

PO-DDC-1900230

KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1

PALOLO, OAHU, HAWAII

TMK: 3-4-30: 18, 48, 49 & 59

DEPARTMENT OF DESIGN AND CONSTRUCTION
CIVIL DIVISION
CITY AND COUNTY OF HONOLULU

FEBRUARY 2020

Schnabel
FOUNDATION COMPANY

3075 CITRUS CIRCLE, SUITE 150
WALNUT CREEK, CA 94598

DRAFT

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GENERAL CONSTRUCTION NOTES:

- 1. ALL APPLICABLE CONSTRUCTION WORK SHALL BE DONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1986 AND STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984, AS AMENDED, OF THE DEPARTMENT OF PUBLIC WORKS, CITY AND COUNTY OF HONOLULU AND THE COUNTIES OF KAUAI, MAUI, AND HAWAII.
2. THE UNDERGROUND PIPES, CABLES OR DUCTLINES KNOWN TO EXIST FROM RESEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE FACILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES ARE SHOWN ON THE PLANS, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
3. NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW INTO EXISTING CITY DRAINAGE SYSTEMS, OR ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR MAY BE CITED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ALL REMEDIAL ACTIONS NECESSARY.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 54, "WATER QUALITY STANDARDS," AND TITLE 11, CHAPTER 55, "WATER POLLUTION CONTROL", AS WELL AS CHAPTER 14 OF THE REVISED ORDINANCES OF HONOLULU, AS AMENDED. BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED AT ALL TIMES DURING CONSTRUCTION.

THE CONTRACTOR SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:

- 1. STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE, AND
2. DISCHARGES OF HYDROTASTING EFFLUENT, DEWATERING EFFLUENT, AND WELL DRILLING EFFLUENT TO STATE WATERS.

IN ACCORDANCE WITH STATE LAW, ALL DISCHARGES RELATED TO THE PROJECT CONSTRUCTION OR OPERATIONS ARE REQUIRED TO COMPLY WITH STATE WATER QUALITY STANDARDS (HAWAII ADMINISTRATIVE RULES, CHAPTER 11-54). BEST MANAGEMENT PRACTICES SHALL BE USED TO MINIMIZE OR PREVENT THE DISCHARGE OF SEDIMENT, DEBRIS, AND OTHER POLLUTANTS TO STATE WATERS. PERMIT COVERAGE IS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT HTTP://HEALTH.HAWAII.GOV/CWB. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.

- 5. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (DPP) AT 768-8084 TO ARRANGE FOR INSPECTIONAL SERVICES AND SUBMIT TWO (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTIONAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

- 6. CONFINED SPACE
FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(b), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:

I. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:

- A. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL,
B. LIFELINE AND ASSOCIATED CLIPS,
C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT,
D. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT,
E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION),
F. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE,
G. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE OF AT LEAST 20- FEET AWAY),
H. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.

II. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.

III. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT).

IV. ALL SAFETY EQUIPMENT SHALL COMPLY WITH THE STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL APPLICABLE FEDERAL, STATE, AND CITY LAWS AND REGULATIONS RELATING TO SAFETY.

- 7. PURSUANT TO CHAPTER 6E, HRS, IN THE EVENT ANY ARTIFACTS OR HUMAN REMAINS ARE UNCOVERED DURING CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL IMMEDIATELY SUSPEND WORK AND NOTIFY THE HONOLULU POLICE DEPARTMENT, THE STATE DEPARTMENT OF LAND AND NATURAL RESOURCES-HISTORIC PRESERVATION DIVISION (692-8015). IN ADDITION, FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL INFORM THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.

- 8. FOR PROJECTS ABUTTING STATE HIGHWAYS' RIGHTS-OF-WAY, THE OWNER OR AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS DIVISION, OAHU DISTRICT, DRAINAGE DISCHARGE UNIT AT 831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS PERMIT REQUIREMENTS.

- 9. ANY EXISTING PAVEMENT AND PAVEMENT MARKINGS THAT ARE DAMAGED AS A RESULT OF CONSTRUCTION OPERATIONS SHALL BE RESTORED TO ITS ORIGINAL, OR BETTER, CONDITION. SUCH RESTORATION SHALL BE TO THE SATISFACTION OF THE OFFICER-IN-CHARGE AT CONTRACTOR'S EXPENSE.

- 10. THE CONTRACTOR SHALL NOTIFY ALL AGENCIES TO VERIFY THE ACTUAL LOCATION OF ALL UTILITIES IN THE PROJECT AREA PRIOR TO EXCAVATING. THE CONTRACTOR SHALL COORDINATE ALL WORK.

GENERAL CONSTRUCTION NOTES (Cont'd):

- 11. 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 INCLUDED IN THE VARIOUS BID ITEMS.
12. THE CONTRACTOR SHALL RESTORE TO ITS ORIGINAL CONDITION ALL IMPROVEMENTS DAMAGED AS A RESULT OF CONSTRUCTION, INCLUDING PAVEMENTS, EMBANKMENTS, CURBS, SIGNS, LANDSCAPING, STRUCTURES, UTILITIES, WALLS, FENCES, ETC. UNLESS PROVIDED FOR SPECIFICALLY IN THE PROPOSAL, DEMOLITION AND RESTORATION OF EXISTING ITEMS SHALL BE INCLUDED IN COST OF THE VARIOUS CONTRACT ITEMS.
13. THE EXISTING IMPROVEMENTS ON THE PREMISES, AND IN ADJACENT AREAS, THAT ARE NOT TO BE REMOVED, SHALL BE PRESERVED AND PROTECTED. ANY AND ALL DAMAGES RESULTING FROM THE CONTRACTOR'S CONSTRUCTION OPERATIONS SHALL BE REPLACED AND REPAIRED TO ORIGINAL CONDITION, TO THE SATISFACTION OF THE OWNER AND PAID FOR BY THE CONTRACTOR.
14. UNLESS RELOCATION IS CALLED FOR ON THE PLANS, EXISTING UTILITIES SHALL REMAIN IN SERVICE AND IN PLACE. IF RELOCATION OF EXISTING UTILITIES 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 OFFICER-IN-CHARGE.
15. THE CONTRACTOR SHALL FURNISH ALL LABOR, EQUIPMENT AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON CONTRACT, DRAWINGS AND SPECIFICATIONS.
16. ALL DIMENSIONS AND DETAILS SHOWN ON THE DRAWINGS SHALL BE CHECKED AND VERIFIED PRIOR TO THE START OF CONSTRUCTION, AND ANY DISCREPANCIES SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OFFICER-IN-CHARGE FOR CLARIFICATION.
17. ALL CONSTRUCTION WORK SHALL IMPLEMENT MEASURES TO ENSURE THAT THE DISCHARGE OF POLLUTANTS FROM THE CONSTRUCTION SITE WILL BE REDUCED TO THE MAXIMUM EXTENT PRACTICABLE AND WILL NOT CAUSE OR CONTRIBUTE TO AN EXCEEDANCE OF WATER QUALITY STANDARDS.
18. FOR ALL PROJECTS, WHICH WILL DISTURB ONE (1) ACRE OR MORE OF LAND, THE CONTRACTOR SHALL NOT START CONSTRUCTION UNTIL A NOTICE OF GENERAL PERMIT COVERAGE (NGPC) IS RECEIVED FROM THE DEPARTMENT OF HEALTH, STATE OF HAWAII, AND HAS SATISFIED ANY OTHER APPLICABLE REQUIREMENTS OF THE NPDES PERMIT PROGRAM. ALSO, FOR NON-CITY AND OTHER NON-GOVERNMENTAL AGENCY PROJECTS, THE CONTRACTOR SHALL PROVIDE A WRITTEN COPY OF THE NGPC TO THE PERMITTING AND INSPECTION SECTION, CIVIL ENGINEERING BRANCH, D.P.P., AT LEAST SEVEN (7) CALENDAR DAYS BEFORE THE START OF THE CONSTRUCTION. FOR CITY OR OTHER GOVERNMENTAL PROJECTS, THE CONTRACTOR SHOULD PROVIDE A WRITTEN COPY OF THE NGPC TO THE APPROPRIATE CITY DEPARTMENT OR GOVERNMENTAL AGENCY PER THEIR REQUIREMENTS.

SEWER NOTES:

- 1. WHERE APPLICABLE, ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY'S STANDARD SPECIFICATIONS, SEPTEMBER 1986, CURRENT CITY PRACTICES AND REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, WASTEWATER SYSTEM DESIGN STANDARDS VOLUME 1, DATED JULY 2017, AND THE WASTEWATER SYSTEM STANDARD DETAILS, DATED JULY 2017, WHICH SUPERSEDES PART 3 OF THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, SEPTEMBER 1984.
2. THE SEWER SYSTEM, INCLUDING ALL LATERAL CONNECTIONS AND SERVICES, SHALL BE OPERATIONAL AT ALL TIMES. NO SERVICE INTERRUPTION IS PERMITTED. WHEN WORK ON EXISTING SEWER IS REQUIRED, THE CONTRACTOR SHALL PROVIDE EQUIPMENT NECESSARY TO REDIRECT SEWAGE AROUND THE SEWER AND MANHOLES. BYPASSING PLANS AND SCHEDULES SHALL BE APPROVED BY THE OFFICER-IN-CHARGE PRIOR TO IMPLEMENTATION. BYPASS REQUESTS SHALL BE SUBMITTED TO THE OFFICER-IN-CHARGE FOR REVIEW THIRTY (30) DAYS PRIOR TO THE START OF THE BYPASS WORK.
3. CONTRACTOR SHALL MAINTAIN VISIBILITY AND MAINTENANCE ACCESS TO LIVE SEWER MANHOLE LOCATIONS AT ALL TIMES, INCLUDING DURING NON-WORK HOURS AND PAVING OPERATIONS.
4. THE CONTRACTOR SHALL REPORT TO THE OFFICER-IN-CHARGE ANY ACCIDENTAL SPILLS OR BYPASSES RESULTING FROM HIS WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND UTILIZE APPROPRIATE SAMPLING AND ANALYZING PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.
6. SEE "ADJUSTMENT TO EXISTING UTILITIES NOTE", THIS SHEET.
7. IF THE CONTRACTOR ENCOUNTERS FLOW MONITORING DEVICES, SUCH AS SPECIAL SEWER MANHOLE COVERS EMBEDDED WITH SOLAR PANELS, NOTIFY THE COLLECTION SYSTEMS MAINTENANCE DIVISION, DEPARTMENT OF ENVIRONMENTAL SERVICES AT 768-7272 PRIOR TO ANY WORK.
8. THE EXISTING UTILITIES, IF SHOWN ON THE PLANS, ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, NONE EXIST. WHEN EXCAVATION IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR USING ALL POSSIBLE MEANS TO ASCERTAIN THE EXACT LOCATIONS OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, INCLUDING, BUT NOT LIMITED TO, INDEPENDENTLY CHECKING THE SITE, AND CONTACTING THE VARIOUS GOVERNMENTAL AGENCIES AND UTILITY COMPANIES TO ARRANGE FOR RESEARCH OF THEIR RECORDS AND FOR TONING OF THEIR UTILITIES. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OFFICER-IN-CHARGE IF THE LOCATIONS OF EXISTING UTILITIES DIFFER MATERIALLY FROM THAT SHOWN ON THE PLANS.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR TONING FOR BURIED FRAMES AND COVERS PRIOR TO COLD MILLING OF ROADWAY.
10. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGEMENT BRANCH, WASTEWATER ENGINEERING AND CONSTRUCTION DIVISION, DEPARTMENT OF ENVIRONMENTAL SERVICES, AT 768-8785, 768-8769, OR 768-8755, TO ARRANGE FOR INSPECTION SERVICES PRE- AND POST-CONSTRUCTION, AND SUBMIT FOUR (4) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF SEWER WORK. THE CONTRACTOR SHALL PAY FOR ALL INSPECTION COSTS.

SEWER NOTES (Cont'd):

- 11. FOR SEWER MANHOLES WITH EXISTING CORROSION PROTECTIVE SURFACE, REMOVE PROTECTIVE LINER OR COATING MATERIAL IN AREAS OF SEWER MANHOLE NECESSARY TO PERFORM FRAME/COVER OR MANHOLE RECONSTRUCTION WORK AND REMOVE IN ACCORDANCE WITH SEWER NOTE 12.
12. CONTRACTOR SHALL USE MANHOLE DEBRIS CATCHING DEVICES, MECHANICAL PLUG, OR ALTERNATE ACCEPTABLE MEANS WHEN PERFORMING MANHOLE HEIGHT ADJUSTMENT WORK AND TO PREVENT ANY CONSTRUCTION DEBRIS FROM FALLING INTO THE MANHOLE DURING OPERATION. ANY CONSTRUCTION DEBRIS THAT HAS FALLEN INTO THE MANHOLE DURING OPERATION SHALL BE IMMEDIATELY REMOVED. DISPOSAL OF CONSTRUCTION DEBRIS IN THE SEWER SYSTEM IS STRICTLY PROHIBITED AT ALL TIMES.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE CLEANING AND/OR COST OF CLEANING THE MANHOLE DUE TO DEBRIS ENTERING THE SEWER SYSTEM.
14. CONTRACTOR SHALL SCHEDULE WORK TO MINIMIZE THE TIME WHERE ACCESS TO THE MANHOLE IS LIMITED, I.E. LOWERING, PAVING, AND ADJUSTMENT TO FINAL GRADE.
15. THE COST OF THE ABOVE SEWER NOTES 8 THROUGH 14 SHALL NOT BE PAID FOR DIRECTLY BUT SHALL BE CONSIDERED INCIDENTAL AND INCLUDED.
16. FOR ENTRY BY CITY PERSONNEL, INCLUDING ITS INSPECTORS AND REPRESENTATIVES, INTO A PERMIT REQUIRED CONFINED SPACE AS DEFINED IN 29 CFR PART 1910.146(b), THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING:
A. ALL SAFETY EQUIPMENT REQUIRED BY THE CONFINED SPACE REGULATIONS APPLICABLE TO ALL PARTIES OTHER THAN THE CONSTRUCTION INDUSTRY, TO INCLUDE, BUT NOT LIMITED TO, THE FOLLOWING:
a. FULL BODY HARNESSES FOR UP TO TWO PERSONNEL,
b. LIFELINE AND ASSOCIATED CLIPS,
c. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT,
d. TWO-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT,
e. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE DURATION),
f. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE,
g. CONTINUOUS GAS DETECTOR (CALIBRATED) TO MEASURE OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLE GASES (CAPABLE OF MONITORING AT A DISTANCE OF AT LEAST 20- FEET AWAY),
h. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR.
B. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
C. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TWO, IF CONDITIONS WARRANT IT) FOR EACH ENTRANT INTO A CONFINED SPACE.
D. ALL SAFETY EQUIPMENT SHALL COMPLY WITH THE STANDARDS OF THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) AND ALL APPLICABLE FEDERAL, STATE, AND CITY LAWS AND REGULATIONS RELATING TO SAFETY.
17. IN THE EVENT THAT ANY CHANGE IN ALIGNMENT OR GRADE FOR THE PROPOSED SEWERS ARE REQUIRED DUE TO UNFORSEEN CONFLICTS WITH OTHER UTILITIES, THE ENGINEER IN CHARGE OR THE MAKER OF THE PLANS SHALL BE RESPONSIBLE FOR FOR THE REQUIRED CHANGES WHICH ARE TO BE PRESENTED TO THE DEPARTMENT OF PLANNING AND PERMITTING (DPP) FOR APPROVAL.
18. CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE MAKER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.
19. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.
20. THE CONSULTING ENGINEER SHALL SUBMIT TO THE WASTEWATER BRANCH, DPP "AS BUILT" TRACINGS AND ELECTRONIC FILES OF THE CONSTRUCTION PLANS AS ACTUALLY CONSTRUCTED, SHOWING ALL THE CHANGES FROM THE ORIGINAL PLANS.
21. THE CONTRACTOR SHALL INSTALL "RAINSTOPPER" MANHOLE INSERTS IN ALL SEWER MANHOLES WITH TYPE SA FRAME AND COVER.
22. ALL SEWER PIPE JOINTS WITHIN EASEMENTS SHALL BE WRAPPED WITH GEOTEXTILE ROOT BARRIER.
23. WHEN CONNECTING TO A LIVE SEWER LINE, THE CONTRACTOR SHALL ABIDE BY AL CONDITIONS THAT THE STATE DEPARTMENT OF HEALTH SETS FORTH TO MITIGATE ANY WASTEWATER SPILLS THAT MAY OCCUR. THE CONTRACTOR SHALL INFORM THE CITY INSPECTOR FIVE (5) WORKING DAYS PRIOR TO ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.
24. FOR SEWER MANHOLE ADJUSTMENTS UPWARD LESS THAN 3", SEE STD. DETAIL S-28. FOR SMH ADJUSTMENTS UPWARD GREATER THAN 3" OR FOR ANY ADJUSTMENTS DOWNWARD, RECONSTRUCT THE SMH TOP FROM BELOW THE CONE SECTION.

MECHANICAL/ELECTRICAL DIVISION NOTES:

- 1. THE CONTRACTOR SHALL NOTIFY THE JOINT POLE COMMITTEE TWO (2) WEEKS IN ADVANCE OF ANY RELOCATION OF UTILITY POLE(S) THAT MAY BE NECESSARY.
2. THE CONTRACTOR SHALL NOTIFY THE MECHANICAL/ELECTRICAL DIVISION, DDC, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE STREET LIGHTING SYSTEM (PHONE: 768-8431).
3. THE LOCATIONS OF THE EXISTING UNDERGROUND STREET LIGHT FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING PLANS AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY TO THE EXISTING STREET LIGHT FACILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE EXISTING STREET LIGHT FACILITIES. ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.

MECHANICAL/ELECTRICAL DIVISION NOTES (Cont'd):

- 4. THE STREET LIGHTING SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE MECHANICAL/ELECTRICAL DIVISION, DDC, AND PAID FOR BY THE CONTRACTOR.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE CITY'S EXISTING COMMUNICATIONS FIBER OPTIC CABLE SYSTEM. ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT THE CONTRACTOR'S COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.
WATER NOTES:
1. UNLESS OTHERWISE SPECIFIED, ALL CONSTRUCTION ACTIVITIES AFFECTING BOARD OF WATER SUPPLY (BWS) FACILITIES IN THIS PROJECT SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S "WATER SYSTEM STANDARDS", DATED 2002, THE "WATER SYSTEM EXTERNAL CORROSION CONTROL STANDARDS", VOLUME 3, DATED 1991, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
2. ALL PLANS APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY.
3. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT IS NOT GUARANTEED AS TO THE ACCURACY OR THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR AND PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
4. THE CONTRACTOR SHALL VERIFY ALL EXISTING SERVICE LATERAL LOCATIONS WHETHER SHOWN OR NOT SHOWN ON PLANS PRIOR TO COMMENCING WITH ANY OF THE WORK AND SHALL NOT ASSUME THAT WHERE NO SERVICES ARE SHOWN NONE EXIST.
5. THE CONTRACTOR SHALL ADJUST ALL MANHOLE FRAMES/VALVE BOXES/METER BOXES WITHIN THE RESURFACED AREA. THE CONTRACTOR SHALL BE RESPONSIBLE FOR "REFERENCING" THESE MANHOLES/VALVE BOXES/METER BOXES TO FACILITATE THE ADJUSTMENT.
6. PRIOR TO ANY EXCAVATING, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATERLINES AND APPURTENANCES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER LINES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER LINES, TEES, AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER LINE MOVEMENT DUE TO THE REMOVAL OF THE SUPPORTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATER LINES, SUCH AS CONSTRUCTING SPECIAL REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING CONSTRUCTION METHOD.
8. THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS DIVISION, CONSTRUCTION SECTION IN WRITING AND SUBMIT SIX (6) SETS OF APPROVED CONSTRUCTION DRAWINGS ONE (1) WEEK PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.
9. RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF TWO (2) YEARS.

PUBLIC HEALTH, SAFETY AND CONVENIENCE NOTES:

- 1. THE CONTRACTOR SHALL OBSERVE AND COMPLY WITH ALL FEDERAL, STATE AND LOCAL LAWS REQUIRED FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY AND ENVIRONMENTAL QUALITY.
2. THE CONTRACTOR, AT ITS OWN EXPENSE, SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. THE CITY AND COUNTY OF HONOLULU SHALL REQUIRE SUPPLEMENTARY MEASURES AS NECESSARY.

ADJUSTMENT TO EXISTING UTILITIES NOTE:

- 1. ADJUST ALL UTILITY VALVE BOX FRAMES & COVERS, WATER METER BOXES, MANHOLE FRAMES AND COVERS, STREET MONUMENT COVERS, ETC., TO NEW FINISH GRADE. COORDINATE WITH PRIVATE COMPANIES AND CITY AGENCIES FOR WORK ON EACH RESPECTIVE UTILITY.

Table with 4 columns: REVISION, DATE, DESCRIPTION, ENGR. APPROVED

DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 50 CONSTRUCTION NOTES - 1 DESIGN: LKK DRAWN: LKK CHECKED: DNC DATE: FEB 2020 APPROVED: [Signature] SHEET 2 OF 24 SHEETS PO-DOC-1900230 FILE DRAW FOLDER NUMBER



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. [Signature] DATE: FEB 2020

HAWAIIAN TELCOM GENERAL CONSTRUCTION/DESIGN NOTES:

1. THE CONTRACTOR SHALL PROCURE AND PAY FOR ALL LICENSES AND PERMITS AND SHALL GIVE ALL NOTICES NECESSARY TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
2. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT AND TONING REQUEST FROM HAWAIIAN TELCOM'S EXCAVATION PERMIT SECTION, LOCATED AT 1177 BISHOP STREET, TWO WEEKS PRIOR TO THE START OF CONSTRUCTION. HOURS OF BUSINESS ARE 8:00 A.M. TO 11:00 A.M. AND 12:00 P.M. TO 3:00 P.M. MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS.
3. PRIOR TO THE EXCAVATION OF THE DUCTLINE, THE CONTRACTOR SHALL REQUEST HAWAIIAN TELCOM TO LOCATE EXISTING DUCTLINE WHEREVER REQUIRED. FOR UNDERGROUND CABLE LOCATING AND MARKING, FIVE (5) WORKING DAYS ADVANCE NOTICE IS REQUIRED FOR ANY INSPECTION BY DESIGNATED REPRESENTATIVE.
4. THE LOCATIONS OF EXISTING UTILITIES ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION AND SHALL MAINTAIN PROPER CLEARANCES WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HAWAIIAN TELCOM FACILITIES. THE CONTRACTOR SHALL VERIFY THEIR LOCATIONS AND SHALL BE LIABLE FOR ANY DAMAGES TO HAWAIIAN TELCOM FACILITIES. ANY DAMAGES SHALL BE REPORTED IMMEDIATELY TO HAWAIIAN TELCOM'S REPAIR SECTION AT #611 (24 HOURS) OR TO THE EXCAVATION PERMIT SECTION AT 546-7746 (NORMAL WORKING HOURS, MONDAY THROUGH FRIDAY, EXCEPT HOLIDAYS). AS A RESULT OF CONTRACTOR'S OPERATIONS, ADJUSTMENTS TO THE NEW DUCTLINE ALIGNMENT, IF REQUIRED, SHALL BE MADE TO PROVIDE THE REQUIRED CLEARANCES.
5. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. A HAWAIIAN TELCOM INSPECTOR OR DESIGNATED REPRESENTATIVE IS REQUIRED TO BE AT ANY JOB SITE WHENEVER THERE WILL BE A BREAKAGE INTO OR ENTRY INTO ANY STRUCTURE THAT CONTAIN HAWAIIAN TELCOM FACILITIES. TEMPORARY CABLE AND DUCT SUPPORTS SHALL BE PROVIDED WHEREVER NECESSARY.
6. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELCOM'S INSPECTOR OR DESIGNATED REPRESENTATIVE A MINIMUM OF 72 HOURS PRIOR TO EXCAVATION, BRACING, OR BACKFILLING OF HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.
7. WHEN EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN TELCOM'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR SHALL:
 - A) SHEET AND/OR BRACE THE EXCAVATION TO PREVENT SLIDES, CAVE-INS, OR SETTLEMENTS TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.
 - B) PROTECT EXISTING STRUCTURES AND/OR FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING WHILE EXCAVATING BENEATH THEM TO ENSURE NO MOVEMENT TO HAWAIIAN TELCOM'S STRUCTURES OR FACILITIES.

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES:

1. LOCATION OF HECO FACILITIES

THE LOCATION OF HECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATIONS OF THE FACILITIES AND SHALL EXERCISE PROPER CARE IN EXCAVATING AND WORKING IN THE AREA. WHEREVER CONNECTIONS OF NEW UTILITIES TO EXISTING UTILITIES AND UTILITY CROSSINGS ARE SHOWN, THE CONTRACTOR SHALL EXPOSE THE EXISTING LINES AT THE PROPOSED CONNECTIONS AND CROSSINGS TO VERIFY THE DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES WHETHER SHOWN OR NOT SHOWN ON THE PLANS.

