

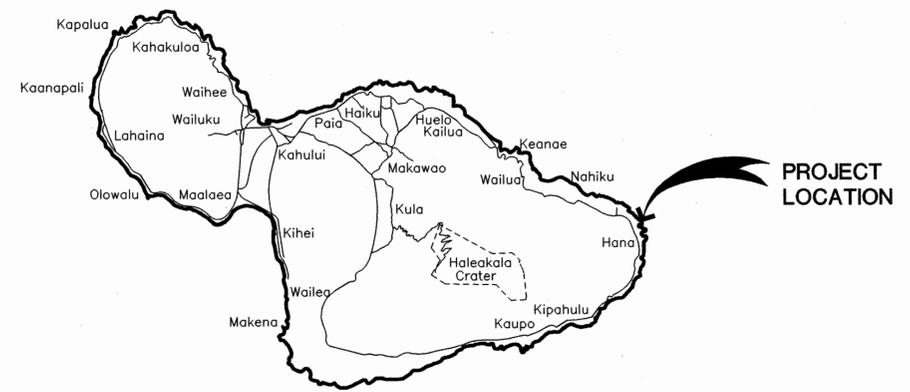
STATE OF HAWAII
 DEPARTMENT OF LAND AND NATURAL RESOURCES
 ENGINEERING DIVISION

FOR
 DIVISION OF STATE PARKS
 JOB NO. F55C642D

**WAIANAPANAPA STATE PARK
 WALKWAY IMPROVEMENTS**

HANA, MAUI, HAWAII

TAX MAP KEY (2) 1-3-005:009

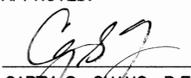


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APPROVED: _____ DATE: 12-30-15

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

APPROVED: _____ DATE: 1/4/15

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

DRAWING NO.
T-1

Job No. F55C642D Waianapanapa State Park Walkway Improvements

CONSTRUCTION NOTES

GENERAL NOTES

- ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE 2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AND THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984 AS AMENDED DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND COUNTIES OF KAUAI, MAUI AND HAWAII.
- LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE BASED ON AVAILABLE "AS-BUILT" OF RECORD CONSTRUCTION PLANS AND ARE APPROXIMATE ONLY AND THEIR ACCURACY IS NOT GUARANTEED.
- EXISTING CONTOURS AND FEATURES ARE BASED ON A "TOPOGRAPHIC SURVEY PREPARED BY RONALD M. FUKUMOTO ENGINEERING, INC. DATED JANUARY 9 THROUGH 13, 2012, AND A "COMPILED TOPOGRAPHIC SURVEY MAP, WAIANAPANAPA STATE PARK" PREPARED BY R. T. TANAKA ENGINEERING, INC. DATED DECEMBER 6, 2007.
- ELEVATIONS SHOWN ARE BASED ON PROJECT BENCH MARK WHICH IS A 1/2-INCH PIPE WITH CAP (STA. S43-3) LOCATED ALONG ON THE SOUTHWESTERLY SIDE OF THE NORTH PARKING LOT. ELEVATION = 47.23 FT. (ASSUMED).
- EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING ANY FURTHER WITH THE WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN THE CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.
- THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES WITHIN PROJECT LIMITS BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ALL UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL REPORT ANY INCONSISTENCIES WITH THE PROPOSED PLAN TO THE OWNER'S REPRESENTATIVE AND SHALL DEMOLISH, REMOVE, OR RELOCATE ALL EXISTING UTILITIES, IMPROVEMENTS, ETC. INCONSISTENT WITH THE PROPOSED PLAN AS DIRECTED BY THE OWNER'S REPRESENTATIVE AND AT THE CONTRACTOR'S EXPENSE.
- THE LATEST REVISIONS OF THE "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION," SEPTEMBER 1984 AND THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION," 2005 SHALL BE INCLUDED AS PART OF THESE CONSTRUCTION PLANS. THE CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS BEFORE COMMENCING CONSTRUCTION.
- NO WORK SHALL BE DONE ON SATURDAY, SUNDAYS AND HOLIDAYS, AND/OR IN EXCESS OF EIGHT (8) HOUR EACH DAY WITHOUT THE WRITTEN CONSENT OF THE ENGINEER. NO WORK SHALL BE DONE AT NIGHTS UNLESS AUTHORIZED BY THE ENGINEER.
- THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS ON THE CONSTRUCTION DRAWINGS AND SPECIFICATIONS FOR ANY DISCREPANCY. ANY DISCREPANCY SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
- WORK INCIDENTAL TO THE CONTRACT AND NECESSARY TO COMPLETE THE PROJECT, ALTHOUGH NOT SPECIFICALLY REFERRED TO ON THE CONTRACT DOCUMENTS, SHALL BE FURNISHED AND PERFORMED BY THE CONTRACTOR.
- IN PERFORMING ALL WORK, THE CONTRACTOR SHALL EXERCISE DUE CARE AND CAUTION NECESSARY TO AVOID ANY DAMAGE TO AND IMPAIRMENT IN THE USE OF ANY EXISTING UTILITY LINE. ANY DAMAGE INFLICTED ON EXISTING UTILITY LINES RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE IMMEDIATELY REPAIRED OR RESTORED AS DIRECTED BY THE ENGINEER AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF THE CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS AND THAT THE CONTRACTOR SHALL DEFINE, INDEMNIFY AND HOLD THE OWNER AND ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR ENGINEER.

- THE UNDERGROUND PIPES, CABLES OR DUCT LINES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. LOCATION OF EXISTING UTILITY LINES SHOWN ON THE PLAN AND PROFILE ARE APPROXIMATE. THEREFORE, NO ASSURANCE CAN BE PROVIDED THAT THE ACTUAL LOCATIONS WILL BE PRECISELY AS SHOWN ON THE CONTRACT DRAWINGS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES PRIOR TO EXCAVATING IN THE AREA AND EXERCISE PROPER CARE WHILE EXCAVATING. WHENEVER 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 CONNECTING CONDITIONS.
- ADEQUATE PROVISIONS FOR TRAFFIC CONTROL SHALL BE PROVIDED IN ACCORDANCE WITH "HAWAII ADMINISTRATIVE RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS OF HAWAII" AND WITH FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS". 1988, AND TO THE SATISFACTION OF THE ENGINEER.
- THE CONTRACTOR SHALL CONDUCT ALL TESTS AS SPECIFIED AND BE RESPONSIBLE FOR EXPENSES INCURRED IN CONDUCTING THESE TESTS.
- WRITTEN DIMENSIONS TAKE PRECEDENCE OVER SCALED DIMENSIONS.
- ALL PERMITS SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR, UNLESS OTHERWISE INDICATED.
- THE CONTRACTOR SHALL COORDINATE THE STORAGE OF HIS MATERIAL WITH THE ENGINEER.
- ALL CONSTRUCTION AND GRADING STAKEOUT SHALL BE DONE BY A SURVEYOR REGISTERED IN THE STATE OF HAWAII. CONTRACTOR SHALL SUBMIT COPIES OF THE STAKEOUT DOCUMENTATION INCLUDING CUT SHEETS, AND ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
- 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 SHALL BE REQUIRED TO PROVIDE ADEQUATE, SAFE NON-SKID BRIDGING MATERIALS OVER TRENCHES, INCLUDING SHORING WHEN TRENCHING IN PAVEMENT AREAS AND AREAS SUBJECT TO VEHICULAR TRAFFIC TO HANDLE ALL TYPES OF VEHICULAR TRAFFIC. NO TRENCH SHALL BE LEFT OPEN DURING NON-WORKING HOURS, STRIKES, OR JOB SHUTDOWN.
- HARD BOULDERS AND MEDIUM HARD TO HARD BASALT ROCK MAY BE ENCOUNTERED NEAR OR AT THE SITE. THEREFORE, APPROPRIATE EQUIPMENT FOR EXCAVATING THE MEDIUM HARD TO HARD BASALT ROCK SHALL BE REQUIRED.
- THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK. ANY NECESSARY REMEDIAL ACTION AS REQUIRED BY THE STATE OR COUNTY ENGINEER SHALL BE DONE BY THE CONTRACTOR AT HIS OWN EXPENSE.
- CONSTRUCTION DEBRIS AND WASTE SHALL BE DEPOSITED AT AN APPROPRIATE SITE IN ACCORDANCE WITH ALL COUNTY, STATE AND FEDERAL LAWS, RULES AND REGULATIONS. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF THE DISPOSAL SITE.
- GRADING AROUND ALL STRUCTURES, CONCRETE PADS AND PIPE RESTS, UNLESS OTHERWISE SHOWN OR INDICATED, SHALL BE MINIMUM 1" ABOVE THE SURROUNDING GRADE AT THE EDGE OF CONCRETE. GRADE SHALL SLOPE AWAY FROM THE EDGE OF CONCRETE AT MAX. 1" PER FOOT TO MEET EXISTING GRADE. PROVISIONS FOR DRAINAGE AROUND STRUCTURES SHALL BE PROVIDED.
- ALL GRADING OPERATIONS SHALL CONFORM WITH APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH.
- ALL SLOPES, SWALES, AND EXPOSED AREAS SHALL BE SEEDED OR PLANTED AS SOON AS PRACTICABLE AFTER THE WORK HAS BEEN COMPLETED.

- THE CONTRACTOR SHALL NOTIFY THE STATE PARKS MAUI DISTRICT SUPERINTENDENT, PHILLIP OHTA, PHONE NO. 984-8102 AT LEAST 2 WEEKS PRIOR TO ANY CLOSURE OR SHUTDOWN OF ANY SERVICE.
- HARD BOULDERS AND MEDIUM HARD TO HARD BASALT ROCK MAY BE ENCOUNTERED NEAR OR AT THE SITE. THEREFORE, APPROPRIATE EQUIPMENT FOR EXCAVATING THE MEDIUM HARD TO HARD BASALT ROCK SHALL BE REQUIRED. EXCAVATION OF THESE MATERIALS SHALL BE DONE AT NO ADDITIONAL COST TO THE STATE.

ARCHAEOLOGICAL NOTES:

- CONTRACTOR TO NOTIFY STATE PARKS ARCHAEOLOGIST WHEN WORK IS SCHEDULED ADJACENT TO THE STACKED ROCK WALLS AND CEMETERIES. THE ARCHAEOLOGISTS WILL IDENTIFY PRECAUTIONARY MEASURES TO BE TAKEN TO PROTECT THESE SITES AND AVOID ANY DISTURBANCE DURING THIS PROJECT. THE ARCHAEOLOGIST MAY BE ON-SITE DURING GROUND DISTURBANCE ACTIVITIES.
- IN THE EVENT THAT PREVIOUS UNIDENTIFIED HISTORIC PROPERTIES (SUCH AS ARTIFACTS; DEPOSITS OF BONE, SHELL OR CHARCOAL; OR ROCK OR CORAL ALIGNMENTS, PAVING OR WALLS) OR HUMAN REMAINS ARE ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK IN THE IMMEDIATE AREA OF THE FIND AND THE CONTRACTOR OR ARCHAEOLOGICAL MONITOR SHALL NOTIFY THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES, HISTORIC PRESERVATION DIVISION, MAUI OFFICE (243-5169) AND THE ENGINEER. IF HUMAN REMAINS ARE DISCOVERED, THE POLICE DEPARTMENT SHALL ALSO BE NOTIFIED. ALL WORK IN THE IMMEDIATE AREA OF THE FIND SHALL BE STOPPED UNTIL THE HISTORIC PRESERVATION DIVISION IS ABLE TO ACCESS THE DISCOVERY, DETERMINE APPROPRIATE MITIGATION MEASURES, AND VERIFY THESE MEASURES HAVE BEEN SUCCESSFULLY IMPLEMENTED.
- ANY CONSTRUCTION WORK OCCURRING WITHIN 20' OF A ROCK WALL, CONTRACTOR SHALL PROVIDE ORANGE FENCING SET-OFF FROM THE FACE OF THE ROCK WALLS TO PROTECT THE WALLS DURING CONSTRUCTION.

