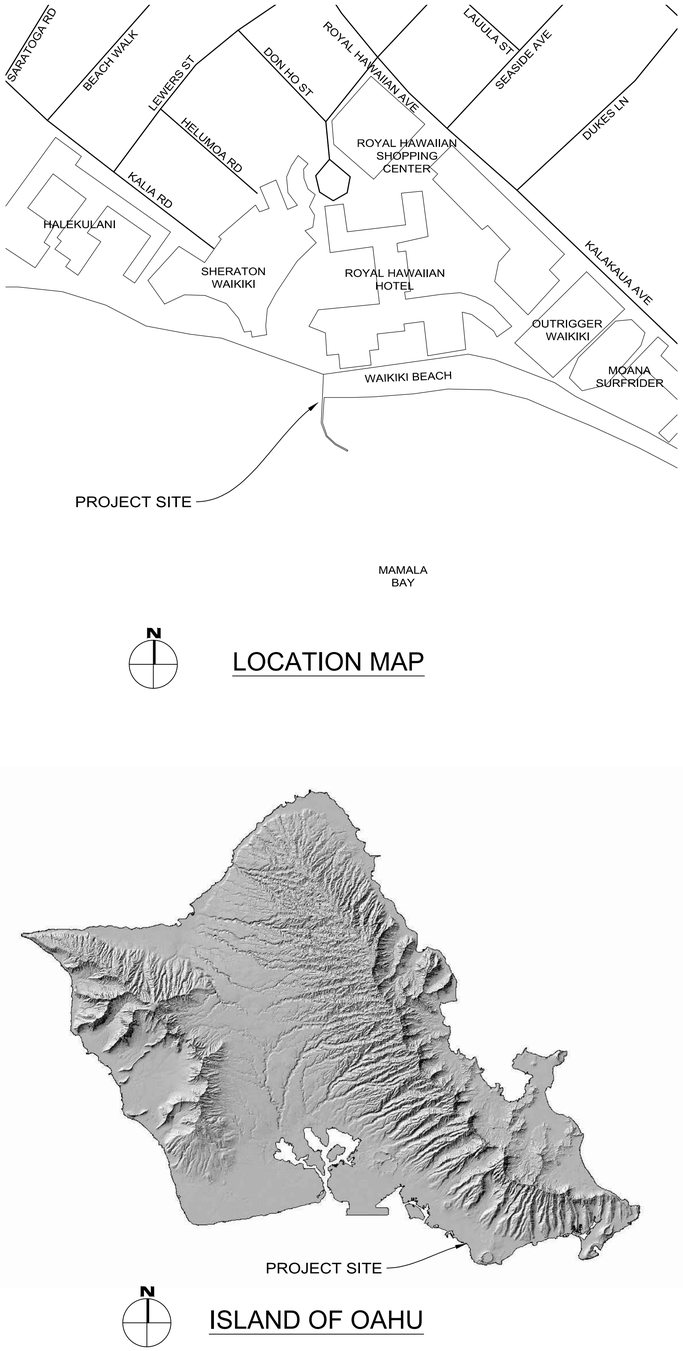

LOCATION MAP

ISLAND OF OAHU

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

ENGINEERING DIVISION

FOR

OFFICE OF CONSERVATION AND COASTAL LANDS

JOB NO. E00XO30B

ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

HONOLULU, OAHU, HAWAII

SEAWARD OF TMK: (1) 2-6-002:005 AND (1) 2-6-002:006

INDEX

APPROVED: DATE: _____

SAMUEL J. LEMMO
ADMINISTRATOR
OFFICE OF CONSERVATION AND COASTAL LANDS
DEPARTMENT OF LAND AND NATURAL RESOURCES

APPROVED: DATE: _____

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

DRAWING NO. T-1

JOB NO. E00XO30B, ROYAL HAWAIIAN GROIN IMPROVEMENT PROJECT

GENERAL NOTES

1. THE ROYAL HAWAIIAN GROIN PROJECT CONSISTS OF CONSTRUCTING A NEW ROCK RUBBLEMOUND GROIN WITH CONCRETE CAP AT THE SITE OF THE EXISTING CONCRETE BLOCK GROIN.

2. THE PROJECT OWNER IS THE STATE OF HAWAII, DEPARTMENT OF LAND AND NATURAL RESOURCES (STATE). THE ENGINEERING CONSULTANT IS SEA ENGINEERING, INC (ENGINEER).

3. TOPOGRAPHIC SURVEYS WERE CONDUCTED BY SEA ENGINEERING, INC. ON AUGUST 28, 2019. RECTANGULAR COORDINATES ARE BASED ON NAD83, HAWAII STATE PLANE, ZONE 3 (US SURVEY FEET).

4. THE PROJECT SHORELINE IS VERY DYNAMIC, WITH RAPID CHANGES IN SAND VOLUME AND BEACH WIDTH POSSIBLE.

5. ELEVATIONS ARE REFERRED TO MEAN SEA LEVEL (MSL). AZIMUTHS ARE MEASURED CLOCKWISE AND REFERRED TO TRUE SOUTH.

6. THE CONTRACTOR SHALL USE THE VERTICAL AND HORIZONTAL CONTROLS SPECIFIED AT MONUMENTS SHOWN ON SHEET C-1.

7. ALL DISTANCES, DIMENSIONS, ELEVATIONS, AND COORDINATES ARE IN FEET, UNLESS NOTED OTHERWISE.

8. THE CONTRACTOR SHALL VERIFY AND CHECK ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS PRIOR TO THE START OF CONSTRUCTION. ANY DISCREPANCY SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE ENGINEER FOR DIRECTION.

9. 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.

10. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR UTILITIES SUCH AS ELECTRICITY, WATER, ETC. REQUIRED FOR HIS OPERATIONS AND ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.

11. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL, OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS, OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE COSTS INCURRED FOR ANY REMEDIAL ACTION SHALL BE PAYABLE BY THE CONTRACTOR.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEARING AND REMOVAL OF ALL SAND AND DEBRIS GENERATED BY HIS CONSTRUCTION WORK AND DEPOSITED AND ACCUMULATED ON ROADWAYS AND OTHER AREAS.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE PROJECT AREA IN A CLEAN AND ORDERLY MANNER, AND FOR CLEARING AND REMOVAL OF ALL DEBRIS GENERATED BY HIS CONSTRUCTION WORK.

14. ALL EXISTING UTILITIES, ROADWAYS, WALKWAYS, WALLS, AND BUILDINGS, WHETHER OR NOT SHOWN ON THE DRAWINGS, SHALL BE PROTECTED FROM DAMAGE AT ALL TIMES DURING CONSTRUCTION. ANY DAMAGE TO THEM SHALL BE REPAIRED BY THE CONTRACTOR AT HIS EXPENSE.

15. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO EXCAVATION. THE CONTRACTOR SHALL NOTIFY THE ONE CALL CENTER AT (866) 423-7287 OR 811 AT LEAST FIVE (5) WORKING DAYS PRIOR TO THE START OF EXCAVATION. PERSONAL INJURY RESULTING FROM CONTACT WITH EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

16. ALL DEMOLITION, STOCKPILING, AND GRADING WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE FEDERAL AND LOCAL LAWS AND REGULATIONS.

17. NO BLASTING SHALL BE ALLOWED ON THIS PROJECT.

18. 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 APPLICABLE FEDERAL AND LOCAL LAWS AND REGULATIONS REGARDING AIR POLLUTION CONTROL.

19. THE JOB SITE MUST BE LEFT IN A SAFE, SECURE CONDITION AT THE END OF EACH CONSTRUCTION WORK DAY. CLEAN UP AND REMOVE FROM THE JOB SITE ALL RUBBISH AND MAINTAIN THE PREMISES IN A CLEAN ORDERLY CONDITION AT ALL TIMES.

20. ALL EXISTING TREES, SHRUBS, AND SURROUNDING VEGETATION SHALL BE PRESERVED AND PROTECTED AS FAR AS PRACTICAL. REMOVAL OF ANY TREES SHALL REQUIRE APPROVAL BY THE ENGINEER. ANY DAMAGED VEGETATION SHALL BE REPLACED BY THE CONTRACTOR AT HIS EXPENSE.

21. ALL PROJECT WORK SHALL BE PERFORMED IN CONFORMANCE WITH APPLICABLE FEDERAL AND LOCAL LAWS AND REGULATIONS REGARDING WATER QUALITY AND WATER POLLUTION CONTROL. 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, HAWAII ADMINISTRATIVE RULES OF THE STATE DEPARTMENT OF HEALTH.

22. THE CONTRACTOR SHALL MAINTAIN THE STREETS, SIDEWALKS, AND OTHER PUBLIC RIGHTS OF WAY IN A CLEAN, SAFE, AND USABLE CONDITION. ALL SPILLS OF SAND, ROCK, OR CONSTRUCTION DEBRIS SHALL BE REMOVED IMMEDIATELY. ALL AREAS ADJACENT TO DESIGNATED WORK AREAS SHALL BE MAINTAINED IN A CLEAN, SAFE, AND USABLE CONDITION.

23. THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING FOR PUBLIC SAFETY IN THE VICINITY OF WORK AREAS. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORK HOURS. ALL WORK AREAS SHALL HAVE SUITABLE SAFETY FENCING AND WARNING SIGNAGE TO INSURE PUBLIC SAFETY.

24. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. TEMPORARY PASSAGEWAYS SHALL BE ACCESSIBLE PER 2010 ADA STANDARDS FOR ACCESSIBLE DESIGN CHAPTER 2, SECTIONS 201.3 AND 206.1.

25. THE BEACH PARK SHALL REMAIN OPEN TO THE MAXIMUM EXTENT POSSIBLE DURING THE CONSTRUCTION PERIOD. PROVIDE AND MAINTAIN SAFE PEDESTRIAN ACCESS TO THE PARK AND PARK FACILITIES THROUGHOUT THE CONSTRUCTION PERIOD.

26. THE CONTRACTOR SHALL PROVIDE, INSTALL, AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, MARKERS, CONES, AND OTHER PROTECTIVE FACILITIES AND SHALL TAKE NECESSARY PRECAUTIONS FOR THE PROTECTION, CONVENIENCE, AND SAFETY OF THE PUBLIC.

27. UPON COMPLETION OF CONSTRUCTION THE ENTIRE JOB SITE SHALL BE CLEANED OF ALL RUBBISH AND DEBRIS.

GROIN CONSTRUCTION NOTES:

28. REMOVE EXISTING SHORELINE MATERIAL AND DEBRIS (ROCKS, RUBBLE, SANDBAGS, SAND, ETC.) AS NECESSARY TO CONSTRUCT THE GROIN TO THE LINES AND GRADES AS SHOWN ON THE DRAWINGS. BEACH SAND SHALL BE STOCKPILED ON THE BEACH CREST ABOVE THE +5 FOOT ELEVATION WITHIN THE WORKSITE STAGING AREA, AND PLACED ADJACENT TO THE NEW GROIN FOLLOWING COMPLETION OF CONSTRUCTION. ALL OTHER MATERIAL SHALL BE DISPOSED OF AT AN APPROVED OFF-SITE DISPOSAL AREA.

29. GROIN ARMOR STONE SHALL CONSIST OF 3,200 TO 5,400 LB STONE. ARMOR STONE SHALL BE UTILIZED WITHIN THE ALLOWABLE SIZE RANGE AS NECESSARY TO MEET THE LINES AND GRADES OF THE GROIN AS SHOWN ON THE PLANS. A MINIMUM OF 50% OF THE ARMOR STONE BY VOLUME SHALL BE GREATER THAN 4,000 LBS.

30. UNDERLAYER STONE SHALL CONSIST OF 300 TO 600 LB STONE.

31. CORE STONE SHALL CONSIST OF 30 TO 100 LB STONE. UNDERLAYER STONE MAY BE SUBSTITUTED FOR CORE STONE.

32. ALL STONE SHALL HAVE A MINIMUM SPECIFIC GRAVITY OF 2.5, AND BE WELL GRADED WITHIN THE ALLOWABLE SIZE RANGES.

33. STONE SHALL BE DENSE, DURABLE, FREE OF CRACKS OR DEFECTS, AND OF A SUITABLE QUALITY TO INSURE PERMANANCE IN THE STRUCTURE. ALL STONE SHALL BE WASHED AND FREE OF SILT, SEDIMENT, EARTHEN MATERIAL, AND ANY CONTAMINANTS.

34. ARMOR STONE SHALL BE PLACED WITHIN THE LINES, GRADES, AND THICKNESSES SHOWN ON THE PLANS.

35. ARMOR STONE SHALL BE INDIVIDUALLY KEYED AND FITTED IN THE STRUCTURE SUCH THAT EACH STONE SHALL CONTACT AND FIRMLY ABUT SURROUNDING ARMOR STONE AND UNDERLAYER STONE.

36. CONCRETE CREST CAP SHALL BE CAST-IN-PLACE. FLEXIBLE FORMWORK SHALL BE USED TO FORM THE CONCRETE CAP SUCH THAT IT CLOSELY ABUTS THE SURROUNDING ARMOR STONE. THE FORMWORK SHALL BE CAPABLE OF CONTAINING CONCRETE DURING PLACEMENT AND PREVENTING LEAKS OF CONCRETE. CREST OF UNDERLAYER STONE UNDER CREST CAP MAY BE CHINKED WITH SMALL STONE AND GRAVEL TO RETAIN CONCRETE.

37. DURING CONSTRUCTION A TEMPORARY SECOND LAYER OF ARMOR STONE MAY BE PLACED ON THE EAST (DIAMOND HEAD) SIDE OF THE GROIN TO PROVIDE ADDITIONAL WIDTH FOR A CONSTRUCTION PLATFORM.

38. THE GENERAL CONSTRUCTION METHODOLOGY AND SEQUENCE SHALL BE AS FOLLOWS:

STA 0+00 TO STA 0+64 – EXCAVATE EXISTING SAND AS NECESSARY FOR GROIN CONSTRUCTION. TEMPORARILY STOCKPILE IT ABOVE THE +5 FOOT ELEVATION WITHIN THE WORKSITE STAGING AREA. STABILIZE THE SAND BANK SLOPE WITH STEEL ROAD PLATES OR EQUIVALENT.

STA 0+00 TO STA 0+40 – CONSTRUCT THE NEW GROIN TO AN ELEVATION OF +4 FEET (TOP OF THE UNDERLAYER), INCLUDING CORE STONE, UNDERLAYER STONE, AND ARMOR STONE. REMOVE THE EXISTING CONCRETE BLOCK GROIN TO A MAXIMUM TOP ELEVATION OF +4 FEET. STONE MAY BE TEMPORARILY PLACED ON THE EAST SIDE BETWEEN STA 0+00 AND APPROXIMATE STA 0+20 AS NECESSARY TO PROVIDE ACCESS ONTO THE NEW GROIN FROM THE BEACH.

STA 0+40 TO STA 0+64 – TRANSITION THE NEW GROIN ELEVATION FROM +4 FEET TO +1 FOOT, INCLUDING CORE STONE, UNDERLAYER STONE, AND ARMOR STONE.

STA 0+64 TO STA 1+75 – CONSTRUCT THE NEW GROIN TO AN ELEVATION OF +1 FEET (TOP OF THE UNDERLAYER), INCLUDING CORE STONE, UNDERLAYER STONE, AND ARMOR STONE. REMOVE THE EXISTING CONCRETE BLOCK GROIN TO A MAXIMUM TOP ELEVATION OF +1 FEET AS NECESSARY.

STA 1+75 TO STA 0+00 – WORK BACK TO LAND CONSTRUCTING THE GROIN TO THE DESIGN LINES AND GRADES, INCLUDING ARMOR STONE AND CONCRETE CREST CAP.

39. ALL EXCESS STONE SHALL BE REMOVED AND DISPOSED OF FOLLOWING COMPLETION OF CONSTRUCTION.

ABBREVIATIONS:

', FT.	FEET	MHHW	MEAN HIGHER HIGH WATER
", IN.	INCHES	MIN.	MINIMUM
CIP	CAST IN PLACE	MSL.	MEAN SEA LEVEL
CL	CENTERLINE	(N)	NEW
CY	CUBIC YARDS	NTS	NOT TO SCALE
DET.	DETAIL	SHT(S).	SHEET(S)
(E)	EXISTING	SQ. FT.	SQUARE FEET
EL.	ELEVATION	STA.	STATION
EG	EXISTING GROUND	TYP.	TYPICAL
LBS	POUNDS		

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

DAVID A. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11453-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4/30/2020 EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

ROYAL HAWAIIAN GROIN
REPLACEMENT PROJECT

GENERAL NOTES

DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: NTS
APPROVED:	DRAWING NO. G-1
CHIEF ENGINEER DATE	

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

DAVID A. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11453-C
HAWAII, U.S.A.