2. COMPLIANCE WITH HAWAII OCCUPATIONAL SAFETY AND HEALTH LAWS

THE CONTRACTOR SHALL COMPLY WITH THE STATE OF HAWAII'S OCCUPATIONAL SAFETY AND HEALTH LAWS AND REGULATIONS, INCLUDING WITHOUT LIMITATION, THOSE RELATED TO WORKING ON OR NEAR EXPOSED OR ENERGIZED ELECTRICAL LINES AND EQUIPMENT.

3. CAUTION!!! ELECTRICAL HAZARD!!!

EXISTING HECO OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HECO. ONLY HECO PERSONNEL ARE TO HANDLE THESE ENERGIZED LINES AND ERECT TEMPORARY GUARDS TO PROTECT THESE LINES FROM DAMAGE. THE CONTRACTOR SHALL WORK CAUTIOUSLY AT ALL TIMES TO AVOID ACCIDENTS AND DAMAGE TO EXISTING HECO FACILITIES, WHICH CAN RESULT IN ELECTROCUTION.

4. OVERHEAD LINES

STATE LAW (OSHA 1910.269(k)(2B)) REQUIRES THAT A WORKER AND THE LONGEST OBJECT THEY MAY CONTACT CANNOT COME CLOSER THAN A MINIMUM RADIAL CLEARANCE OF 10 FEET WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES RATED 50KV AND BELOW. FOR EACH ADDITIONAL 10KV ABOVE 50KV, AN ADDITIONAL 4 INCHES SHALL BE ADDED TO THE 10-FOOT CLEARANCE REQUIREMENT. THE PRECEDING INFORMATION ON LINE CLEARANCE REQUIREMENTS IS PROVIDED AS A CONVENIENCE AND IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE INFORMED OF AND COMPLY WITH ANY REVISIONS OR AMENDMENTS TO THE LAW.

SHOULD THE CONTRACTOR ANTICIPATE THAT WORK WILL RESULT IN THE NEED TO ENCRoACH WITHIN THE MINIMUM REQUIRED CLEARANCE AT ANY TIME, THE CONTRACTOR SHALL NOTIFY HECO AT LEAST FOUR (4) WEEKS PRIOR TO THE PLANNED ENCRoACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE OR DE-ENERGIZE HECO LINES) CAN BE INVESTIGATED. HECO MAY ALSO BE ABLE TO BLANKET ITS DISTRIBUTION (12KV AND BELOW) LINES TO PROVIDE A VISUAL AID IN PREVENTING ACCIDENTAL CONTACT. HECO'S COST OF SAFEGUARDING OR IDENTIFYING ITS LINES WILL BE CHARGED TO THE CONTRACTOR.

CONTACT HECO'S CUSTOMER INSTALLATION DEPARTMENT AT 543-7846 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES (Cont'd):

5. POLE BRACING

A MINIMUM CLEARANCE OF 10 FEET MUST BE MAINTAINED WHEN EXCAVATING AROUND UTILITY POLES AND/OR THEIR ANCHOR SYSTEM TO PREVENT WEAKENING OR POLE SUPPORT FAILURE. SHOULD WORK REQUIRE EXCAVATING WITHIN 10 FEET OF A POLE AND/OR ITS ANCHOR SYSTEM, THE CONTRACTOR SHALL PROTECT, SUPPORT, SECURE, AND TAKE ALL OTHER PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF THESE POLES. THE CONTRACTOR IS RESPONSIBLE FOR ALL POLE BRACING DESIGNS AND STRUCTURAL CALCULATIONS, AS WELL AS THE ASSOCIATED COSTS TO BRACE, REPAIR, OR STRAIGHTEN POLES. ALL MEANS OF STRUCTURAL SUPPORT FOR THE POLE AND/OR ANCHOR SYSTEM PROPOSED BY THE CONTRACTOR SHALL BE SUBMITTED TO HECO'S CUSTOMER INSTALLATIONS DEPARTMENT (543-7846) FOR REVIEW A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO IMPLEMENTATION. THE COST OF HECO'S REVIEW/ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS POLES WILL BE CHARGED TO THE CONTRACTOR.

6. UNDERGROUND LINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HECO'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION. ONLY HECO PERSONNEL ARE TO BREAK INTO EXISTING HECO FACILITIES, HANDLE THESE CABLES, AND ERECT TEMPORARY GUARDS TO PROTECT THESE CABLES FROM DAMAGE. THE COST OF HECO'S ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF ITS UNDERGROUND LINES WILL BE CHARGED TO THE CONTRACTOR. FOR ASSISTANCE/COORDINATION IN PROVIDING PROPER SUPPORT AND PROTECTION OF THESE LINES, THE CONTRACTOR SHALL CALL HECO'S CUSTOMER INSTALLATIONS DEPARTMENT AT 543-7846 A MINIMUM OF TEN (10) WORKING DAYS IN ADVANCE.

SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S 138KV UNDERGROUND LINES (SEE HECO INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND 138KV LINES" FOR DETAILED REQUIREMENTS).

FOR VERIFICATION OF UNDERGROUND LINES, THE CONTRACTOR SHALL CALL THE HAWAII ONE CALL CENTER AT 866-423-7287 MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE.

7. UNDERGROUND FUEL PIPELINES

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF HECO'S UNDERGROUND FUEL OIL PIPELINES. SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HECO'S UNDERGROUND FUEL OIL PIPELINES (SEE HECO'S INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HECO'S UNDERGROUND FUEL PIPELINES" FOR DETAILED REQUIREMENTS).

8. RELOCATION OF HECO FACILITIES

ANY WORK REQUIRED TO RELOCATE OR MODIFY HECO FACILITIES SHALL BE DONE BY HECO, OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HECO'S WORK, WHICH MAY INCLUDE, BUT NOT BE LIMITED TO, STAKING OF POLE/ANCHOR LOCATIONS, IDENTIFYING RIGHT OF WAY AND PROPERTY LINES, EXCAVATION AND BACKFILL, PERMITS AND TRAFFIC CONTROL, BARRICADING, ANY RESTORATION OF PAVEMENT, SIDEWALKS, AND OTHER FACILITIES, ALL COSTS ASSOCIATED WITH ANY RELOCATION OR MODIFICATION (EITHER TEMPORARY OR PERMANENT) FOR THE CONVENIENCE OF THE CONTRACTOR, OR TO ENABLE THE CONTRACTOR TO PERFORM THE CONTRACTOR'S WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING THE CONTRACTOR'S CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

9. CONFLICTS

ANY REDESIGN OR RELOCATION OF HECO'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HECO IS NOT RESPONSIBLE FOR ANY DELAY OR DAMAGE THAT MAY ARISE AS A RESULT OF ANY CONFLICTS DISCOVERED OR IDENTIFIED WITH RESPECT TO THE LOCATION OR CONSTRUCTION OF HECO'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES. IN ORDER TO MINIMIZE ANY DELAY OR IMPACT ARISING FROM SUCH CONFLICTS, HECO SHOULD BE NOTIFIED IMMEDIATELY UPON DISCOVERY OR IDENTIFICATION OF SUCH CONFLICT.

10. DAMAGE TO HECO FACILITIES

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HECO SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HECO'S FACILITIES AS A RESULT OF THE CONTRACTOR'S OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES OR ANY HAZARDOUS CONDITIONS RELATED TO HECO'S LINES TO HECO'S TROUBLE DISPATCHER AT 548-7961. REPAIR WORK SHALL BE DONE BY HECO OR BY THE CONTRACTOR UNDER HECO'S SUPERVISION. COSTS FOR DAMAGES TO HECO'S FACILITIES SHALL BE BORNE BY THE CONTRACTOR.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HECO'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HECO'S HONOLULU POWER PLANT SHIFT SUPERVISOR AT 533-2102 (A 24-HOUR NUMBER) SO HECO PERSONNEL CAN SECURE THE DAMAGE SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO THE WAAU OR KAHE FUEL PIPELINES, THE CONTRACTOR SHALL ALSO NOTIFY CHEVRON AT 682-2227. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

11. HECO STAND-BY PERSONNEL

THE CONTRACTOR MAY REQUEST HECO TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HECO'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR. THE CONTRACTOR SHALL CALL HECO'S CUSTOMER INSTALLATIONS DEPARTMENT AT 543-7846 A MINIMUM OF FIVE (5) WORKING DAYS IN ADVANCE TO ARRANGE FOR HECO STAND-BY PERSONNEL.

HAWAIIAN ELECTRIC COMPANY (HECO) NOTES (Cont'd):

12. INDEMNITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HECO FROM AND AGAINST ALL LOSSES, DAMAGES, CLAIMS AND ACTIONS, INCLUDING BUT NOT LIMITED TO REASONABLE ATTORNEY'S FEES AND COSTS BASED UPON OR ARISING OUT OF DAMAGE TO PROPERTY OR INJURIES TO PERSONS, OR OTHER TORTIOUS ACTS CAUSED OR CONTRIBUTED TO BY CONTRACTOR OR ANYONE ACTING UNDER ITS DIRECTION OR CONTROL OR ON ITS BEHALF; PROVIDED CONTRACTOR'S INDEMNITY SHALL NOT BE APPLICABLE TO ANY LIABILITY BASED UPON THE SOLE NEGLIGENCE OF HECO.

GAS FACILITIES CONSTRUCTION NOTES:

1. HAWAII GAS PIPELINES IN THE PROJECT AREA ARE PLASTIC COATED AND CATHODICALLY PROTECTED. THE CONTRACTOR SHALL BE EXTREMELY CAREFUL WHEN WORKING NEAR THESE GAS PIPELINES.
2. WRITTEN CLEARANCES MUST BE OBTAINED FROM HAWAII GAS, MAPS AND RECORDS DEPARTMENT, 515 KAMAEKE STREET, AT LEAST FIVE (5) WORKING DAYS PRIOR TO STARTING EXCAVATION NEAR THESE GAS PIPELINES.
3. SINCE GAS LINE LOCATIONS ON FIELD MAPS ARE APPROXIMATE, THE CONTRACTOR, AFTER OBTAINING WRITTEN CLEARANCE, SHALL CALL HAWAII ONE CALL CENTER A MINIMUM OF FIVE (5) WORKING DAYS BEFORE STARTING EXCAVATION TO ARRANGE FOR FIELD LOCATION OF THE EXISTING GAS PIPELINES. THE TELEPHONE NUMBER IS 811 OR 1-866-423-7287.
4. THE CONTRACTOR SHALL EXCAVATE AND BACKFILL AROUND GAS PIPELINES IN THE PRESENCE OF A REPRESENTATIVE OF HAWAII GAS. ALL BACKFILL WITHIN SIX INCHES OF ANY GAS PIPELINE SHALL BE SELECT CUSHION MATERIAL APPROVED BY HAWAII GAS.
5. FOR RELOCATION OF ANY GAS PIPELINE, THE CONTRACTOR SHALL NOTIFY HAWAII GAS FIVE (5) WORKING DAYS BEFORE STARTING WORK. THE TELEPHONE NUMBER IS 594-5574. THE CONTRACTOR SHALL PROVIDE THE NECESSARY EXCAVATION AND BACKFILL, OBTAIN TRAFFIC PERMITS, AND RESTORE PAVEMENT, SIDEWALKS, AND OTHER FACILITIES. ANY RELOCATION OF GAS FACILITIES SHALL BE DONE BY HAWAII GAS AND PAID FOR BY THE CONTRACTOR.
6. THE CONTRACTOR SHALL NOTIFY HAWAII GAS IMMEDIATELY AFTER ANY DAMAGE HAS BEEN CAUSED TO EXISTING GAS PIPELINES, COATINGS, OR ITS CATHODIC PROTECTION DEVICES. THE TELEPHONE NUMBER IS 535-5933, 24 HOURS A DAY. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGE TO HAWAII GAS FACILITIES. REPAIR WORK ON SUCH DAMAGE SHALL BE DONE BY HAWAII GAS WITH PAYMENT OF THIS WORK TO BE BORNE BY THE CONTRACTOR.
7. MINIMUM VERTICAL AND HORIZONTAL CLEARANCE BETWEEN THE GAS PIPELINES AND OTHER PIPELINES, CONDUITS, DUCTLINES, OR OTHER FACILITIES SHALL BE 12 INCHES. ADEQUATE SUPPORT AND PROTECTION FOR GAS PIPELINES EXPOSED IN THE TRENCH SHALL BE PROVIDED BY THE CONTRACTOR AND APPROVED BY HAWAII GAS.
8. THE CONTRACTOR SHALL WORK IN AN EXPEDITIOUS MANNER IN ORDER TO KEEP THE UNCOVERED GAS PIPELINES EXPOSED FOR AS SHORT A PERIOD OF TIME AS POSSIBLE.

CATV NOTES:

1. THE CONTRACTOR SHALL TAKE NECESSARY PRECAUTION NOT TO DAMAGE EXISTING CABLES OR DUCTS. ANY WORK INVOLVING EXISTING CABLES OR DUCTS SHALL BE DONE IN THE PRESENCE OF THE CATV INSPECTOR OR REPRESENTATIVE. TEMPORARY CABLE AND DUCT SUPPORTS SHALL BE PROVIDED WHEREVER NECESSARY.

AT&T NOTES:

1. THE LOCATION OF AT&T UNDERGROUND FACILITIES AS SHOWN ON THE PLANS ARE FROM RECORDS OF VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY TO UNDERGROUND FIBER OPTIC FACILITIES. ANY DAMAGE TO THE EXISTING UNDERGROUND FACILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
2. PLEASE CALL 1-800-227-2600 PRIOR TO THE START OF WORK THAT WILL IMPACT AT&T'S FIBER OPTIC COMMUNICATIONS CABLE. TO ARRANGE FOR EXACT CABLE LOCATION, 72 HOURS PRIOR NOTIFICATION WILL BE APPRECIATED.
3. WHENEVER A CONTRACTOR IS WORKING OVER OR NEAR THE AT&T CABLE AN AT&T TECHNICIAN (455-1010) MUST BE ON SITE.

DEPARTMENT OF TRANSPORTATION SERVICES - PUBLIC TRANSIT DIVISION (DTS-PTD) NOTE:

1. CONSTRUCTION OF THIS PROJECT SHALL NOT AFFECT TRANSIT OPERATIONS. BUS ROUTES AND BUS STOPS SHALL REMAIN OPEN AND ACCESSIBLE AT ALL TIMES. ANY WORK AFFECTING BUS OPERATIONS, ROUTES, OR STOPS MUST BE SUBMITTED TO DTS-PTD FOR REVIEW NO LESS THAN 30 DAYS PRIOR TO THE START DATE.

POINT OF CONTACT INFORMATION:

DTS-PTD: 768-8396 AND THEBUSSTOP@HONOLULU.GOV AND HANDIVAN@HONOLULU.GOV
OAHU TRANSIT SERVICES:
BUS OPERATIONS: 768-9520 AND 848-4565 AND JOHN.DONOVAN@THEBUS.ORG AND SPAIO@THEBUS.ORG
PARA-TRANSIT OPERATIONS: 454-5006 AND 454-5083

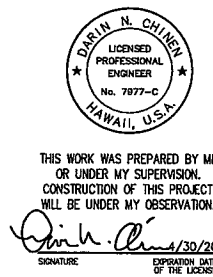
HONOLULU FIRE DEPARTMENT (HFD) NOTE:

1. THE CONTRACTOR SHALL NOTIFY THE HONOLULU FIRE DEPARTMENT (HFD), BATTALION CHIEF ALAN CARVALHO (723-7182), 636 SOUTH STREET, HONOLULU, HAWAII, 96813 OR a.carvalho@honolulu.gov TWO WEEKS PRIOR TO CONSTRUCTION, INFORMING THEM OF LOCATION, SCOPE OF WORK, AND PROPOSED CLOSURE OF ANY STREET OR TRAFFIC LANES.

TRAFFIC NOTES FOR WORK ON CITY AND COUNTY STREETS:

1. THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND SHALL MEET THE LATEST REQUIREMENTS OF THE CITY DEPARTMENT OF TRANSPORTATION SERVICES (DTS). THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL PLAN TO THE CITY DEPARTMENT OF PLANNING AND PERMITTING (DPP), TRAFFIC REVIEW BRANCH FOR REVIEW AND APPROVAL BEFORE APPLYING FOR A STREET USAGE PERMIT. THE TRAFFIC CONTROL PLAN SHALL MEET ALL DTS AND DPP REQUIREMENTS INCLUDING PREPARATION BY, OR UNDER THE SUPERVISION OF, A LICENSED PROFESSIONAL ENGINEER.
2. A PERMIT SHALL BE OBTAINED FROM DTS BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. CONSTRUCTION TRAFFIC CONTROL PLANS APPROVED BY DTS AND/OR THE DEPARTMENT OF PLANNING AND PERMITTING MUST BE PROVIDED WHEN APPLYING FOR THE PERMIT.
3. THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS AND OTHER PROTECTIVE FACILITIES, WHICH SHALL CONFORM WITH THE "HAWAII ADMINISTRATIVE 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 CURRENT U.S. FEDERAL HIGHWAY ADMINISTRATION'S "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROLS FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
4. WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 A.M. TO 3:30 P.M., MONDAY THROUGH FRIDAY UNLESS OTHERWISE PERMITTED BY DTS.
5. DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SKID BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
6. AS REQUIRED BY DTS, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE FLOW OF TRAFFIC.
7. WHERE PEDESTRIAN WALKWAYS EXIST, THEY SHALL BE MAINTAINED IN PASSABLE CONDITION, OR OTHER FACILITIES FOR PEDESTRIANS SHALL BE PROVIDED. PASSAGE BETWEEN WALKWAYS AT INTERSECTIONS SHALL LIKEWISE BE PROVIDED.
8. DRIVEWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
9. THE CONTRACTOR SHALL REFERENCE TO THE APPROVAL OF THE DEPARTMENT OF TRANSPORTATION SERVICES AND THE DEPARTMENT OF PLANNING AND PERMITTING, ALL EXISTING TRAFFIC SIGNS, POSTS, AND PAVEMENT MARKINGS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THE CONTRACTOR SHALL REPLACE OR REPAIR ALL TRAFFIC SIGNS, POSTS AND PAVEMENT MARKINGS DISTURBED BY THE CONTRACTOR'S ACTIVITIES.
10. THE CITY AND COUNTY OF HONOLULU, DEPARTMENT OF DESIGN AND CONSTRUCTION SHALL ENSURE THAT THE CONTRACTOR INSTALLS THE CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD AND HAWAII ADMINISTRATION RULES AS SPECIFIED IN TRAFFIC NOTE #3.
11. NO EQUIPMENT SHALL BE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY DTS.
12. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 ONE (1) WEEK PRIOR TO ANY WORK TO BE DONE ON SIGNS, POST AND PAVEMENT MARKINGS.

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59				
CONSTRUCTION NOTES - 2				
DESIGN: LKK	APPROVED:	DRAWING NO.		
DRAWN: LKK		CN-2		
CHECKED: DNC		SHEET 3		
DATE: FEB 2020		OF 24 SHEETS		
PO-DDC-1900230		FILE	DRAW	FOLDER NUMBER



GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES

ALL PROJECTS MUST IMPLEMENT AND MAINTAIN GOOD HOUSEKEEPING PRACTICES TO ELIMINATE AND MINIMIZE POLLUTANT DISCHARGES TO THE MAXIMUM EXTENT PRACTICABLE. MANDATORY GOOD HOUSEKEEPING PRACTICES INCLUDE, BUT ARE NOT LIMITED TO:

- STREET SWEEPING AND VACUUMING. ALL POLLUTANTS DISCHARGED FROM A CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEEPED OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.
- MATERIALS DELIVERY, STORAGE AND USE MANAGEMENT. PREVENT, REDUCE, OR ELIMINATE THE DISCHARGE OF POLLUTANTS FROM MATERIAL DELIVERY, STORAGE, AND USE TO THE STORM WATER SYSTEM OR WATERCOURSES BY MINIMIZING THE STORAGE OF HAZARDOUS MATERIALS ONSITE, STORING MATERIALS IN A DESIGNATED AREA, INSTALLING SECONDARY CONTAINMENT. CONSTRUCTION MATERIALS, WASTE, TOXIC AND HAZARD SUBSTANCES, STOCKPILES AND OTHER SOURCES OF POLLUTION SHALL NOT BE STORED IN BUFFER AREAS, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS ADJACENT TO THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS SHALL BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE.
- SPILL PREVENTION AND CONTROL. PROJECTS SHALL CREATE AND IMPLEMENT SPILL PREVENTION AND RESPONSE PLANS TO ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO THE MS4 AND RECEIVING WATERS FROM LEAKS AND SPILLS BY REDUCING THE CHANCE FOR SPILLS, ABSORBING, CONTAINING, AND CLEANING UP SPILLS AND PROPERLY DISPOSING OF SPILL MATERIALS. AT A MINIMUM, ALL PROJECTS SHALL CLEAN UP ALL LEAKS AND SPILLS IMMEDIATELY.
- HAZARDOUS MATERIALS. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM HAZARDOUS WASTE THROUGH PROPER MATERIAL USE AND WASTE DISPOSAL. IN THE EVENT THAT HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF FACILITIES MAINTENANCE, HONOLULU FIRE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASONS FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
- NON-HAZARDOUS MATERIALS. IN THE EVENT THAT NON-HAZARDOUS MATERIALS ARE DISCHARGED TO THE MS4, THE PROPERTY OWNER OR ESCP COORDINATOR SHALL NOTIFY THE CITY DEPARTMENT OF FACILITIES MAINTENANCE BY TELEPHONE NO LATER THAN THE NEXT BUSINESS DAY. A WRITTEN REPORT DESCRIBING THE POLLUTANTS THAT WERE DISCHARGED, THE REASON FOR THE DISCHARGE, AND THE MEASURES THAT HAVE BEEN TAKEN OR WILL BE TAKEN TO PREVENT A REOCCURRENCE OF THE DISCHARGE SHALL BE SUBMITTED TO THE DIRECTOR NO LESS THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
- VEHICLE AND EQUIPMENT CLEANING. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT CLEANING OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, WASHING IN DESIGNATED, CONTAINED AREAS ONLY, AND ELIMINATING DISCHARGES TO THE STORM DRAIN SYSTEM BY EVAPORATING AND/OR TREATING WASH WATER AS APPROPRIATE, OR INFILTRATING WASH WATER FOR EXTERIOR CLEANING ACTIVITIES THAT USE WATER ONLY.
- VEHICLE AND EQUIPMENT FUELING. PREVENT FUEL SPILLS AND LEAKS BY USING OFF-SITE FACILITIES, FUELING ONLY IN DESIGNATED AREAS, ENCLOSING OR COVERING STORED FUEL, AND IMPLEMENTING SPILL CONTROLS SUCH AS SECONDARY CONTAINMENT AND ACTIVE MEASURES USING SPILL RESPONSE KITS.
- VEHICLE AND EQUIPMENT MAINTENANCE. ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM VEHICLE AND EQUIPMENT MAINTENANCE OPERATIONS BY USING OFF-SITE FACILITIES WHEN FEASIBLE, PERFORMING WORK IN DESIGNATED AREAS ONLY, USING SPILL PADS UNDER VEHICLES AND EQUIPMENT, CHECKING FOR LEAKS AND SPILLS, AND CONTAINING AND CLEANING UP SPILLS IMMEDIATELY.
- SOLID WASTE MANAGEMENT. PREVENT OR REDUCE DISCHARGE OF POLLUTANTS TO THE LAND, GROUNDWATER, AND IN STORM WATER FROM SOLID WASTE OR CONSTRUCTION AND DEMOLITION WASTE BY PROVIDING DESIGNATED WASTE COLLECTION AREAS, COLLECT SITE TRASH DAILY, AND ENSURING THAT CONSTRUCTION WASTE IS COLLECTED, REMOVED, AND DISPOSED OF ONLY AT AUTHORIZED DISPOSAL AREAS.
- SANITARY/SEPTIC WASTE MANAGEMENT. TEMPORARY AND PORTABLE SANITARY AND SEPTIC WASTE SYSTEMS SHALL BE MOUNTED OR STAKED IN, WELL-MAINTAINED, AND SCHEDULED FOR REGULAR WASTE DISPOSAL AND SERVICING. SOURCES OF SANITARY AND/OR SEPTIC WASTE SHALL NOT BE STORED NEAR THE MS4 OR RECEIVING WATERS.
- STOCKPILE MANAGEMENT. STOCKPILES SHALL NOT BE LOCATED IN DRAINAGE WAYS, WITHIN 50 FEET FROM AREAS OF CONCENTRATED FLOWS, AND ARE NOT ALLOWED IN THE CITY RIGHT-OF-WAY. SEDIMENT BARRIERS OR SILT FENCES SHALL BE USED AROUND THE BASE OF ALL STOCKPILES. STOCKPILES SHALL NOT EXCEED 15 FEET IN HEIGHT. STOCKPILES GREATER THAN 15 FEET IN HEIGHT SHALL REQUIRE 8 FOOT WIDE BENCHING IN ACCORDANCE WITH ROH CHAPTER 14, ARTICLE 15. STOCKPILES MUST BE COVERED WITH PLASTIC SHEETING OR A COMPARABLE MATERIAL IF THEY WILL NOT BE ACTIVELY USED WITHIN 7 DAYS.
- LIQUID WASTE MANAGEMENT. LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOLDING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SUFFICIENT VOLUME AND TO CONTAIN THE LIQUID WASTES GENERATED. CONTAINMENT AREAS OR DEVICES MUST BE IMPERMEABLE AND LEAK FREE AND SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS.
- CONTAMINATED SOIL MANAGEMENT. AT MINIMUM CONTAIN CONTAMINATED MATERIAL SOIL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC SHEETING. CONTAMINATED SOIL SHOULD BE DISPOSED OF PROPERLY IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS.