EROSION CONTROL NOTES

THE FOLLOWING IS AN OUTLINE OF THE EROSION CONTROL MEASURES THAT WILL BE IMPLEMENTED FOR THIS PROJECT.

- GENERAL EROSION CONTROL MEASURES
 - MINIMIZE TIME OF CONSTRUCTION.
 - RETAIN EXISTING GROUND COVER UNTIL THE LATEST DATE TO COMPLETE CONSTRUCTION.
 - CONTROL DUST BY SPRINKLING WITH WATER WAGONS OR OTHER SUITABLE METHODS. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
 - USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
 - CONSTRUCT PERMANENT EROSION AND DRAINAGE CONTROL FEATURES AS EARLY AS POSSIBLE. ALL CUT AND FILL SLOPES SHALL BE SODDERED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.
 - MAINTAIN EROSION CONTROL MEASURES UNTIL ESTABLISHMENT OF GRASS AND LANDSCAPE PLANTING.
- SITE-SPECIFIC EROSION CONTROL MEASURES
 - INSTALL SILT FENCES DOWN SLOPE OF WORK. INSPECT FENCES WEEKLY AND AFTER STORMS. REMOVE AND STABILIZE SEDIMENT WHEN IT REACHES A HEIGHT OF 8 INCHES AT THE FENCE.
- ADDITIONAL EROSION CONTROL NOTES
 - ALL CONTROL MEASURES SHALL BE CHECKED AND REPAIRED AS NECESSARY WEEKLY IN DRY PERIODS AND WITHIN 24 HOURS AFTER ANY RAINFALL OF 1/2 INCH OR GREATER WITHIN A 24-HOUR PERIOD. DURING PROLONGED PERIODS OF RAINFALL, DAILY CHECKING IS NECESSARY.
 - THE PERMITTEE SHALL MAINTAIN RECORDS OF THE DURATION AND ESTIMATED VOLUME OF STORM WATER DISCHARGE(S), CHECKS, AND REPAIRS. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN PLACE AND FUNCTIONAL BEFORE EARTH MOVING OPERATIONS BEGIN. THESE MEASURES SHALL BE PROPERLY CONSTRUCTED AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
 - A SPECIFIC INDIVIDUAL SHALL BE DESIGNATED TO BE RESPONSIBLE FOR EROSION AND SEDIMENT CONTROLS ON EACH PROJECT. TEMPORARY SOIL STABILIZATION WITH APPROPRIATE VEGETATION SHALL BE APPLIED ON AREAS THAT WILL REMAIN UNFINISHED FOR MORE THAN 30 CALENDAR DAYS.
 - PERMANENT SOIL STABILIZATION WITH PERENNIAL VEGETATION OR PAVEMENT SHALL BE APPLIED AS SOON AS PRACTICAL AFTER FINAL GRADING. IRRIGATION AND MAINTENANCE OF THE PERENNIAL VEGETATION SHALL BE PROVIDED FOR 30 DAYS OR UNTIL THE VEGETATION TAKES ROOT, WHICHEVER IS SHORTER.

COMPACTION REQUIREMENTS

- TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
 - EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
 - AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
 - AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS PER LIFT OF MATERIAL; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER PROJECT;
 - ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE; THREE (3) A.C. CORES FOR THICKNESS AND DENSITY TESTS PER PROJECT;
 - TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
- CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE STATE'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO STATE'S ACCEPTANCE OF WORK.
- THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE STATE OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

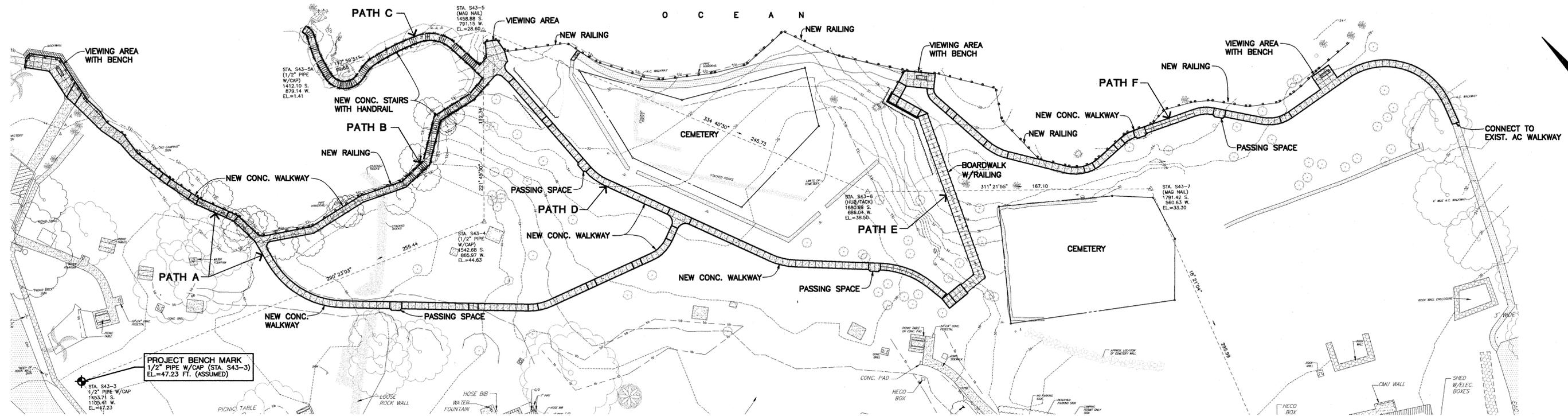
ENVIRONMENTAL PROTECTION NOTES:

- IN ACCORDANCE WITH CHAPTER 11-60.1, AIR POLLUTION CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT EFFECTIVE CONTROL MEASURES ARE PROVIDED TO MINIMIZE OR PREVENT ANY VISIBLE DUST EMISSION CAUSED BY THE CONSTRUCTION WORK FROM IMPACTING THE SURROUNDING AREAS INCLUDING THE OFF-SITE ROADWAYS USED TO ENTER/EXIT THE PROJECT. THESE MEASURES INCLUDE BUT ARE NOT LIMITED TO THE USE OF WATER WAGONS, SPRINKLER SYSTEMS, DUST FENCES, ETC.
- IN ACCORDANCE WITH CHAPTER 11-55, WATER POLLUTION CONTROL AND CHAPTER 11-54, WATER QUALITY STANDARDS, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE BEST MANAGEMENT PRACTICE (BMP) TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENTS, DEBRIS, AND OTHER WATER POLLUTANT INTO STATE WATERS IS PROVIDED.
- IN ACCORDANCE WITH CHAPTER 11-58, SOLID WASTE MANAGEMENT CONTROL, TITLE 11, HAWAII ADMINISTRATIVE RULES, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT GRUB MATERIALS, DEMOLITION WASTE, AND CONSTRUCTION WASTE GENERATED BY THE PROJECT ARE DISPOSED OF IN A MANNER OR AT A SITE APPROVED BY THE STATE DEPARTMENT OF HEALTH. DISPOSAL OF ANY OF THESE WASTES BY BURNING IS PROHIBITED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND PAYING FOR ALL APPLICABLE PERMITS FROM THE DEPARTMENT OF HEALTH INCLUDING BUT NOT LIMITED TO NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS FOR STORM WATER, HYDROTSTING WATER AND DEWATERING DISCHARGES PRIOR TO COMMENCING CONSTRUCTION.

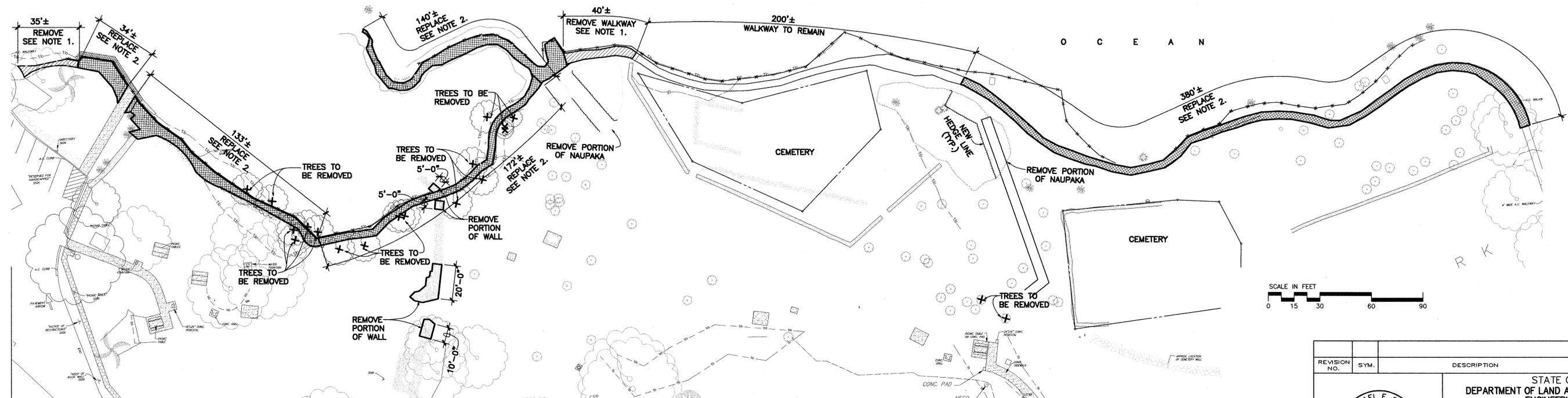
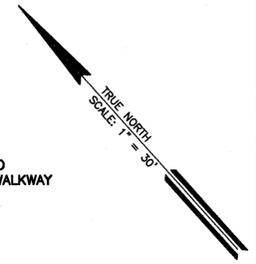
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII					
CONSTRUCTION NOTES					
FUKUMOTO ENGINEERING, INC.					
DESIGNED:	M.S./M.K.S.	SUBMITTED:			
DRAWN:	N.M./S.W.	DATE:	DECEMBER 2015		
CHECKED:	M.S.	SCALE:	AS NOTED		
APPROVED:			DATE:	JAN 04 2016	
CHIEF ENGINEER			DRAWING NO. C-1		

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

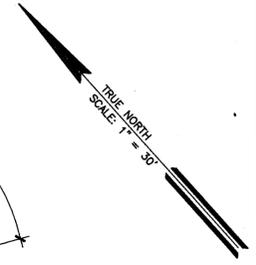
MICHAEL E. SILVA
LICENSED PROFESSIONAL ENGINEER
No. 11185-C
HAWAII, U.S.A.
License Expires: APRIL 30, 2016



GENERAL PLAN
SCALE: 1" = 30'

