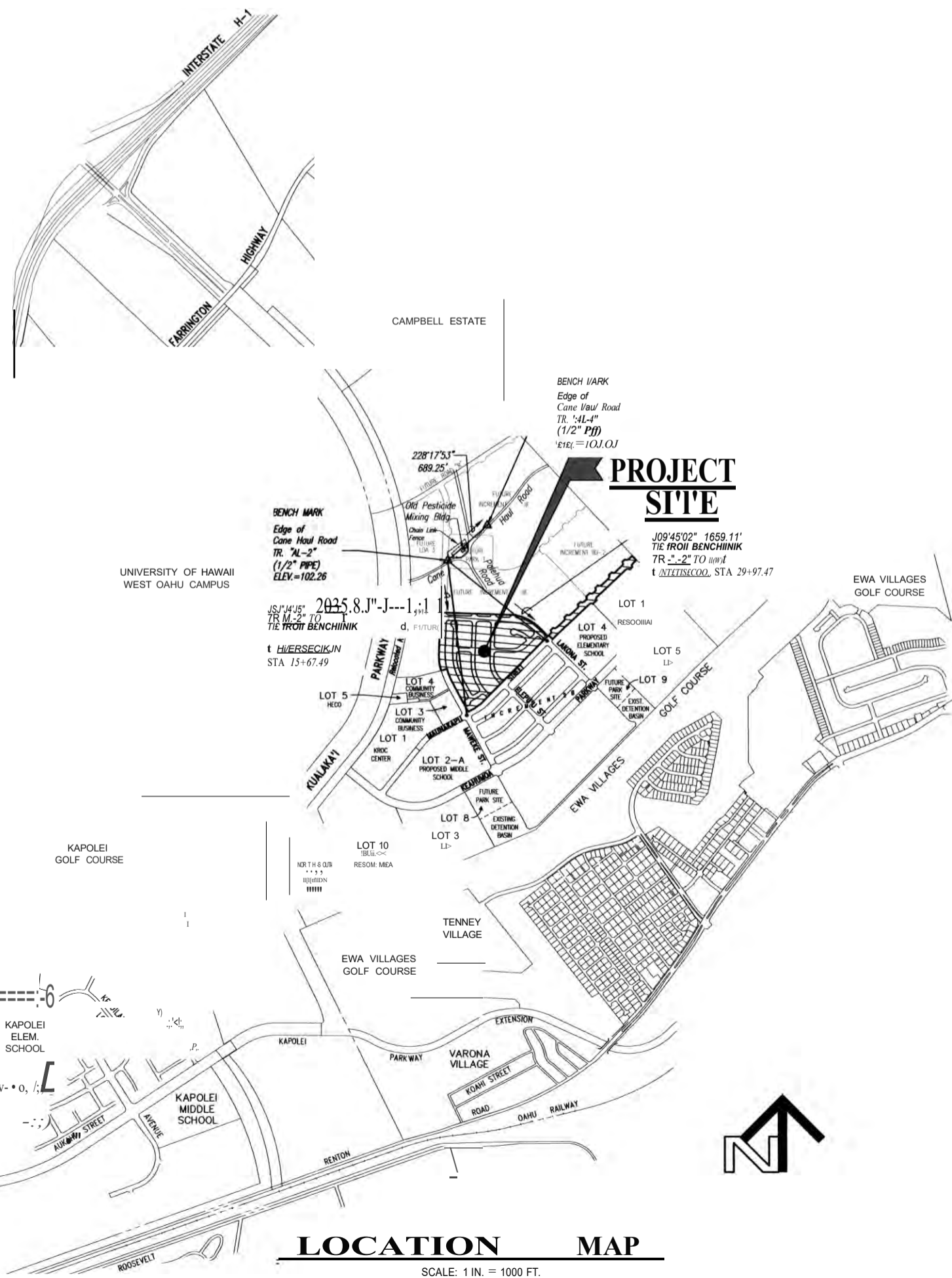




VICINITY MAP

SCALE: 1/4" = 1 MILE



LOCATION MAP

SCALE: 1 IN. = 1000 FT.

CONSTRUCTION PLANS FOR EAST KAPOLEI II DEVELOPMENT INCREMENT 2C

HONOULIULI, EWA, OAHU, HAWAII

(OPP SUBD. FILE NO. 2019/SUB-171)

OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEY: 9-1-17: Portion 161



Community Planning and Engineering, Inc.