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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

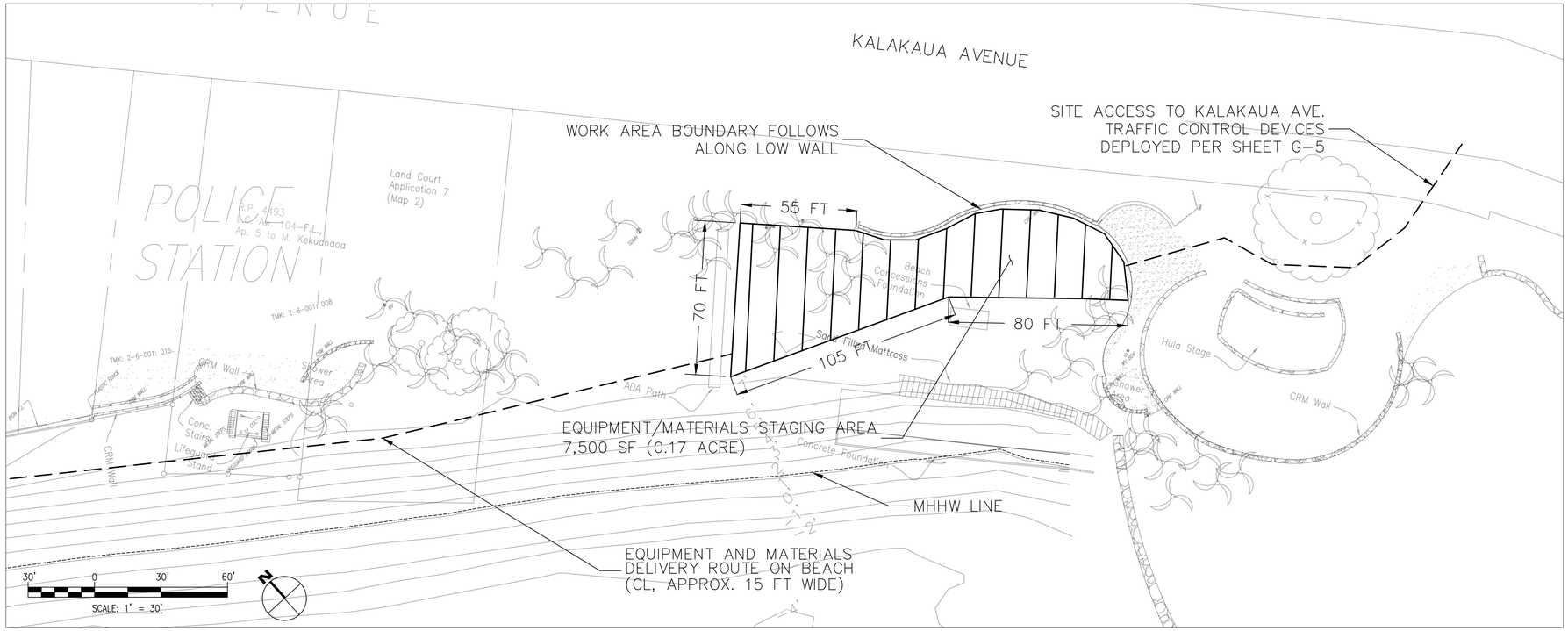
ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

SITE MAP

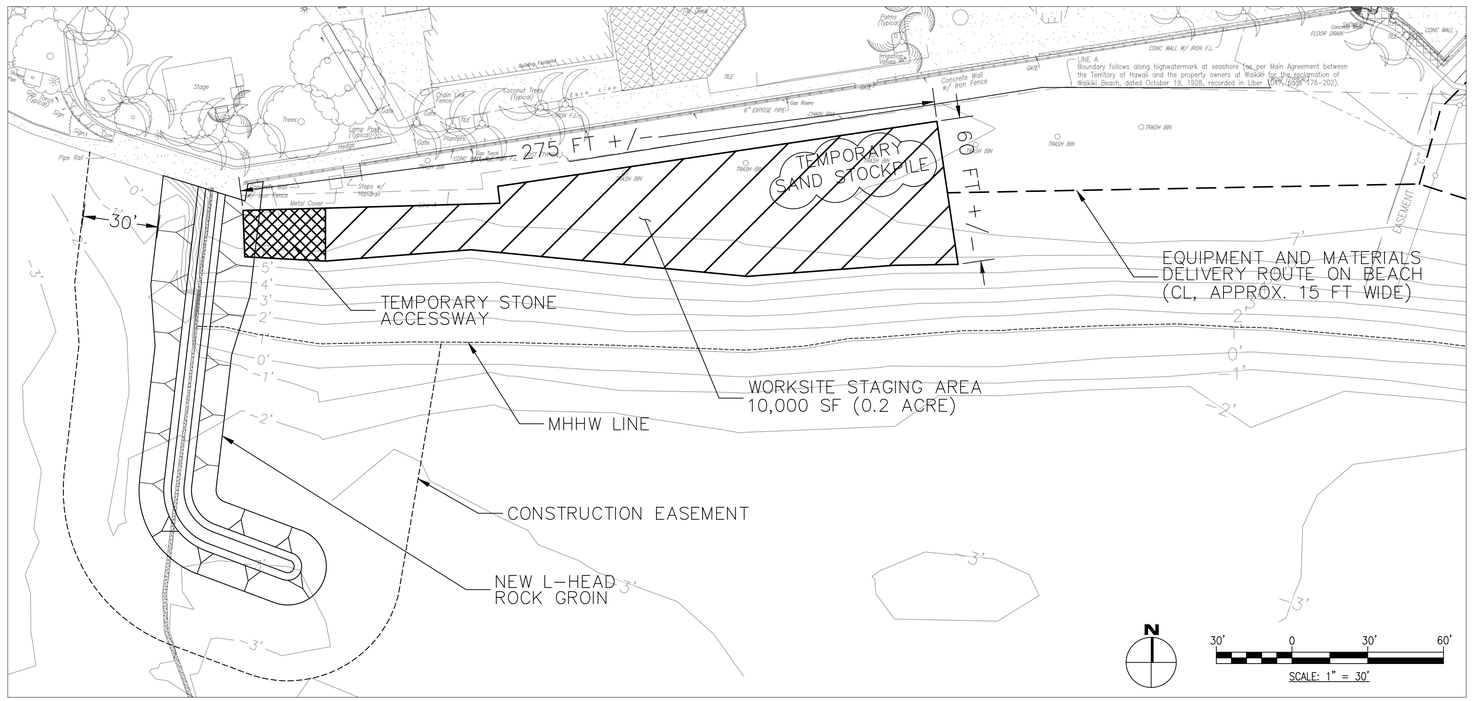
DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 60'

APPROVED: _____ CHIEF ENGINEER _____ DATE

DRAWING NO. G-2



1 G-2 G-3 EQUIPMENT/MATERIALS STAGING DETAIL
SCALE: 1" = 30'



2 G-2 G-3 WORKSITE STAGING AREA DETAIL
SCALE: 1" = 30'

NOTES:

1. EXACT BOUNDARIES OF WORK AREA TO BE CONFIRMED BY STATE TWO WEEKS PRIOR TO START OF CONSTRUCTION.

2. STAGING AREA SEAWARD BOUNDARY WILL BE THE APPROXIMATE +5 FOOT CONTOUR.

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HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

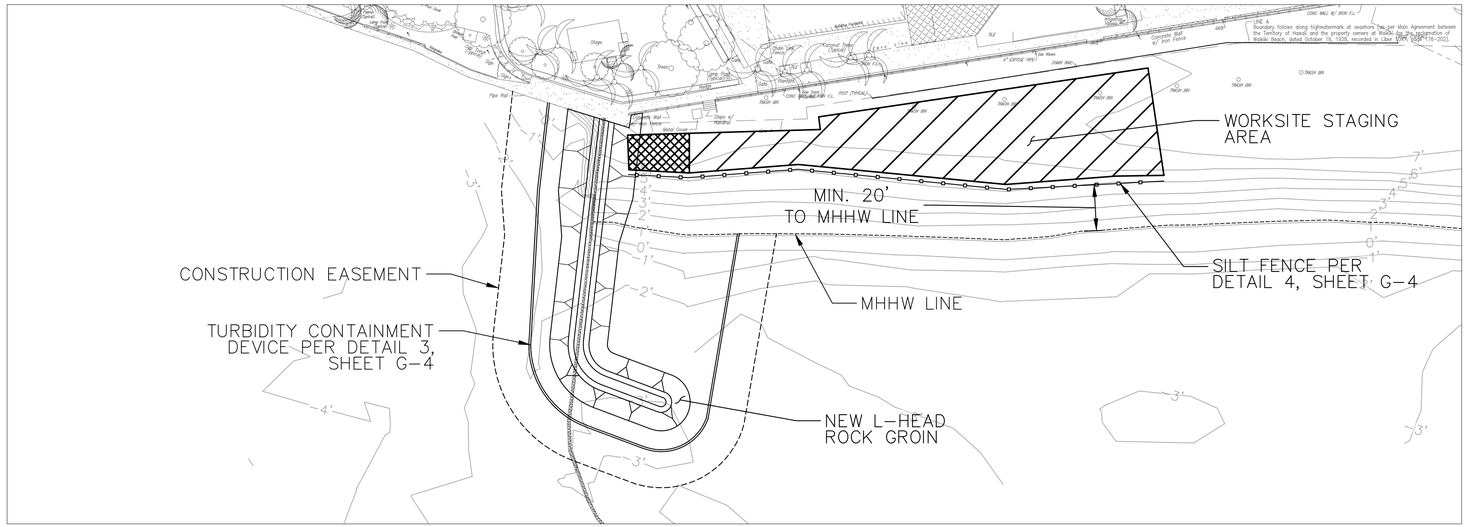
David A. Smith 4/30/2020
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