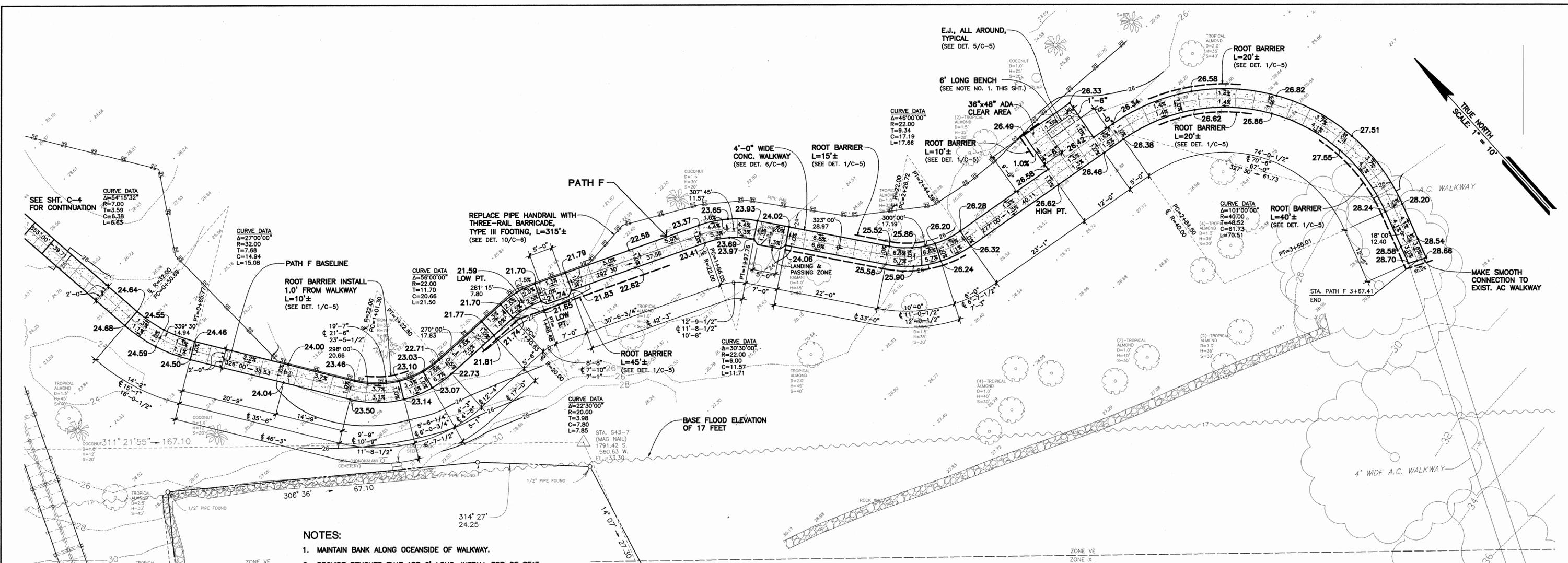


DEMOLITION PLAN
SCALE: 1" = 30'



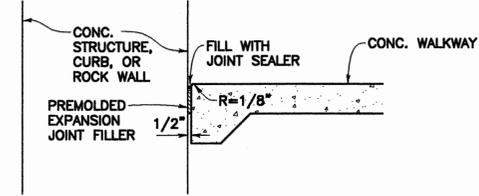
- NOTES:**
- REMOVE EXIST. AC WALKWAY. REPLACE WITH TOPSOIL AND GRASS. MAKE SMOOTH CONNECTION TO EXIST. GRADE.
 INDICATES SECTIONS TO BE REMOVED
 - REPLACE EXIST. AC WALKWAY AND ROCK STEPS WITH CONCRETE WALKWAY AND STEPS. SEE SHTS. C-3, C-4, AND C-5.
 INDICATES SECTIONS TO BE REPLACED
 - ALL PIPE RAILINGS INCLUDING POST FOUNDATIONS ARE TO BE REMOVED TO 18" BELOW FINISH GRADE.

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII					
GENERAL PLAN & DEMOLITION PLAN					
FUKUMOTO ENGINEERING, INC.					
DESIGNED: M.S./M.K.S.		SUBMITTED: <i>[Signature]</i>			
DRAWN: N.M/S.W.		DATE: DECEMBER 2015			
CHECKED: M.S.		SCALE: AS NOTED			
APPROVED: <i>[Signature]</i>		DATE: JAN 04 2016		DRAWING NO. C-2	
MICHAEL E. SILVA LICENSED PROFESSIONAL ENGINEER No. 11185-C HAWAII, U.S.A.		CHIEF ENGINEER			

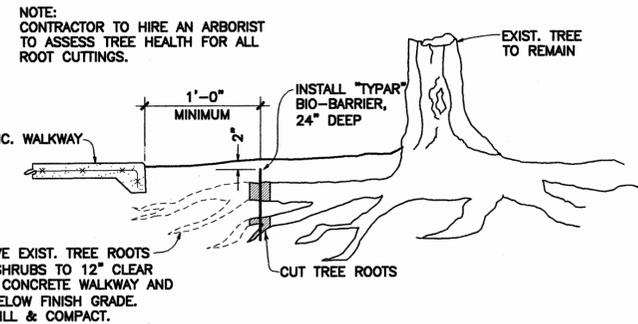


SITE AND GRADING PLAN - 3
 SCALE: 1" = 10'
 SCALE IN FEET

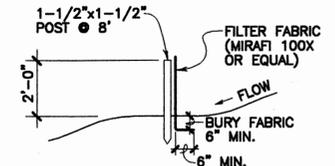
- NOTES:**
1. MAINTAIN BANK ALONG OCEANSIDE OF WALKWAY.
 2. PROVIDE BENCHES THAT ARE 6' LONG. INSTALL TOP OF SEAT 18" ABOVE FINISH FLOOR AND ANCHOR BENCH TO THE SLAB WITH TAMPER PROOF SCREWS. PROVIDE BROWN FRAME COLOR AND GREEN SEAT COLOR. PROVIDE TRADITIONAL RECYCLED PLASTIC PLANK BACKLESS BENCH BY BELSON OUTDOORS OR APPROVED EQUAL.
 3. FLOOD INSURANCE ZONE BOUNDARIES AND BASE FLOOD ELEVATIONS TAKEN FROM FEMA FIRM PANEL NUMBER 150003 0680E DATED SEPTEMBER 25, 2009 USING THE HAWAII NATIONAL FLOOD INSURANCE PROGRAM FLOOD HAZARD ASSESSMENT TOOL. REFER TO FLOOD INSURANCE STUDY FOR THE COUNTY OF MAUI, HAWAII PREPARED BY FEMA REVISED SEPTEMBER 19, 2012 FOR EXPLANATION OF ZONE DESIGNATIONS NOTED ON THIS MAP. BASE FLOOD ELEVATIONS ARE BASED UPON LOCAL TIDAL DATUM.
 4. --- ZONE VE
 --- ZONE X DENOTES FLOOD HAZARD AREA BOUNDARIES
 5. 17' DENOTE BASE FLOOD ELEVATION OF 17 FEET.



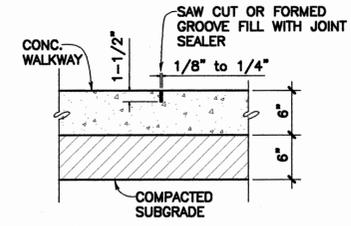
5 EXPANSION JOINT (E.J.)
 SCALE: 1" = 1'-0"



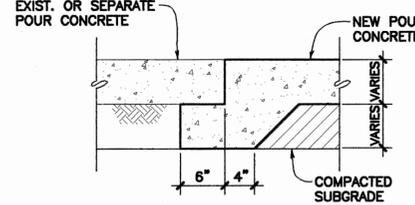
1 ROOT BARRIER DETAIL
 C-5 NOT TO SCALE



2 SILT FENCE SECTION
 C-5 NOT TO SCALE

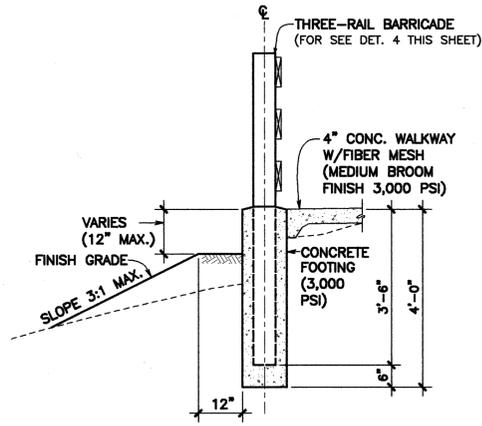


3 CONTRACTION JOINT (C.J.)
 C-5 SCALE: 1" = 1'-0"

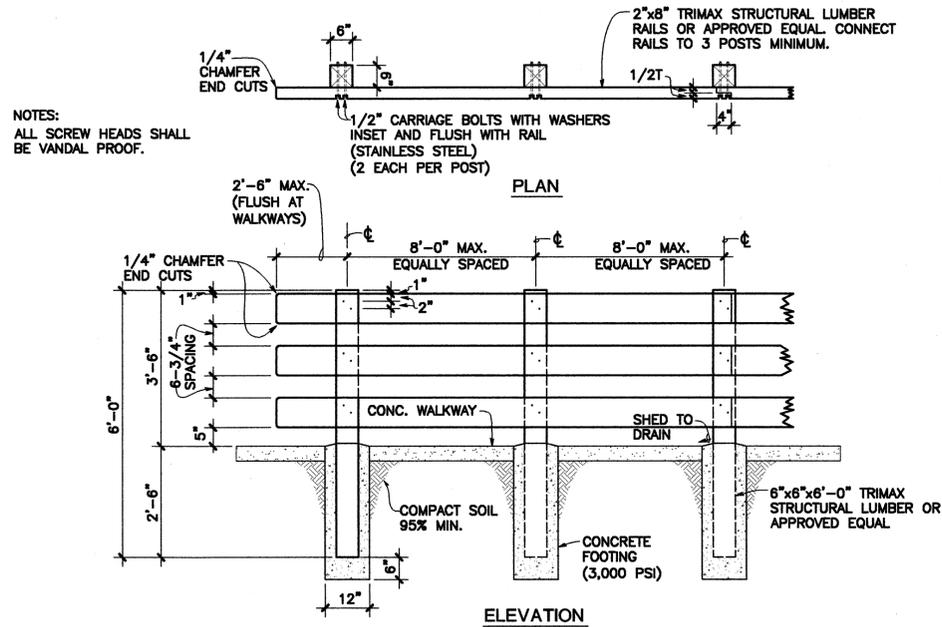


4 KEYED-CONSTRUCTION JOINT
 C-5 SCALE: 1" = 1'-0"

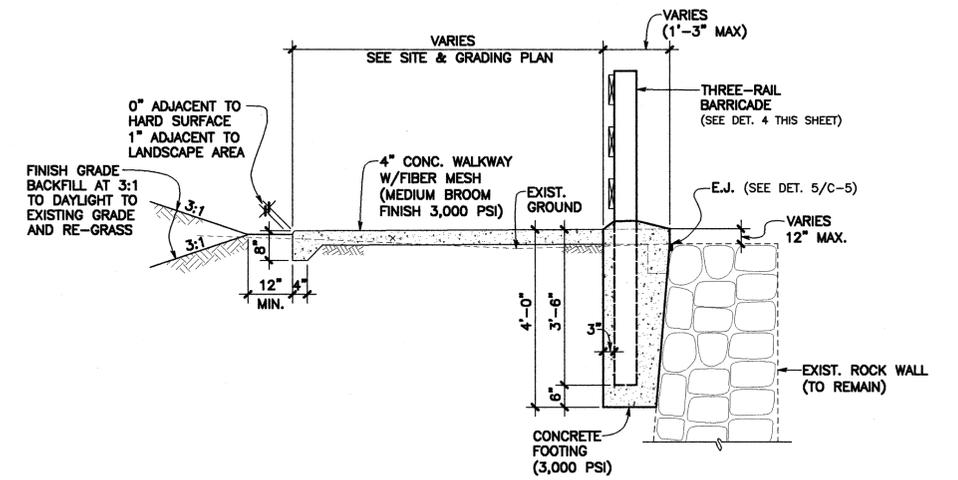
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STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
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SITE AND GRADING PLAN - 3 AND DETAILS					
FUKUMOTO ENGINEERING, INC.					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.					
DESIGNED:	M.S./M.K.S.	SUBMITTED:	[Signature]		
DRAWN:	N.M./S.W.	DATE:	DECEMBER 2015		
CHECKED:	M.S.	SCALE:	AS NOTED		
APPROVED:	[Signature]	DATE:	JAN 04 2016		
MICHAEL E. SILVA LICENSED PROFESSIONAL ENGINEER No. 11185-C HAWAII, U.S.A.		CHIEF ENGINEER		DRAWING NO. C-5	



