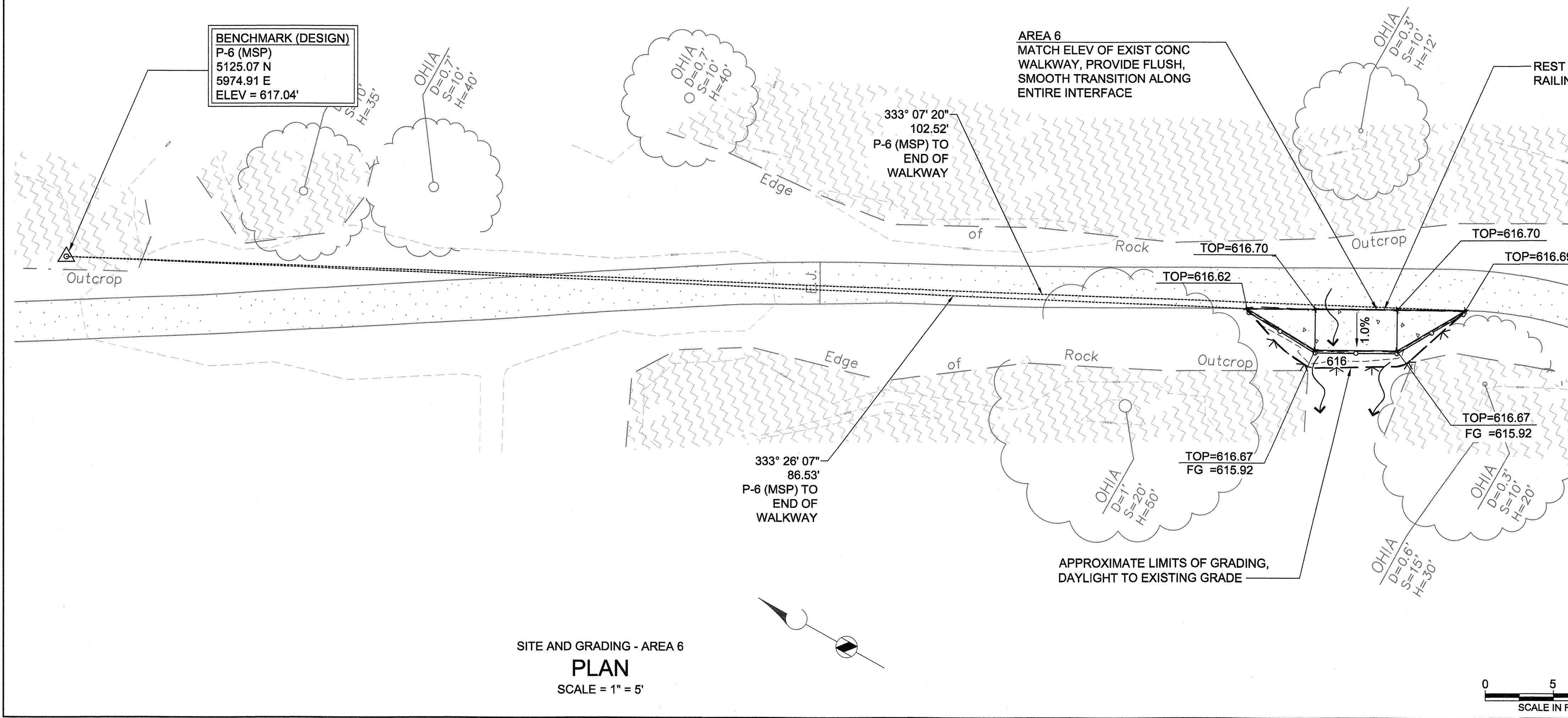
- 616 — EXISTING CONTOUR LINE
- 616 — NEW CONTOUR LINE
- 6" WIDE GRASS BUFFER
- LAVA TREE MOLD
- ⌋⌋⌋⌋ APPROXIMATE LIMITS OF GRADING
- ▒ CONCRETE PAVEMENT
- ▒ ROCK OUTCROP

KEY NOTE

- ① CONNECT TO EXIST CONC WALKWAY WITH EXPANSION JOINT AS PER DET C/C-8; PROVIDE SMOOTH, FLUSH, CONTINUOUS SURFACE TRANSITION

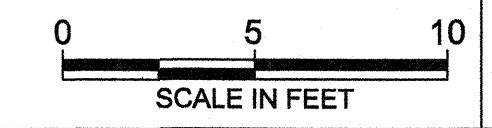
GENERAL NOTES:

1. THIS PROJECT INCLUDES ALTERATIONS TO AN EXISTING TRAIL AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAG). ALL NEW CONSTRUCTION SHALL COMPLY WITH THE TRAIL REQUIREMENTS OF THE PROPOSED HODAAG.
2. SLOPES WITHIN THE CONCRETE WALKWAY SHALL NOT EXCEED A 5% RUNNING SLOPE AND A 2% CROSS SLOPE.
3. UNLESS OTHERWISE NOTED, A FLAT, 6-INCH WIDE, GRASS BUFFER WILL BE LOCATED ON EACH SIDE OF THE RECONSTRUCTED CONCRETE WALKWAY.
4. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NEEDED TO DAYLIGHT TO EXISTING EARTHWORK GRADES TO AVOID LAVA ROCK FEATURES WHETHER OR NOT SHOWN ON THE PLANS. HE/SHE SHALL ASK THE ENGINEER FOR SITUATION-SPECIFIC CLARIFICATION IF UNCERTAIN.
5. CONCRETE WALKWAY SLABS SHALL BE 3-FEET WIDE MINIMUM (CLEAR WIDTH) AND 5-FEET LONG OR OF SHORTENED LENGTH TO MATCH TO EXISTING, UNLESS OTHERWISE NOTED. SEE DET B/C-8 FOR CONCRETE WALKWAY SECTION.
6. CONCRETE WALKWAY JOINTS SHALL BE CONSTRUCTED PER HDOT-HWY STD PLANS D-15.
7. REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.