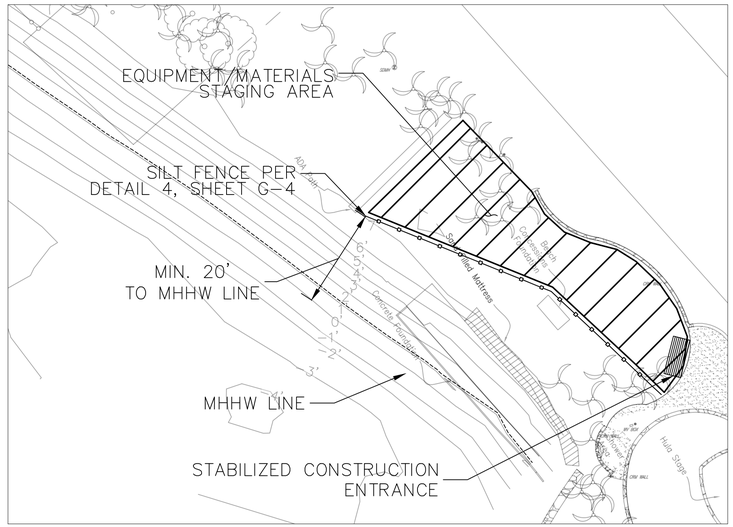
ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

CONSTRUCTION ACCESS AND STAGING AREAS

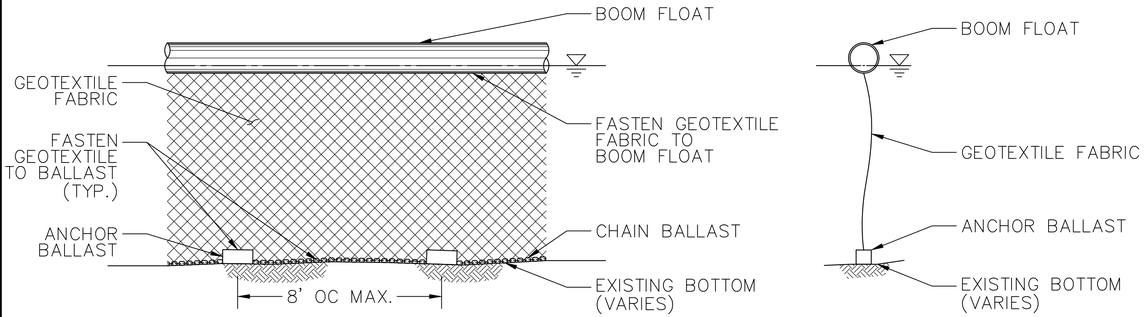
DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 30'
APPROVED:	DRAWING NO. G-3
CHIEF ENGINEER	DATE



1 G-4 GROIN CONSTRUCTION AND WORKSITE STAGING AREA
SCALE: 1" = 40'

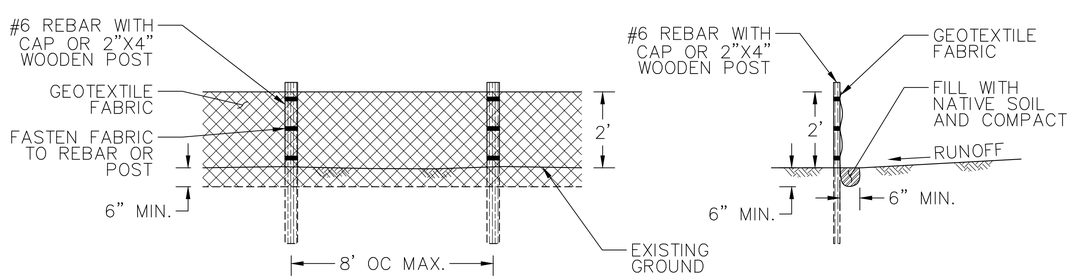


2 G-4 EQUIPMENT/MATERIALS STAGING AREA
SCALE: 1" = 40'



ELEVATION SECTION

3 G-4 TYPICAL TURBIDITY CONTAINMENT DEVICE DETAIL
SCALE: NTS



ELEVATION SECTION

4 G-4 TYPICAL SILT FENCE DETAIL
SCALE: NTS

BEST MANAGEMENT PRACTICES:

TURBIDITY CONTAINMENT

1. TURBIDITY CONTAINMENT DEVICES AND ON-LAND SILT FENCES AS SHOWN ON SHEET G-4 SHALL BE OF SUFFICIENT DESIGN, STRENGTH, AND SUITABILITY FOR THEIR INTENDED APPLICATION IN THE OCEAN ENVIRONMENT.

2. FLOATING TURBIDITY CONTAINMENT DEVICES SHALL GENERALLY BE COMPOSED OF A WATER SURFACE FLOATATION BOOM WITH A MINIMUM FREEBOARD OF 4 INCHES, A CURTAIN HANGING VERTICALLY TO THE REQUIRED DEPTH, BALLAST WEIGHT AT THE CURTAIN BOTTOM, AND SUFFICIENT ANCHORS TO MAINTAIN THE CURTAIN IN PLACE.

3. THE FLOATING TURBIDITY CONTAINMENT DEVICE CURTAIN MATERIAL SHALL BE MONOFILAMENT WOVEN POLYPROPYLENE WITH THE FOLLOWING MINIMUM PHYSICAL REQUIREMENTS:

PROPERTY	VALUE	TEST METHOD
GRAB STRENGTH	200 LBS	ASTM D 4632
PUNCTURE	90 LBS	ASTM D 4833
TRAPEZOID TEAR	90 LBS	ASTM D 4533

PERVIOUS GEOTEXTILE CURTAIN MATERIAL SHALL HAVE A MAXIMUM APPARENT OPENING SIZE (AOS) AND PERCENT OPEN AREA (POA) CAPABLE OF RETAINING FINE SUSPENDED SEDIMENTS 0.004 MM OR LARGER IN DIAMETER.

4. A DESCRIPTION OF THE TURBIDITY CONTAINMENT DEVICE(S), THEIR MATERIALS AND DESIGN, AND THE PROPOSED DEPLOYMENT METHODOLOGY SHALL BE INCLUDED IN THE ENVIRONMENTAL PROTECTION PLAN AND APPROVED BY THE STATE PRIOR TO THEIR USE.

5. TURBIDITY CONTAINMENT DEVICES AND FENCES SHALL BE INSPECTED DAILY, AND IMMEDIATELY REPAIRED OR REPLACED AS NECESSARY TO ENSURE THEIR EFFECTIVENESS.

GROIN CONSTRUCTION AREA (IN-WATER)

1. A TURBIDITY CONTAINMENT DEVICE SHALL BE DEPLOYED TO COMPLETELY SURROUND THE AREA OF ACTIVE IN-WATER CONSTRUCTION.

2. USE STAKES AS NECESSARY TO KEEP TURBIDITY CONTAINMENT DEVICE VERTICAL AND FUNCTIONAL ON THE BEACH FACE UNTIL LANDWARD OF THE WATERLINE.

3. SHOULD WEATHER OR SEA CONDITIONS PROHIBIT PROPER PLACEMENT AND FUNCTION OF THE TURBIDITY CONTAINMENT DEVICE, CONSTRUCTION SHALL CEASE UNTIL CONDITIONS PERMIT PROPER DEPLOYMENT.

WORKSITE AND EQUIPMENT/MATERIALS STAGING AREAS (ON LAND)

1. A SILT FENCE SHALL BE INSTALLED AND MAINTAINED AROUND THE WORKSITE AND EQUIPMENT/MATERIALS STAGING AREAS.

2. SILT FENCE FILTER FABRIC SHALL BE MIRAFI SILT FENCE, AMOCO SILT STOP, OR APPROVED EQUAL.

3. CONSTRUCTION ENTRANCES SHALL BE STABILIZED WHEREVER TRAFFIC WILL BE ENTERING OR LEAVING THE CONSTRUCTION SITE. IF THE ENTRANCE IS NOT PROPERLY PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED.

4. ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED BY SHOVELING OR STREET SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE.

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

ENVIRONMENTAL PROTECTION PLAN

DAVID A. SMITH LICENSED PROFESSIONAL ENGINEER No. 11453-C HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4/30/2020 EXPIRATION DATE OF THE LICENSE

DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: VARIES
APPROVED:	DRAWING NO. G-4
CHIEF ENGINEER	DATE

CONSTRUCTION NOTES FOR TRAFFIC CONTROL PLAN

1. THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN FOR REVIEW AND APPROVAL PRIOR TO STARTING ANY WORK. LANE CLOSURES SHALL NOT TAKE PLACE WITHOUT AN APPROVED TRAFFIC CONTROL PLAN.