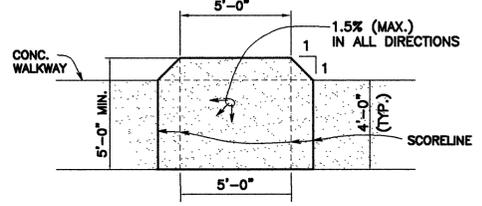
1 TYPE I FOOTING FOR THREE-RAIL BARRICADE
SCALE: 1/2" = 1'-0"



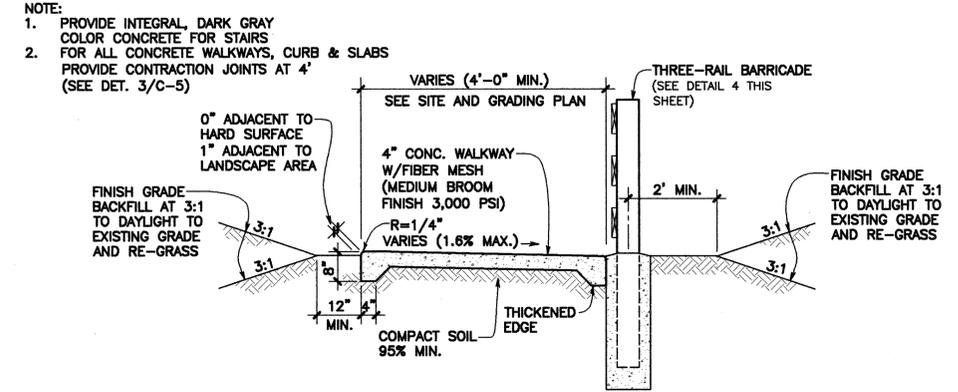
4 THREE-RAIL BARRICADE
SCALE: 1/2" = 1'-0"



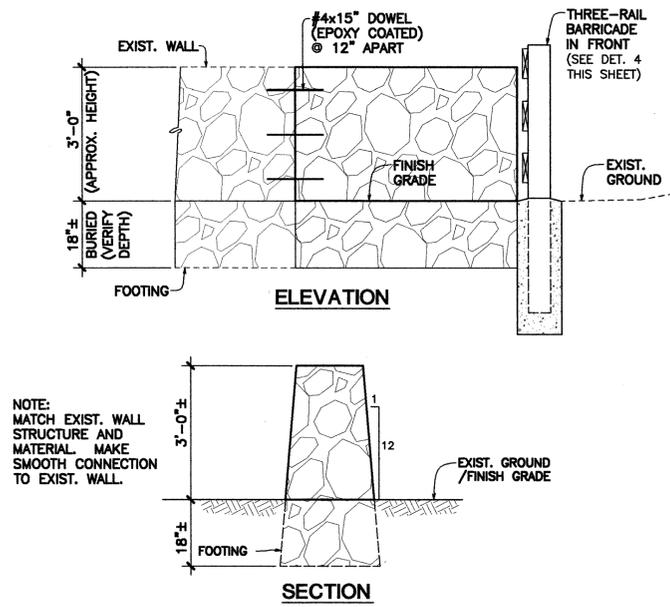
7 TYPE II FOOTING FOR THREE-RAIL BARRICADE
SCALE: 1/2" = 1'-0"



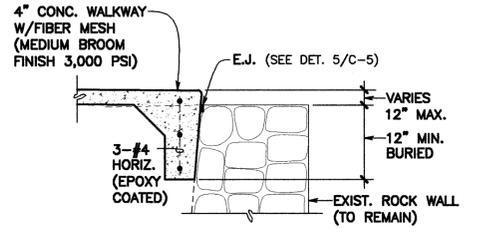
2 WALKWAY PASSING SPACE
NOT TO SCALE



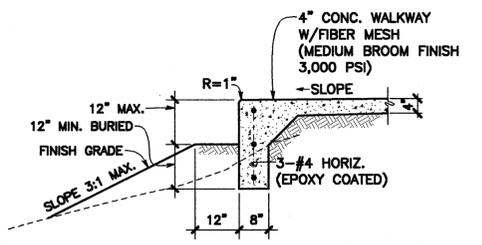
5 4\"/>



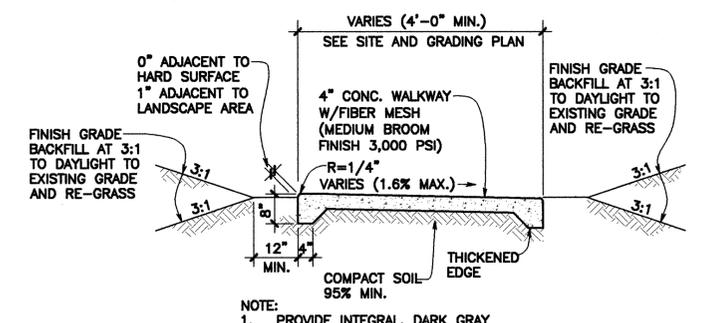
8 ROCK WALL EXTENSION
SCALE: 1/2" = 1'-0"



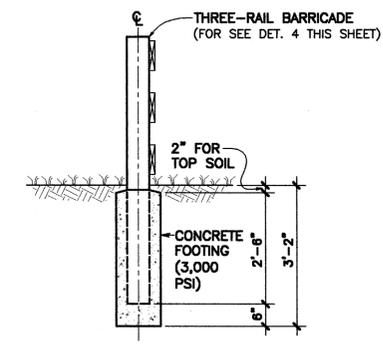
9 4\"/>



3 4\"/>



6 4\"/>

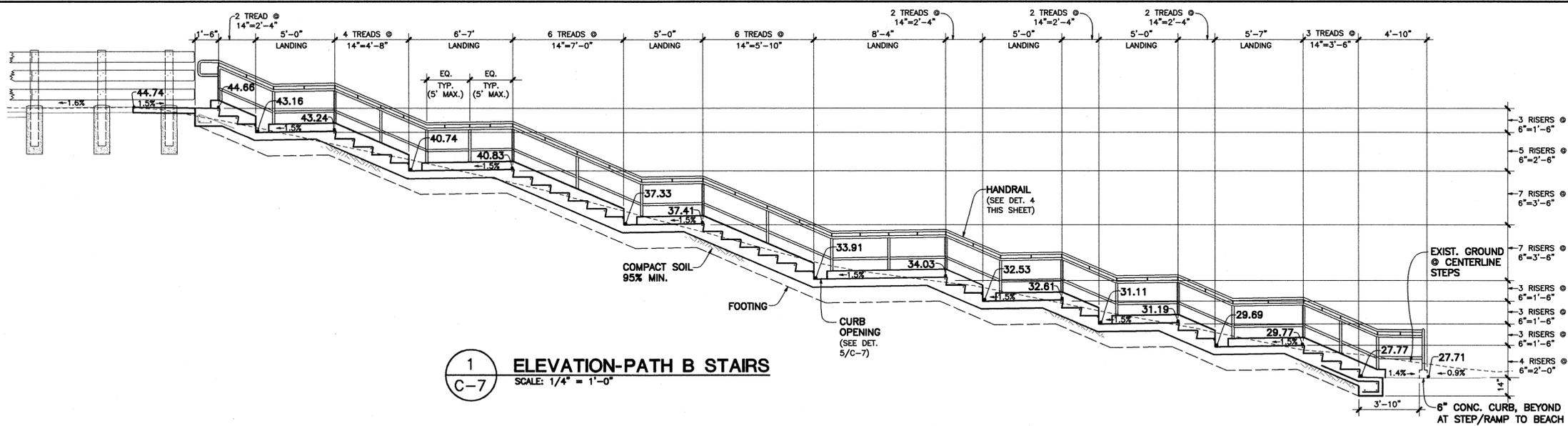


10 TYPE III FOOTING FOR THREE-RAIL BARRICADE WITHIN LANDSCAPED AREA
SCALE: 1/2" = 1'-0"

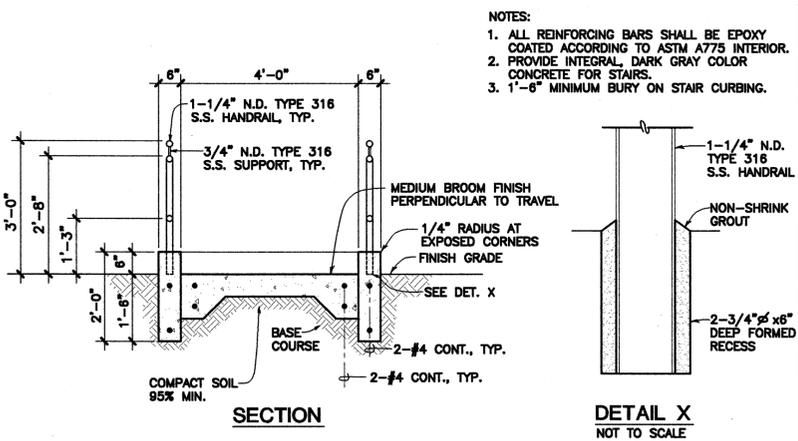
NOTE:
1. PROVIDE INTEGRAL, DARK GRAY COLOR CONCRETE FOR STAIRS FOR ALL CONCRETE WALKWAYS, CURB & SLABS
2. PROVIDE CONTRACTION JOINTS AT 4' (SEE DET. 3/C-5)

NOTE:
1. PROVIDE INTEGRAL, DARK GRAY COLOR CONCRETE FOR STAIRS FOR ALL CONCRETE WALKWAYS, CURB & SLABS
2. PROVIDE CONTRACTION JOINTS AT 4' (SEE DET. 3/C-5)