GOOD HOUSEKEEPING BEST MANAGEMENT PRACTICES (CONT.)

- CONCRETE WASTE MANAGEMENT. PREVENT OR REDUCE THE DISCHARGE OF POLLUTANTS TO STORM WATER FROM CONCRETE WASTE BY CONDUCTING WASHOUT OFFSITE OR PERFORMING ONSITE WASHOUT IN A DESIGNATED AREA CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MILLIMETER POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL. CONTAINMENT AREAS OR DEVICES SHOULD NOT BE LOCATED WHERE ACCIDENTAL RELEASE OF THE CONTAINED LIQUID CAN DISCHARGE TO WATER BODIES, CHANNELS, OR STORM DRAINS. WASHOUT FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75 PERCENT FULL. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHOULD BE BROKEN UP, REMOVED, AND DISPOSED OF AS SOLID WASTE.
- DUST CONTROL SHALL BE APPLIED TO REDUCE DUST EMISSIONS. THE CONTRACTOR, AT THEIR OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS IN HAWAII ADMINISTRATIVE RULES: TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".

EROSION CONTROL PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES NOTES

- THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTY OF HONOLULU'S "RULES RELATING TO WATER QUALITY".
- NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING (DPP) TWO (2) WEEKS PRIOR TO STARTING WORK. ATTACH A PROJECT SCHEDULE TO THIS ESCP INCLUDING DATES WHEN THE BMPs WILL BE INSTALLED, WHEN LAND DISTURBING ACTIVITIES WILL BEGIN AND END, AND DATES WHEN BMPs WILL BE REMOVED.
- THE OWNER OF THE PROJECT OR THEIR AUTHORIZED AGENT MUST SIGN THE TRENCHING PROJECT ESCP AND MUST DESIGNATE A PERSON RESPONSIBLE FOR IMPLEMENTING THE ESCP AT THE PROJECT SITE ("ESCP COORDINATOR") USING THE FORM PROVIDED AS APPENDIX A IN THE RULES RELATING TO WATER QUALITY, EFFECTIVE DECEMBER 24, 2018. THE FORM MUST INCLUDE THE NAME, PHONE NUMBER, MAILING ADDRESS, AND EMAIL ADDRESS OF THE ESCP COORDINATOR AND MUST BE SIGNED BY THE OWNER OF THE PROJECT OR THEIR AUTHORIZED AGENT AND THE ESCP COORDINATOR PRIOR TO PERMIT ISSUANCE. CHANGES TO THE ESCP COORDINATOR SHALL BE SUBMITTED TO THE DIRECTOR IN WRITING IMMEDIATELY FOR THE DEPARTMENT'S ACCEPTANCE.
- MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY CONSTRUCTION IS INITIATED.
- REGULARLY INSPECT AND MAINTAIN ALL EROSION AND SEDIMENT CONTROLS TO ENSURE CONTINUED PERFORMANCE.
- PERMANENT STABILIZATION

ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED USING VEGETATIVE COVERING, PAVEMENT, OR EQUIVALENT, PRIOR TO REMOVING EROSION AND SEDIMENT MEASURES. TRAPPED SEDIMENT AND AREAS OF DISTURBED SOIL WHICH RESULT FROM THE REMOVAL OF THE TEMPORARY MEASURES SHALL BE IMMEDIATELY AND PERMANENTLY STABILIZED.

- INLET PROTECTION
 - ALL STORM DRAIN INLETS ONSITE AND THOSE OFFSITE WHICH MAY RECEIVE RUNOFF FROM THE SITE SHALL USE AN INLET PROTECTION DEVICE UNLESS THEY ARE DIRECTED TO A SEDIMENT BASIN.
 - SEDIMENT LEVELS MAY NOT EXCEED ONE THIRD OF THE HEIGHT OF A SEDIMENT BARRIER OR INLET PROTECTION DEVICE AT ANY POINT ALONG THE LENGTH OF THE SEDIMENT BARRIER OR THE INLET PROTECTION DEVICE.
 - SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNCLOGGED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
 - TORN, WEATHERED, OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.
- TRACKING CONTROL
 - MINIMIZE SEDIMENT TRACK-OUT ONTO THE OFF-SITE STREETS, OTHER PAVED AREAS, AND SIDEWALKS FROM VEHICLES EXITING THE CONSTRUCTION SITE BY RESTRICTING VEHICLE TRAFFIC TO PROPERLY DESIGNATED AREAS AND USING ADDITIONAL CONTROLS TO REMOVE SEDIMENT FROM VEHICLE TIRES PRIOR TO EXITING THE SITE.
 - VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEFINED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
 - ALL POLLUTANTS AND MATERIALS THAT ARE DROPPED, WASHED, TRACKED, SPILLED OR OTHERWISE DISCHARGED FROM A PROJECT SITE TO OFF-SITE STREETS, OTHER PAVED AREAS, SIDEWALKS OR THE MS4 MUST BE CLEANED USING DRY METHODS SUCH AS SWEEPING OR VACUUMING.
 - WASHING POLLUTANTS AND MATERIALS THAT ARE DISCHARGED FROM THE PROJECT SITE TO THE MS4 INTO DRAIN INLETS OR CATCH BASINS IS PROHIBITED UNLESS THE MATERIAL IS SEDIMENT AND THE INLETS ARE DIRECTED TO A SEDIMENT BASIN OR SEDIMENT TRAP.
- BEST MANAGEMENT PRACTICES (BMPs) SHALL NOT BE REMOVED UNTIL FINAL STABILIZATION IS COMPLETE FOR EACH PHASE.
- PROVIDE SEDIMENT FENCES OR BARRIERS AROUND THE PERIMETER OF STAGING AREAS IF THERE IS A POTENTIAL FOR RUNOFF TO FLOW OFF THE PROJECT SITE, AND AROUND THE BASE OF ALL MATERIAL STOCKPILES. THESE MAY INCLUDE GRAVEL BAGS, SAND BAGS, FIBER ROLLS, SILT FENCES, OR COMPOST SOCKS THAT INTERCEPT RUNOFF.
- CONTRACTOR SHALL EMPLOY BEST MANAGEMENT PRACTICES AT ALL TIMES DURING CONSTRUCTION WITH THE USE OF "SEDIMENT CONTROL FILTERS" AT CATCH BASINS/DRAIN INLETS.

EROSION CONTROL PREVENTION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES NOTES (CONT.)

- REFER TO CITY AND COUNTY OF HONOLULU STORM WATER BEST MANAGEMENT PRACTICES MANUAL - CONSTRUCTION, FOR MORE INFORMATION ON BMPs.
- FLUSHING INTO CATCH BASINS/DRAIN INLETS IS PROHIBITED.
- FOR THE PROTECTION OF PUBLIC HEALTH AND SAFETY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING LOCAL WEATHER REPORTS FOR FORECASTED AND/OR ANTICIPATED SEVERE STORM EVENTS. THE CONTRACTOR SHALL PREPARE THE CONSTRUCTION WORK SITE AS NECESSARY TO PREVENT FLOODING ON THE ROADWAY, OR DAMAGE TO THE PROJECT OR SURROUNDING PROPERTIES.
- WRITTEN APPROVAL FROM DPP IS REQUIRED BEFORE PROCEEDING TO EACH NEXT PHASE OF DEVELOPMENT SHOWN ON THE SITE PLAN.
- ALL MOBILIZED EQUIPMENT SHALL BE REMOVED POST CONSTRUCTION.

EROSION & SEDIMENT CONTROL PLAN SCHEDULE AND RAIN RESPONSE PLAN

PROJECT SEQUENCE:

- INSTALL INLET PROTECTION AT EXISTING CATCH BASINS/DRAIN INLETS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AS PER THE EROSION CONTROL PREVENTION, SEDIMENT CONTROL AND GOOD HOUSEKEEPING BMP NOTES.
- INSTALL PERIMETER CONTROLS AROUND STAGING AREAS AND MATERIAL STOCKPILES AS NEEDED.
- PROCEED WITH CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
- REMOVE TEMPORARY EROSION CONTROL MEASURES AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER OR PERMANENT PAVEMENT STRUCTURE HAS BEEN INSTALLED.
- PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
- INSPECTIONS WILL BE PERFORMED WEEKLY.

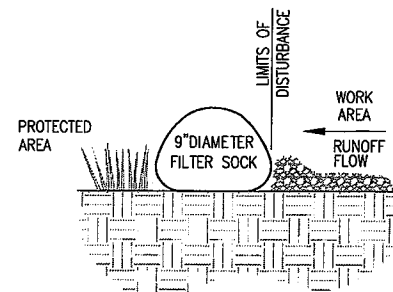
RAIN RESPONSE PLAN:

THE FOLLOWING WILL BE PERFORMED WHEN HEAVY RAINS, TROPICAL STORM OR HURRICANE IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS:

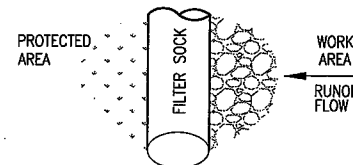
- TEMPORARY SUSPENSION OF ACTIVE TRENCHING OR COLD PLANING ACTIVITIES.
- INSPECT ALL INLET PROTECTION DEVICES AND MAINTAIN AS NEEDED. IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
- COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
- PLACE SPILL PANS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACTING ANY SPILLED PETROLEUM PRODUCTS. PROPERLY DISPOSE OF ANY ACCUMULATED OILY WATER AFTER THE RAIN EVENT.
- RE-INSPECT AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE AND REPLACE OR MAINTAIN BMPs AS NEEDED.

DEWATERING OPERATIONS BEST MANAGEMENT PRACTICES NOTE

- DEWATERING OPERATIONS ARE NOT PART OF THE PROJECT SCOPE; BEST MANAGEMENT PRACTICES FOR DEWATERING OPERATIONS ARE NOT REQUIRED.



SECTION



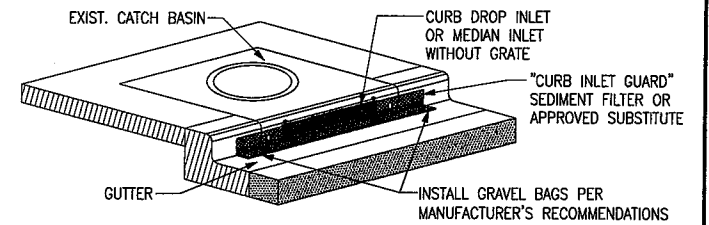
PLAN

FILTER SOCK FOR PERIMETER CONTROL DETAIL

NOT TO SCALE

NOTE:

USE 9-INCH DIAMETER FILTER SOCK FOR PERIMETER CONTROL. INSTALL FILTER SOCK ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

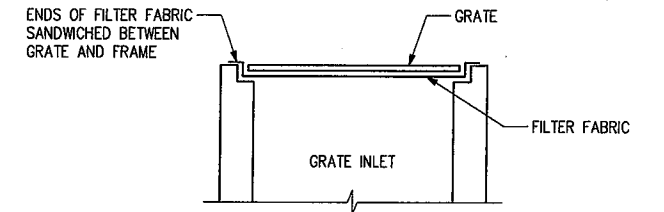


NOTE

"CURB INLET GUARD" IS MANUFACTURED BY ERTEC ENVIRONMENTAL SYSTEMS.

CATCH BASIN SEDIMENT CONTROL FILTER DETAIL

NOT TO SCALE



DRAIN INLET SEDIMENT CONTROL FILTER DETAIL

NOT TO SCALE

NOTES:

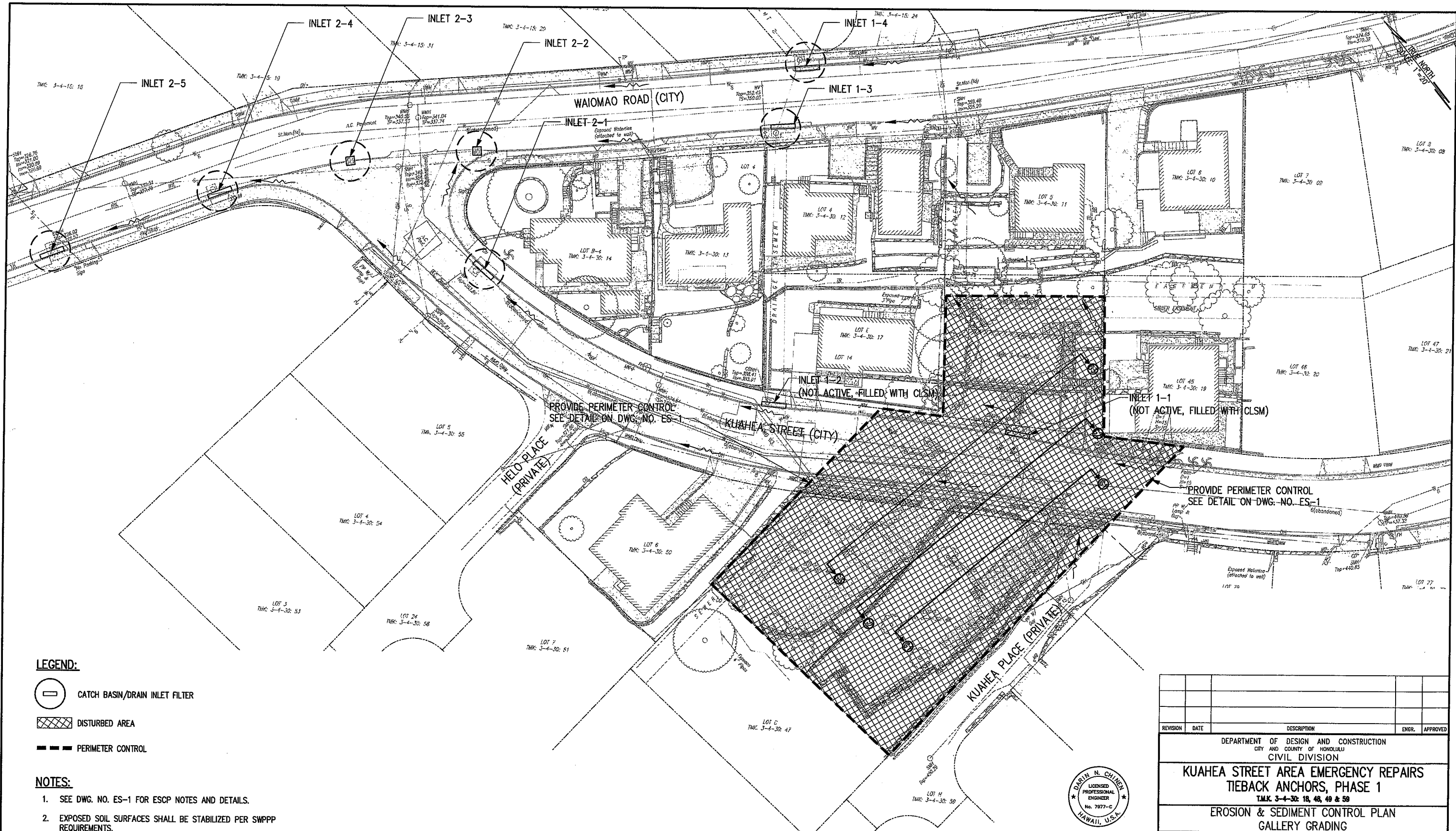
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- TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59				
EROSION & SEDIMENT CONTROL PLAN NOTES AND DETAILS				
DESIGN: LJK	APPROVED:		DRAWING NO.	
DRAWN: LJK	DATE: FEB 2020		ES-1	
CHECKED: DNC	DATE: FEB 2020		SHEET 4	
DATE: FEB 2020	DATE: FEB 2020		OF 24 SHEETS	
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER






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Darin M. Chien /30/20
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LEGEND:

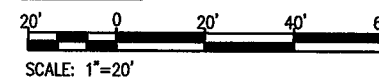
-  CATCH BASIN/DRAIN INLET FILTER
-  DISTURBED AREA
-  PERIMETER CONTROL

NOTES:

1. SEE DWG. NO. ES-1 FOR ESCP NOTES AND DETAILS.
2. EXPOSED SOIL SURFACES SHALL BE STABILIZED PER SWPPP REQUIREMENTS.

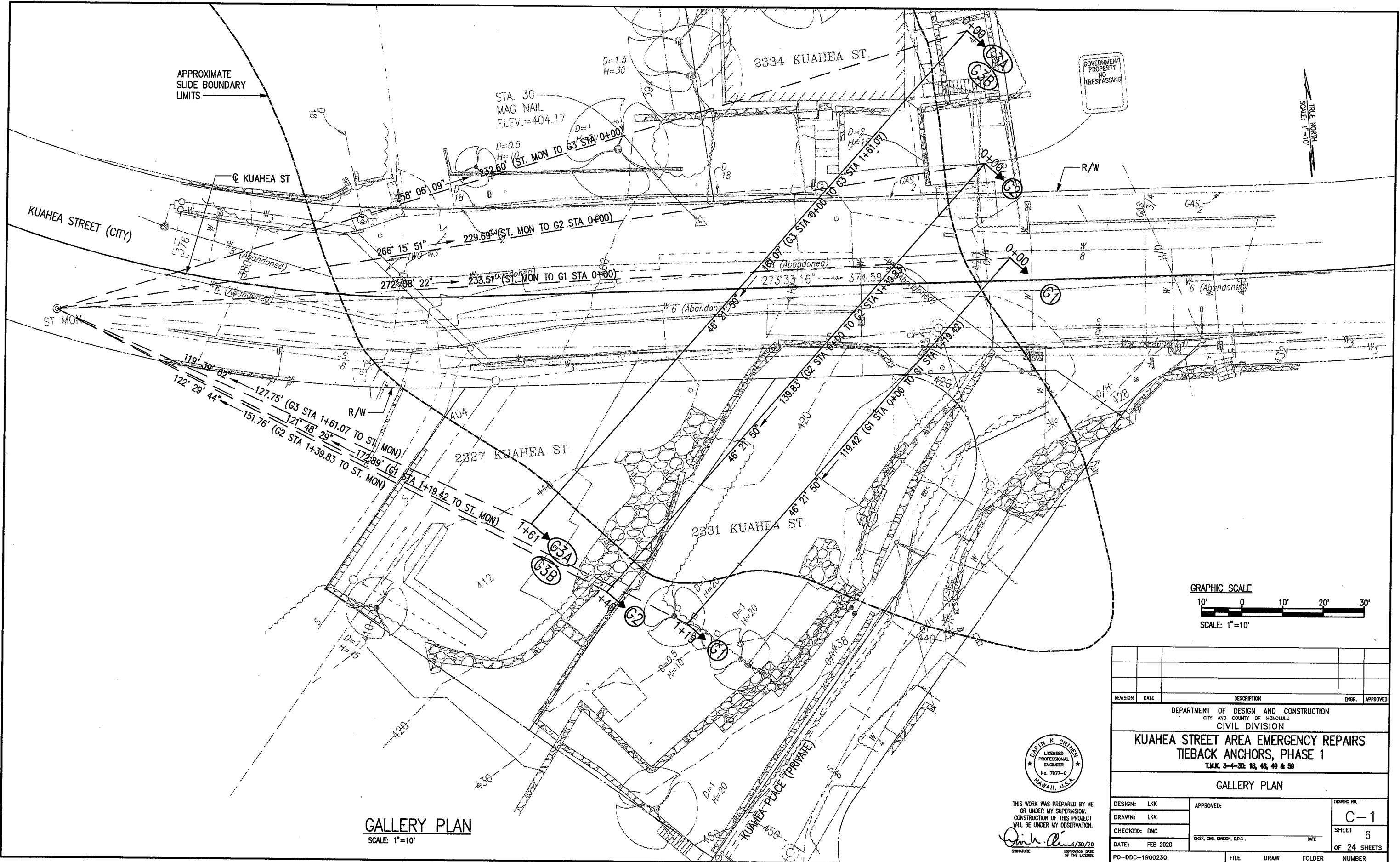
EROSION & SEDIMENT CONTROL PLAN
SCALE: 1"=20'

GRAPHIC SCALE



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Darin N. Chinen 3/30/20
SIGNATURE DATE OF THE LICENSE

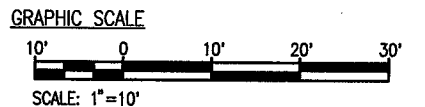
REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEHA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 58				
EROSION & SEDIMENT CONTROL PLAN GALLERY GRADING				
DESIGN: LKK	APPROVED:		DRAWING NO.	
DRAWN: LKK			ES-2	
CHECKED: DNC			SHEET 5	
DATE: FEB 2020	CHIEF, CIVIL DIVISION, D.D.C.		DATE	
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER



APPROXIMATE
SLIDE BOUNDARY
LIMITS

GOVERNMENT
PROPERTY
NO
TRESPASSING

TRUE NORTH
SCALE: 1"=10'

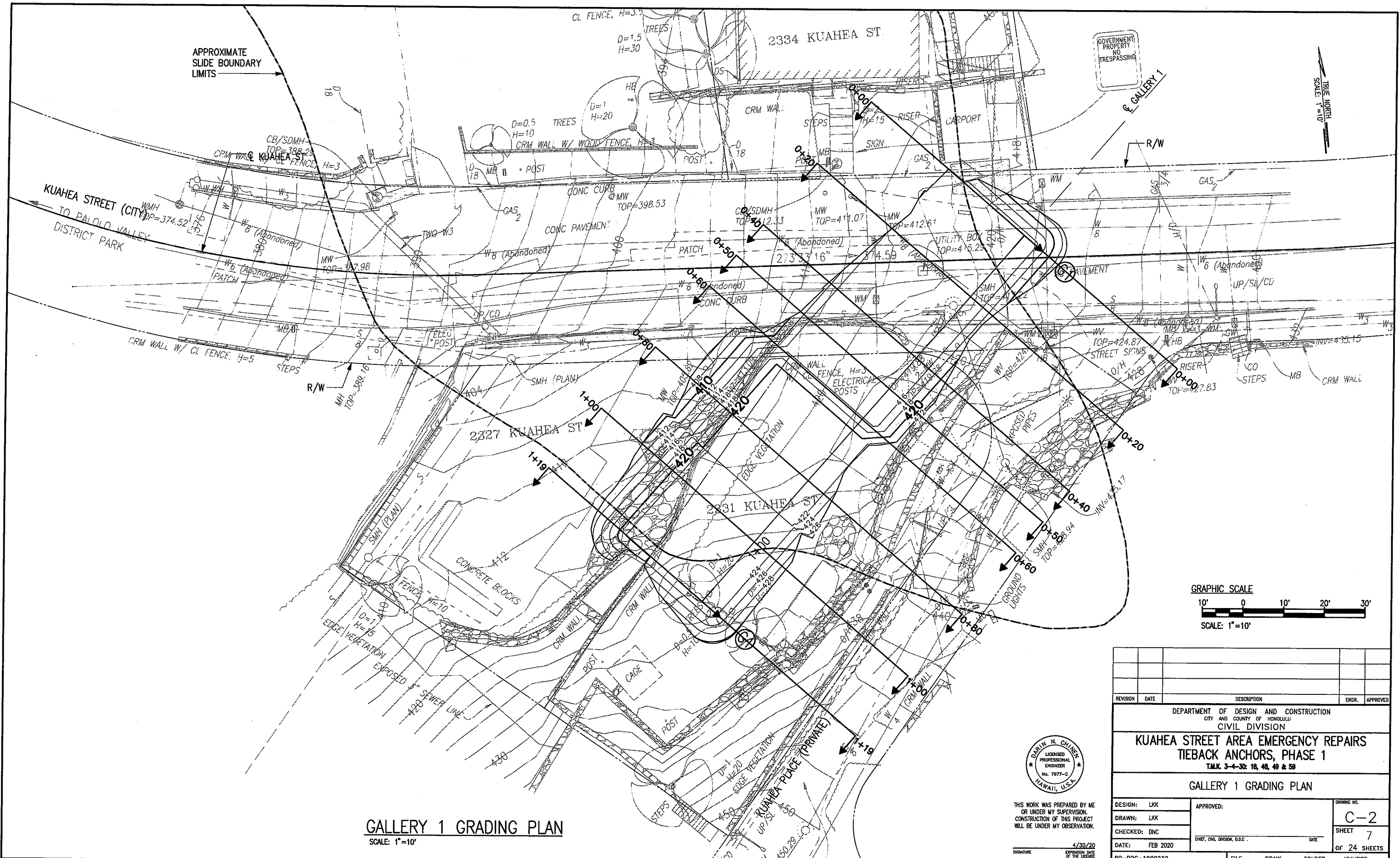


GALLERY PLAN
SCALE: 1"=10'