SITE AND GRADING - AREA 6
PLAN
 SCALE = 1" = 5'

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS SITE AND GRADING PLAN - AREAS 5 AND 6					
DESIGNED: SM DRAWN: YN CHECKED: MN APPROVED: <i>[Signature]</i> CHIEF ENGINEER		SUBMITTED: MS <i>[Signature]</i> DATE: DATE SCALE: AS SHOWN SHEET NO. C-6			
APRIL 30, 2018 EXPIRATION DATE OF THE LICENSE MAY - 6 2016 DATE					
JOB NO. J00CF34B SHEET NO. 12 OF 14 SHEETS					



PIPROJECTS\HAWAII, STATE OF (H)\146833 ADA_LAVA TREE STATE MONUMENT_HAWAII_CADD\2-SHEETS\CIVIL\146833-SF-LT-C-007.DWG 5/6/2016 YNODA

KEY NOTE

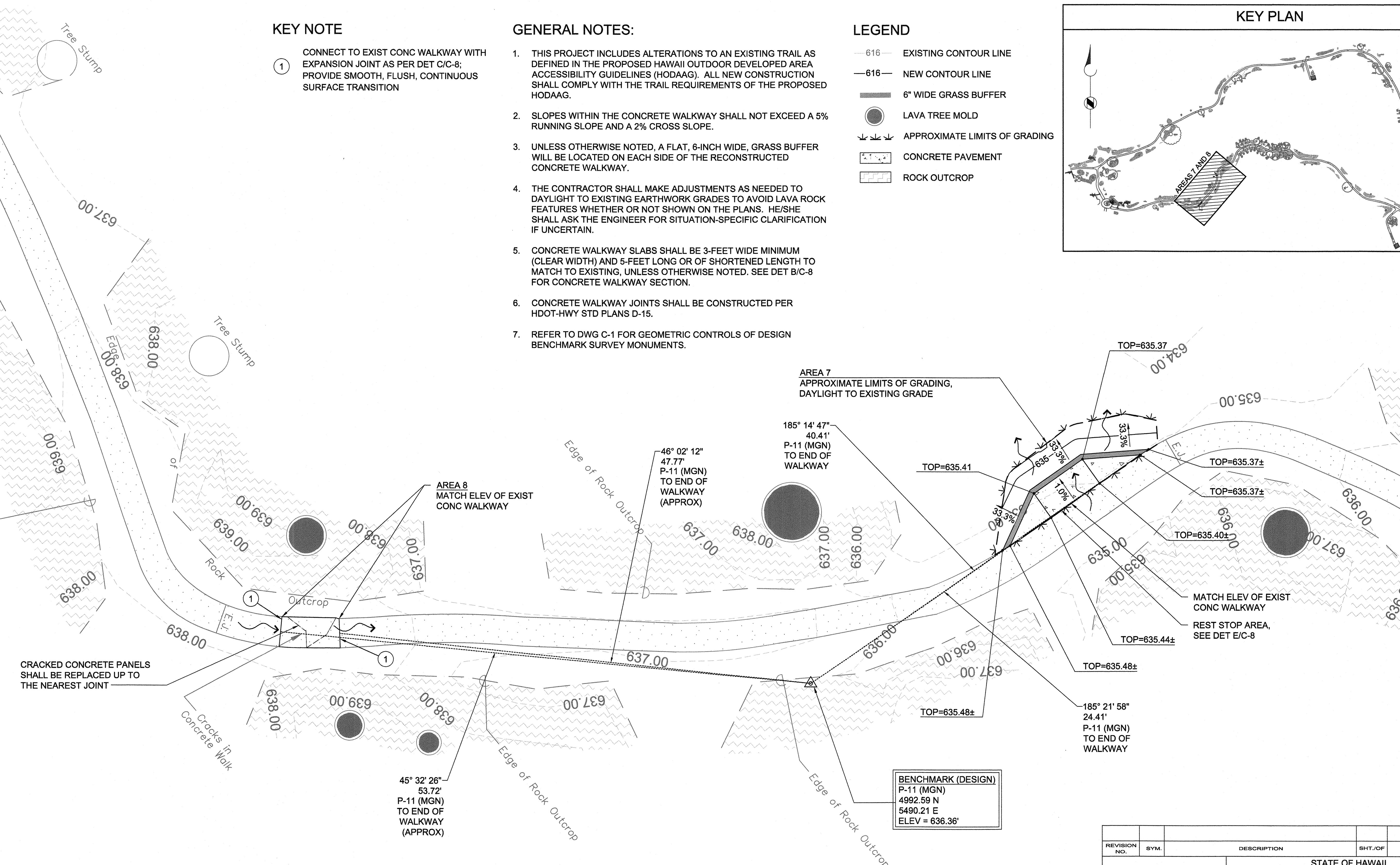
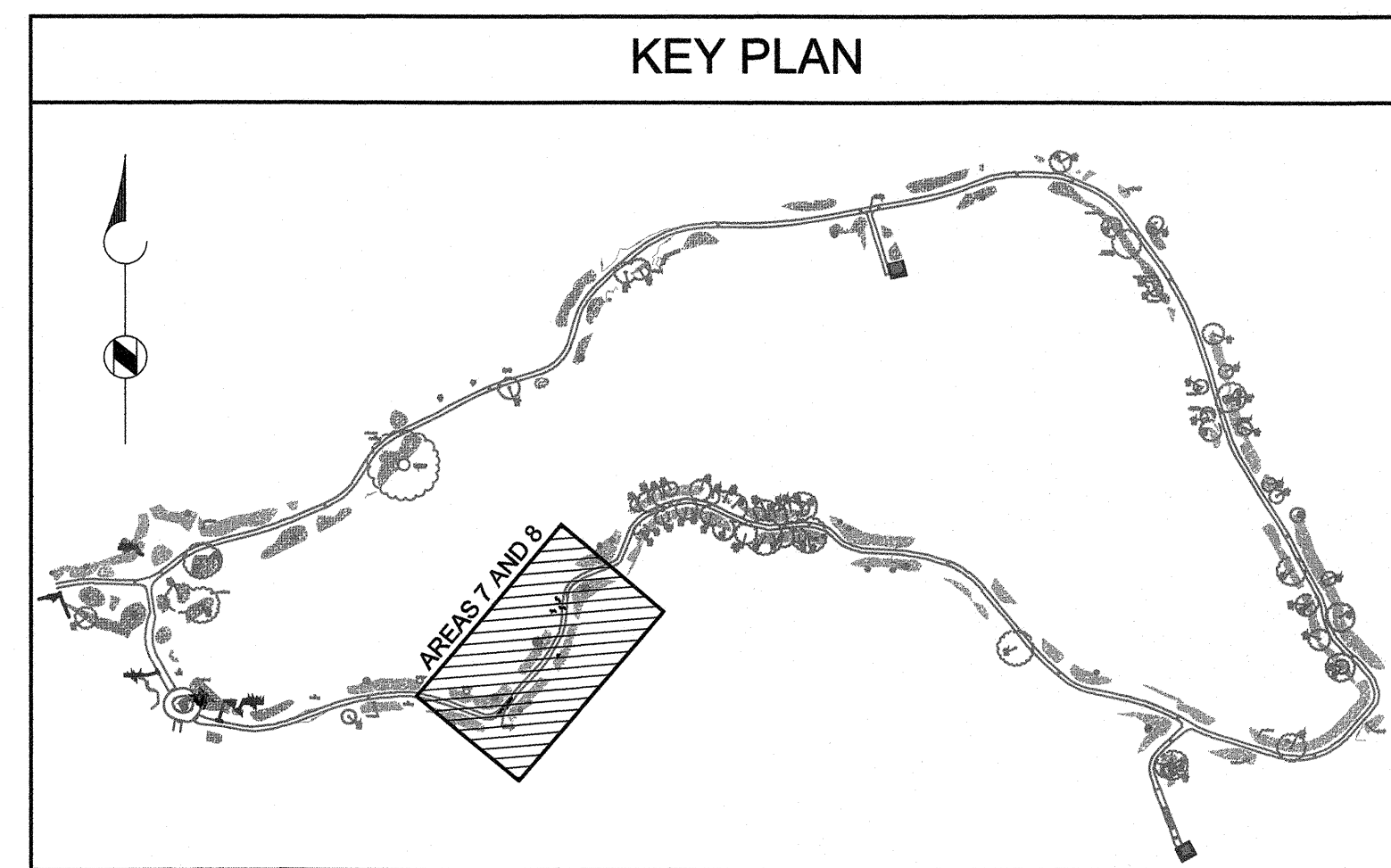
- 1. CONNECT TO EXIST CONC WALKWAY WITH EXPANSION JOINT AS PER DET C/C-8; PROVIDE SMOOTH, FLUSH, CONTINUOUS SURFACE TRANSITION