2. ALL SUCH PROTECTIVE FACILITIES AND PRECAUTIONS TO BE TAKEN SHALL CONFORM TO THE "HAWAII ADMINISTRATION RULES GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORK SITES ON OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS" ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREET AND HIGHWAYS, PART IV – TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS", AS AMENDED.

3. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, ETC. TO FIT FIELD CONDITIONS.

4. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.

5. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.

6. REGULATORY AND WARNINGS SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK.

7. FLAGGERS SHALL BE USED TO ASSIST CONSTRUCTION VEHICLES ENTERING THE CLOSED (MAKAI) LANE ON KALAKAUA AVE FROM THE SAND BORROW STOCKPILE/STAGING AREA AND THE WORK AREA.

8. FLAGGERS AND/OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.

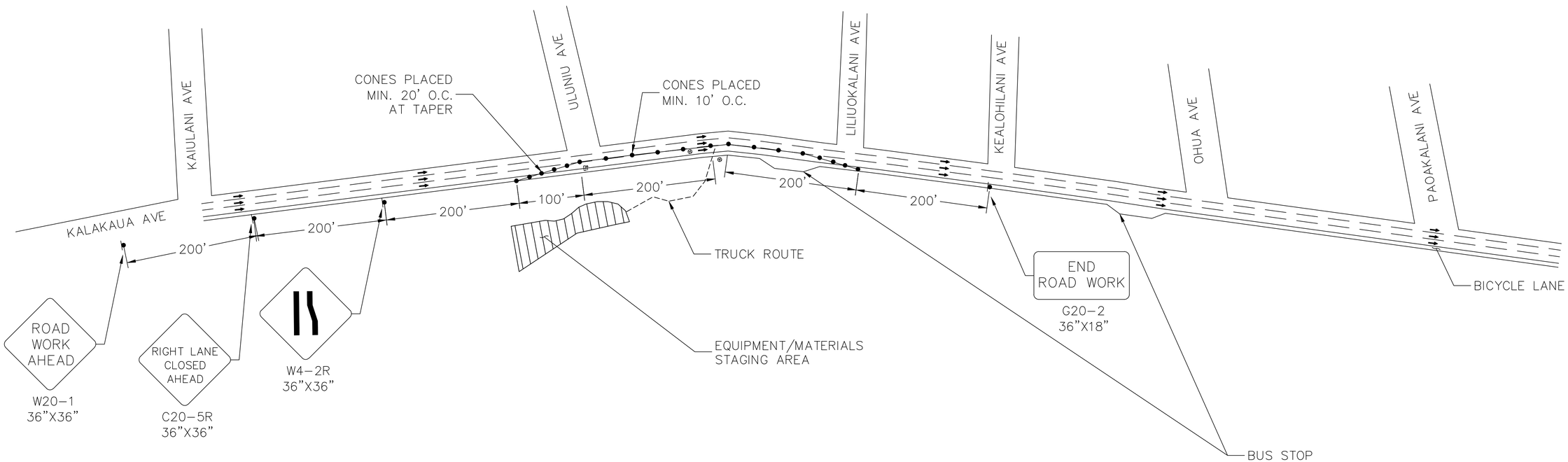
9. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.

10. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED (WHICHEVER OCCURS SOONER), THE CONTRACTOR SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC VEHICULAR AND PEDESTRIAN TRAFFIC. REMOVAL SHALL BE IN REVERSE ORDER OF INSTALLATION.

11. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.

LEGEND

- SIGN
- CONE OR DELINEATOR
- DIRECTION OF TRAFFIC
- POLICE OFFICER/FLAGGER
- FLASHING ARROW SIGNAL



80' 0 80' 160'

SCALE: 1" = 80'

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

DAVID A. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11453-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE — EXPIRATION DATE OF THE LICENSE: 4/30/2020

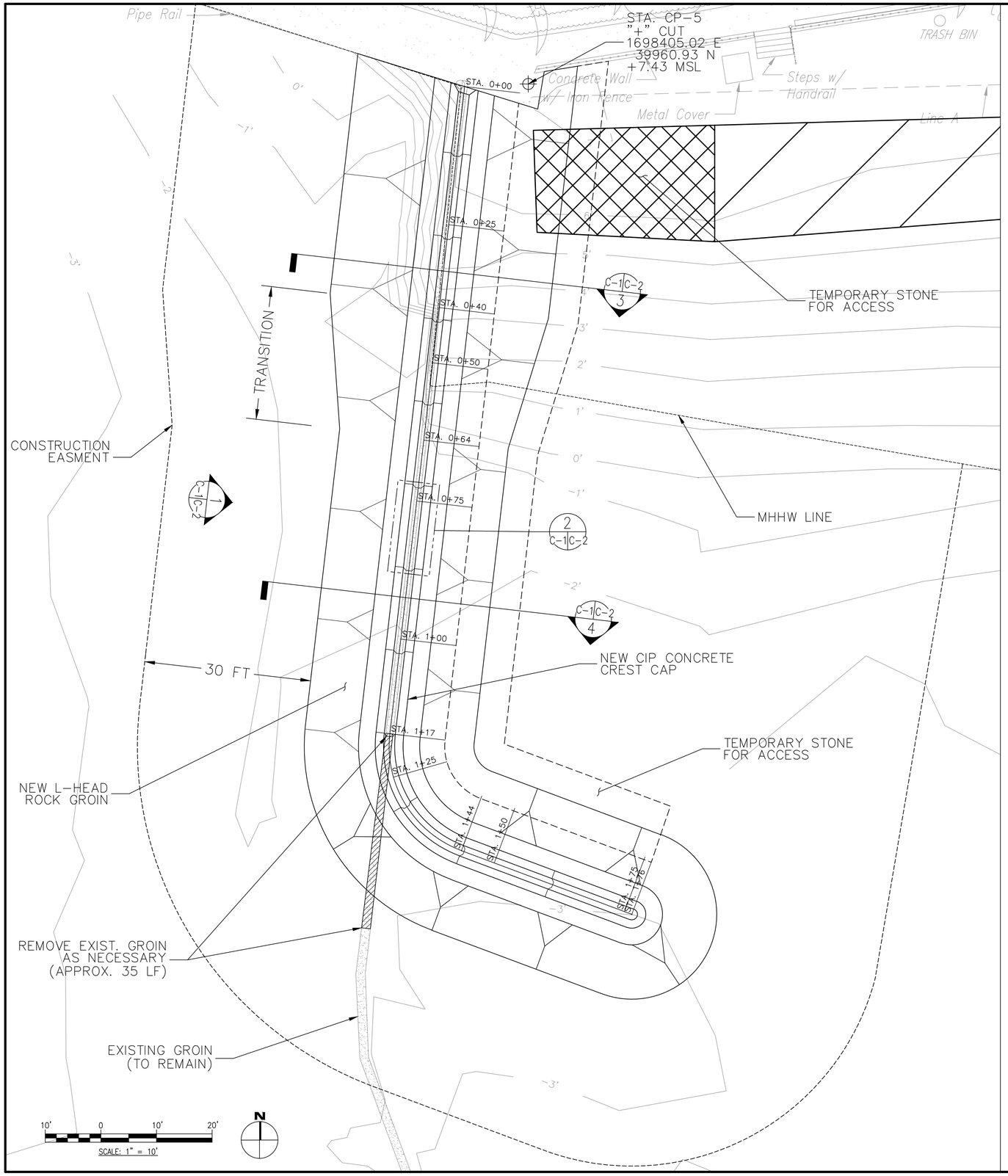
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