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Darin N. Chien
SIGNATURE DATE: 4/30/20
EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEHA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59				
GALLERY PLAN				
DESIGN: LKK	APPROVED:	DRAWING NO.		C-1
DRAWN: LKK		SHEET		6
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DATE: FEB 2020		FILE	DRAW	FOLDER
PO-DDC-1900230				NUMBER

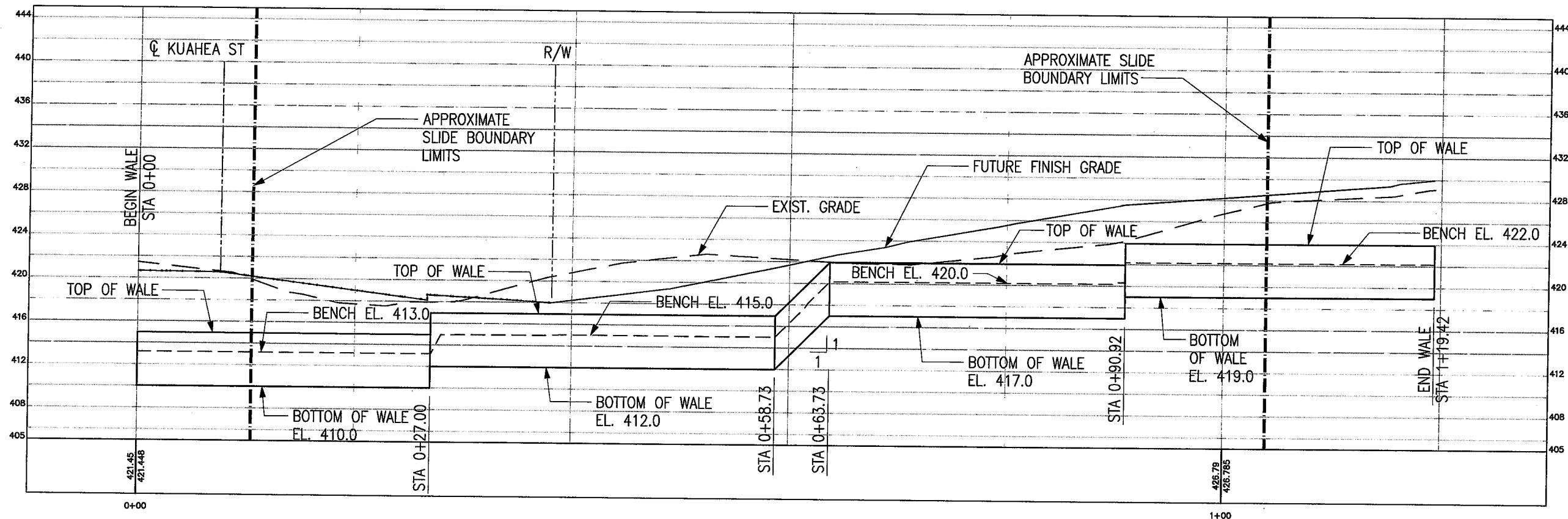


GALLERY 1 GRADING PLAN
SCALE: 1"=10'



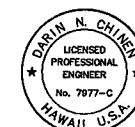
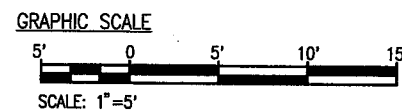
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4/30/20
SIGNATURE EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEHA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 50				
GALLERY 1 GRADING PLAN				
DESIGN: LKK	APPROVED:		DRAWING NO. C-2	
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CHECKED: DNC			OF 24 SHEETS	
DATE: FEB 2020				
PO-DC-1900230	FILE	DRAW	FOLDER	NUMBER



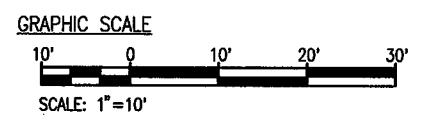
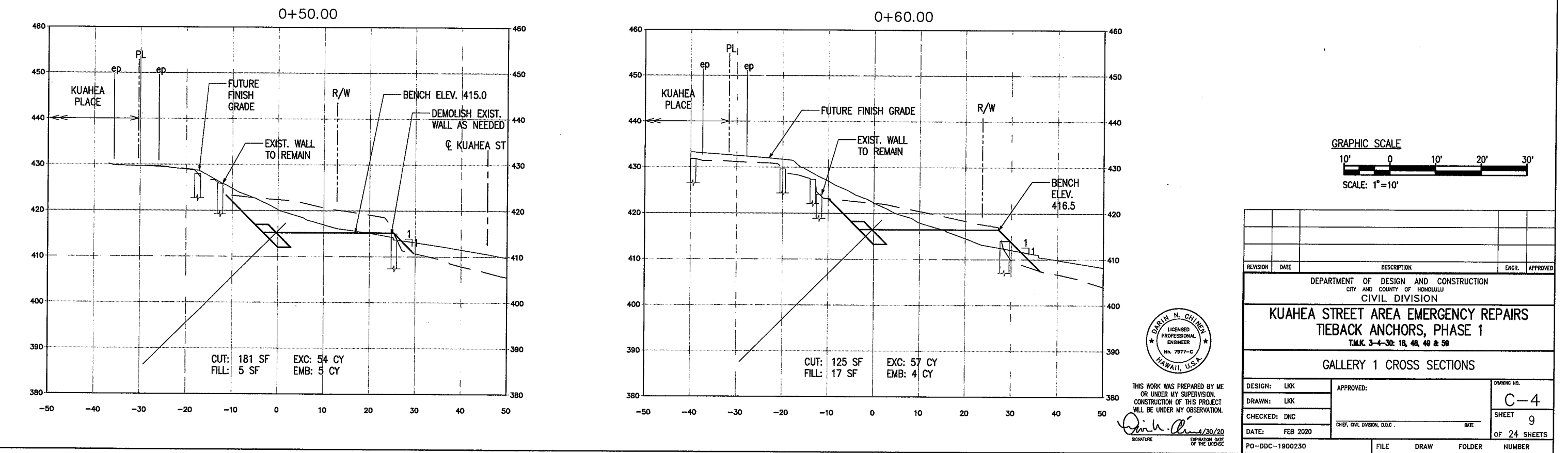
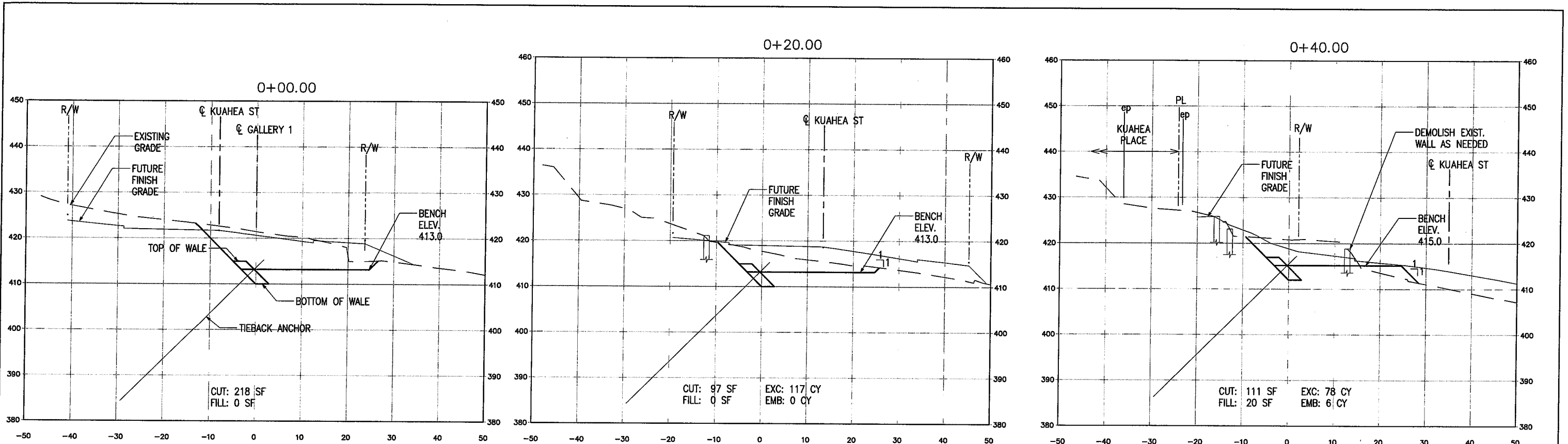
NOTE:
SEE TIEBACK SHOP DRAWINGS FOR LOCATIONS OF
TIEBACK THROUGH WALE.

GALLERY 1 ELEVATION
SCALE: 1"=5'



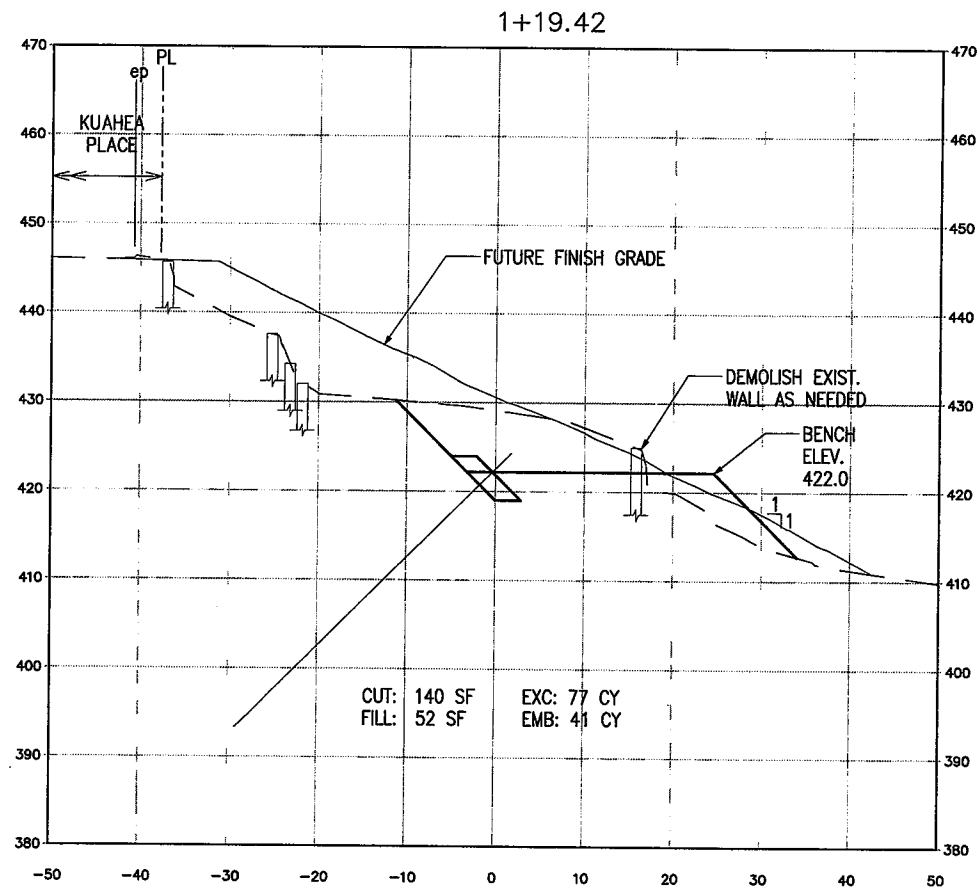
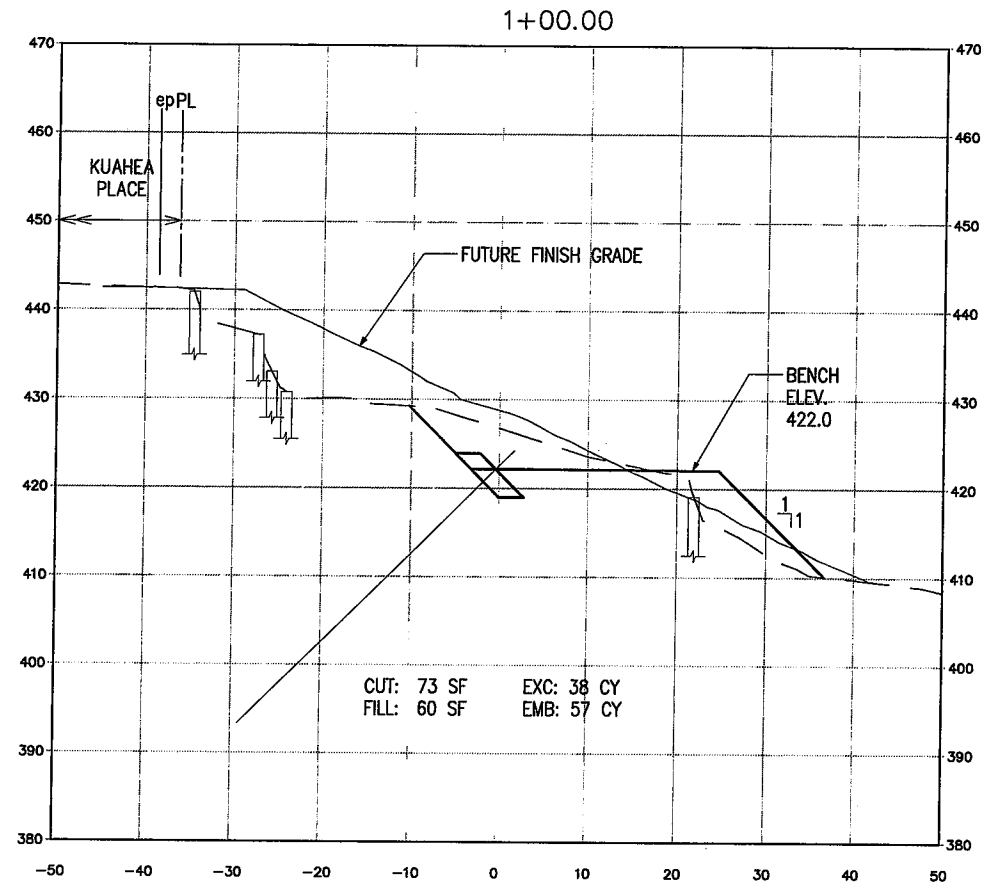
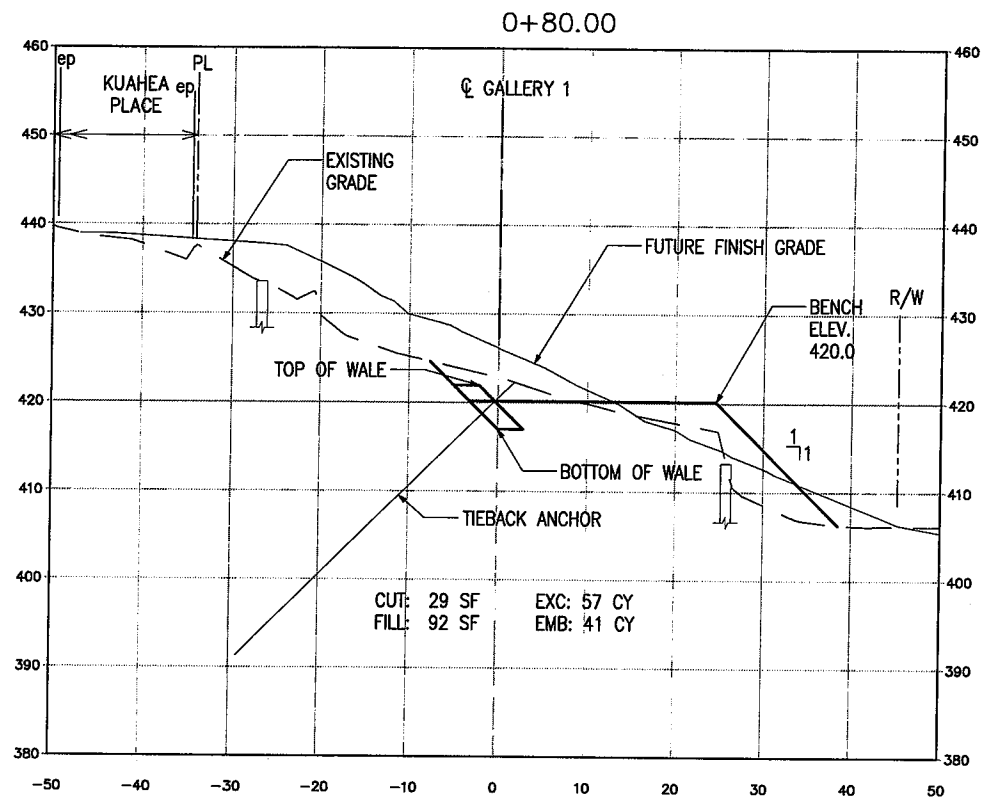
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CONSTRUCTION OF THIS PROJECT
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Darin Chinen 3/30/20
SIGNATURE EXPIRATION DATE
OF THE LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59 GALLERY 1 ELEVATION				
DESIGN:	LKK	APPROVED:	DRAWING NO. C-3	
DRAWN:	LKK	CHECKED:	DNC	SHEET 8
DATE:	FEB 2020	CHIEF, CIVIL DIVISION, D.A.C.	DATE	OF 24 SHEETS
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER

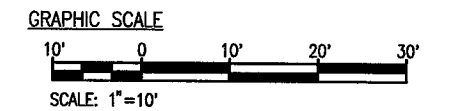


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 Signature: *Danny N. Chen* 3/30/20
 EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59				
GALLERY 1 CROSS SECTIONS				
DESIGN: LKK	APPROVED:	DRAWING NO. C-4		
DRAWN: LKK		CHECKED: DNC		SHEET 9
DATE: FEB 2020				OF 24 SHEETS
PO-DDC-1900230		FILE	DRAW	FOLDER NUMBER



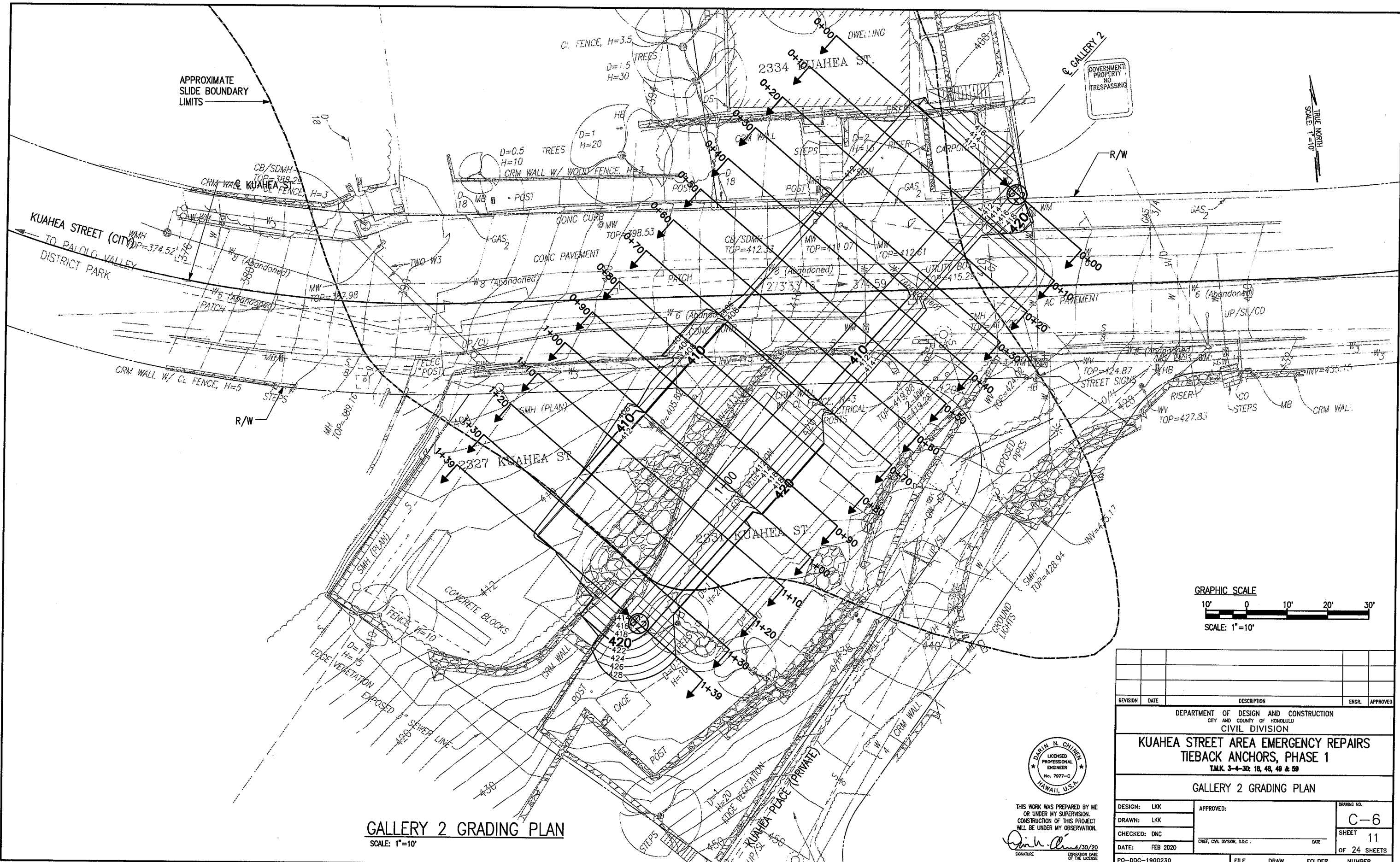
TOTAL EXC: 403 CY
TOTAL EMB: 161 CY



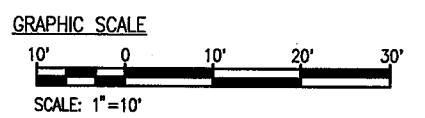
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Darin N. Chinn 3/30/20
SIGNATURE EXPIRATION DATE OF THE LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 TMK. 3-4-30: 18, 48, 49 & 59				
GALLERY 1 CROSS SECTIONS				
DESIGN: LKK	APPROVED:		DRAWING NO.	
DRAWN: LKK			C-5	
CHECKED: DNC			SHEET 10	
DATE: FEB 2020			OF 24 SHEETS	
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER



GALLERY 2 GRADING PLAN
SCALE: 1"=10'



REVISION	DATE	DESCRIPTION	ENGR.	APPROVED

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
CIVIL DIVISION

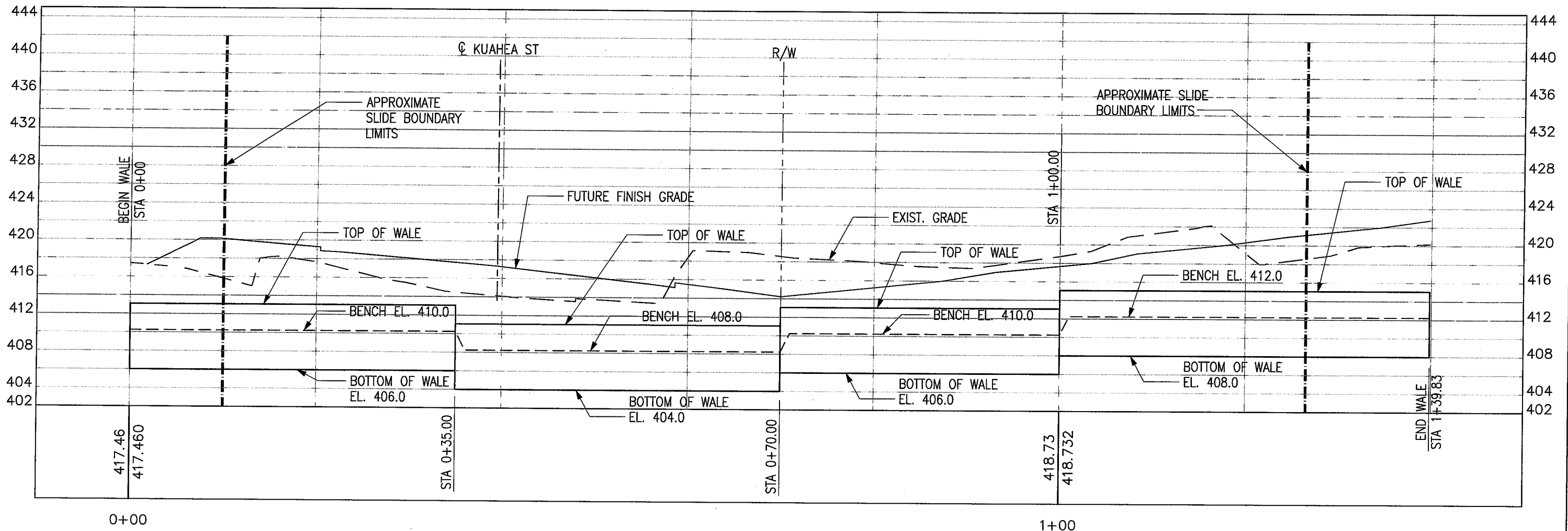
**KUAHEA STREET AREA EMERGENCY REPAIRS
TIEBACK ANCHORS, PHASE 1**
T.M.K. 3-4-30: 18, 48, 49 & 58