GENERAL NOTES:

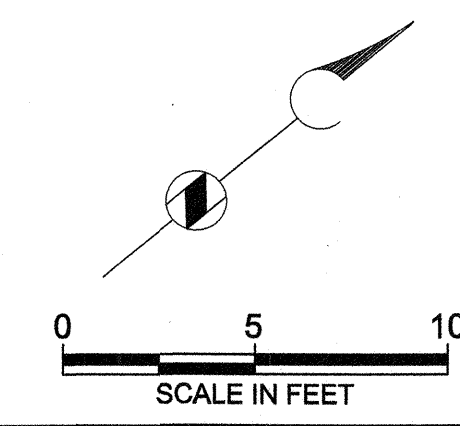
1. THIS PROJECT INCLUDES ALTERATIONS TO AN EXISTING TRAIL AS DEFINED IN THE PROPOSED HAWAII OUTDOOR DEVELOPED AREA ACCESSIBILITY GUIDELINES (HODAAG). ALL NEW CONSTRUCTION SHALL COMPLY WITH THE TRAIL REQUIREMENTS OF THE PROPOSED HODAAG.
2. SLOPES WITHIN THE CONCRETE WALKWAY SHALL NOT EXCEED A 5% RUNNING SLOPE AND A 2% CROSS SLOPE.
3. UNLESS OTHERWISE NOTED, A FLAT, 6-INCH WIDE, GRASS BUFFER WILL BE LOCATED ON EACH SIDE OF THE RECONSTRUCTED CONCRETE WALKWAY.
4. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AS NEEDED TO DAYLIGHT TO EXISTING EARTHWORK GRADES TO AVOID LAVA ROCK FEATURES WHETHER OR NOT SHOWN ON THE PLANS. HE/SHE SHALL ASK THE ENGINEER FOR SITUATION-SPECIFIC CLARIFICATION IF UNCERTAIN.
5. CONCRETE WALKWAY SLABS SHALL BE 3-FEET WIDE MINIMUM (CLEAR WIDTH) AND 5-FEET LONG OR OF SHORTENED LENGTH TO MATCH TO EXISTING, UNLESS OTHERWISE NOTED. SEE DET B/C-8 FOR CONCRETE WALKWAY SECTION.
6. CONCRETE WALKWAY JOINTS SHALL BE CONSTRUCTED PER HDOT-HWY STD PLANS D-15.
7. REFER TO DWG C-1 FOR GEOMETRIC CONTROLS OF DESIGN BENCHMARK SURVEY MONUMENTS.

LEGEND

- 616- EXISTING CONTOUR LINE
- 616- NEW CONTOUR LINE
- 6" WIDE GRASS BUFFER
- LAVA TREE MOLD
- APPROXIMATE LIMITS OF GRADING
- CONCRETE PAVEMENT
- ROCK OUTCROP