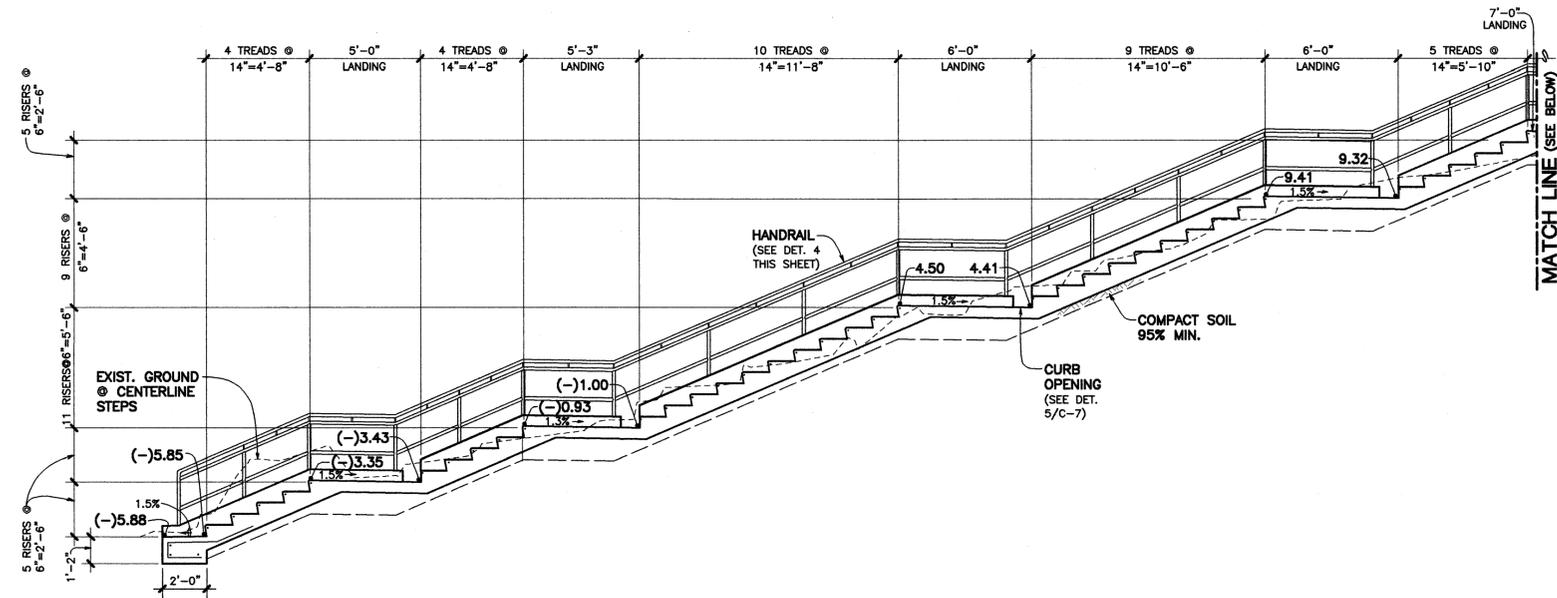
REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII					
MISCELLANEOUS DETAILS					
FUKUMOTO ENGINEERING, INC.					
DESIGNED:	M.S./M.K.S.	SUBMITTED:	12	DATE:	DECEMBER 2015
DRAWN:	N.M/S.W.	CHECKED:	M.S.	SCALE:	AS NOTED
APPROVED:	<i>M. Silva</i>	DATE:	JAN 04 2016	DRAWING NO.:	C-6
MICHAEL E. SILVA LICENSED PROFESSIONAL ENGINEER No. 11185-C HAWAII, U.S.A.		THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.			
CHIEF ENGINEER		LICENSE EXPIRES: APRIL 30, 2016			



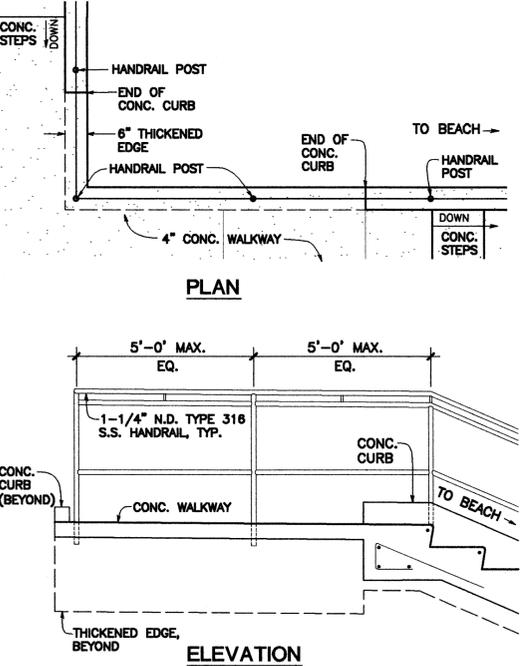
1 ELEVATION-PATH B STAIRS
SCALE: 1/4" = 1'-0"



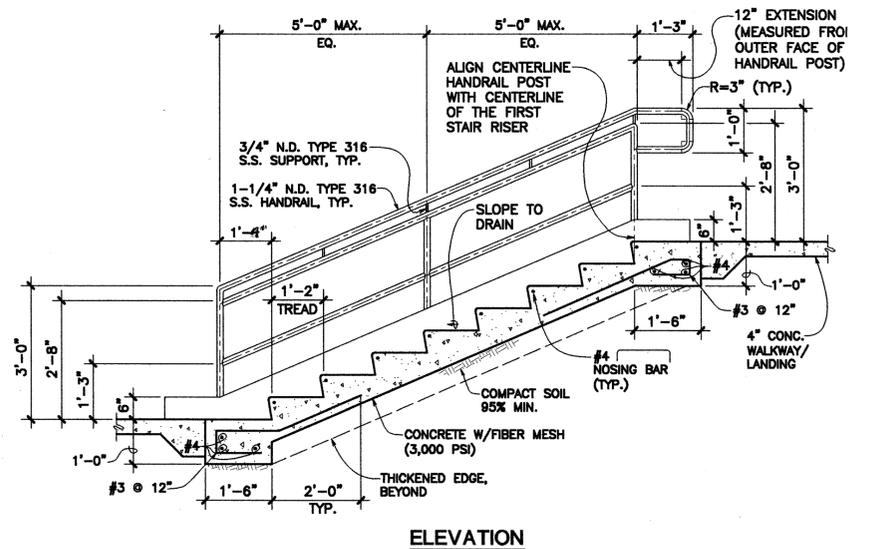
- NOTES:
 1. ALL REINFORCING BARS SHALL BE EPOXY COATED ACCORDING TO ASTM A775 INTERIOR.
 2. PROVIDE INTEGRAL, DARK GRAY COLOR CONCRETE FOR STAIRS.
 3. 1'-6\"/>



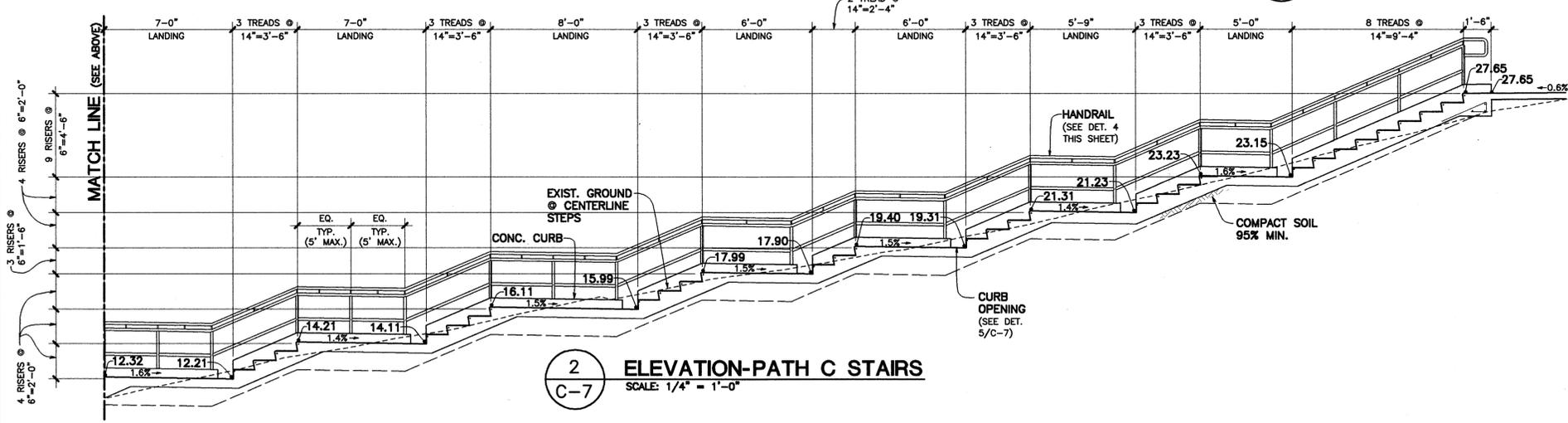
2 ELEVATION-PATH C STAIRS
SCALE: 1/4" = 1'-0"



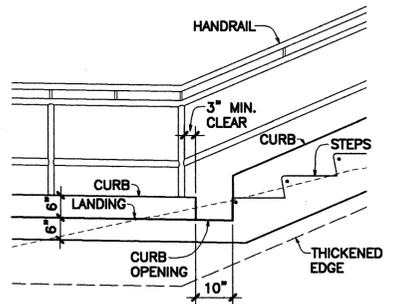
3 CONCRETE CURB AND HANDRAIL DETAIL
SCALE: 1/2" = 1'-0"



4 TYPICAL STAIR DETAIL
SCALE: 1/2" = 1'-0"



2 ELEVATION-PATH C STAIRS
SCALE: 1/4" = 1'-0"



5 CURB OPENING DETAIL
SCALE: 1/2" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION					
WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII					
STAIR DETAIL AND ELEVATIONS					
FUKUMOTO ENGINEERING, INC.					
DESIGNED:	M.S./M.K.S.	SUBMITTED:			
DRAWN:	N.M./S.W.	DATE:	DECEMBER 2015		
CHECKED:	M.S.	SCALE:	AS NOTED		
APPROVED:	<i>M. Silva</i>	DATE:	JAN 04 2016		
CHIEF ENGINEER		DATE		DRAWING NO.	
				C-7	

STRUCTURAL NOTES:

GENERAL

- ALL DETAILS, SECTIONS, AND NOTES SHOWN ON DRAWINGS ARE TYPICAL AND SHALL APPLY TO SIMILAR SITUATIONS ELSEWHERE UNLESS OTHERWISE NOTED.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT SITE PRIOR TO COMMENCEMENT OF CONSTRUCTION.
- ALL OMISSIONS OR CONFLICTS BETWEEN THE VARIOUS ELEMENTS OF THE WORKING DRAWINGS AND/OR THE SPECIFICATIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE PROCEEDING WITH ANY WORK INVOLVED.
- ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE 2006 IBC WITH LOCAL ADDENDUMS.
- OBSERVATION VISITS TO THE SITE BY ENGINEER'S FIELD REPRESENTATIVES SHALL NOT BE CONSTRUED AS INSPECTION NOR APPROVAL OF CONSTRUCTION.
- THE CONTRACTOR SHALL NOTIFY ENGINEER NOT LESS THAN TWO (2) WORKING DAYS PRIOR TO THE NEED FOR FIELD OBSERVATION VISITS.
- THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY CONDITION WHICH MIGHT ENDANGER THE STABILITY OF THE STRUCTURE OR CAUSE VISIBLE DISTRESS IN THE STRUCTURE.
- ALL WORK SHALL CONFORM TO THE BEST PRACTICE PREVAILING IN THE VARIOUS TRADES COMPRISING THE WORK.
- THE CONTRACTOR SHALL PROVIDE ADEQUATE BRACING AND SHORING FOR ALL STRUCTURAL MEMBERS DURING ALL PHASES OF CONSTRUCTION.
- ALL CONDITIONS OF POTENTIAL INSTABILITY OF EMBARKMENTS, CUT OR FILL SLOPES SHOULD BE BROUGHT TO THE ATTENTION OF THE SOILS ENGINEER. THE CONTRACTOR TO WORK CLOSELY WITH THE SOILS ENGINEER FOR ALL SOILS RELATED MATTERS.