GALLERY 2 GRADING PLAN

DESIGN: LKK	APPROVED:	DRAWING NO. C-6
DRAWN: LKK	CHEF, CIVIL DIVISION, D.D.C.	SHEET 11
CHECKED: DNC	DATE	OF 24 SHEETS
DATE: FEB 2020	FILE	DRAW
PO-DOC-1900230	FOLDER	NUMBER

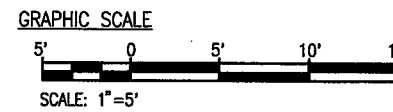


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Darin N. Chinen 3/30/20
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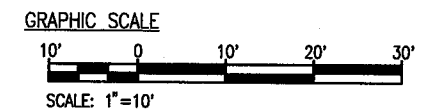
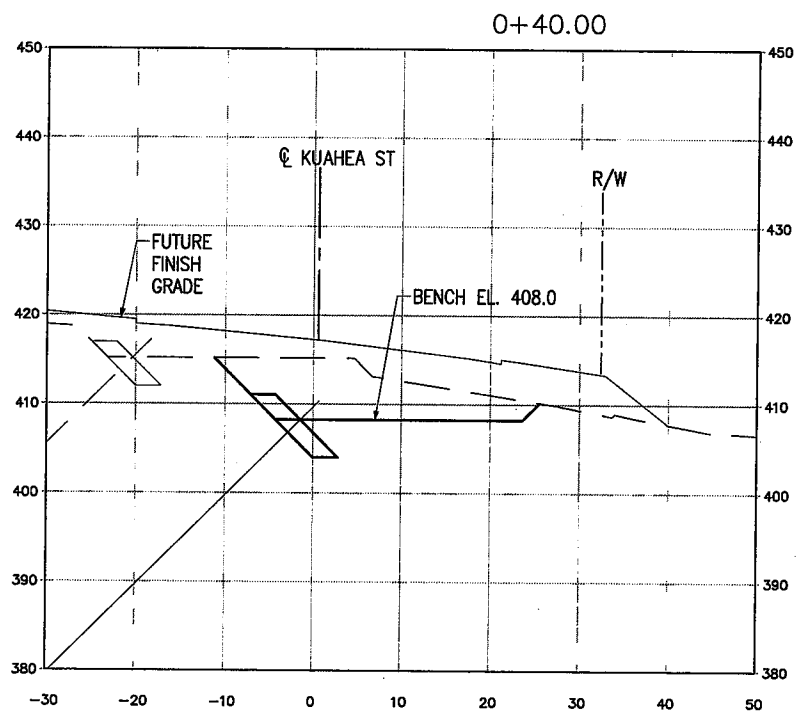
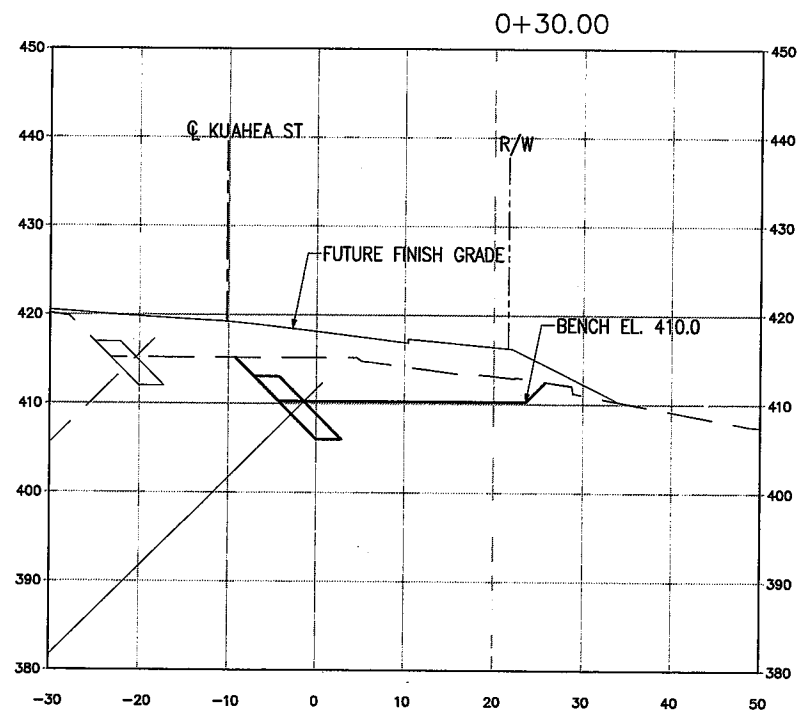
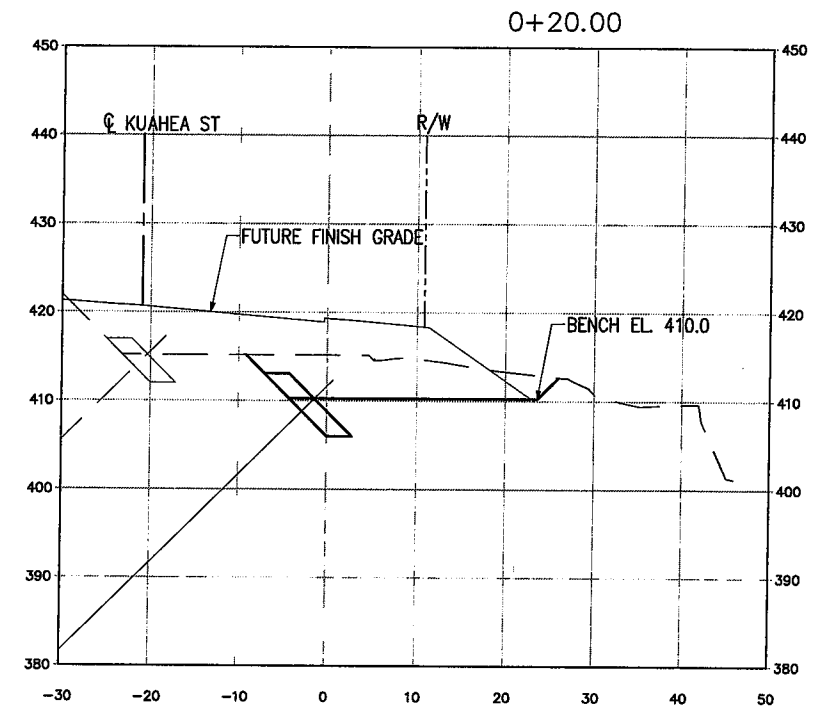
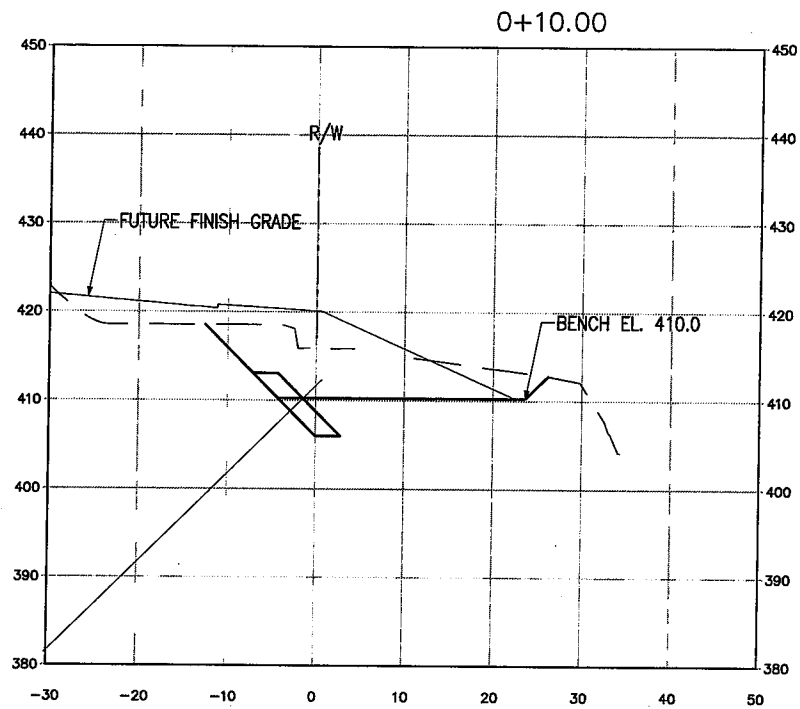
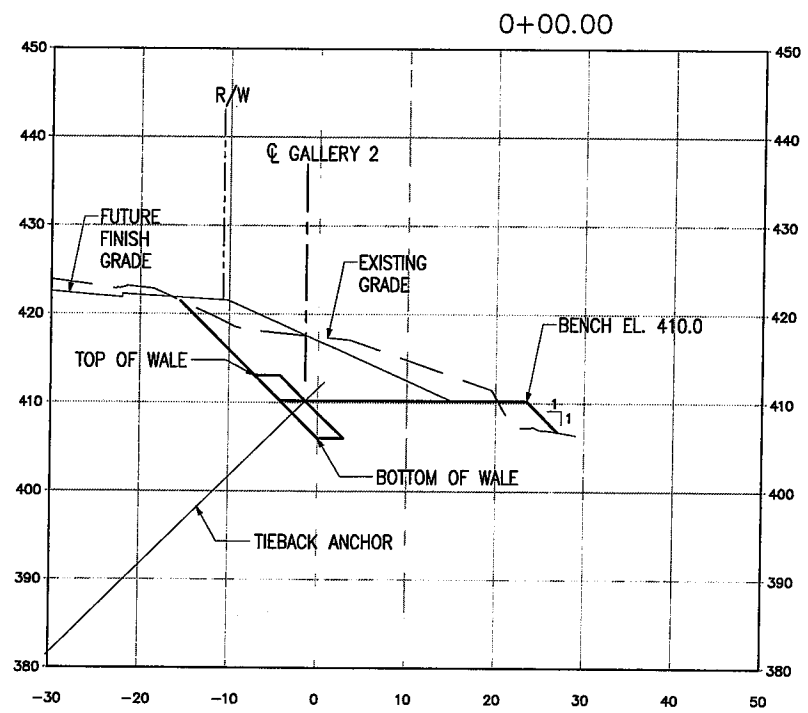
NOTE:
SEE TIEBACK SHOP DRAWINGS FOR LOCATIONS OF
TIEBACK THROUGH WALE.

GALLERY 2 ELEVATION
SCALE: 1"=5'



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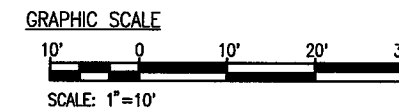
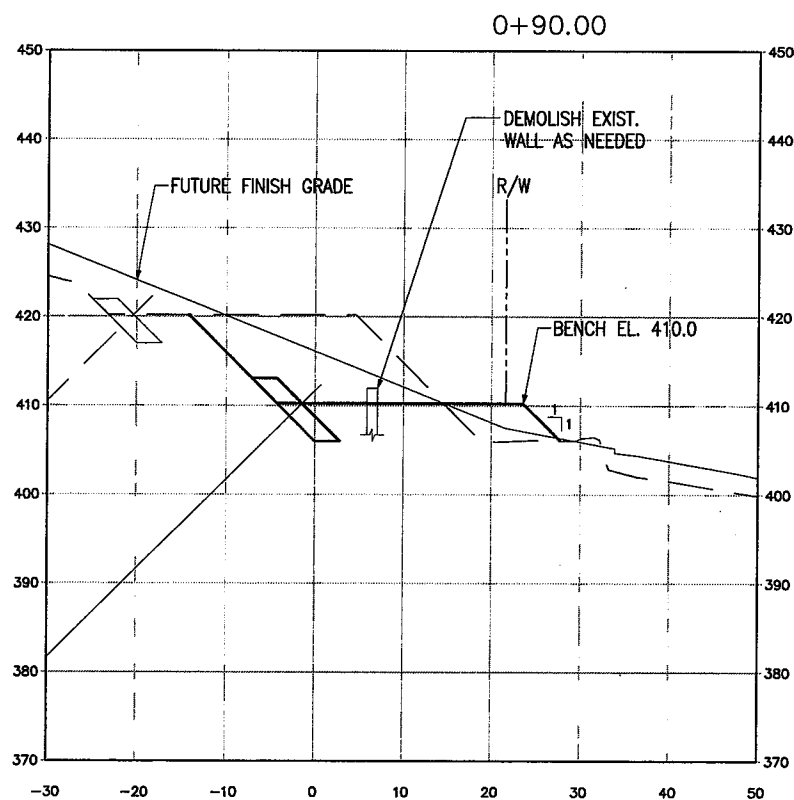
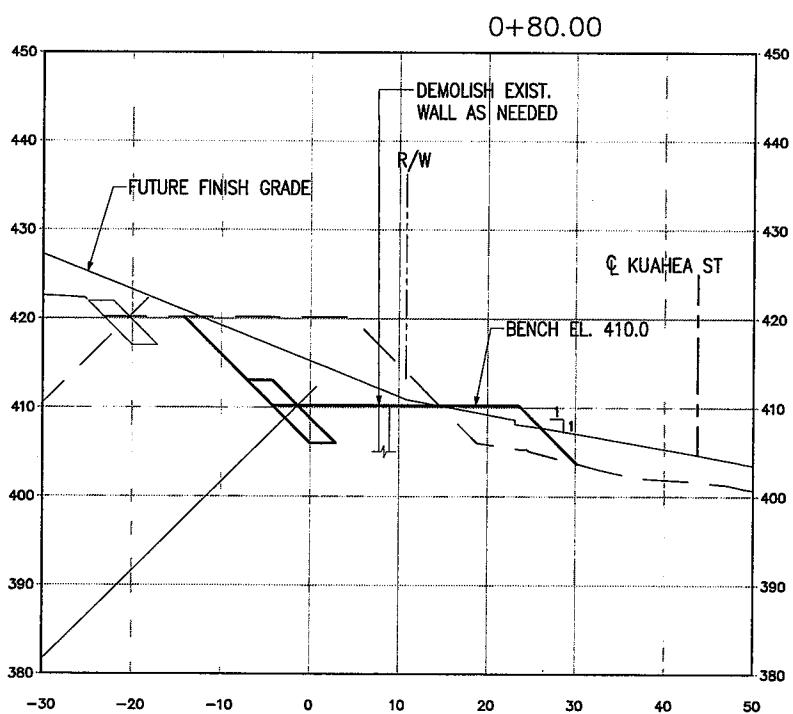
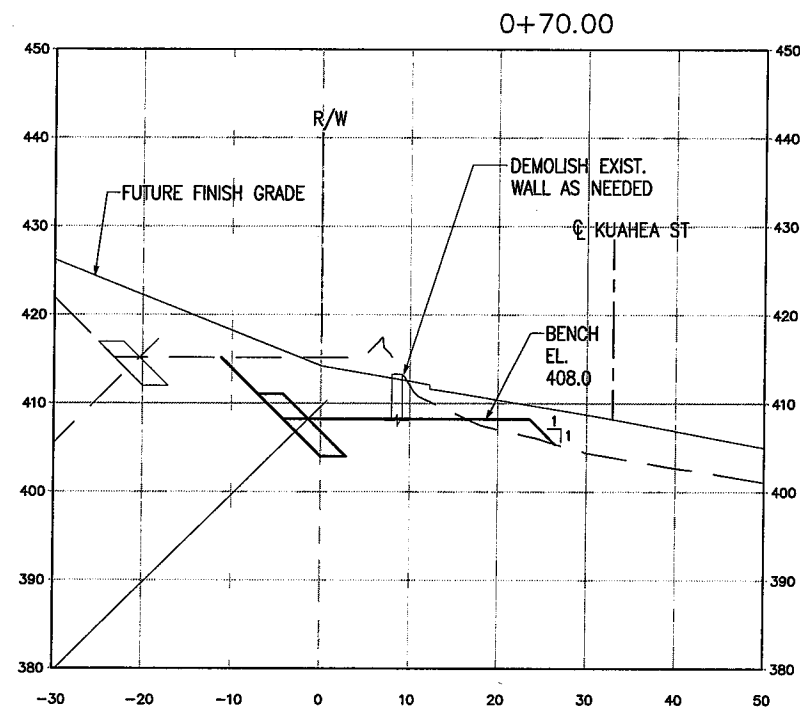
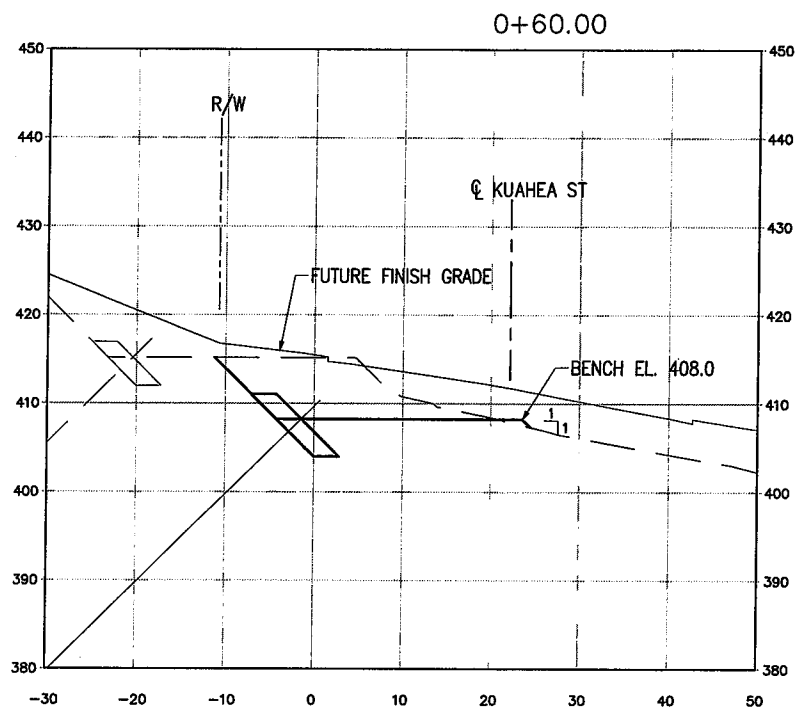
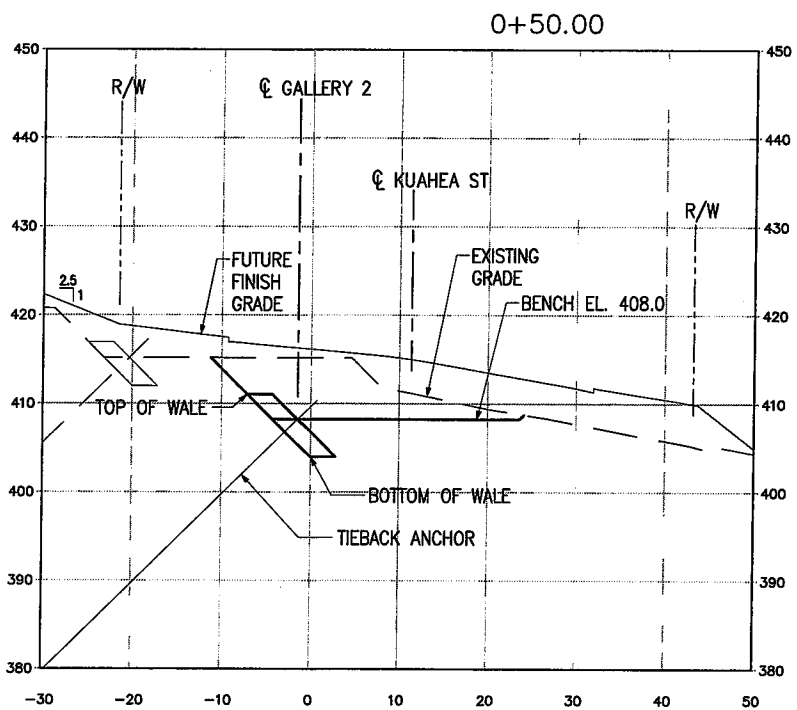
REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 50 GALLERY 2 ELEVATION				
DESIGN:	LKK	APPROVED:	DRAWING NO. C-7	
DRAWN:	LKK	CHEKED:	SHEET 12	
CHECKED:	DNC	DATE:	OF 24 SHEETS	
DATE:	FEB 2020	CHIEF, CIVIL DIVISION, D.D.C.	DATE	
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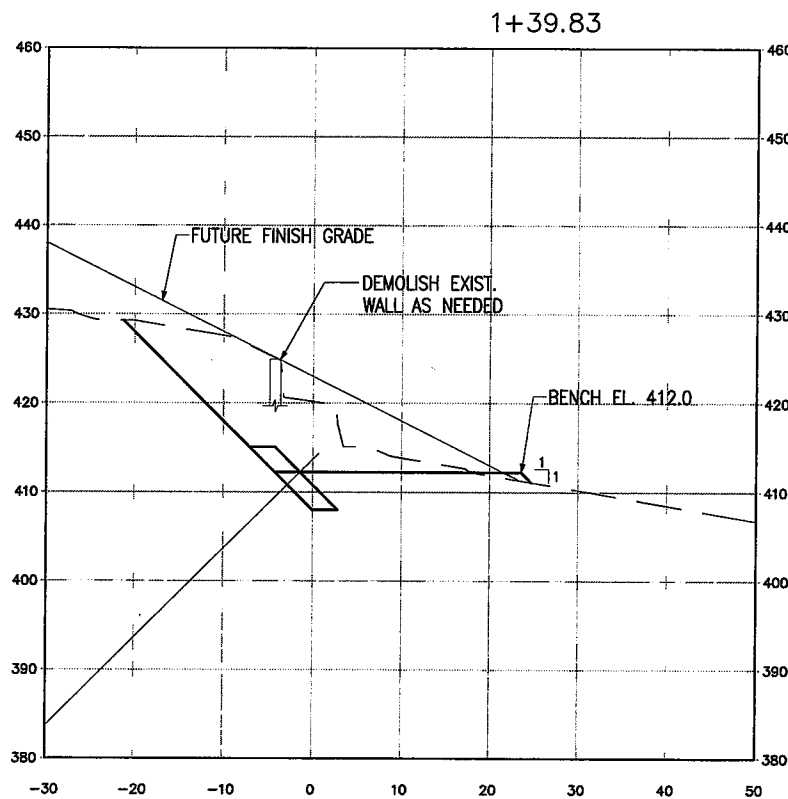
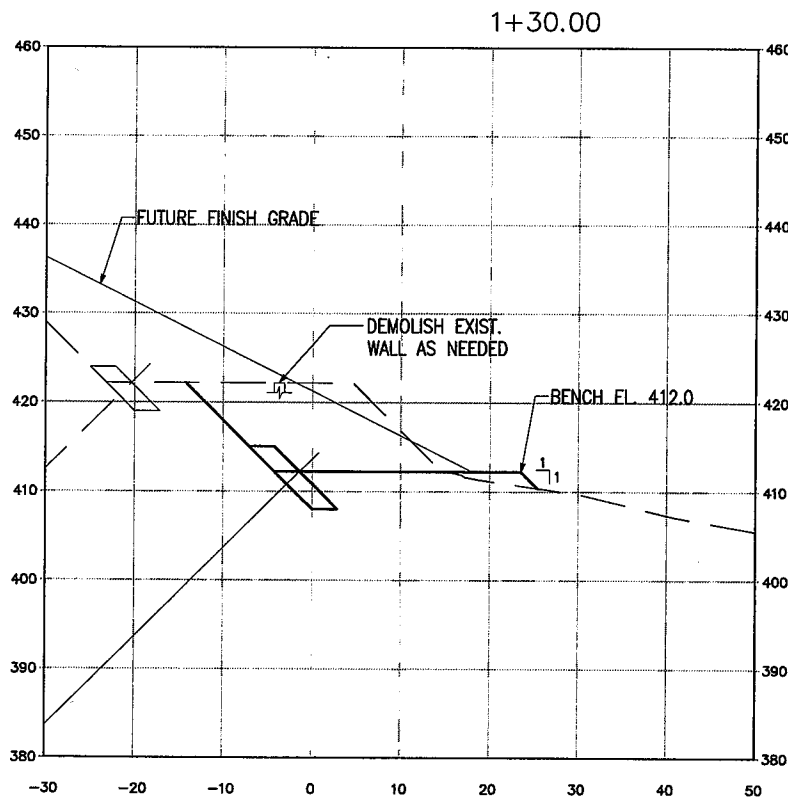
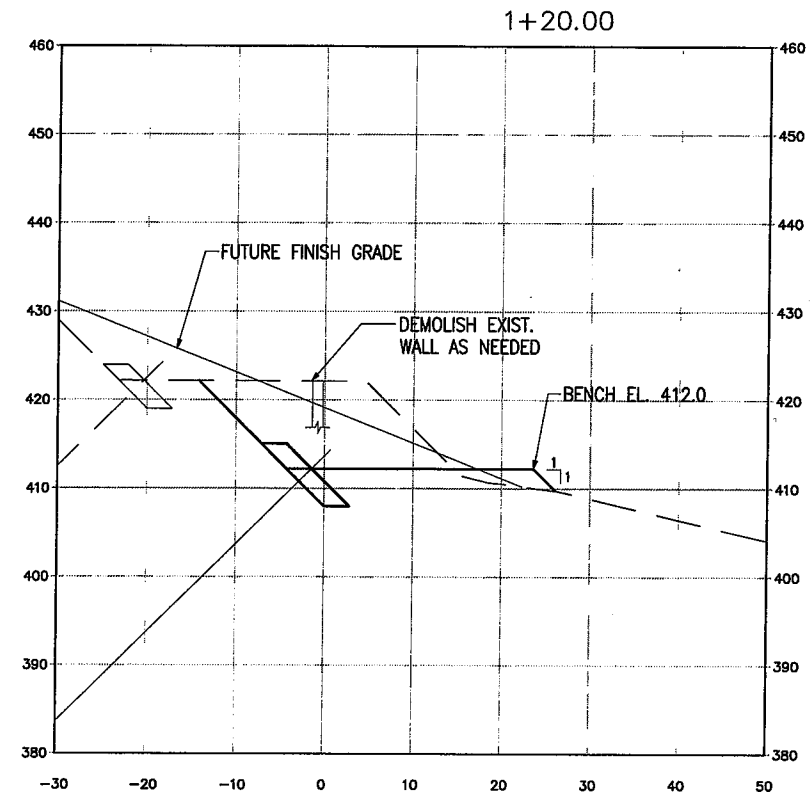
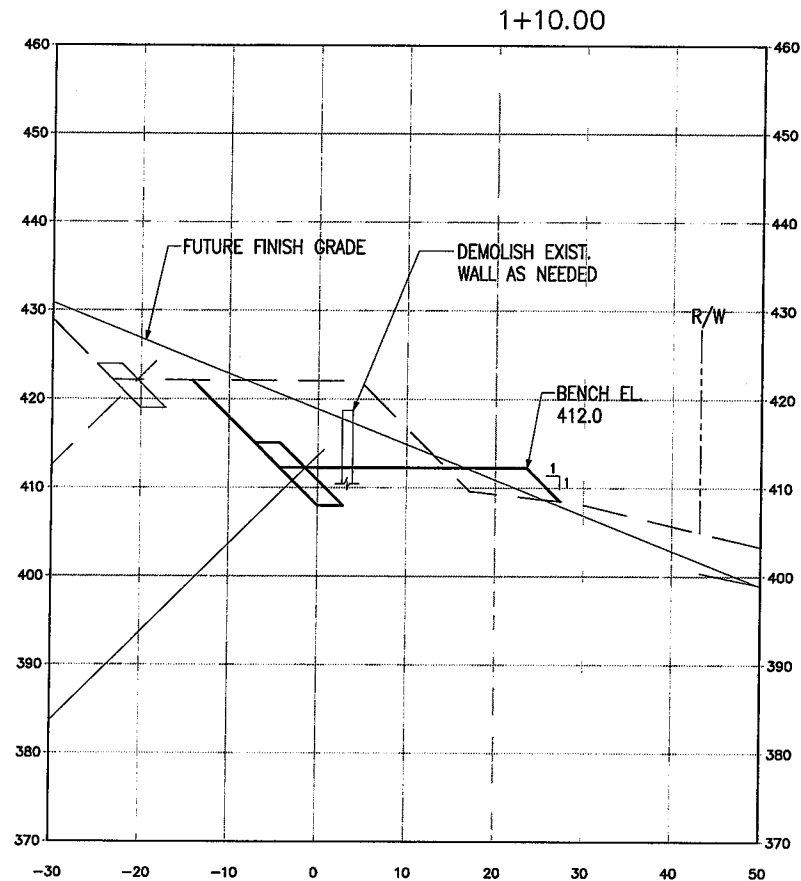
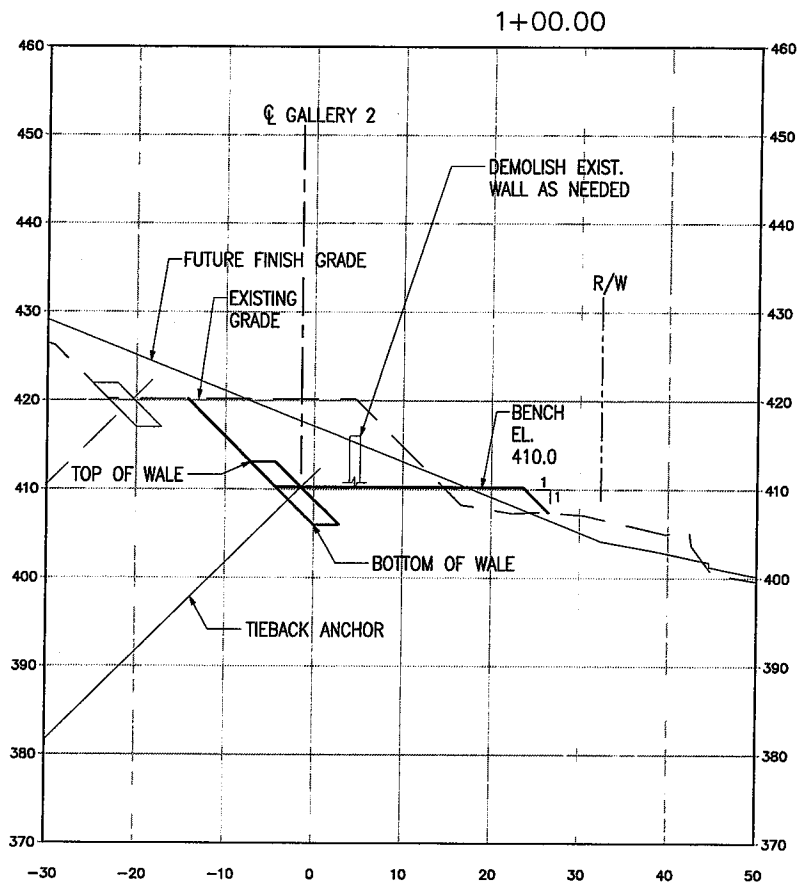
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GALLERY 2 CROSS SECTIONS				
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DRAWN: LKK		SHEET 13		
CHECKED: DNC		OF 24 SHEETS		
DATE: FEB 2020		PO-DDC-1900230	FILE	DRAW FOLDER NUMBER