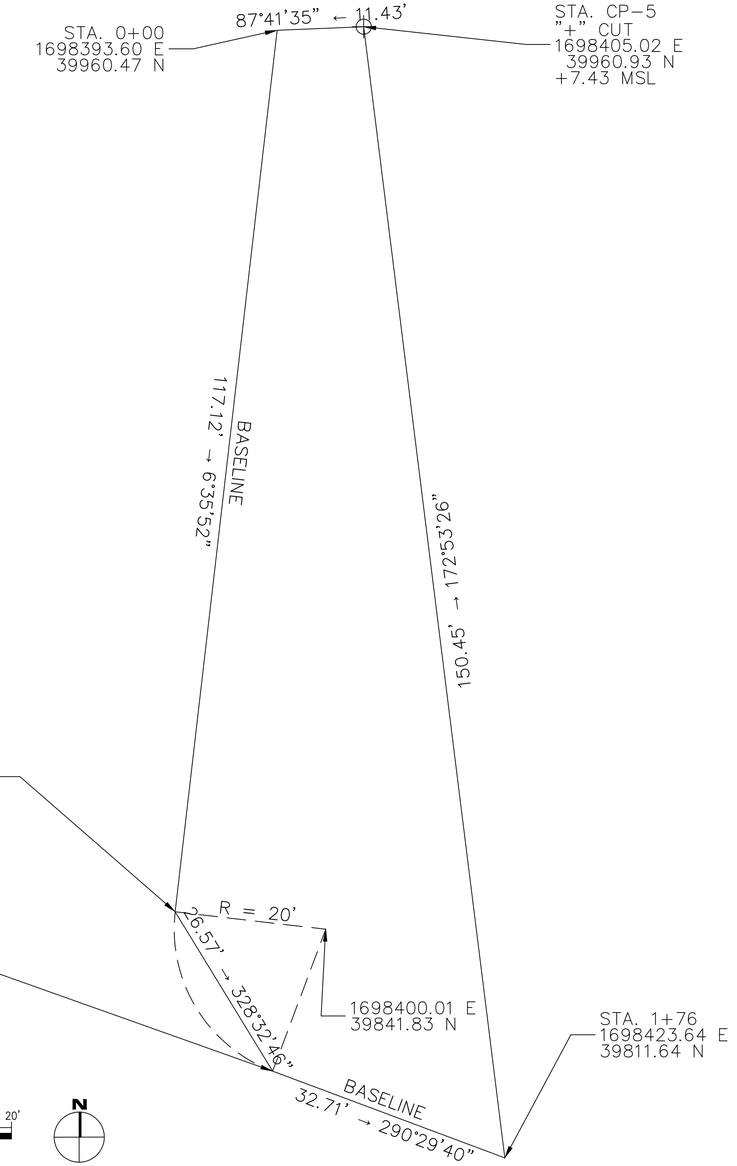
ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

TRAFFIC CONTROL PLAN

DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 80'
APPROVED:	DRAWING NO. G-5
CHIEF ENGINEER	DATE

JOB NO. E00XO30B





1 C-1 PROJECT BASELINE AND SURVEY CONTROLS
SCALE: 1" = 10'

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

DAVID A. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11453-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

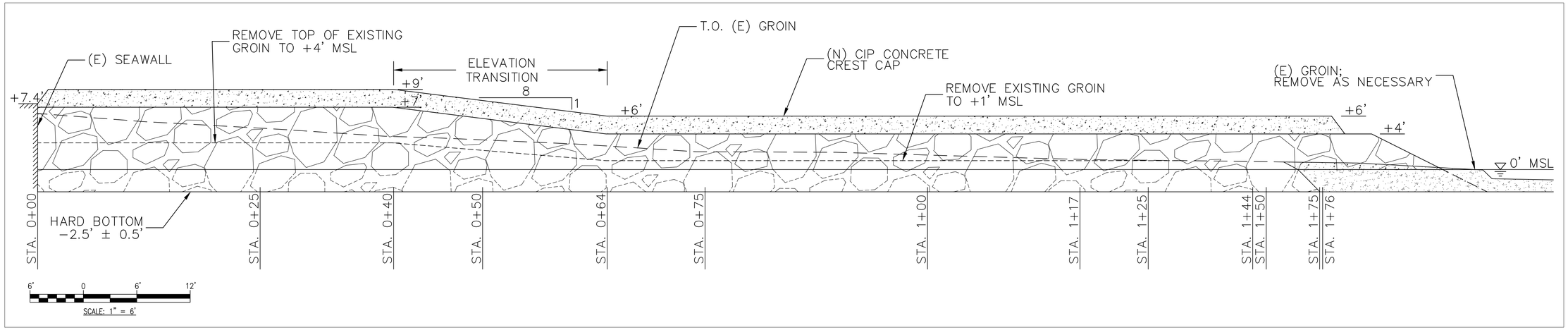
David A. Smith 4/30/2020
SIGNATURE EXPIRATION DATE OF THE LICENSE

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

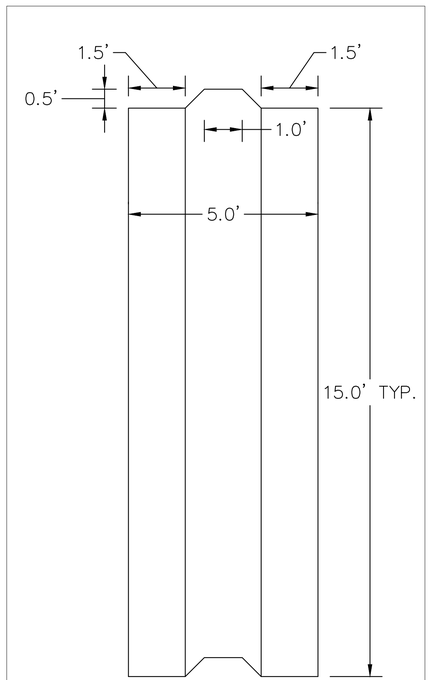
ROYAL HAWAIIAN GROIN
REPLACEMENT PROJECT

GROIN PLAN AND PROJECT BASELINE

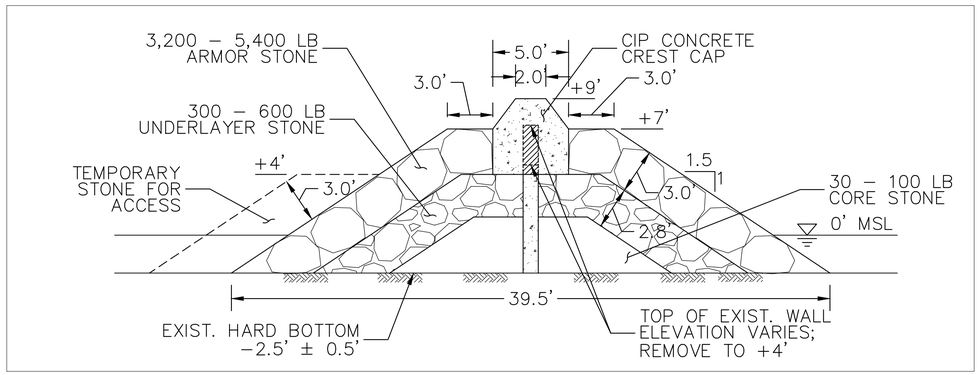
DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 10'
APPROVED:	DRAWING NO. C-1
CHIEF ENGINEER	DATE



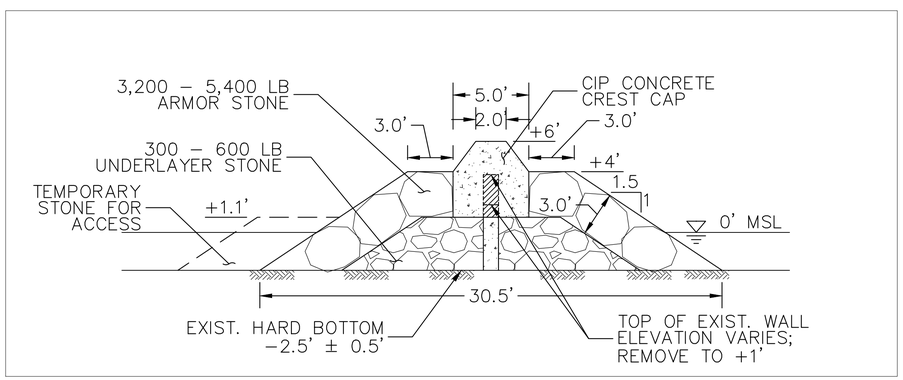
1 C-1|C-2 GROIN ELEVATION
SCALE: 1" = 6'



2 C-1|C-2 CONCRETE CREST CAP DETAIL PLAN
SCALE: 1" = 2'



3 C-1|C-2 TYPICAL SECTION – STA. 0+00 TO STA. 0+40
SCALE: 1" = 5'



4 C-1|C-2 TYPICAL SECTION – STA. 0+64 TO STA. 1+75
SCALE: 1" = 5'

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

DAVID A. SMITH
LICENSED PROFESSIONAL ENGINEER
No. 11453-C
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

SIGNATURE 4/30/2020 EXPIRATION DATE OF THE LICENSE

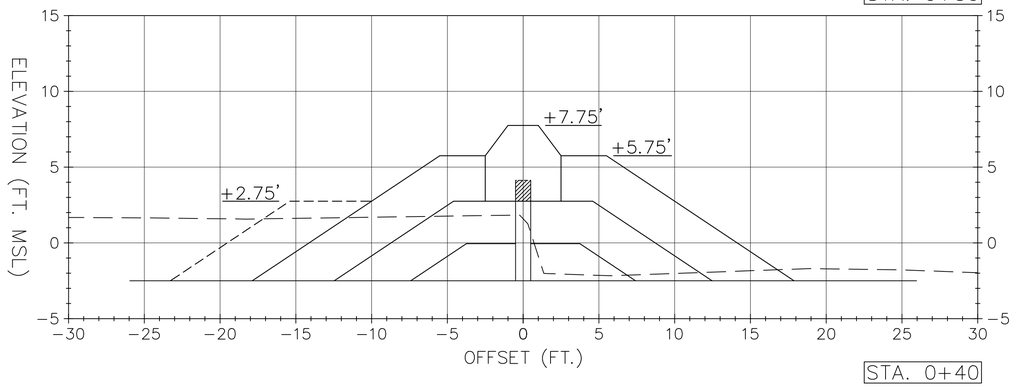
STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