DESIGN

- LIVE LOADS:
FLOOR..... 60 PSF (PER 2006 IBC)
- WIND..... EFFECTIVE WIND SPEED.....90 MPH
WIND EXPOSURE CATEGORY.....C
TOPO FACTOR.....1.0
- EARTHQUAKE ZONE.....MAUI COUNTY 0.2 AND 1 SEC. SPECTRAL
RESPONSE ACCELERATION OF 95 AND 25
FOR SITE CLASS B
- ALLOWABLE SOIL PRESSURE PER CODE.

FOUNDATION

- ALL FOUNDATION EXCAVATIONS SHALL BE KEPT CLEAR OF WATER AT ALL TIMES. THE BOTTOM OF THE FOOTING EXCAVATION SHALL BE NEAT AND FREE OF LOOSE SOILS AND DEBRIS. ALL FOOTINGS MUST REST ON 95% COMPACTED EARTH. ALL COMPACTONS MUST BE OBSERVED BY A LICENSED SOILS ENGINEER. THE CONTRACTOR TO PROVIDE A CERTIFICATION THAT ALL FOUNDATIONS ARE RESTING ON 95% COMPACTED EARTH.
- FILLS AND BACKFILLS SHALL BE CLEAN GRANULAR FILL PLACED IN MAXIMUM 8-INCH LIFTS AND COMPACTED TO A MINIMUM OF 95% OF ITS MAXIMUM DRY DENSITY ESTABLISHED BY ASTM D-1557. THE ON-SITE CLAY SOIL OR DEBRIS SHALL NOT BE USED FOR FILL MATERIAL BELOW STRUCTURES.
- THE FILL AREA SHALL BE CLEARED OF VEGETATION AND DEBRIS PRIOR TO FILLING. ALL COMPACTONS MUST BE OBSERVED BY A LICENSED SOILS ENGINEER. LIFTS FOR ALL FILL AREAS SHALL BE IN STRICT ACCORDANCE WITH THE RECOMMENDATIONS FROM A SOILS ENGINEER. THE COST OF A SOILS ENGINEER SHALL BE BORNE BY THE CONTRACTOR.

CONCRETE AND REINFORCING

- USE TYPE I OR II CEMENT CONFORMING WITH ASTM C-150. DO NOT HAND MIX CONCRETE ON JOBSITE. CONCRETE SHALL HAVE COMPRESSIVE STRENGTHS AT 28 DAYS AS FOLLOWS:
4000 PSI CONCRETE WITH MINIMUM 5.5 SACKS OF CEMENT PER CU.YD.
- MAXIMUM SLUMP FOR ALL CONCRETE SHALL BE 4.1/2 INCHES.
- DRYPACK CONCRETE SHALL BE ONE PART PORTLAND CEMENT AND ONE PART SAND WITH SUFFICIENT WATER TO ALLOW A SMALL AMOUNT OF PASTE TO COME TO THE SURFACE.
- ALL REINFORCING STEEL SHALL BE NEW STOCK DEFORMED BARS CONFORMING TO ASTM A-775 GRADE 60 (FUSION EPOXY BONDS) UNLESS OTHERWISE NOTED. PLACEMENT OF REINFORCING STEEL SHALL BE IN ACCORDANCE WITH ACI 315 AND ACI 318. ALL REINFORCING SHALL BE CLEAN, ANY EXPOSED REBAR ENDS OR DAMAGED PAINT SHALL BE PAINTED WITH SKOTCHKOTE 413 OR APPROVED EQUAL. ALL BENDS SHALL BE MADE COLD.
- ALL REINFORCING STEEL SHALL BE ACCURATELY AND SECURELY PLACED.
- STATEMENT OF MIX DESIGN SHALL BE MADE FOR ALL CONCRETE. THE AVERAGE TRIAL BATCH STRENGTH SHALL EXCEED THE SPECIFIED STRENGTH, F_c, BY 15%. MIX DESIGN SHALL BE APPROVED BY THE STRUCTURAL ENGINEER PRIOR TO COMMENCEMENT OF THE WORK.
- CONCRETE SHALL BE COLORED DARK GREY. SEE SPECIFICATION.

PLASTIC LUMBER

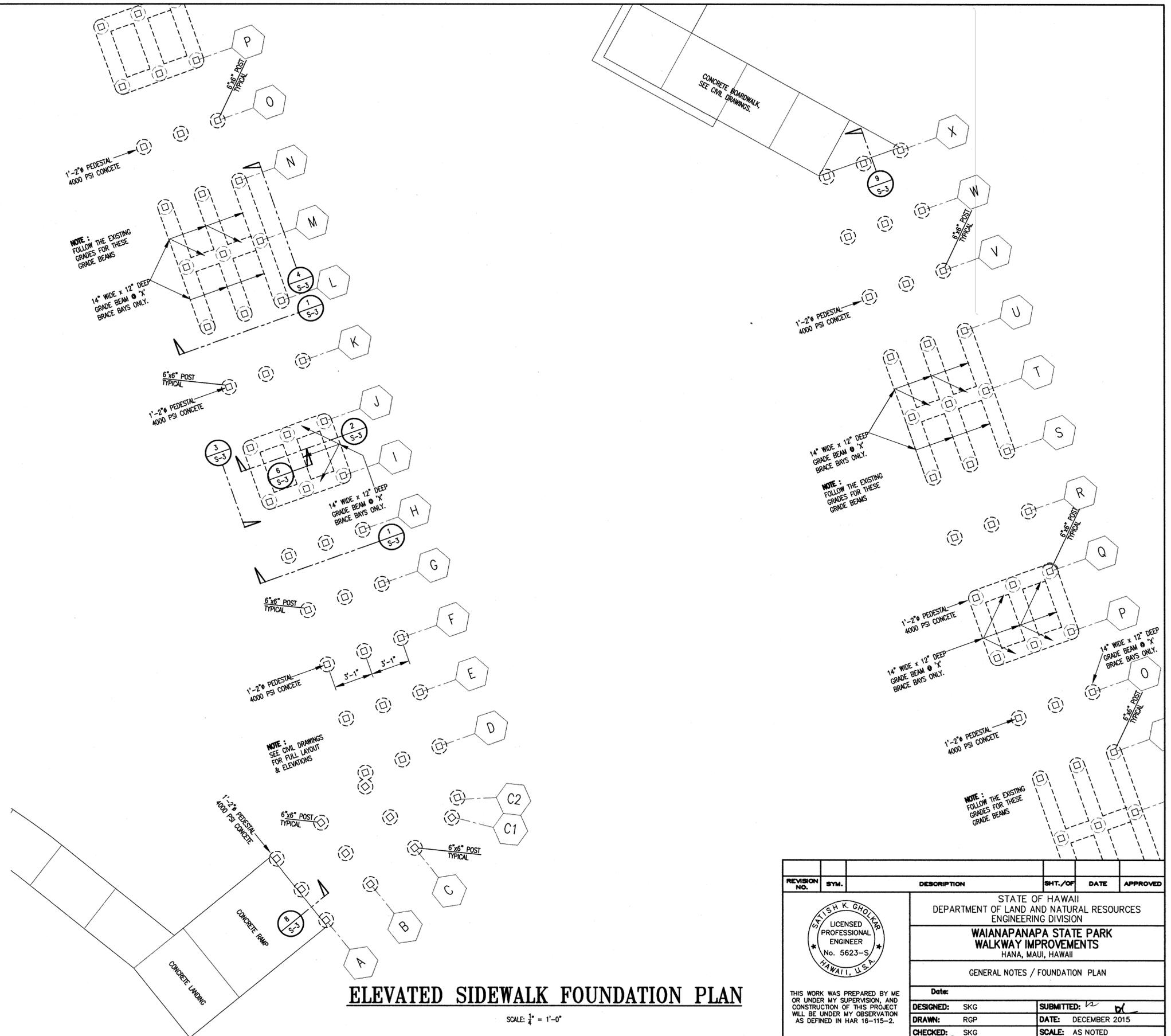
- STRUCTURAL PLASTIC LUMBER SHALL BE MADE OF RECYCLED MIX PLASTIC WASTE AS MANUFACTURED BY "TRIMAX PLASTIC LUMBER" AS MANUFACTURED BY N.E.W PLASTIC CORP OR, "FIBERFORCE PLASTIC LUMBER" AS MANUFACTURED BY BEDORD TECHNOLOGIES, LLC., OR APPROVED EQUAL.
FOLLOWING PROPERTIES ARE USED FOR DESIGN :
MODULUS OF RUPTURE (MOR) AS ESTABLISHED BY ASTM D 6109-05 = 1470 PSI
MODULUS OF ELASTICITY (MOE) AS ESTABLISHED BY ASTM D 6109-05 = 450,000 PSI
COMPRESSION PARALLEL TO GRAIN = 870 PSI
COMPRESSION PERPENDICULAR TO GRAIN = 347 PSI
HORIZONTAL SHEAR = 370 PSI
TENSION PARALLEL TO GRAIN = 625 PSI
- 2x8 JOIST IS MEASURED AS 1 1/2" x 7 1/2" SQR. EDGE
2x6 JOIST IS MEASURED AS 1 1/2" x 5 1/2" SQR. EDGE
4x4 MEMBER IS MEASURED AS 3 1/2" x 3 1/2" SQR. EDGE
6x6 MEMBER IS MEASURED AS 5 1/2" x 5 1/2" SQR. EDGE
ALL DECK BOARDS SHALL BE TREX TRANSEND 2x COMPOSITE DECKING OR APPROVED EQUAL. 2x DECKING MATERIAL SHALL BE SQUARE EDGE BOARDS WITH DIMENSION OF 1.375"x5.5"
- DO NOT APPLY GLUE OR EPOXY ON PLASTIC LUMBER.
- HOLES FOR BOLTS SHALL BE DRILLED 1/32" TO 1/16" LARGER THAN BOLT DIAMETER. ALL BOLTS AND NUTS AT PLASTIC LUMBER SURFACES SHALL BE FITTED WITH STEEL WASHERS.
- NO STRUCTURAL MEMBER SHALL BE CUT OR NOTCHED FOR ANY OPENING UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS OR APPROVED IN THE FIELD BY THE STRUCTURAL ENGINEER.
- WHEREVER THERE IS BOLT ADD MINIMUM OF (4) SCREWS IN ADDITION TO IT.
- ALL BOLTS FOR THE ENTIRE JOB SHALL BE STAINLESS STEEL OTHERWISE NOTED. SEE PLANS AND DETAILS FOR SIZE AND SPACINGS.
- IF CONTRACTOR FINDS ANY CONFLICT WITH STRUCTURAL DRAWINGS AND OTHER DISCIPLINES (OR SPECIFICATIONS), IT SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER. IN CASE OF CONFLICT USE THE STRINGENT CONDITION AND REQUIREMENTS.

STRUCTURAL STEEL

- ALL STRUCTURAL STEEL WORK SHALL COMPLY WITH THE LATEST EDITION OF A.I.S.C. "STANDARD SPECIFICATIONS FOR STRUCTURAL STEEL FOR BUILDINGS" AND THE A.I.S.C. "CODE OF STANDARD PRACTICE".
- ALL STEEL BOLTS, PLATES SHALL BE 318 STAINLESS STEEL UNLESS NOTED OTHERWISE. ALL HANDRAILS, PLATES FOR HANDRAILS AND BOLTS FOR HANDRAIL SHALL BE 316 STAINLESS STEEL.