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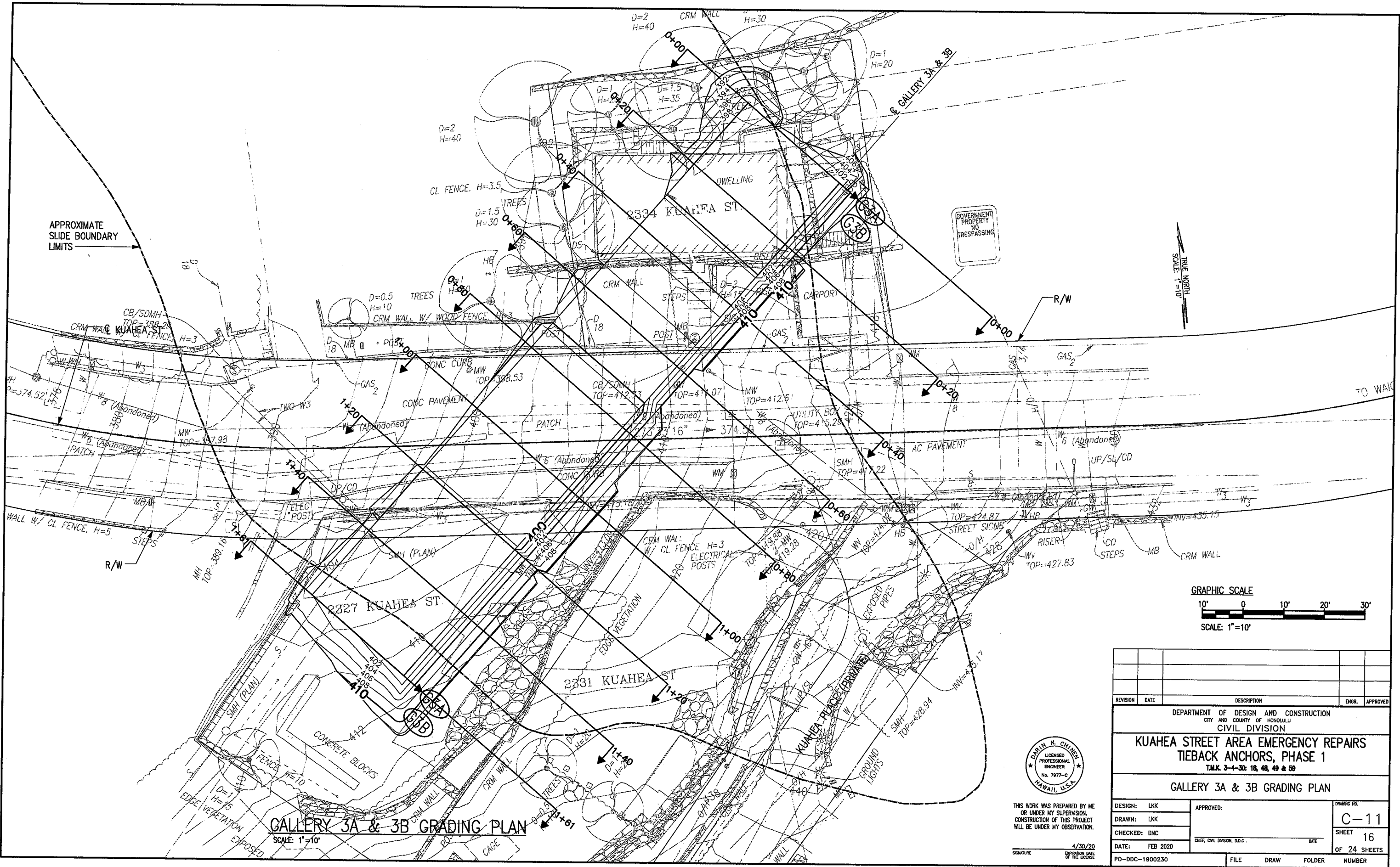
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GALLERY 2 CROSS SECTIONS				
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DATE: FEB 2020	CHIEF, CIVIL DIVISION, D.D.C.		DATE	
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GALLERY 2 CROSS SECTIONS				
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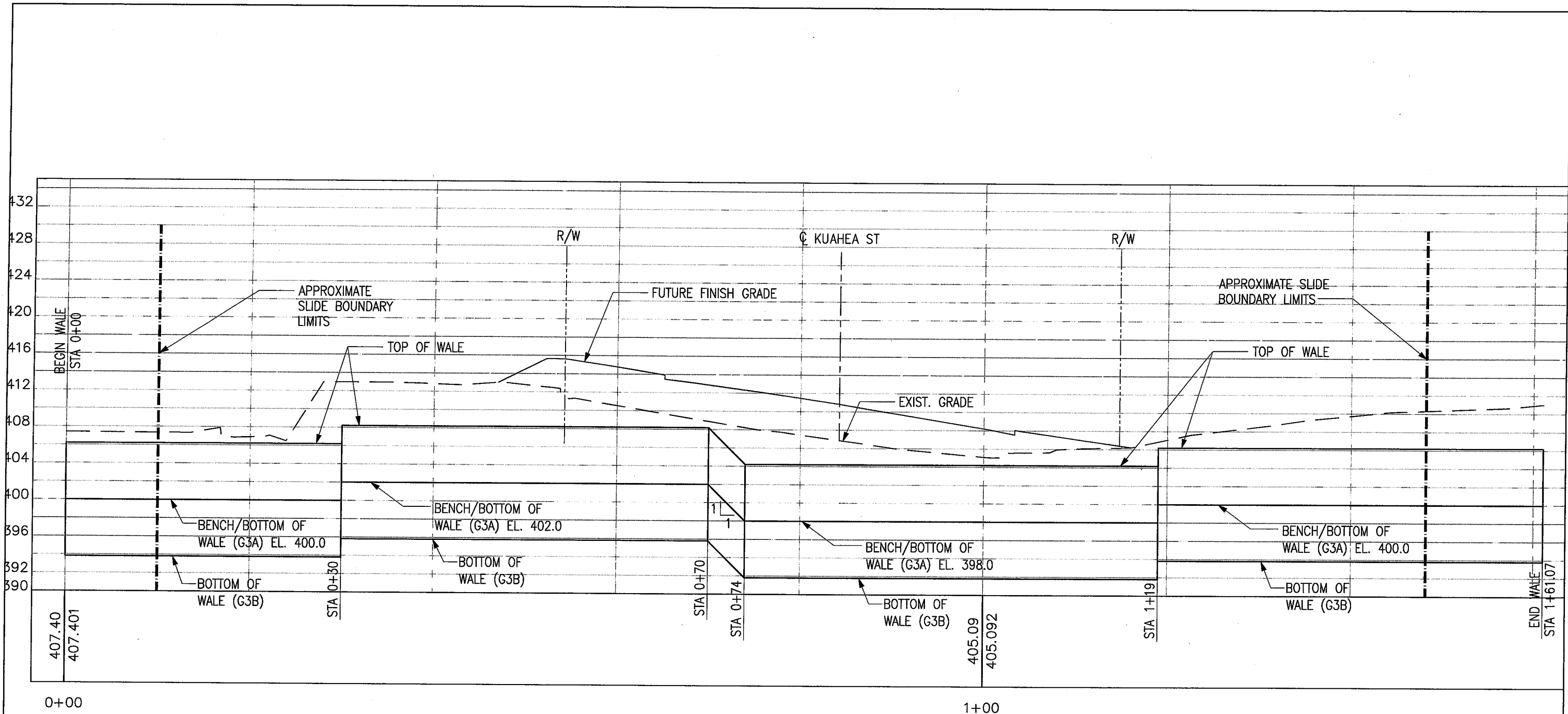


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GALLERY 3A & 3B GRADING PLAN				
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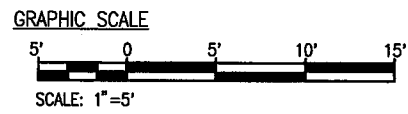
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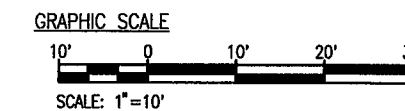
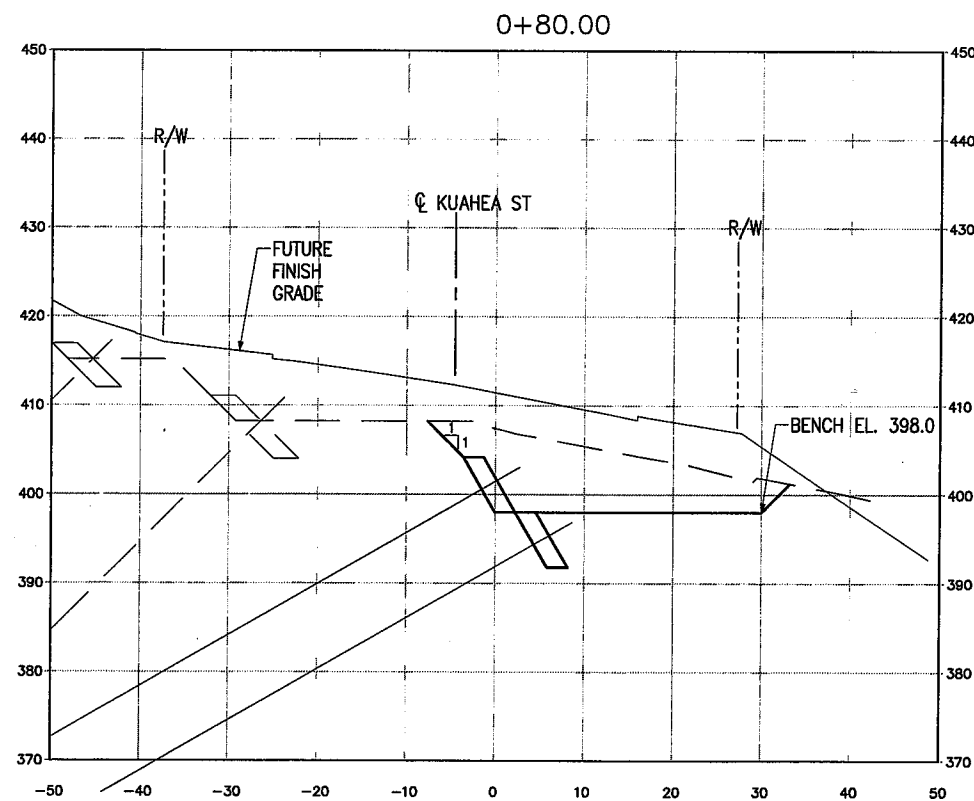
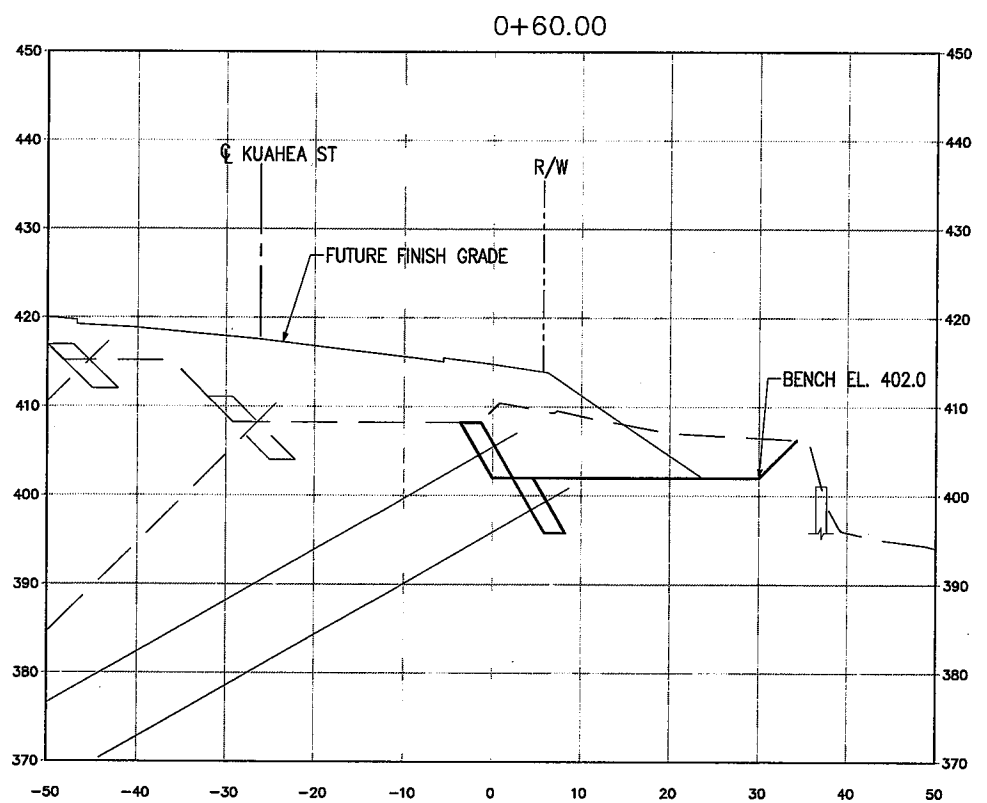
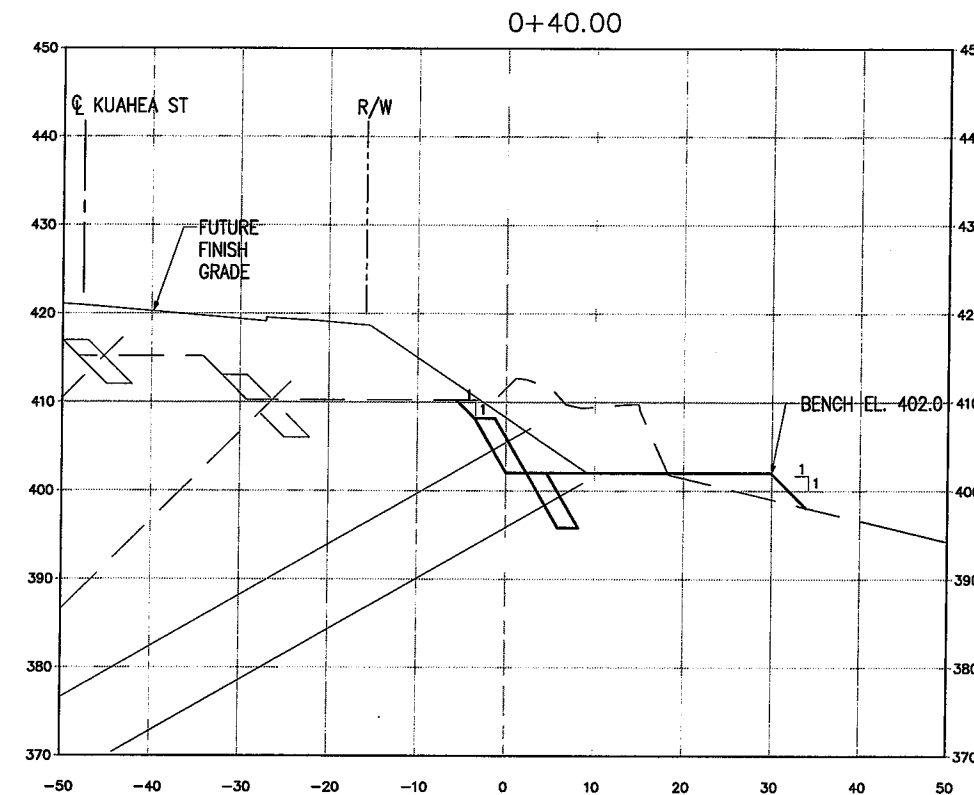
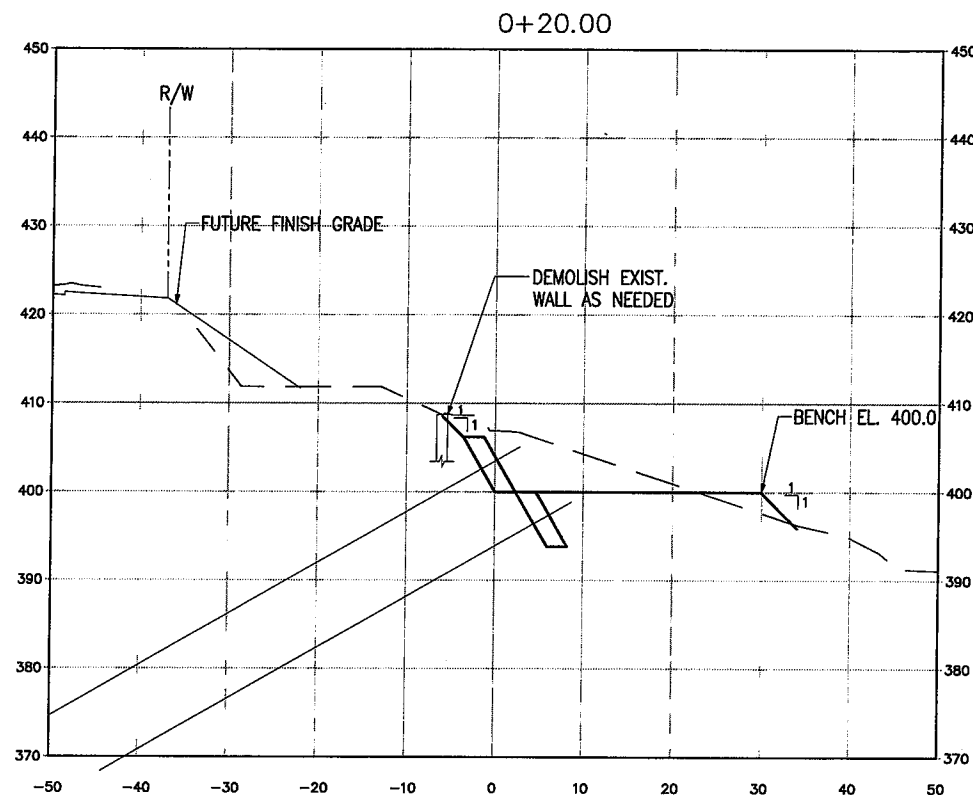
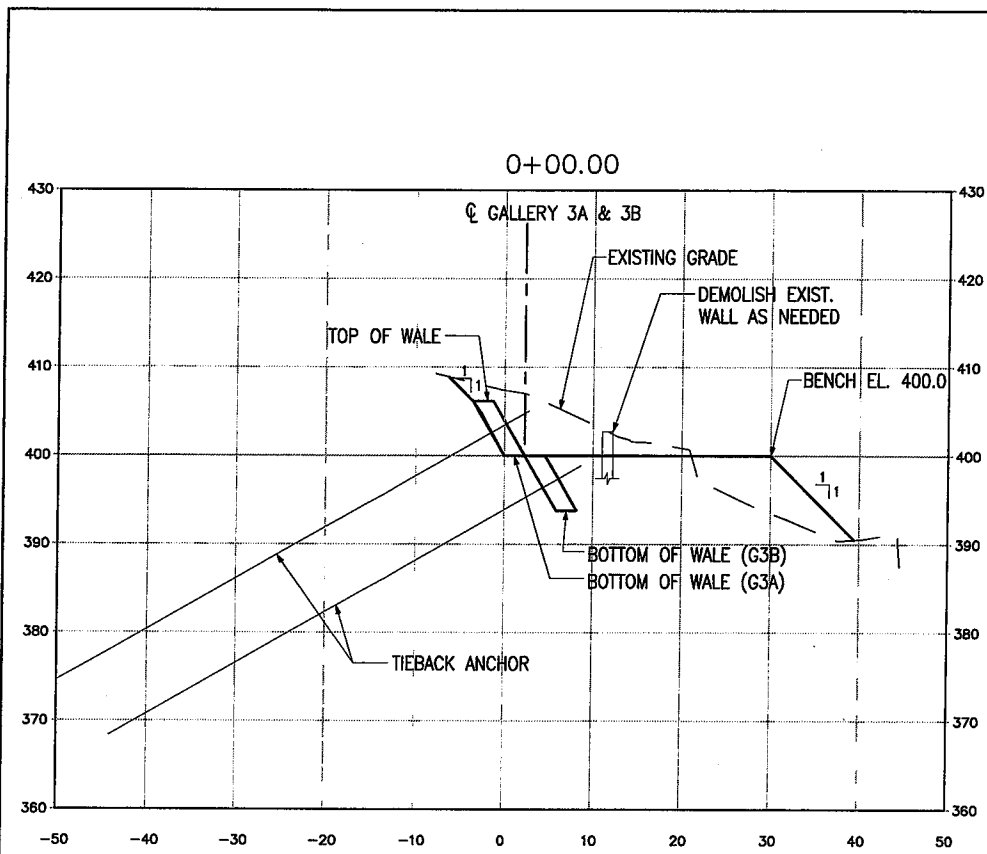
NOTE:
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GALLERY 3A & 3B ELEVATION
SCALE: 1"=5'