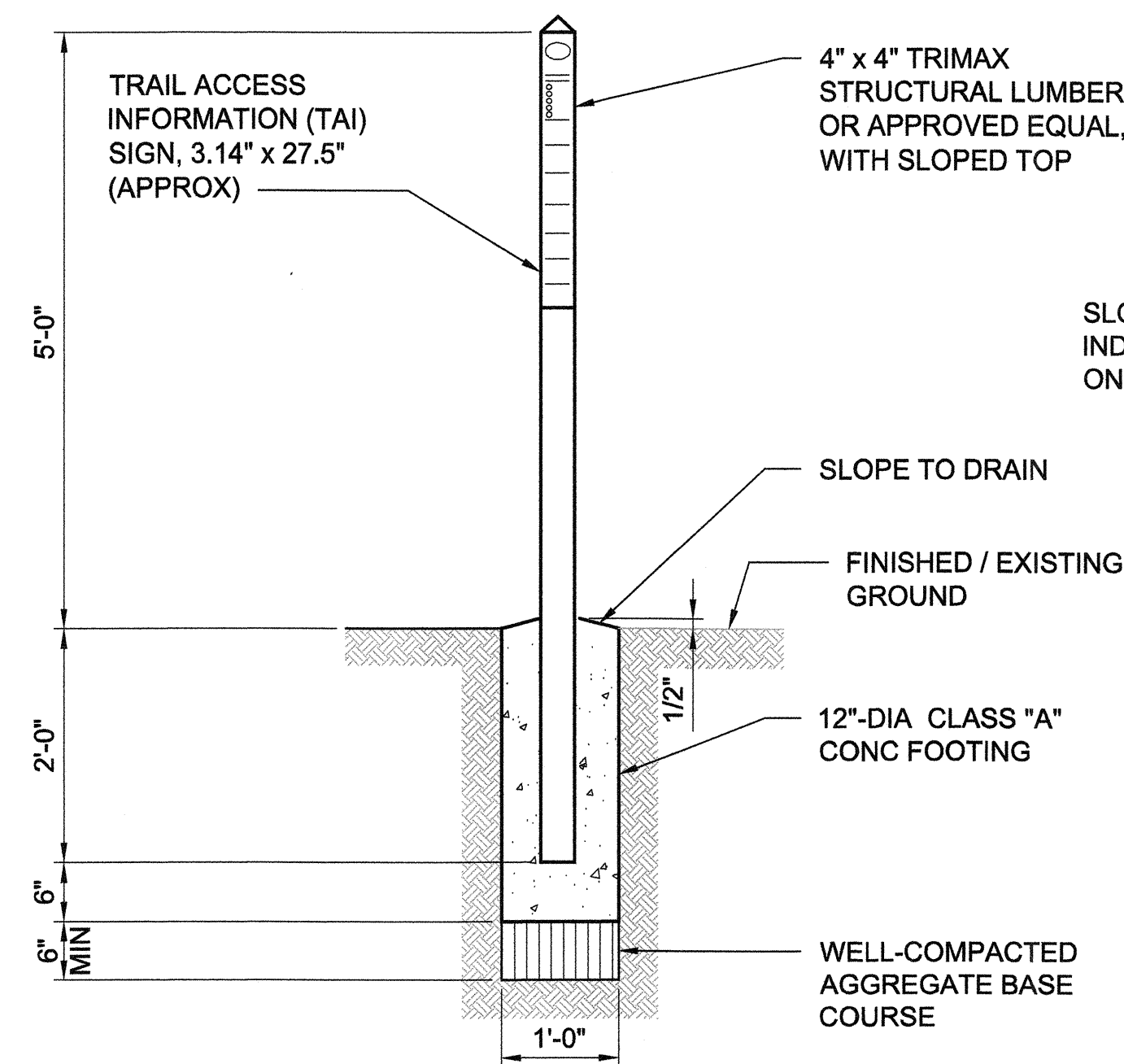


SITE AND GRADING - AREAS 7 AND 8
PLAN
SCALE: 1" = 5'



REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS SITE AND GRADING PLAN - AREAS 7 AND 8					
DESIGNED: SM	SUBMITTED: MS				
DRAWN: YN	DATE: DATE				
CHECKED: MN	SCALE: AS SHOWN				
APPROVED:	APRIL 30, 2018		SHEET NO.		
EXPIRATION DATE OF THE LICENSE		MAY - 6 2016		C-7	
JOB NO. J00CF34B SHEET NO. 13 OF 14 SHEETS					

P:\PROJECTS\HAWAII, STATE OF (H)\146833 ADA_LAVA TREE STATE MONUMENT_HAWAII\CADD2-SHEETS\CIVIL\146833-SF-LT-C-08_CONSTR_DETAILS.DWG 5/6/2016 YNDDA

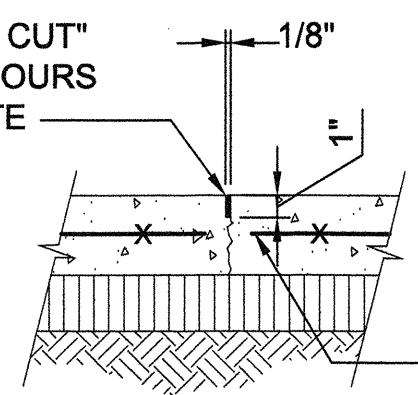


NOTE:
TAI STRIP BY BENEFICIAL DESIGNS; INFORMATION TO BE INCLUDED SHALL BE COORDINATED WITH THE ENGINEER.