SPECIAL INSPECTION REQUIREMENTS

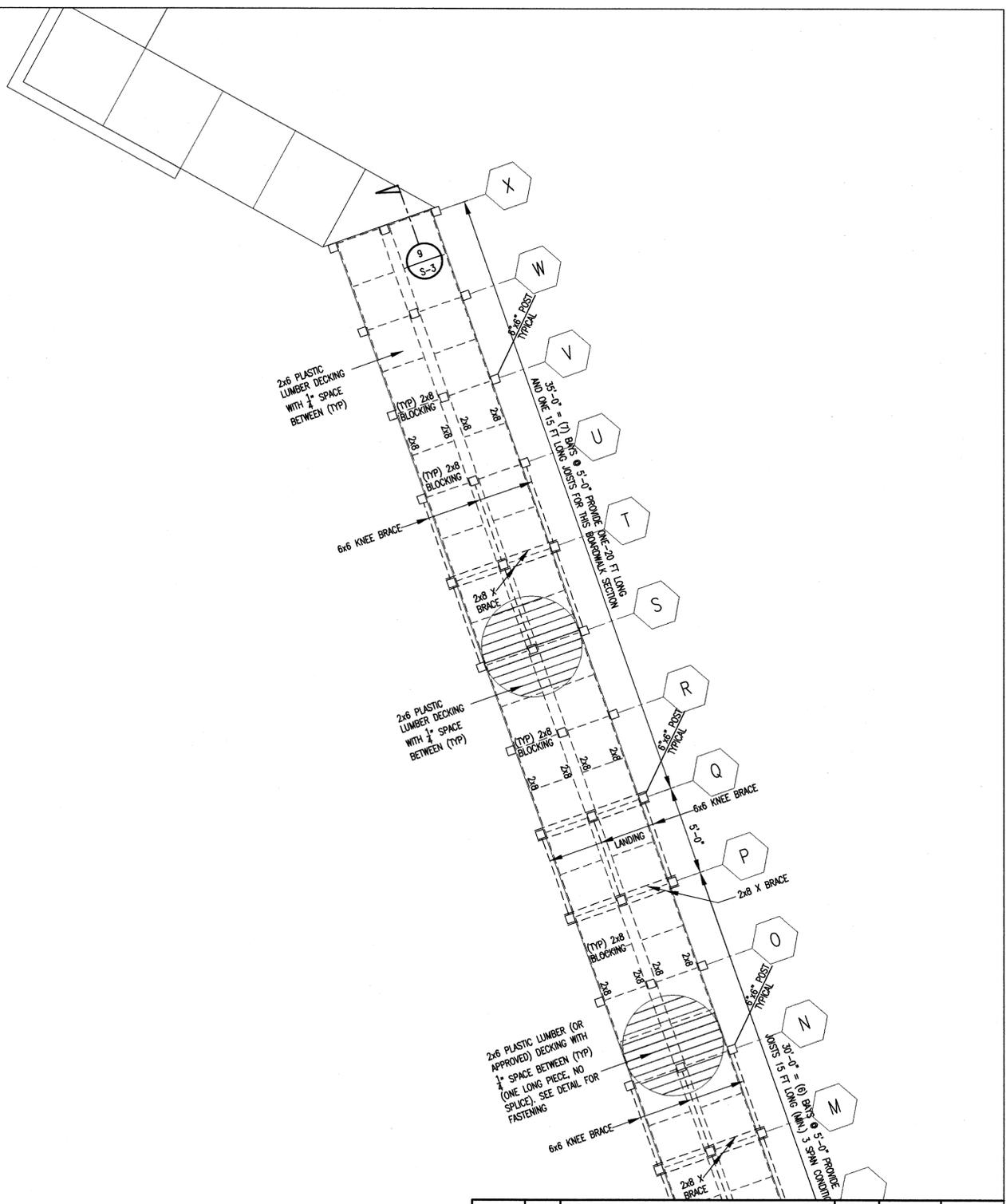
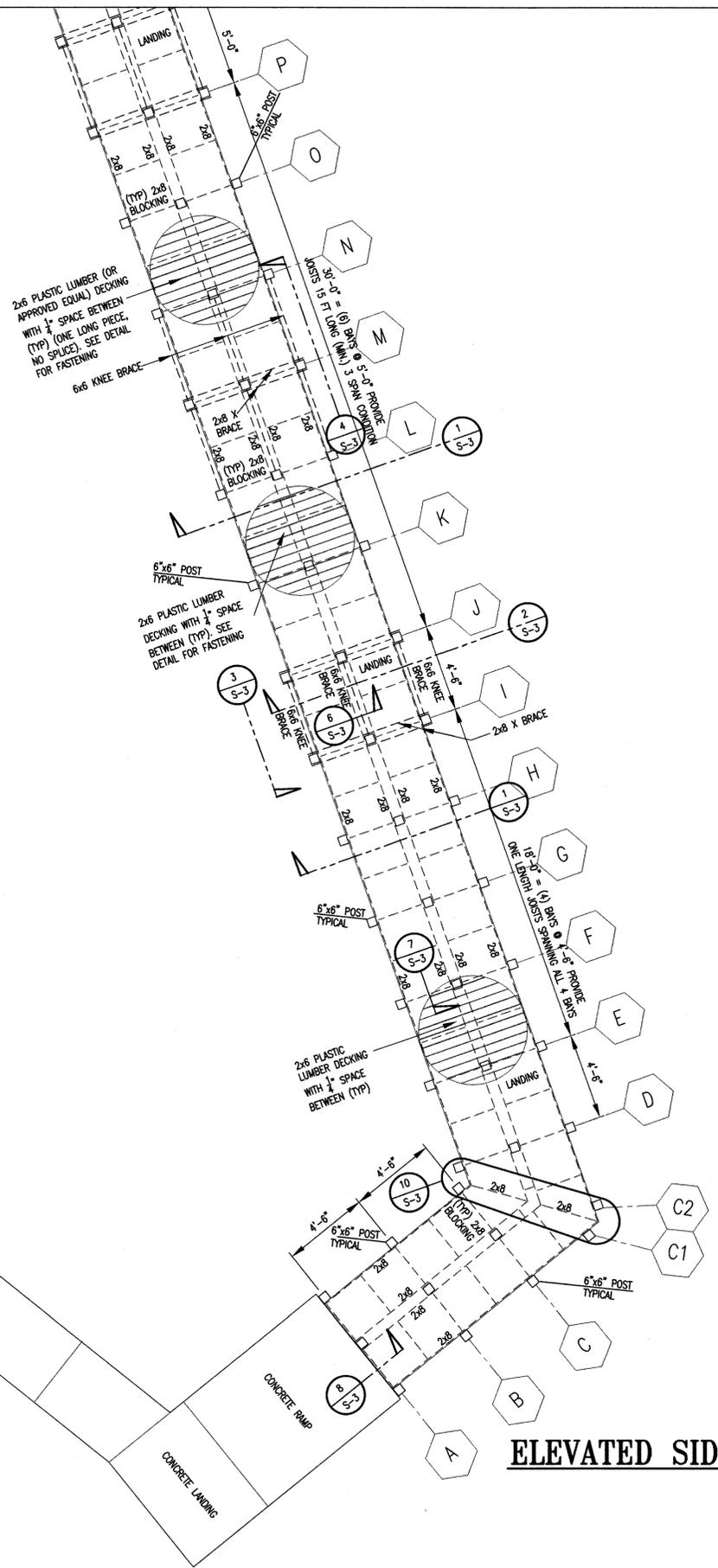
- THE PROJECT REQUIRES SPECIAL INSPECTIONS. CONTRACTOR TO INFORM OUR OFFICE (MINIMUM 48 HOURS) FOR THE FOLLOWING REQUIRED INSPECTIONS:
- REINFORCING IN FOOTINGS PRIOR TO POURING OF CONCRETE.



ELEVATED SIDEWALK FOUNDATION PLAN

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

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII GENERAL NOTES / FOUNDATION PLAN					
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.					
DESIGNED:	SKG	SUBMITTED:	12	DATE:	DECEMBER 2015
DRAWN:	RGP	CHECKED:	SKG	SCALE:	AS NOTED
APPROVED:	<i>Satish K. Gholkar</i>	DATE:	JAN 04 2016	DRAWING NO.:	S-1
License Expires: APRIL 30, 2016 CHIEF ENGINEER					



ELEVATED SIDEWALK FLOOR FRAMING PLAN

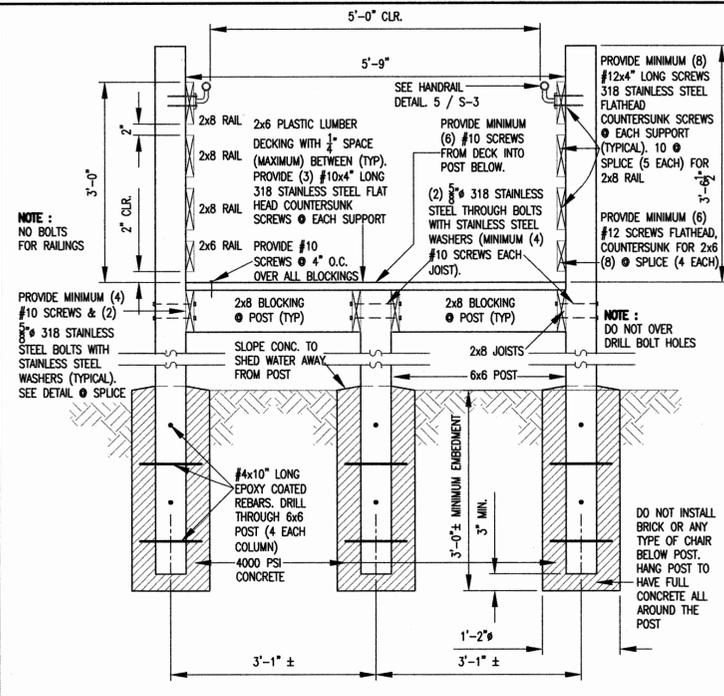
SCALE: 1/4" = 1'-0"

REVISION NO.	SYM.	DESCRIPTION	SHT./OF	DATE	APPROVED
STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION WAIANAPANAPA STATE PARK WALKWAY IMPROVEMENTS HANA, MAUI, HAWAII FLOOR FRAMING PLAN					
Date:					
DESIGNED:	SKG	SUBMITTED:	[Signature]		
DRAWN:	RGF	DATE:	DECEMBER 2015		
CHECKED:	SKG	SCALE:	AS NOTED		
APPROVED:	[Signature]	DATE:	JAN 04 2016	DRAWING NO.	S-2
License Expires: APRIL 30, 2016		CHIEF ENGINEER			



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION, AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN HAR 16-115-2.