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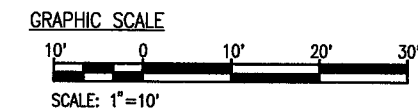
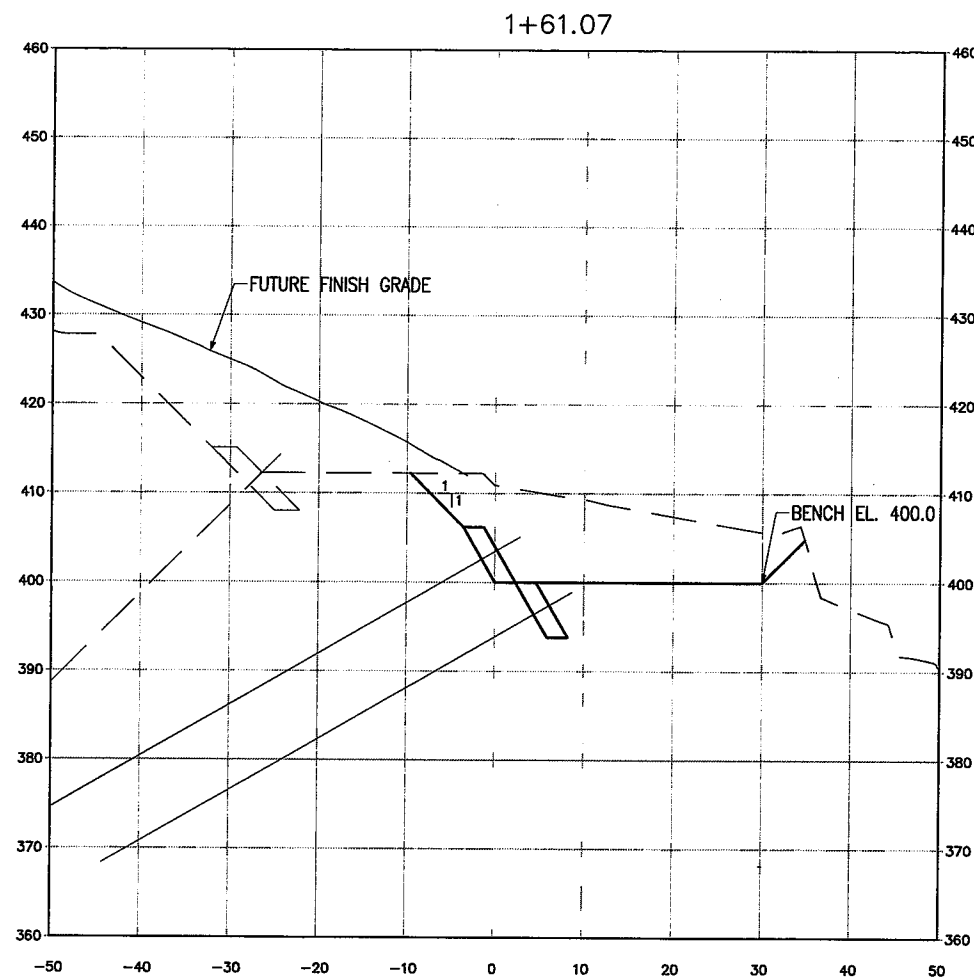
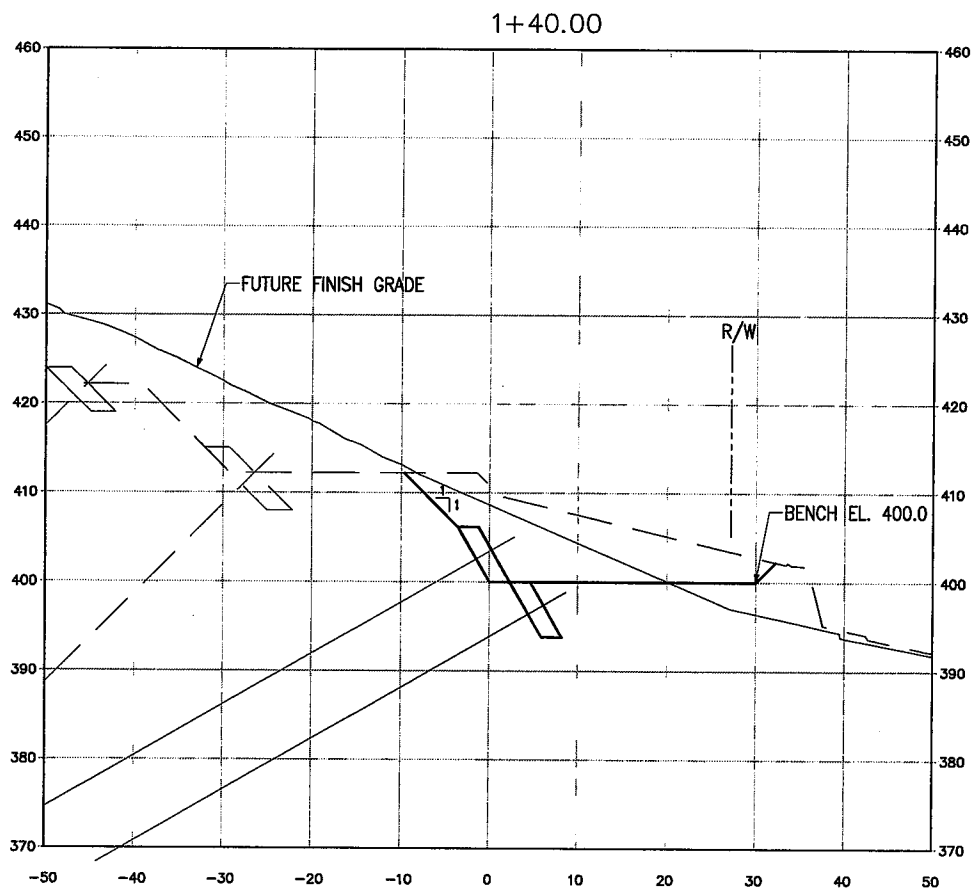
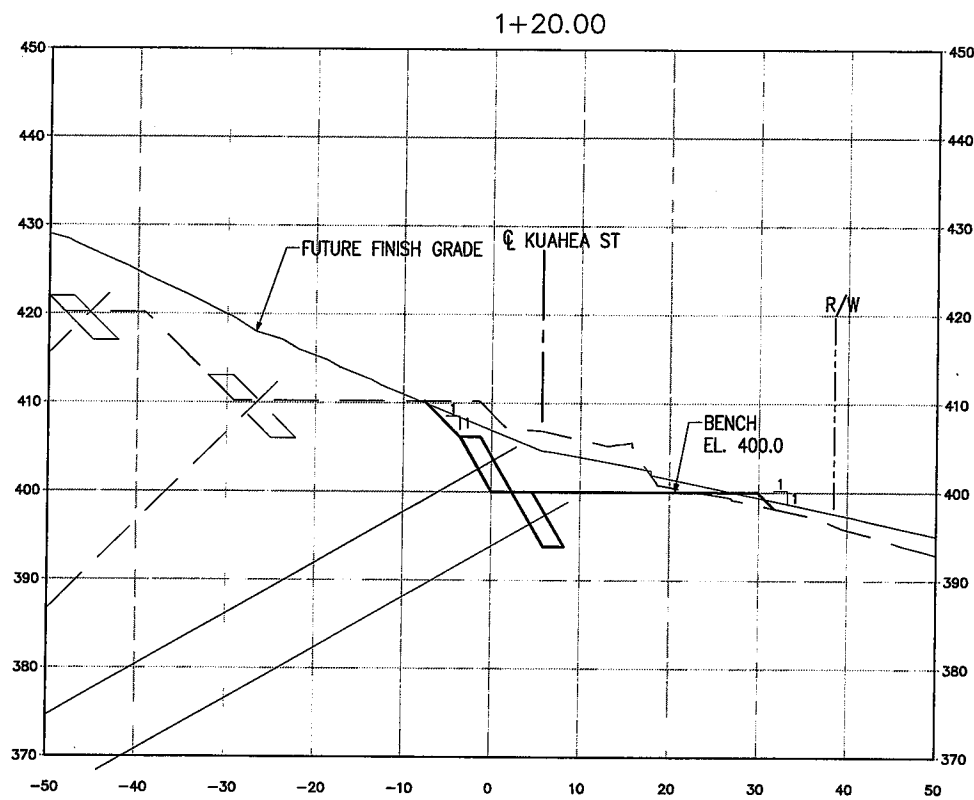
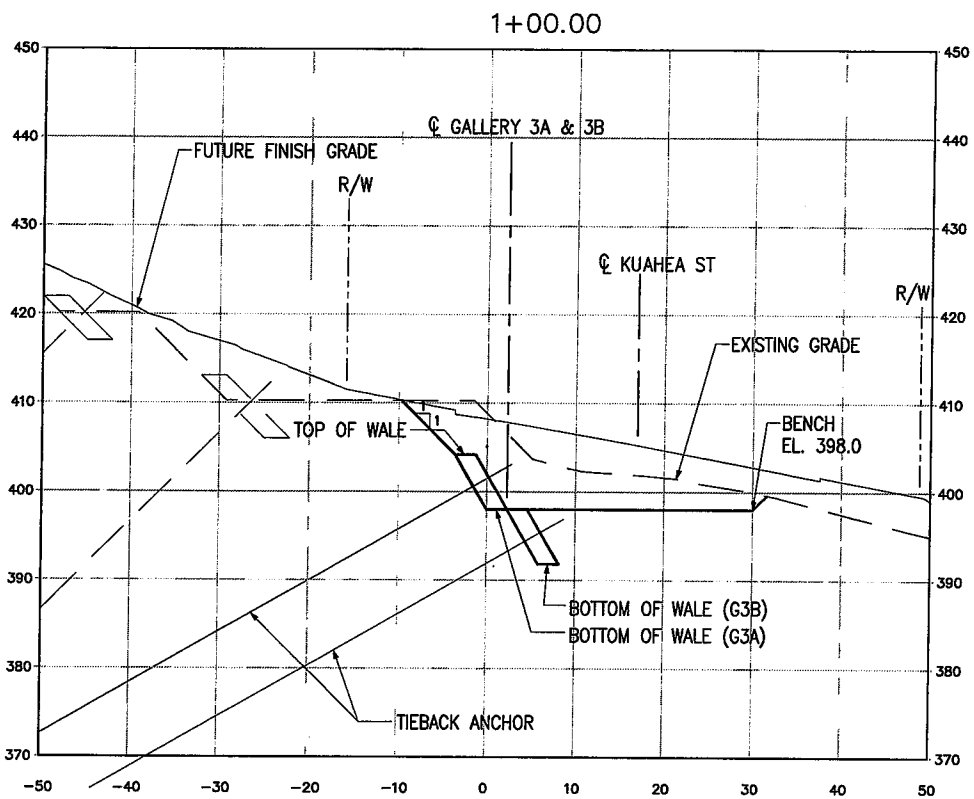
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DESIGN: LKK	APPROVED:		DRAWING NO.	
DRAWN: LKK			C-12	
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DATE: FEB 2020	CHIEF, CIVIL DIVISION, D.D.C.		DATE	
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GALLERY 3A & 3B CROSS SECTIONS				
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CHECKED: DNC			SHEET 19	
DATE: FEB 2020			OF 24 SHEETS	
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GENERAL NOTES

THIS SET OF DRAWINGS DETAILS THE CONSTRUCTION TECHNIQUES AND METHODS REQUIRED TO INSTALL THE TIEBACK ANCHORS FOR THE KUAHEA STREET AREA EMERGENCY REPAIRS PROJECT IN PALOLO VALLEY, OAHU, HAWAII. ONLY THE INFORMATION NECESSARY TO ACCOMPLISH THIS WORK IS SHOWN. REFERENCE IS MADE BACK TO THE OTHER DESIGN DRAWINGS INCLUDED IN THESE PROJECT PLANS AND SPECIFICATIONS FOR DETAILS NOT SHOWN ON THESE DRAWINGS.

MATERIAL #1: FILL/COLLUVIUM; STIFF TO VERY STIFF, HIGH PLASTICITY CLAYEY SILT TO SILTY CLAY WITH GRAVELS, COBBLES, AND BOULDERS.

- WET SOIL UNIT WEIGHT = 110 pcf
- COHESION = 0 psf
- FRICTION ANGLE = 22 degrees

MATERIAL #2: FAILURE PLANE; SOFT TO VERY STIFF, HIGH PLASTICITY CLAYEY SILT

- WET SOIL UNIT WEIGHT = 110 pcf
- COHESION = 0 psf
- FRICTION ANGLE = 22 degrees
- ULTIMATE SOIL/GROUT ADHESION = N/A (ASSUMED)

MATERIAL #3: COLLUVIUM; DENSE, CLAYEY COBBLES WITH SOME GRAVELS

- WET SOIL UNIT WEIGHT = 120 pcf
- COHESION = 0 psf
- FRICTION ANGLE = 22 degrees
- ULTIMATE SOIL/GROUT ADHESION = 26.6 PSI BOND STRESS (ASSUMED)

MATERIALS:

STEEL:
STRUCTURAL ASTM A-36 MINIMUM, PLATES TO BE 50ksi YIELD (MIN.)
REINFORCING STEEL ASTM A-615, DEFORMED GRADE 60 MINIMUM
TIEBACK STEEL, ASTM A-722, THREADBAR GRADE 150 MINIMUM OR 270ksi MULTI-STRAND TENDONS ASTM A416

CONCRETE:
SHOTCRETE f'c = 4,000 psi

CEMENT:
ASTM C-150, TYPE I-II

GROUT:
NEAT CEMENT, f'c = 4,000 psi, W/C RATIO = 0.35 TO 0.40
4 GALLONS OF WATER PER 94 LB. SACK

ADMIXTURES:
0.33 LBS PER 94 LB BAG OF SPECRETE INTRUSION-AID FG+ (WATER REDUCER) OR APPROVED EQUAL
3-6 LBS. PER 94 LB BAG OF MASTERROC FLC 100 (NON-SHRINK ADDITIVE) OR APPROVED EQUAL
1 OZ. PER 94 LB BAG CORTEC MCI 2005 NS (CORROSION INHIBITOR) OR APPROVED EQUAL

MEMBERS OR DETAILS MAY BE SUBSTITUTED FOR EQUIVALENT OR BETTER, AS APPROVED BY A SCHNABEL ENGINEER, AND THE CITY AND COUNTY OF HONOLULU.

THE DRILL HOLE DIMENSIONS SHOWN ON THIS AND ON THE FOLLOWING SHEETS ARE INDICATED AS MINIMUM VALUES. THE ACTUAL DRILL HOLE DIAMETER AND CASING SIZES MAY VARY BASED ON THE AVAILABLE MATERIALS AT THE TIME OF ORDER. THE FINAL DRILL HOLE AND CASING SIZE WILL BE NO LESS THAN WHAT IS INDICATED IN THE PROJECT PLANS AND SPECIFICATIONS.

GENERAL CONSTRUCTION PROCEDURES

- THE GENERAL CONSTRUCTION PROCEDURES DETAILED BELOW SHOWN DEPICT THE MOST PROBABLE PROGRESSION OF THE WORK. THE CONTRACTOR MAY DEViate FROM THIS SEQUENCE OF PROCEDURES AT THEIR DISCRETION. THESE DESCRIPTIONS ARE PROVIDED TO ASSIST THE REVIEWERS IN UNDERSTANDING THE GENERAL CONCEPT OF CONSTRUCTION OF THE PROJECT.
- PRIOR TO THE START OF ANY WORK, VERIFY THE LOCATION IN PLAN AND ELEVATION OF THE EXISTING UTILITIES.
- LOCATE AND LAY OUT TIEBACK GALLERY LOCATION.
- EXCAVATE EXISTING GROUND FOR GALLERY WALE.
- TIE AND PLACE REINFORCING STEEL FOR GALLERY WALE AS SHOWN ON THESE PLANS.
- SHOTCRETE ANCHOR BLOCK.
- RE-GRADE BENCH AND INSTALL ANCHORS AS SHOWN ON THESE PLANS.
- ONCE SHOTCRETE GALLERY WALE HAS REACHED ADEQUATE STRENGTH, PERFORM ANCHOR TESTING AS SHOWN ON THESE PLANS.
- REPEAT THE ABOVE STEPS FOR THE SUBSEQUENT GALLERY WALES.

TIEBACKS:

- PRIOR TO START OF THE WORK, VERIFY LOCATION OF UTILITIES.
- A FIRM LEVEL BENCH SHALL BE USED FOR TIEBACK INSTALLATION AT EACH TIEBACK LEVEL.
- TIEBACK ANGLE AND LOCATIONS MAY BE ALTERED TO ACCOMODATE FIELD CONDITION, PROVIDED THE DESIGN LOADS ARE ADJUSTED ACCORDINGLY BY SCHNABEL'S ENGINEER AND THE CITY AND COUNTY OF HONOLULU.

PERMISSIBLE TIEBACK INSTALLATION PROCEDURES:

- STRAIGHT SHAFT**
-DRILL HOLE AT THE LOCATION INDICATED.
-INSERT A TENDON WITH CENTRALIZERS TO THE BOTTOM OF THE HOLE.
-TREMIE GROUT INSERTING THE HOSE TO THE BOTTOM OF THE DRILLED HOLE. PUMP UNTIL GROUT HAS REACHED APPROXIMATELY FIVE FEET FROM THE BOTTOM OF THE HOLE. EXTRACT HOSE GRADUALLY AS PUMPING CONTINUES UP TO THE TOP OF THE HOLE. A DEDICATED GROUT PIPE MAY BE USED AS AN ALTERNATIVE.
 - RE-GROUTABLE ANCHORS**
-DRILL HOLE AT THE LOCATION INDICATED.
-INSERT A TENDON WITH CENTRALIZERS AND A SEALED PERFORATED TUBE WITH VALVES TO THE BOTTOM OF THE HOLE.
-TREMIE GROUT HOLE WITH GROUT
-ALLOW GROUT TO HARDEN OVERNIGHT. THE FOLLOWING MORNING PUMP NEAT CEMENT GROUT THROUGH THE GROUT TUBE AT HIGH PRESSURE. REPEAT PROCEDURE AS REQUIRED. FLUSH RE-GROUT TUBE AFTER EACH GROUTING OPERATION, FOR FUTURE RE-GROUTS IF REQUIRED.
- ADEQUACY OF FIELD WELDS AT TIEBACK LOCATIONS WILL BE VERIFIED DURING THE TESTING OF EACH TIEBACK AND NO OTHER WELD TESTING PROCEDURE IS REQUIRED.

TIEBACK TESTING PROCEDURE:

THE PERFORMANCE TEST SHALL BE PERFORMED BY INCREMENTALLY LOADING AND UNLOADING THE TIEBACK IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. AT EACH INCREMENT, THE MOVEMENT AT THE END OF THE TIEBACK SHALL BE RECORDED WITH AN AMES DIAL READING 0.001", AND THE LOAD MAINTAINED UNTIL THE RATE OF MOVEMENT STABILIZES. THE INCREMENTS OF LOAD SHALL BE:
(DESIGN LOAD=DL, ALIGNMENT LOAD=AL)

AL, 0.25 DL
AL, 0.25 DL, 0.50 DL
AL, 0.25 DL, 0.50 DL, 0.75 DL
AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.20 DL
AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.33 DL
AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.20 DL, 1.5 DL
HOLD 10 MINUTES AT 1.33 DL
LOCK OFF LOAD = 1.0 DL

THE PROOF TEST SHALL BE PERFORMED BY INCREMENTALLY LOADING THE TIEBACK IN ACCORDANCE WITH THE FOLLOWING SCHEDULE. AT EACH INCREMENT OF LOAD THE MOVEMENT OF THE END OF THE TIEBACK SHALL BE RECORDED WITH AN AMES DIAL GAUGE READING TO 0.001", AND THE LOAD MAINTAINED UNTIL THE RATE OF MOVEMENT STABILIZES. THE INCREMENT SHALL BE: AL, 0.25 DL, 0.50 DL, 0.75 DL, 1.00 DL, 1.33 DL. HOLD 10 MINUTES AT 1.33 DL

LOCK OFF LOAD = 1.00 DL

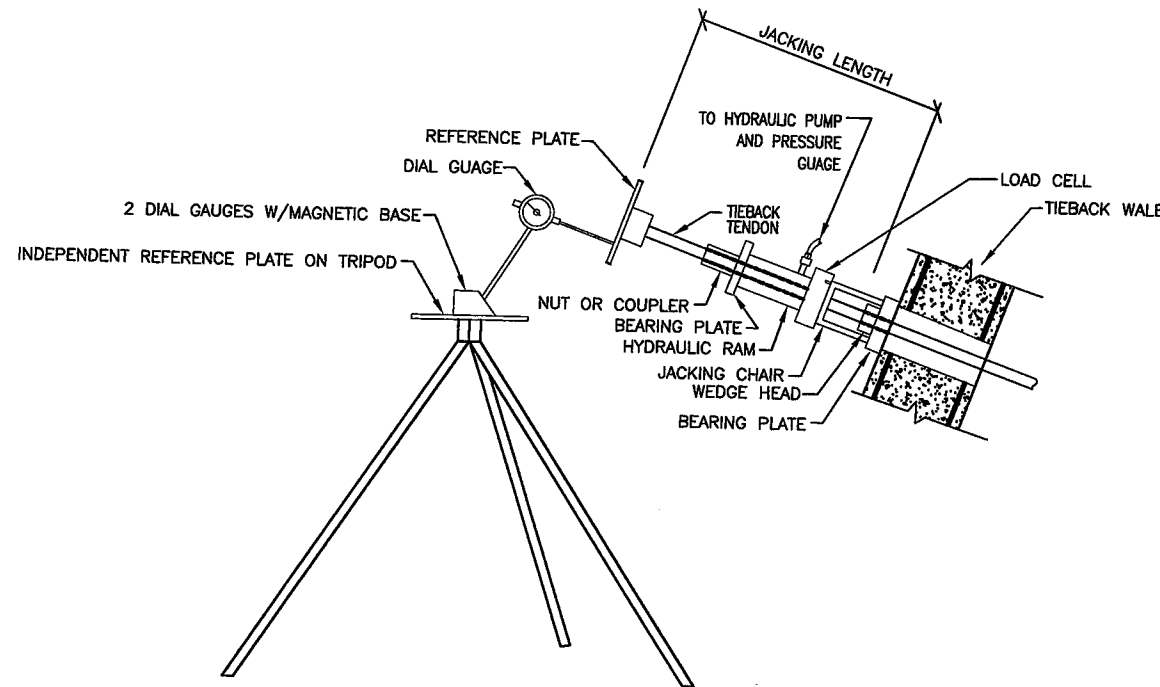
FOR THE PROOF AND PERFORMANCE TESTS, DURING THE 10 MINUTE HOLD, TOTAL MOVEMENT SHALL BE RECORDED AT 1 MINUTE, 2, 3, 4, 5, 6 AND 10 MINUTES. IF THE MOVEMENT BETWEEN 1 MINUTE AND 10 MINUTES EXCEEDS 0.04", THE TEST LOAD SHALL BE MAINTAINED FOR AN ADDITIONAL 50 MINUTES. ANCHOR MOVEMENTS SHALL BE RECORDED AT 15 MINUTES, 20, 25, 30, 40, 50 AND 60 MINUTES. A CREEP CURVE SHOWING THE CREEP MOVEMENTS BETWEEN 6 MINUTES AND 60 MINUTES SHALL BE PLOTTED AS A FUNCTION OF THE LOG OF TIME.