TRAIL ACCESS INFORMATION SIGN POST

DETAIL A
C-3
NOT TO SCALE

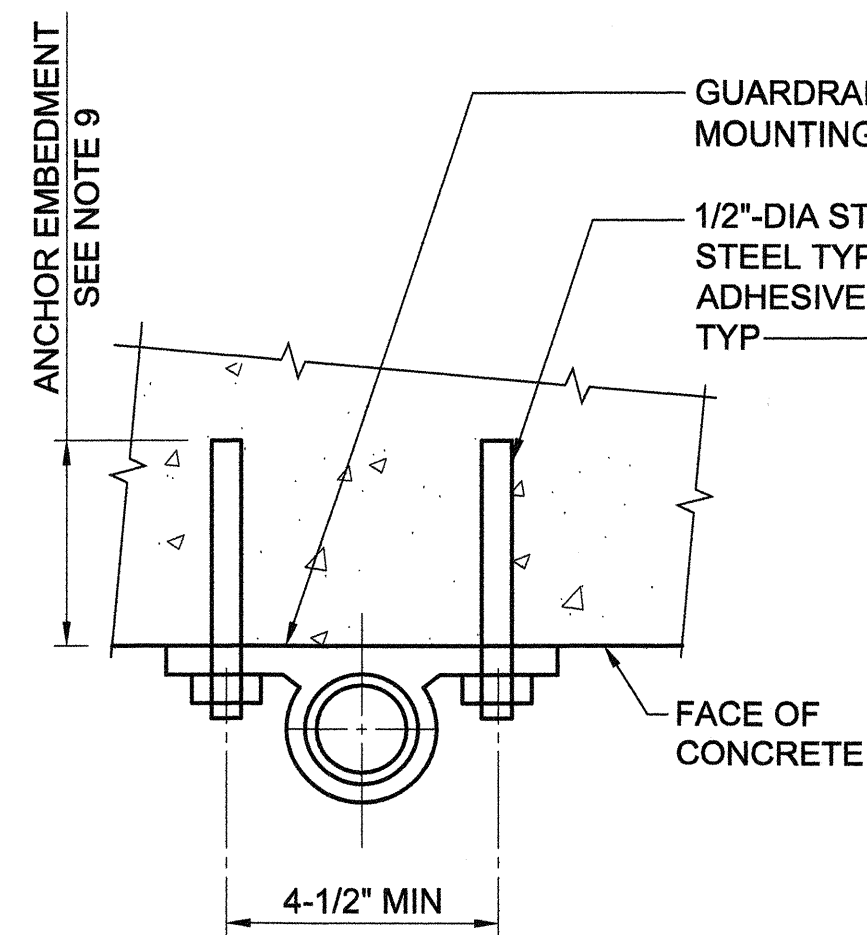
SAWCUT USING "SOFT CUT" METHOD; WITHIN 12" HOURS OF PLACING CONCRETE



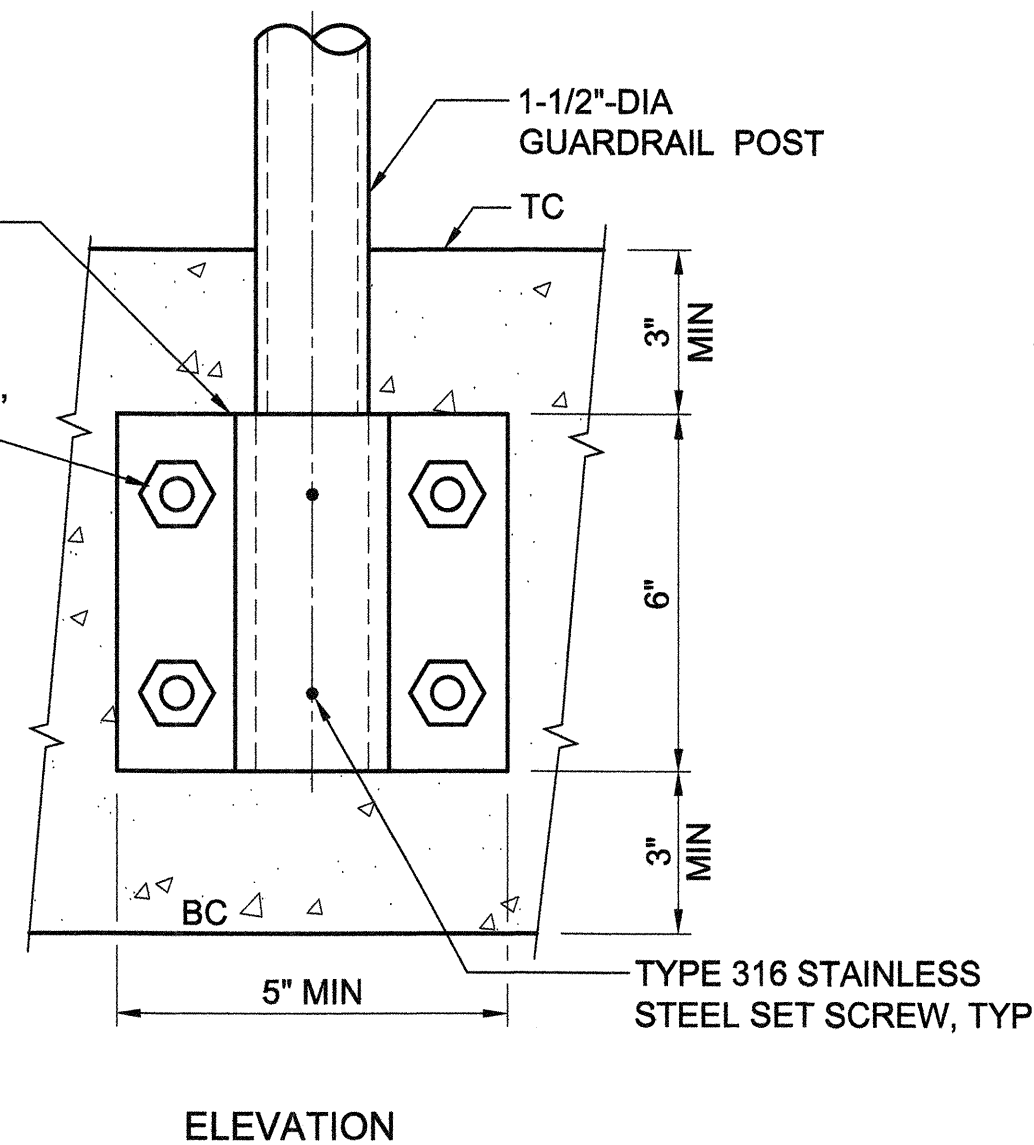
CUT ALTERNATE WIRE TO PROVIDE 50% REINFORCING CONTINUOUS ACROSS JOINT

CONTROL JOINT (CJ)