ROYAL HAWAIIAN GROIN IMPROVEMENT PROJECT

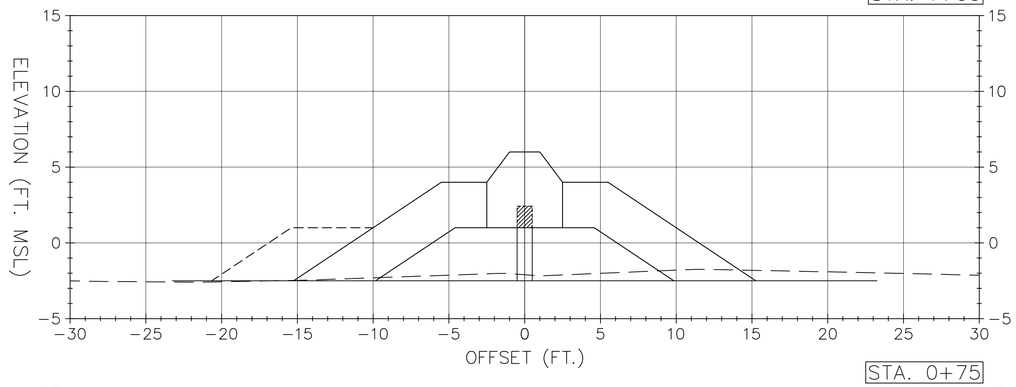
DETAILS AND TYPICAL SECTIONS

DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: VARIES
APPROVED:	DRAWING NO. C-2
CHIEF ENGINEER	DATE

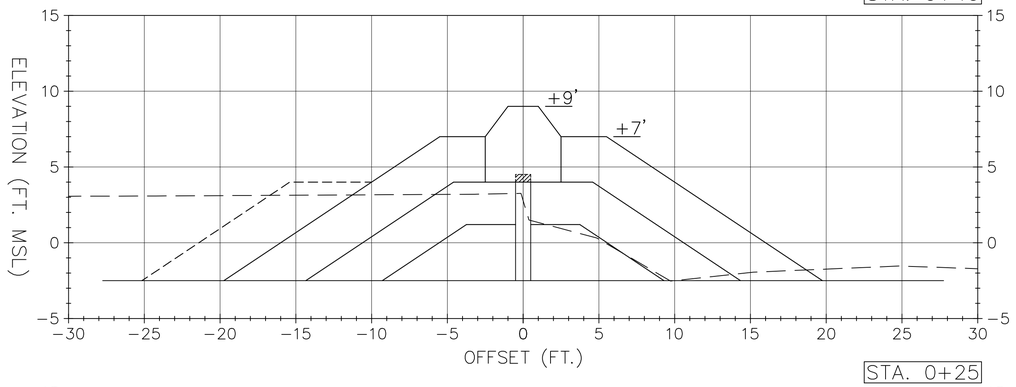
STA. 0+50



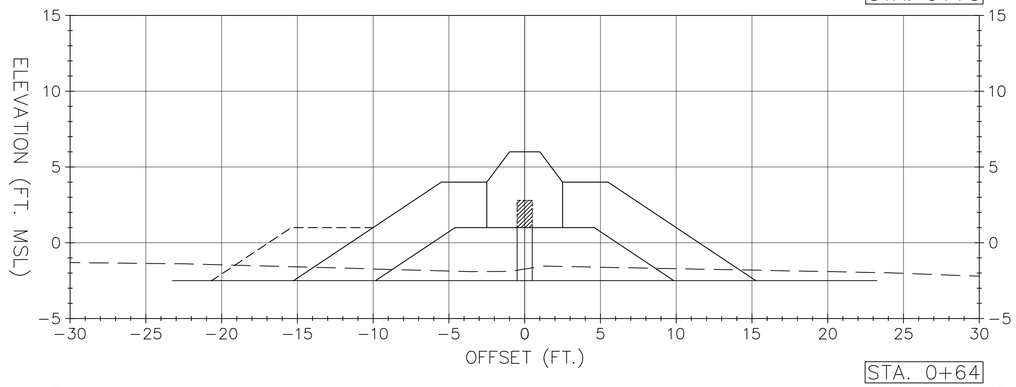
STA. 1+00



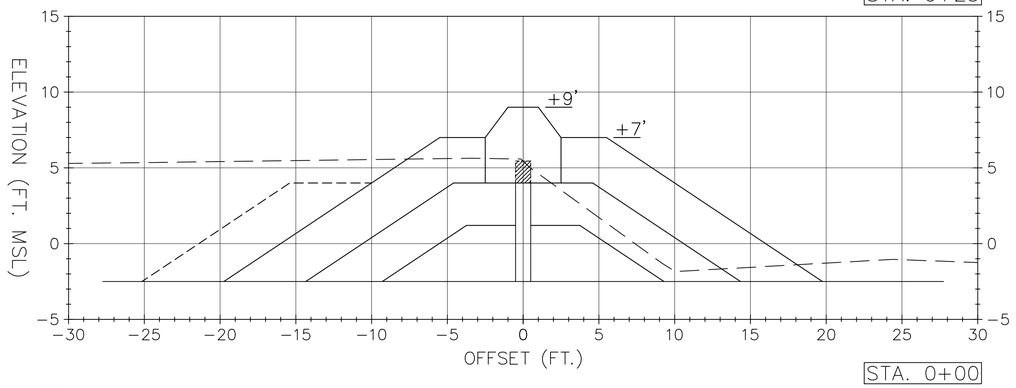
STA. 0+40



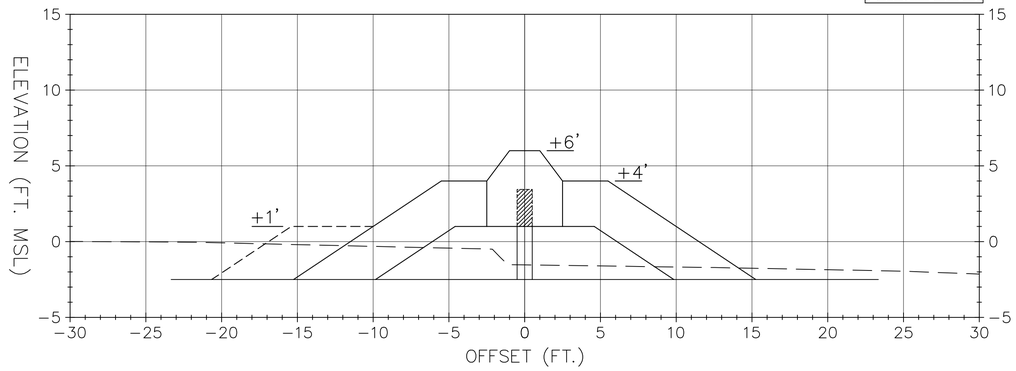
STA. 0+75



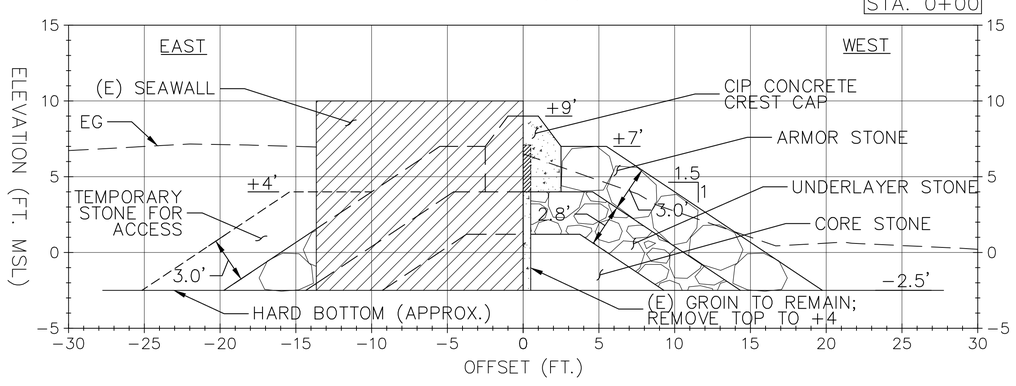
STA. 0+25



STA. 0+64



STA. 0+00



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David A. Smith 4/30/2020
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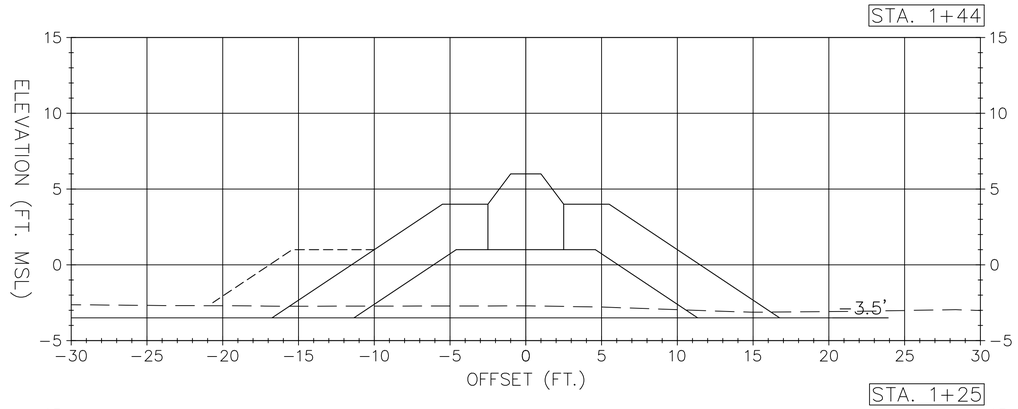
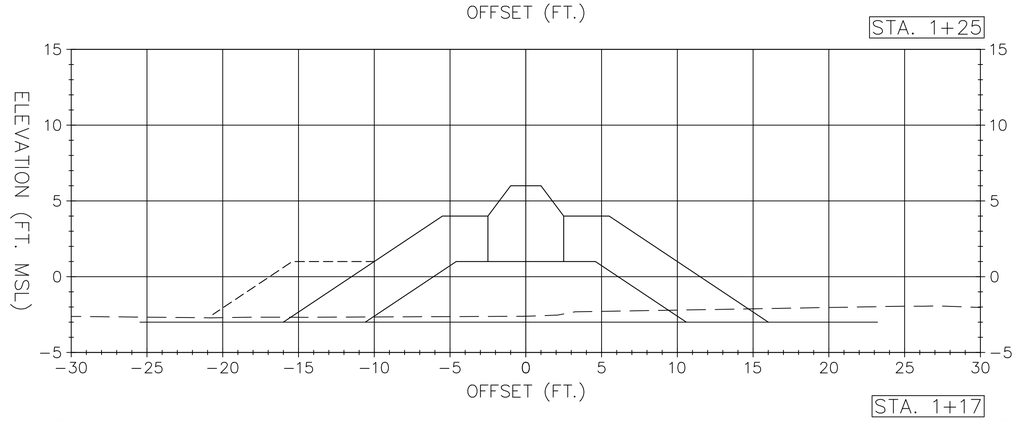