ANCHOR ACCEPTANCE CRITERIA:

THE TIEBACK TESTED WILL BE ACCEPTABLE IF:

- THE CREEP MOVEMENT MEASURED AT THE ANCHOR HEAD IS EQUAL TO OR LESS THAN 0.04" BETWEEN THE 1 AND 10 MINUTE HOLD. FOR A 60 MINUTE CREEP TEST, THE TIEBACK TESTING WILL BE ACCEPTABLE, IF THE CREEP CURVE INDICATES A CREEP RATE EQUAL TO OR LESS THAN 0.08" PER LOG CYCLE OF TIME BETWEEN SIX (6) AND 60 MINUTES.
- TIEBACKS SHALL BE STRESSED STRAIGHT AND TRUE.

ANY TIEBACK WHICH CANNOT BE SUCCESSFULLY TESTED TO THE LOADS REQUIRED IN THIS SCHEDULE CAN ONLY BE INCORPORATED USING (AND LOCKING OFF TO) ONE HALF OF THE LOAD WHICH IT WILL HOLD WITHOUT CONTINUOUS MOVEMENT. ADDITIONAL TIEBACKS WILL BE INSTALLED FOR THE DIFFERENCE BETWEEN THE DESIGN LOAD AND THE REDUCED CAPACITY OF THE FIRST TIEBACK.



TIEBACK TEST SETUP

N.T.S.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY AND COUNTY OF HONOLULU AND THE STATE OF HAWAII. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE APPROPRIATE AGENCIES AND DEPARTMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY APPROVALS FROM THE APPROPRIATE AGENCIES AND DEPARTMENTS.

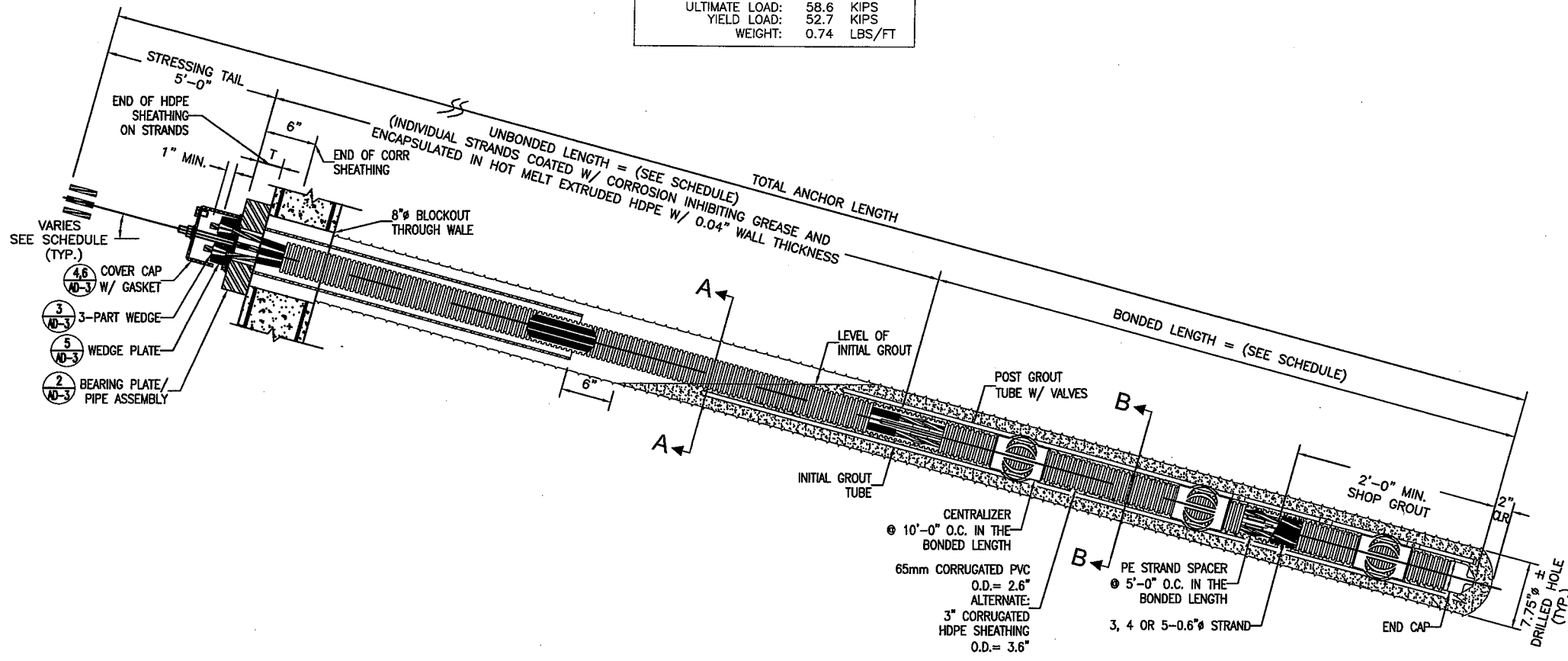


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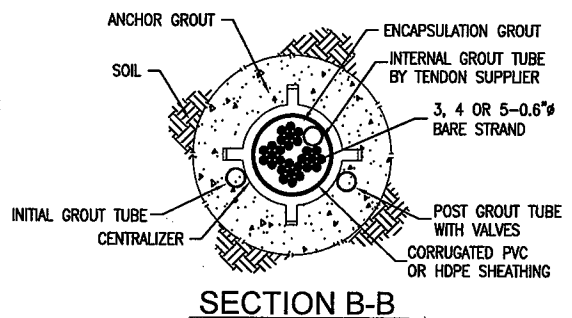
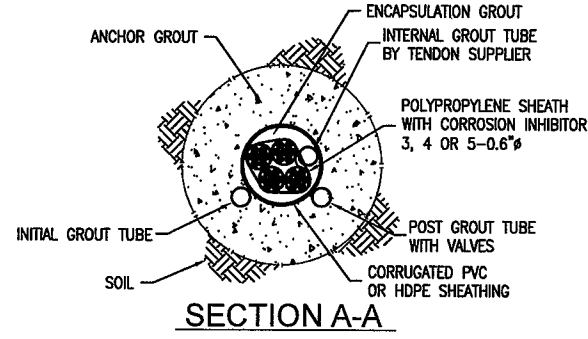
Douglas R. Jernigan
SIGNATURE
EXPIRATION DATE OF LICENSE: 4/30/20

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KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 59				
TIEBACK ANCHOR NOTES				
DESIGN: DRJ	APPROVED:			DRAWING NO. AD-1
DRAWN: KAJ				SHEET 20
CHECKED: DRJ	CHIEF, CIVIL DIVISION, D.D.C.			DATE
DATE: FEB 2020				OF 24 SHEETS
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER

PHYSICAL PROPERTIES OF 0.6" Ø STRAND - ASTM A416	
EFFECTIVE AREA:	0.217 SQ. IN.
ULTIMATE STRENGTH:	270 KSI
ULTIMATE LOAD:	58.6 KIPS
YIELD LOAD:	52.7 KIPS
WEIGHT:	0.74 LBS/FT



1 TYPICAL LONGITUDINAL SECTION
AD-2 SCALE: N.T.S.



REVISION	DATE	DESCRIPTION	ENGR.	APPROVED

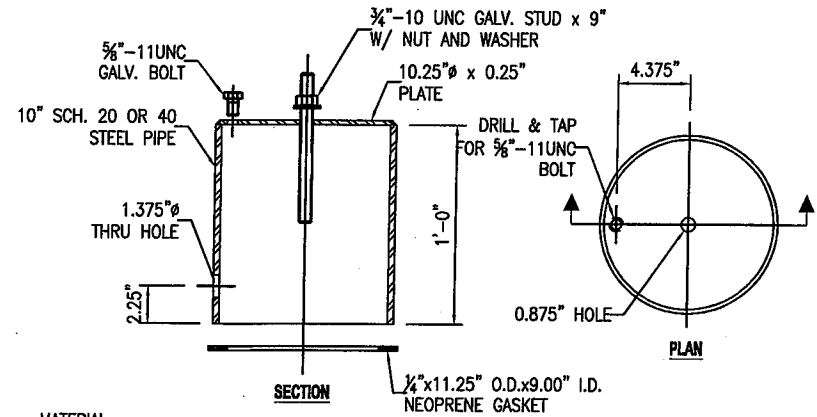
DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
CIVIL DIVISION
**KUAHEA STREET AREA EMERGENCY REPAIRS
TIEBACK ANCHORS, PHASE 1**
I.M.K. 3-4-30: 18, 48, 49 & 59

ANCHOR DETAILS 1

DESIGN: DRJ	APPROVED:	DRAWING NO. AD-2
DRAWN: KAJ	_____ DATE	SHEET 21
CHECKED: DRJ		OF 24 SHEETS
DATE: FEB 2020	CHEF, CIVIL DIVISION, D.D.C.	

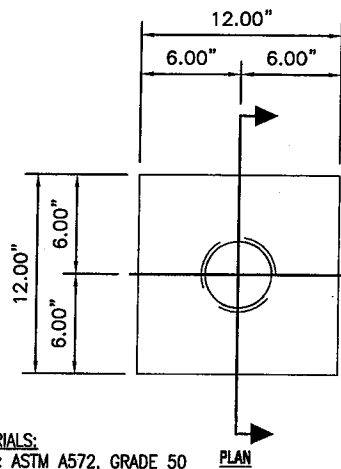


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David S. Jensen
SIGNATURE DATE: 4/30/20 EXPIRES DATE OF LICENSE



MATERIAL:
 PLATE: ASTM A36
 PIPE: ASTM A53
 GALVANIZED AFTER FABRICATION

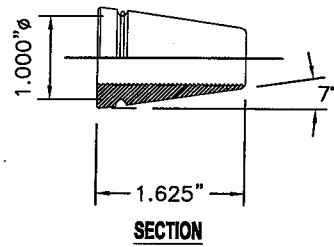
1 LOAD CELL COVER CAP DETAIL
 AD-3 SCALE: N.T.S.



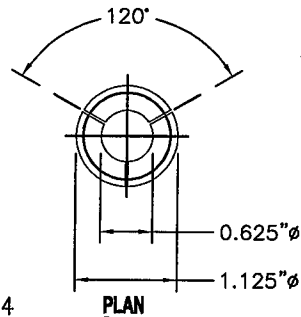
MATERIALS:
 PLATE: ASTM A572, GRADE 50
 PIPE: ASTM A53
 GALVANIZED AFTER FABRICATION

2 BEARING PLATE/PIPE ASSEMBLY
 AD-3 SCALE: N.T.S.

NO. OF STRANDS	T
3	1.50
4	1.75
5	2.00



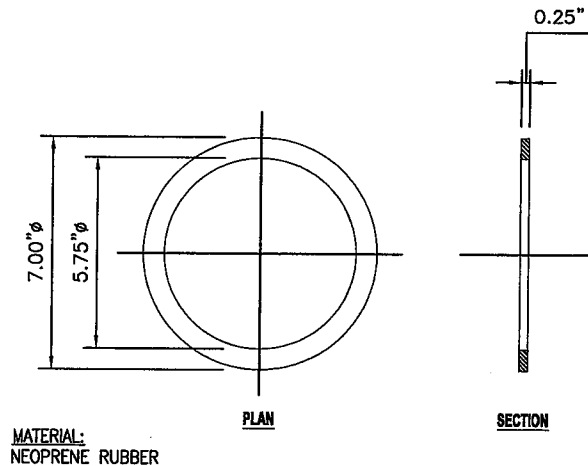
SECTION



PLAN

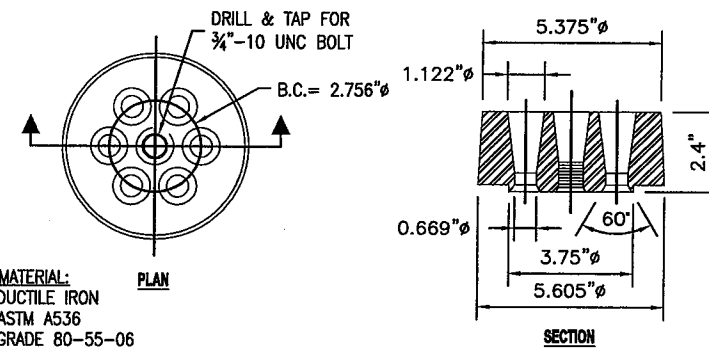
MATERIAL:
 C11L17 OR C12L14

3 3-PART WEDGE DETAIL
 AD-3 SCALE: N.T.S.



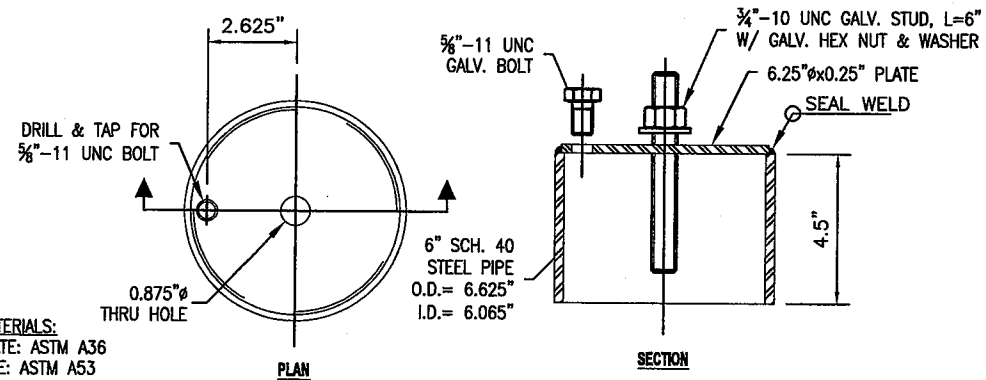
MATERIAL:
 NEOPRENE RUBBER

4 COVER CAP GASKET DETAIL
 AD-3 SCALE: N.T.S.



MATERIAL:
 DUCTILE IRON
 ASTM A536
 GRADE 80-55-06
 BHN 187/255

5 7-0.6" WEDGE PLATE DETAIL
 AD-3 SCALE: N.T.S.



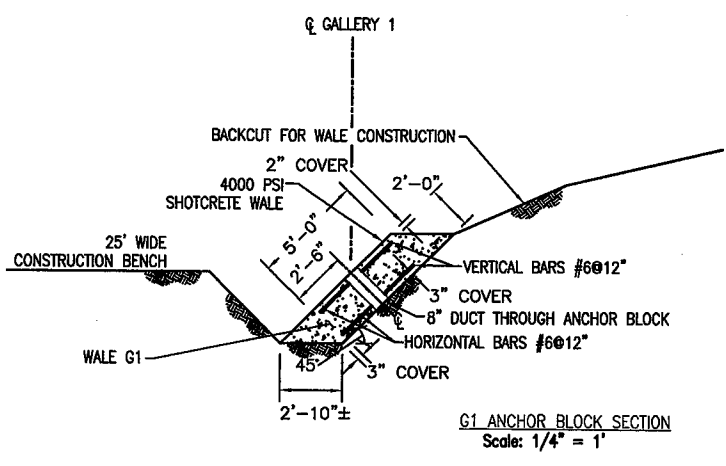
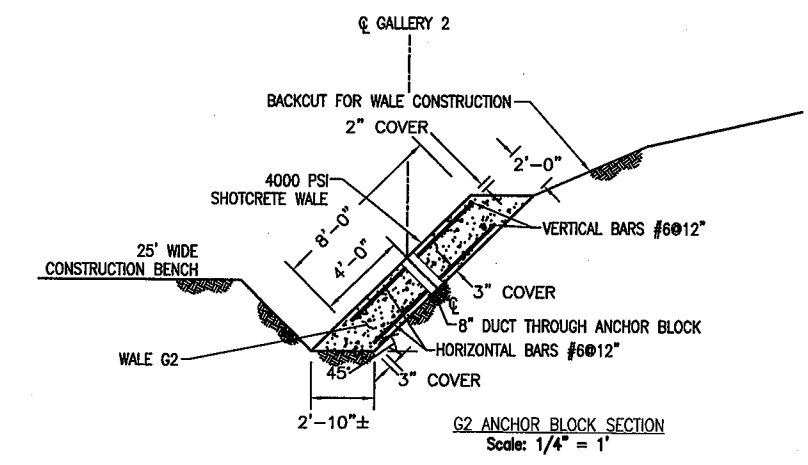
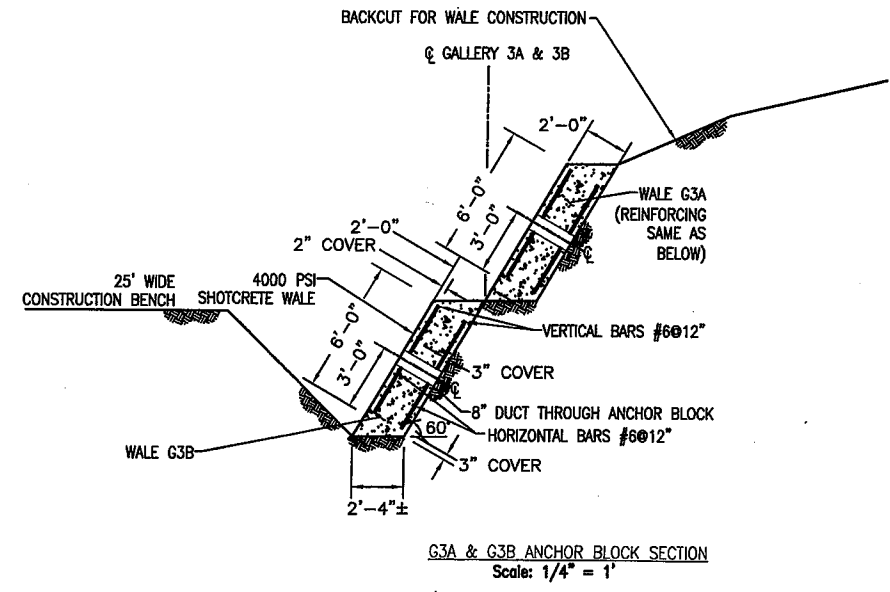
MATERIALS:
 PLATE: ASTM A36
 PIPE: ASTM A53
 GALVANIZED AFTER FABRICATION

6 COVER CAP DETAIL
 AD-3 SCALE: N.T.S.



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 DATE: 4/30/20
 SIGNATURE: [Signature]
 EXPIRATION DATE OF LICENSE:

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 50				
ANCHOR DETAILS 2				
DESIGN: DRW	APPROVED:		DRAWING NO. AD-3	
DRAWN: ISM			SHEET 22	
CHECKED: DRG			OF 24 SHEETS	
DATE: FEB 2020	CHEF, CIVIL DIVISION, D.D.C.		DATE	
PO-DDC-1900230	FILE	DRAW	FOLDER	NUMBER



ANCHOR SCHEDULE

Gallery Number	Gallery Length ft.	Number of Anchors ea.	Design Load kip/lf	Anchor Spacing ft.	Design Load kips	Tieback Angle deg.	Unbonded Length, Lu min. ft.	Bonded Length, La min. ft.	Jacking Tail Length, Lj min. ft.	Total Length, Lt min. ft.	Number of 0.6" Strands ea.	Wale Height ft.	Plate Thickness in.
1	119.42	39	17.5	3	53	45	29	14	5	48	3	5	1.50
2	139.83	46	46.7	3	140	45	32	40	5	77	4	8	1.75
3A	161.07	26	29.2	6	175	30	35	50	5	90	5	6	2.00
3B	161.07	26	29.2	6	175	30	30	50	5	85	5	6	2.00

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED

DEPARTMENT OF DESIGN AND CONSTRUCTION
 CITY AND COUNTY OF HONOLULU
 CIVIL DIVISION

**KUAHEA STREET AREA EMERGENCY REPAIRS
 TIEBACK ANCHORS, PHASE 1**
 T.M.K. 3-4-30: 18, 48, 49 & 59

ANCHOR BLOCK DETAILS AND SCHEDULE

DESIGN: DRG	APPROVED:	DRAWING NO. AD-4
DRAWN: BMM	CHIEF, CIVIL DIVISION, D.D.C.	SHEET 23
CHECKED: DRG		OF 24 SHEETS
DATE: FEB 2020	DATE	

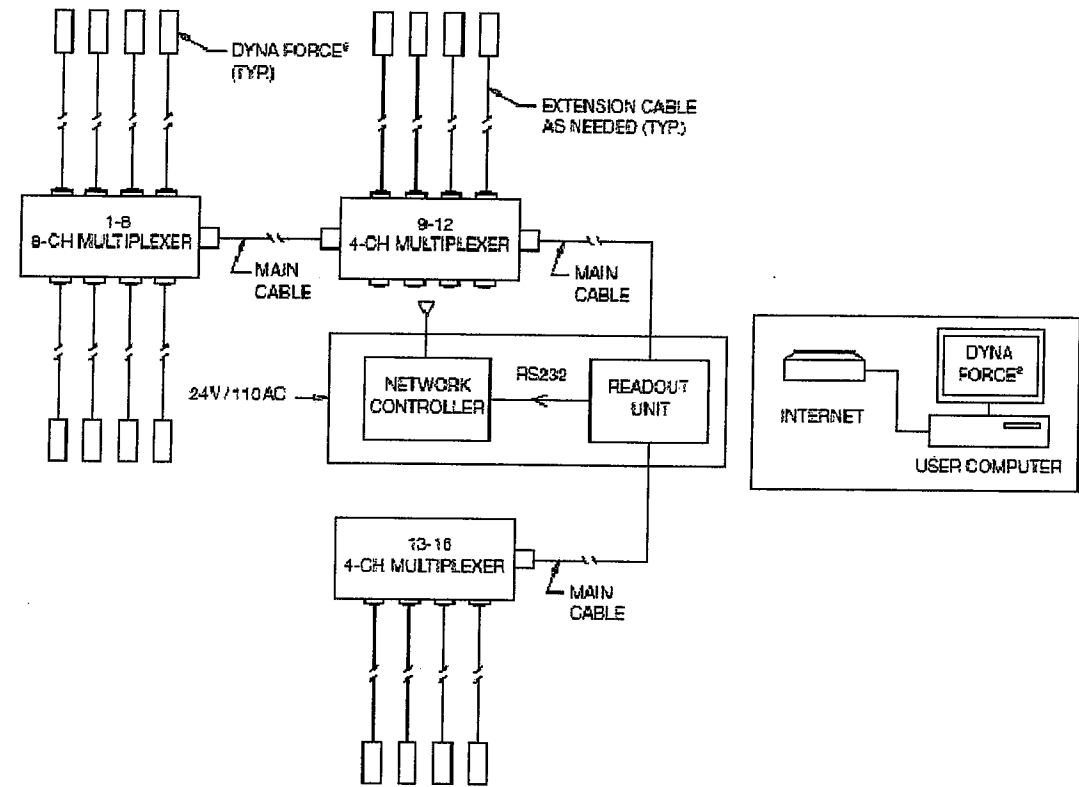
PO-DDC-1900230 FILE DRAW FOLDER NUMBER



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D. Jensen 4/30/20
 SIGNATURE EXPIRATION DATE OF LICENSE

ALL DIMENSIONS TO CENTER UNLESS OTHERWISE NOTED. SEE DRAWING 19-00000-01 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-02 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-03 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-04 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-05 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-06 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-07 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-08 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-09 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-10 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-11 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-12 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-13 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-14 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-15 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-16 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-17 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-18 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-19 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-20 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-21 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-22 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-23 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-24 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-25 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-26 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-27 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-28 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-29 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-30 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-31 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-32 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-33 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-34 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-35 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-36 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-37 FOR TIEBACK ANCHOR SCHEDULE. 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SEE DRAWING 19-00000-95 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-96 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-97 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-98 FOR TIEBACK ANCHOR DETAILS. SEE DRAWING 19-00000-99 FOR TIEBACK ANCHOR SCHEDULE. SEE DRAWING 19-00000-100 FOR TIEBACK ANCHOR DETAILS.



1 SYSTEM SCHEMATIC
AD-5 SCALE: N.T.S.

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 OR UNDER MY SUPERVISION.
 CONSTRUCTION OF THIS PROJECT
 WILL BE UNDER MY OBSERVATION.
 Signature: *D.S.D.* 4/30/20
 EXPIRES DATE OF LICENSE

REVISION	DATE	DESCRIPTION	ENGR.	APPROVED
DEPARTMENT OF DESIGN AND CONSTRUCTION CITY AND COUNTY OF HONOLULU CIVIL DIVISION				
KUAHEA STREET AREA EMERGENCY REPAIRS TIEBACK ANCHORS, PHASE 1 T.M.K. 3-4-30: 18, 48, 49 & 50				
INSTRUMENTATION DETAILS				
DESIGN: DRJ	APPROVED:		DRAWING NO.	
DRAWN: KAJ			AD-5	
CHECKED: DRJ			SHEET 24	
DATE: FEB 2020	CHIEF, CIVIL DIVISION, D.D.C.	DATE	OF 24 SHEETS	
PD-DDC-1900230	FILE	DRAW	FOLDER	NUMBER