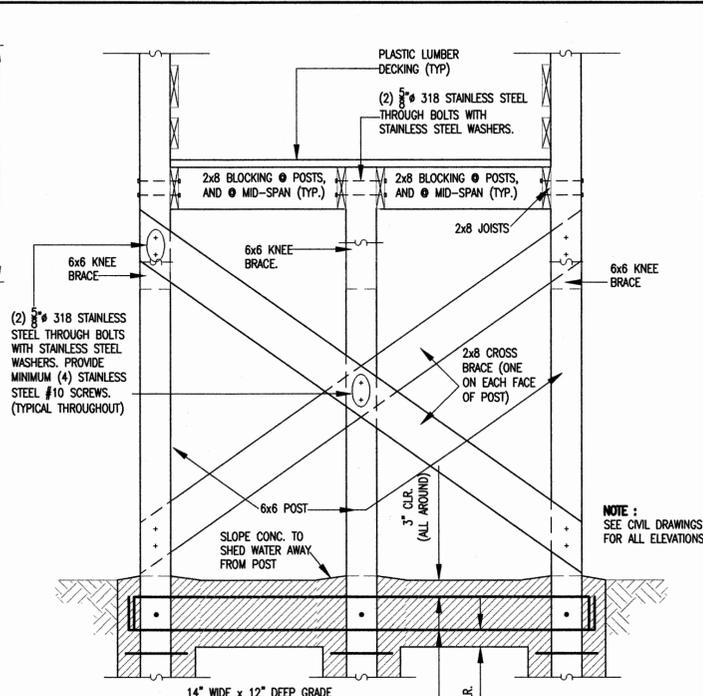
Sattish K. Ghoshkar
 License Expires: APRIL 30, 2016



SECTION

SCALE: 3/4" = 1'-0"

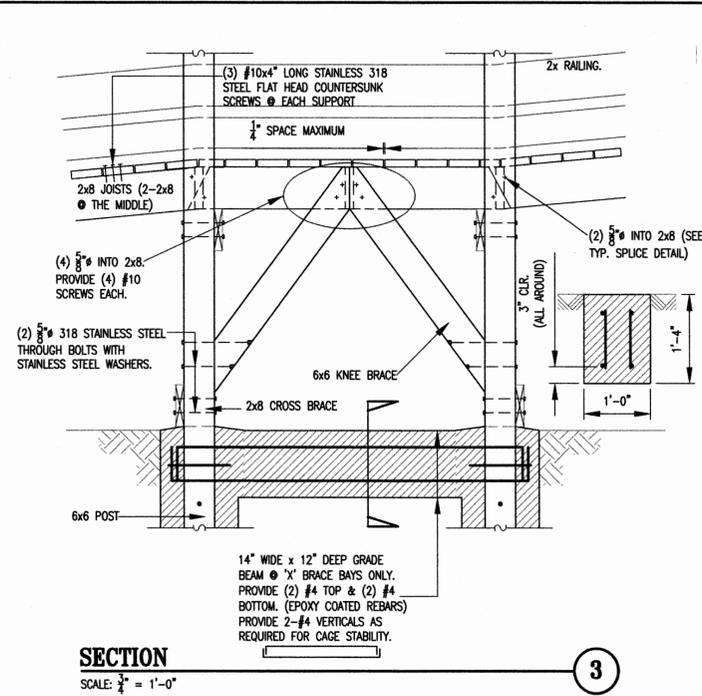
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SECTION

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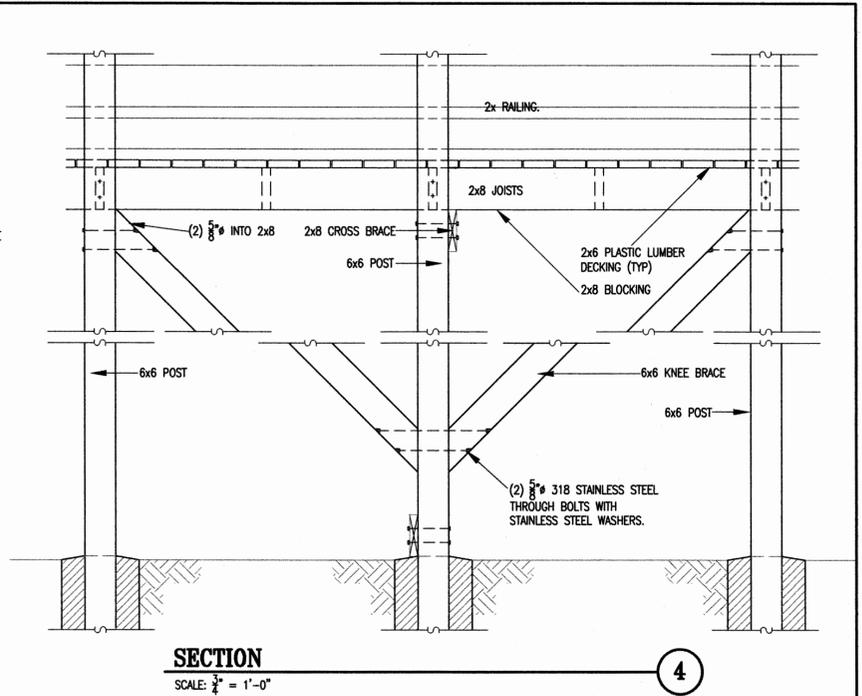
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SECTION

SCALE: 3/4" = 1'-0"

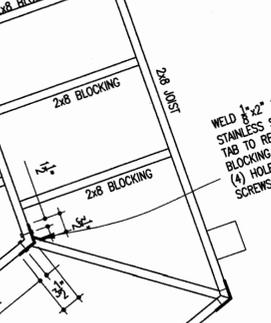
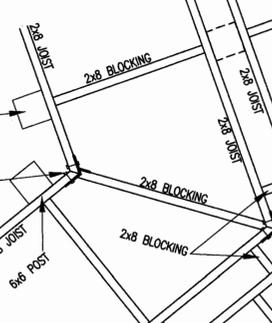
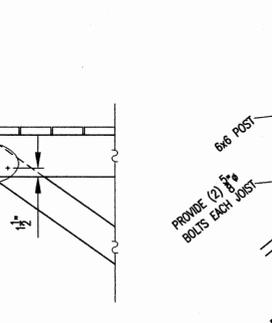
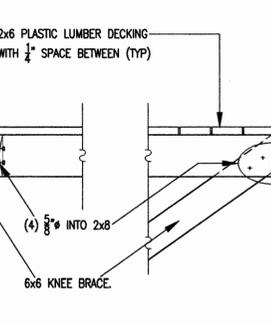
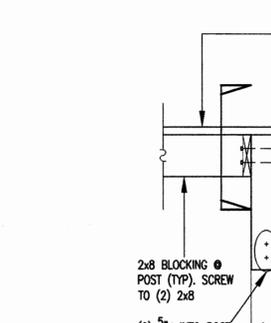
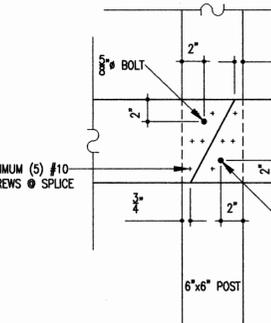
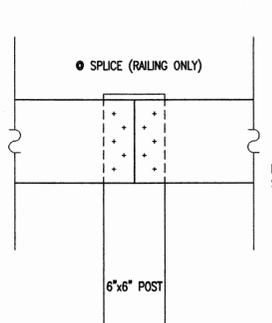
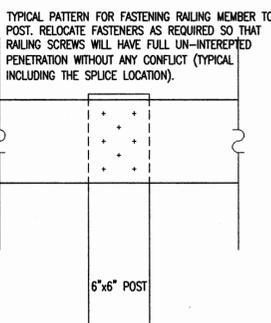
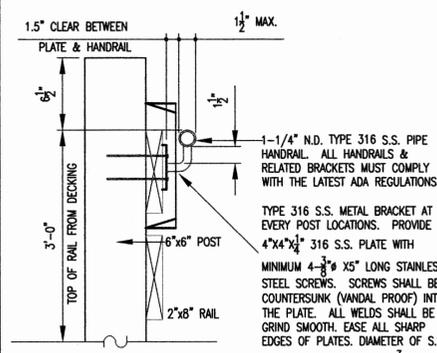
3



SECTION

SCALE: 3/4" = 1'-0"

4



NOTE: DIAMETER FOR ALL #10 STAINLESS STEEL SCREWS SHALL BE 0.182 OR LARGER (TYPICAL).

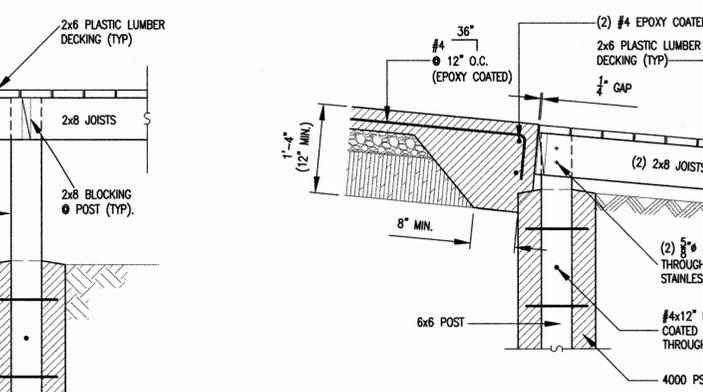
NOTE: DO NOT OVER DRILL BOLT HOLES.



SECTION

SCALE: 3/4" = 1'-0"

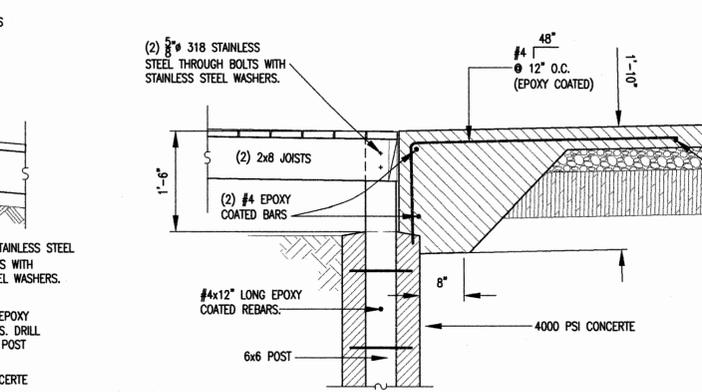
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SECTION

SCALE: 3/4" = 1'-0"

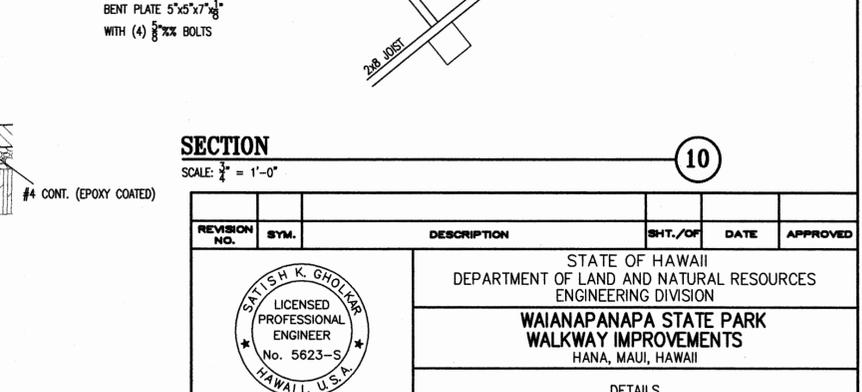
8



SECTION

SCALE: 3/4" = 1'-0"

9



SECTION

SCALE: 3/4" = 1'-0"

10

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

**WAIANAPANAPA STATE PARK
WALKWAY IMPROVEMENTS**
HANA, MAUI, HAWAII

DETAILS

Date:

DESIGNED: SKG
DRAWN: RGP
CHECKED: SKG
APPROVED: *Salih K. Gholker*
CHIEF ENGINEER

SUBMITTED: *ll*
DATE: DECEMBER 2015
SCALE: AS NOTED
DRAWING NO. S-3
DATE: JAN 04 2016

License Expires: APRIL 30, 2016