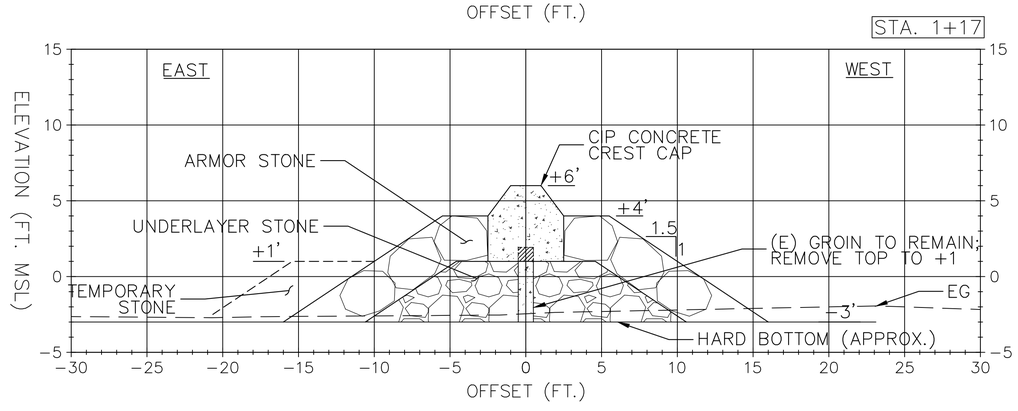
ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

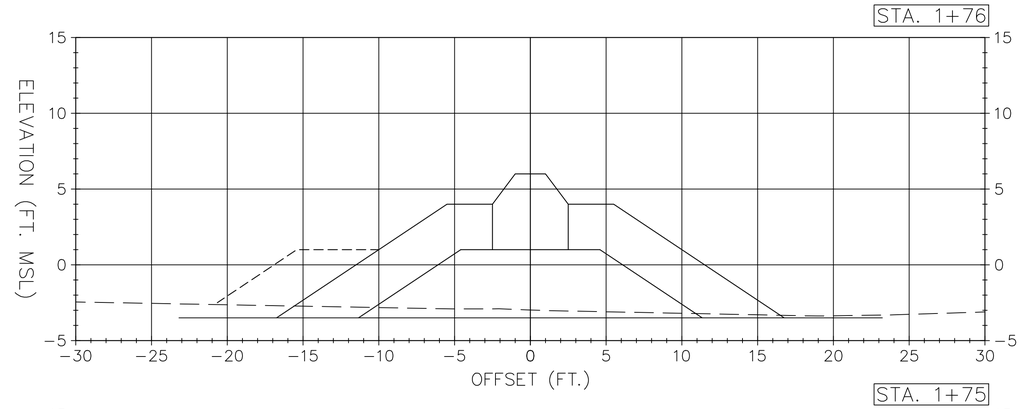
CROSS SECTIONS
STA. 0+00 TO STA. 1+00

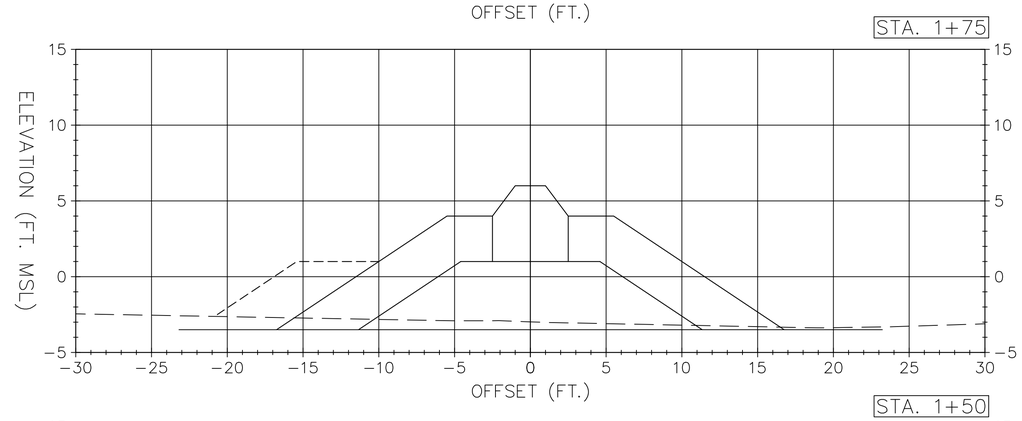
DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 5'
APPROVED:	DRAWING NO. C-3
CHIEF ENGINEER	DATE

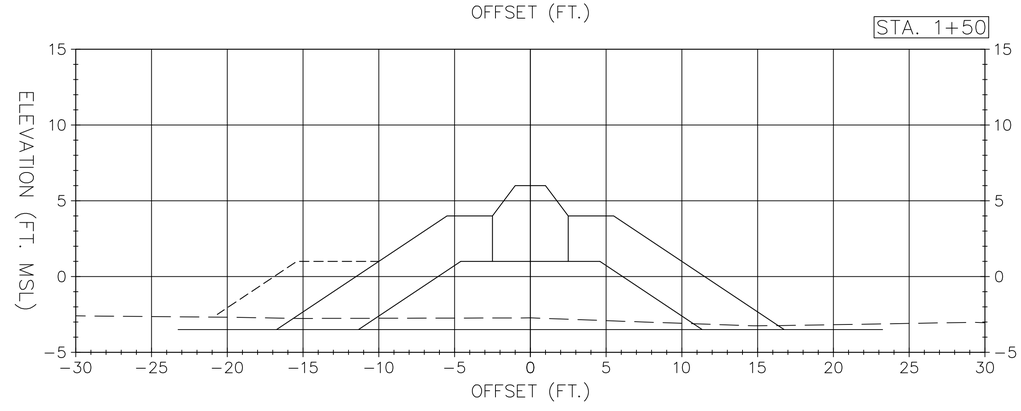












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David A. Smith 4/30/2020
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ROYAL HAWAIIAN GROIN REPLACEMENT PROJECT

CROSS SECTIONS STA. 1+17 TO STA. 1+76

DESIGNED: SS	SUBMITTED:
DRAWN: DL	DATE: SEPTEMBER 27, 2019
CHECKED: DS	SCALE: 1" = 5'
APPROVED:	DRAWING NO. C-4
CHIEF ENGINEER DATE	