DETAIL D
VAR
NOT TO SCALE



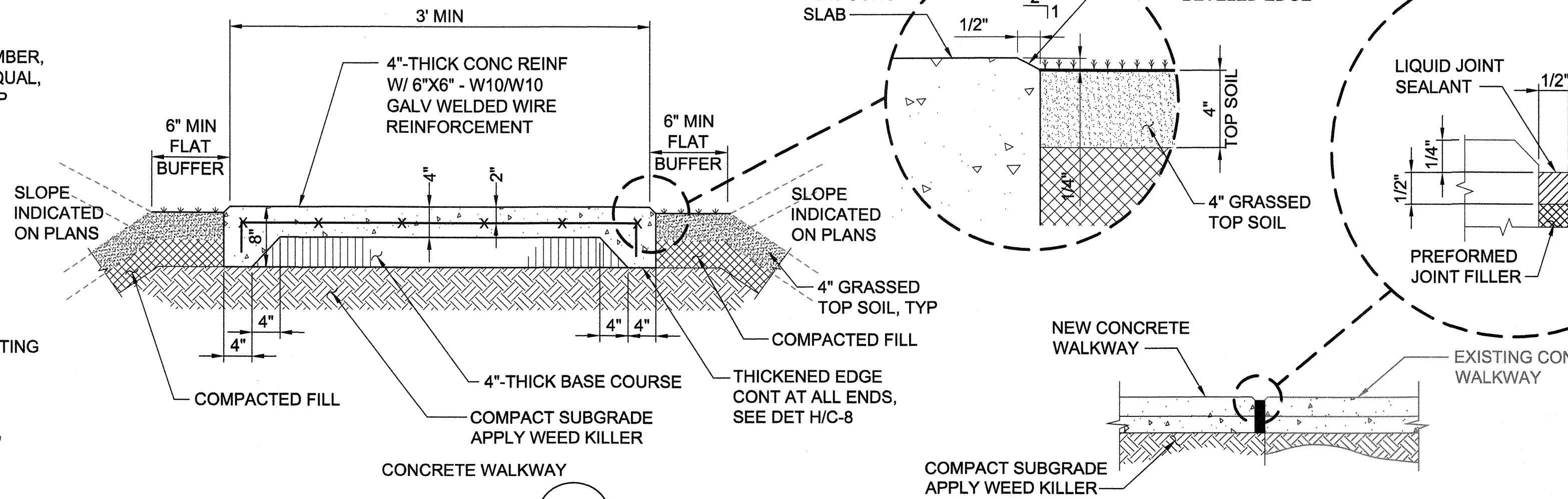
PLAN



ELEVATION

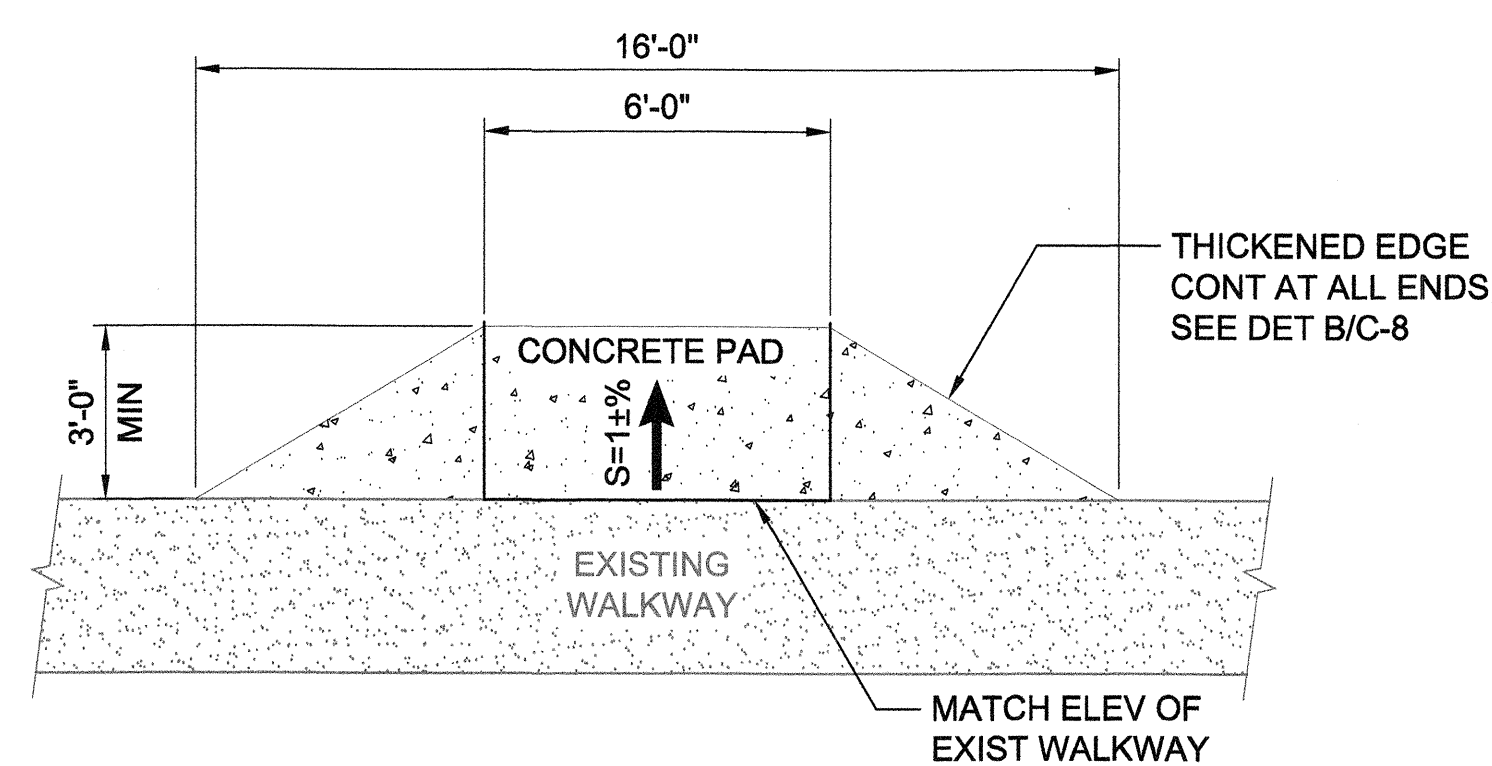
RAILING SIDE MOUNT

DETAIL G
C-8
NOT TO SCALE



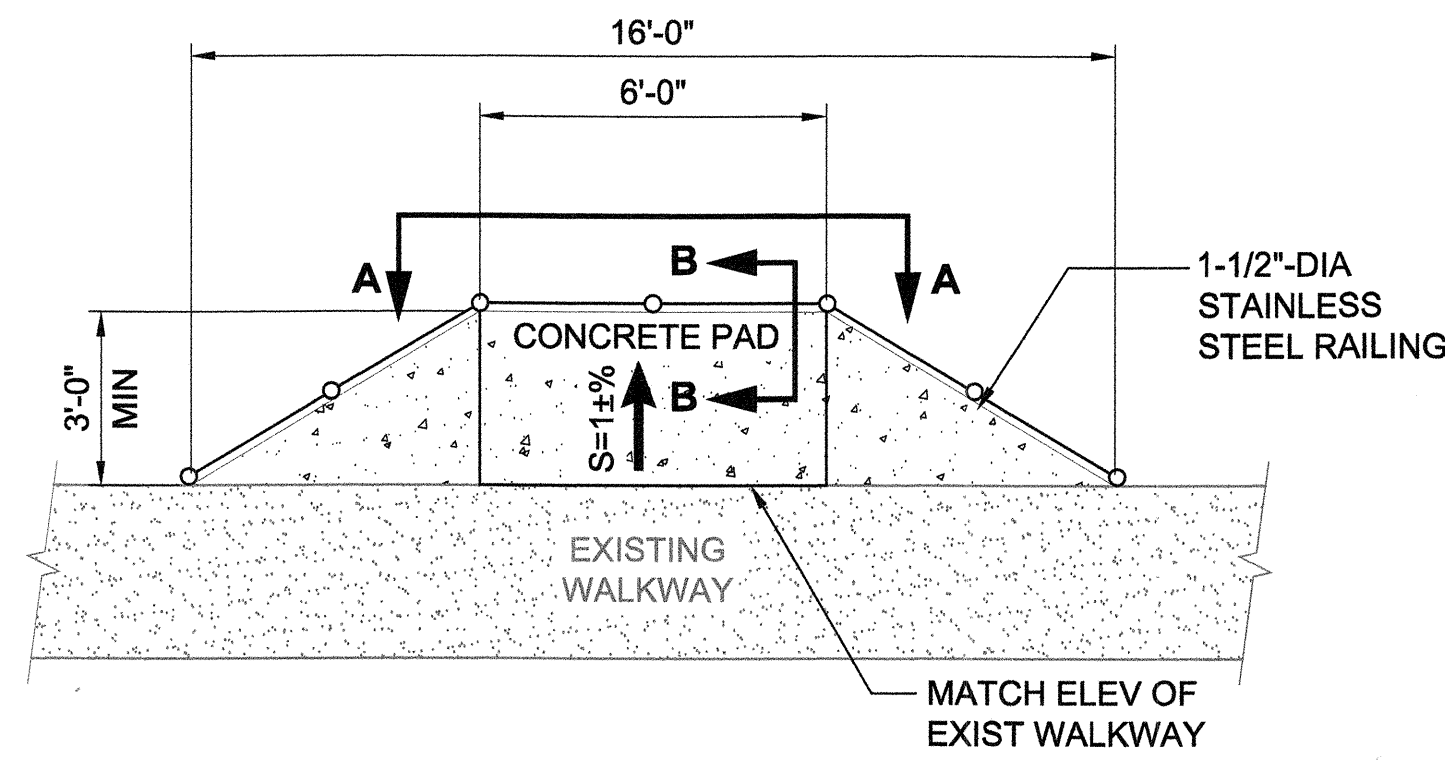
DETAIL B
VAR
NOT TO SCALE

DETAIL C
VAR
NOT TO SCALE



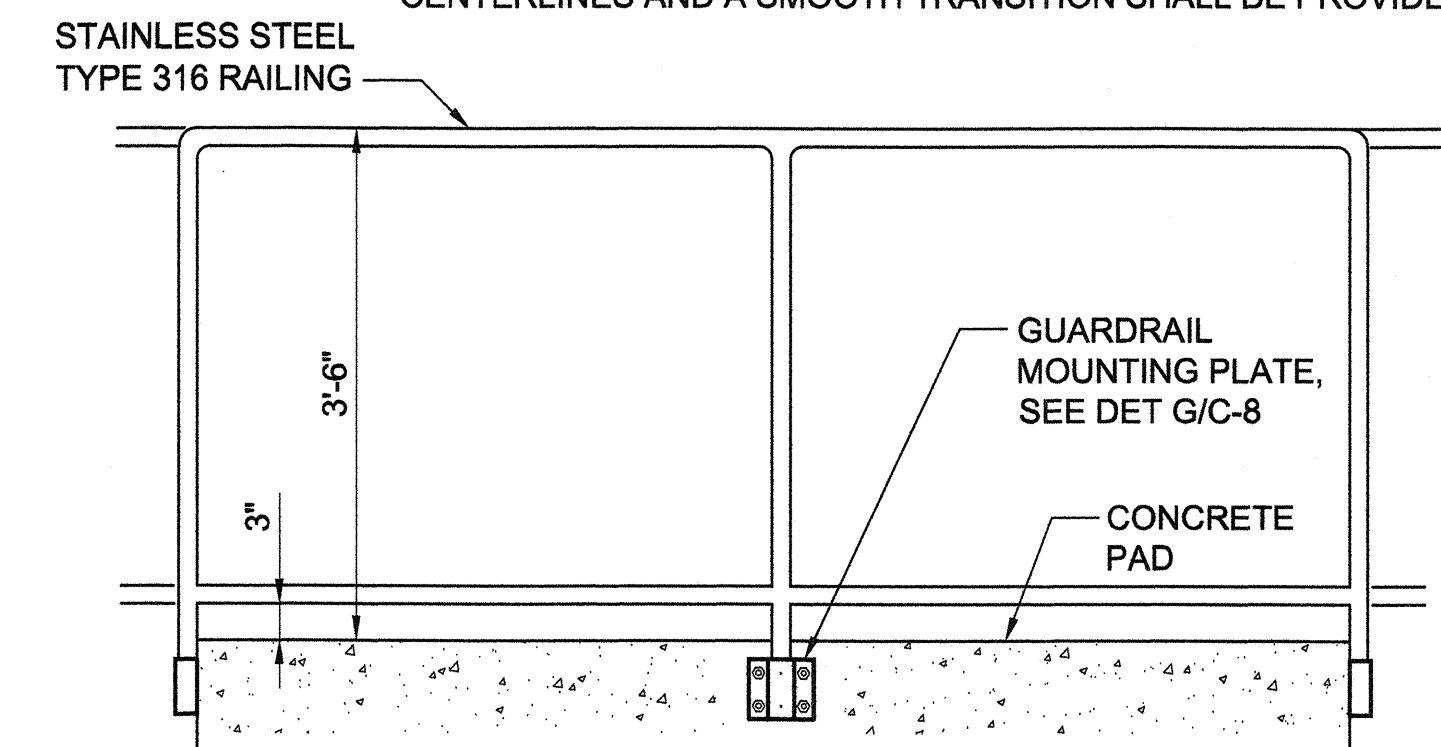
REST STOP AREA

DETAIL E
VAR
NOT TO SCALE

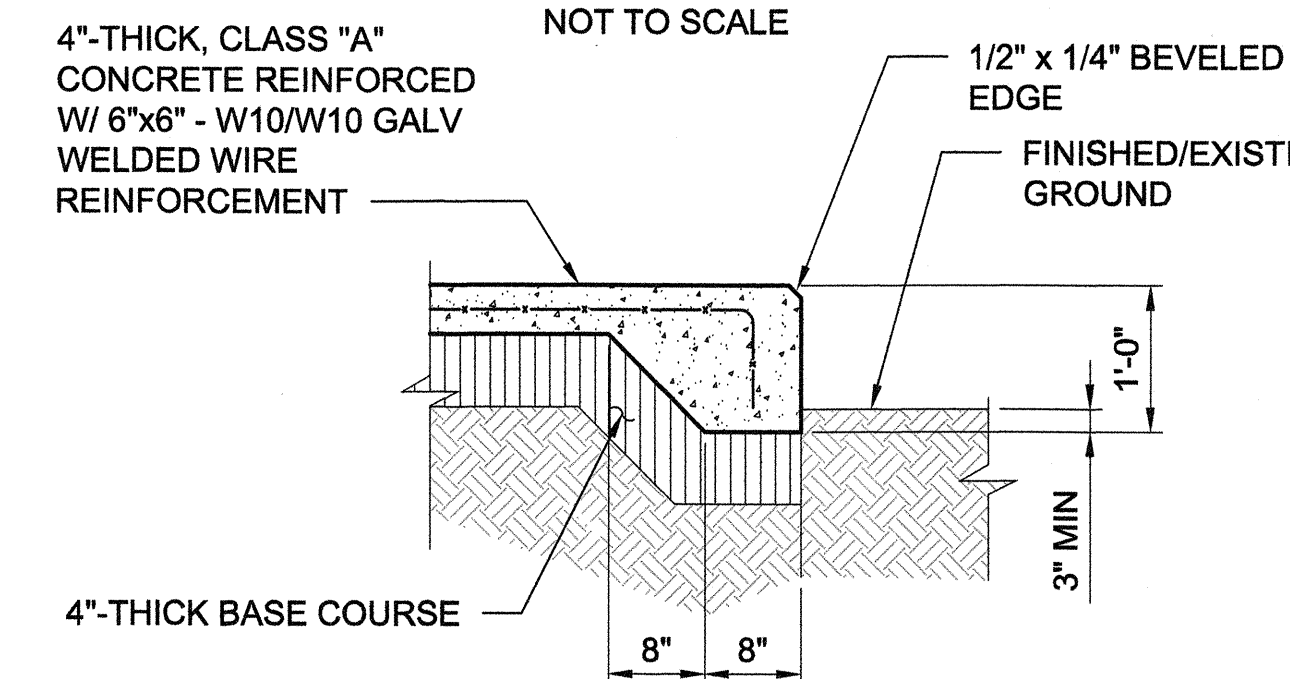


REST STOP AREA WITH RAILING

DETAIL F
C-6
NOT TO SCALE



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

NOTES

1. WALKWAY AND REST STOP AREA CROSS SLOPES SHALL BE LESS THAN 2%.
2. WALKWAY RUNNING SLOPES SHALL BE LESS THAN 5%.
3. 1"-DEEP CONTROL JOINT, SAWCUT AT 5' SPACING MAX. CUT JOINTS WITHIN 12 HOURS OF PLACING CONCRETE.
4. ALL WALKWAYS ARE 3'-WIDE MINIMUM (CLEAR WIDTH) UNLESS OTHERWISE NOTED.
5. ALL CONTROL JOINTS TO BE CUT USING "SOFT CUT" METHOD AS SOON AS POSSIBLE AFTER PLACING CONCRETE WITHOUT RAVELLING EDGES, BUT WITHIN 12 HOURS OF PLACEMENT.
6. EXPANSION JOINTS SHALL BE SPACED A MAXIMUM OF 100' APART.
7. EXPANSION JOINTS SHALL BE INSTALLED WHERE CONCRETE ABUTS EXISTING CONCRETE STRUCTURES.
8. JOINTS SHALL BE CONSTRUCTED PER DOT-HIGHWAYS STD PLANS D-15.
9. NUMBER OF ANCHORS AND SIZE OF ANCHORS SHOWN ARE MINIMUM. PROVIDE LARGER ANCHOR SIZE IF NECESSARY TO MEET LOAD REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE NUMBER OF AND SPACING OF RAILINGS. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNING BASE BRACKET AND ANCHOR BOLT SIZE AND EMBEDMENT DEPTH INTO CONCRETE TO RESIST LOADS TAKING INTO ACCOUNT ANCHOR EDGE DISTANCES AND CONCRETE STRENGTHS AT THE POINT OF ATTACHMENT.
10. NEW WALKWAYS MAY BE SLIGHTLY WIDER THAN EXISTING. NEW AND EXISTING WALKWAYS SHALL BE ALIGNED BY THEIR CENTERLINES AND A SMOOTH TRANSITION SHALL BE PROVIDED.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
LAVA TREE STATE MONUMENT TRAIL IMPROVEMENTS					
MISCELLANEOUS DETAILS					
DESIGNED: SM			SUBMITTED: MS		
DRAWN: YN			DATE: DATE		
CHECKED: MN			SCALE: AS SHOWN		
APPROVED:			SHEET NO. C-8		
APRIL 30, 2018			MAY - 6 2016		
EXPIRATION DATE OF THE LICENSE			DATE		
JOB NO. J00CF34B SHEET NO. 14 OF 14 SHEETS					