1288 E. Enwa Street, Honolulu, HI 96814

INDEX TO DRAWINGS

SHT. NO.	DWG. NO.	DESCRIPTION
1	T-1	TITLE SHEET
2-5	C-1 THRU C-4	GENERAL NOTICES
6-11	C-5 THRU C-10	GRADING PLANS
12	C-11	PROFILE - WALL "B"
13-15	C-12 THRU C-14	GENERAL LAYOUT PLANS
16	C-15	EROSION AND SEDIMENT CONTROL PLAN
17	C-16	EROSION AND SEDIMENT CONTROL NOTICES
18	C-17	TEMPORARY SEDIMENT BASIN DETAIL
19	C-18	POST CONSTRUCTION BMP PLAN
20	C-19	TYPICAL ROADWAY SECTIONS
21	C-20	PLAN AND PROFILE - ROAD "A"
22	C-21	PLAN AND PROFILE - ROAD "B"
23	C-22	PLAN AND PROFILE - ROAD "C"
24	C-23	PLAN AND PROFILE - ROAD "C1" & ROAD "M"
25-26	C-24 & C-25	PLAN AND PROFILE - ROAD "D"
27-28	C-26 & C-27	PLAN AND PROFILE - ROAD "E"
29	C-28	PLAN AND PROFILE - ROAD "F"
30	C-29	PLAN AND PROFILE - ROAD "F1" & "F3"
31	C-30	PLAN AND PROFILE - ROAD "F2"
32-34	C-31 THRU C-33	PLAN AND PROFILE - INTERSECTIONS
35	C-34	PLAN AND PROFILE - DRAINLINE "G"
36-38	C-35 THRU C-37	CURB RETURNS
39	C-38	TYPICAL CURB RAMP DETAILS
40-48	C-39 THRU C-47	CURB RAMP DETAILS
49-51	C-48 THRU C-50	TRAFFIC SIGNS AND PAVEMENT MARKING PLAN
52	C-51	TRAFFIC SIGNS AND PAVEMENT MARKING DETAILS
53-54	C-52 & C-53	FIRE HYDRANT PROFILES
55	C-54	SEWER LINE STATIONING
56-63	S-1 THRU S-8	STRUCTURAL SHEETS
64-89	E-1 THRU E-26	ELECTRICAL PLANS
90-101	L-1 THRU L-12	STREET TREE AND DETAILS
102-109	CP-1 THRU CP-8	CATHODIC PROTECTION PLANS

APPROVED

[Signature]
 CHAIRMAN, HAWAIIAN HOME LANDS COMMISSION
 DEPARTMENT OF HAWAIIAN HOME LANDS
 STATE OF HAWAII
 DATE: 3/23/22

[Signature]
 DIRECTOR, DEPARTMENT OF PLANNING AND PERMITTING
 CITY & COUNTY OF HONOLULU
 DATE: 4/20/2022

[Signature]
 REGISTERED PROFESSIONAL ENGINEER, BOARD OF WATER SUPPLY "6"
 CITY & COUNTY OF HONOLULU
 (FOR WORK AFFECTING BWS FACILITIES IN CITY/STATE
 RIGHT-OF-WAY AND BWS EASEMENTS ONLY)
 DATE: MAR 11 2022

[Signature]
 CHIEF, ENVIRONMENTAL MANAGEMENT DIVISION
 DEPARTMENT OF HEALTH, STATE OF HAWAII
 DATE: 4-7-2022

CONSTRUCTION NOTES

- 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 MAUI AND HAWAII.
- THE UNDERGROUND PIPES, CABLES OR UTILITIES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH 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 UTILITIES AT THE PROPOSED CONNECTIONS TO VERIFY THEIR LOCATIONS AND DEPTHS PRIOR TO EXCAVATION FOR THE NEW LINES.
- NO CONTRACTOR SHALL PERFORM ANY CONSTRUCTION OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL OR OBJECTS IN ANY FORM TO FALL, SLIDE OR ROLL INTO EXISTING CITY OR PRIVATE SYSTEMS, ALL OWNERS' PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH CONDITIONS OCCUR, THE CONTRACTOR MAY BE ORDERED AND THE CONTRACTOR SHALL IMMEDIATELY MAKE ANY REMEDIAL ACTIONS NECESSARY.
- THE GENERAL CONTRACTOR/DEVELOPER/OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR CONFORMANCE WITH APPLICABLE PROVISIONS OF THE 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 GENERAL CONTRACTOR/DEVELOPER/OWNERS OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT CHARGE ELIMINATION SYSTEM (NPDES) PERMITS FOR THE FOLLOWING:

- STORM WATER CHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE (1) ACRE OR MORE AND
 - CHARGES OF HYDROTIC EFFLUENT, DETERGENT EFFLUENT, AND WASHING EFFLUENT TO STATE WATERS.
- IN ACCORDANCE WITH STATE LAW, ALL CHARGES RELATED TO 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 CHARGE OF SEDIMENT, OILS, AND OTHER POLLUTANTS TO STATE WATERS. PERMITS AVAILABLE FROM THE DEPARTMENT OF HEALTH, CLEAN WATER BRANCH AT [HTTP://HEALTH.HAWAII.GOV/CWB](http://health.hawaii.gov/cwb). THE OWNER/DEVELOPER/CONTRACTOR IS RESPONSIBLE FOR OBTAINING OTHER FEDERAL, STATE, OR LOCAL AUTHORIZATIONS AS REQUIRED BY LAW.
- FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CML ENGINEERING BRANCH, O.P.P. AT 768-8084 TO ARRANGE FOR INSPECTORIAL SERVICES AND SUBMIT THE (2) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTORIAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.
 - FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL SUBMIT A SUBSTITUTION REQUEST TO REQUEST TO PRECAST ANY CITY OWNED AND/OR MAINTAINED DRAINAGE STRUCTURE (EX. CATCH BASINS, DRAIN MANHOLES, DRAIN INLETS, CULVERTS, ETC). HOWEVER, PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL (A) SUBMIT SIX (6) SETS OF SHOP DRAWINGS TO THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AND OBTAIN WRITTEN APPROVAL AND (B) NOTIFY THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 TO ARRANGE FOR INSPECTORIAL SERVICES. NON-COMPLIANCE WITH ANY OF THESE REQUIREMENTS SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST CONSTRUCTION WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED. FOR CITY PROJECTS, THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE RESPONSIBLE CITY AGENCY FOR REVIEW AND APPROVAL. ALSO, THE CONTRACTOR SHALL COORDINATE INSPECTORIAL SERVICES WITH THE RESPONSIBLE CITY AGENCY.

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

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 THREE (3) PERSONNEL
- B. BELTLINE AND ASSOCIATED CUPS.
- C. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT.
- D. 90-DEGREE (WALKIE-TALKIE) IF OUT OF LINE-OF-SIGHT.
- E. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE OPERATION).
- 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.

- CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS.
- ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (DVM, IF CONDITIONS WARRANT IT).
- PURSUANT TO CHAPTER 64, 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 CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
- FOR PROJECTS ABUTTING STATE HIGHWAYS -S RIGHTS-OF-WAY, THE OWNER OR HIS AUTHORIZED REPRESENTATIVE SHALL NOTIFY THE STATE DEPARTMENT OF TRANSPORTATION, HIGHWAYS -S DIVISION, OAHU DISTRICT, ORANAIANE SCHRIEGEL UNIT AT 831-6793 FOR AN ASSESSMENT OF STATE HIGHWAYS -S PERMITS REQUIREMENTS.
- FOR BENCH MARK, SEE OWG, NO. T-1.

ARCHAEOLOGICAL NOTE

IF DURING CONSTRUCTION, ANY PREVIOUSLY UNOBTAINED SITES OR REMAINS (SUCH AS ARTIFACTS, SHELL BONE, OR CHARCOAL DEPOSITS, HUMAN BONES, ROCK OR CORAL ALIGNMENTS, PAVINGS, OR WALLS) ARE ENCOUNTERED, THE APPLICANT SHALL STOP WORK AND CONTACT THE HONOLULU POLICE DEPARTMENT AND THE STATE OLNR HISTORIC SITES OFFICE AT 692-8015 IMMEDIATELY. IN ADDITION, FOR NON-CITY PROJECTS, THE APPLICANT SHALL INFORM THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY. WORK IN THE IMMEDIATE AREA SHALL BE STOPPED UNTIL THE OFFICE IS ABLE TO ASSESS THE IMPACT AND MAKE FURTHER RECOMMENDATIONS FOR MITIGATION ACTIVITY.

NOTES FOR PUBLIC HEALTH, SAFETY AND CONVEYANCE

- 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.
- THE CONTRACTOR AT HIS OWN EXPENSE SHALL KEEP THE PROJECT AND ITS SURROUNDING AREAS FREE FROM OBSTACLES. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. CONTRACTOR SHALL BE IN CONFORMANCE WITH THE HAWAII ADMINISTRATIVE RULES, CHAPTER 11-60.1-33.
- THE CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, BARRICADES, MARKERS, CONES AND OTHER PROTECTIVE FACILITIES AND TAKE ALL NECESSARY PRECAUTIONS FOR THE PROTECTION, COMFORT AND SAFETY OF THE PUBLIC.
- THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER UPON DISCOVERY OF STAINED SOIL OR FACTORY EVIDENCE OF A SUSPECTED PETROLEUM OR SOLVENT RELEASE INTO THE ENVIRONMENT. IF THERE ARE ANY FUEL SPILLS, EXISTING LEAKS, ETC. FOUND DURING CONSTRUCTION, REPORT THE FOREGOING TO THE HAZARDOUS EVALUATION AND EMERGENCY RESPONSE UNIT (PH. NO. 586-4249) OR THE DEPARTMENT OF HEALTH. FOR NON-WORKING HOURS, CALL THE STATE HOSPITAL OPERATOR (PH. NO. 247-2191).

TRAFFIC NOTES FOR WORK ON STATE & COUNTY STREETS AND HIGHWAYS

- A PERMIT SHALL BE OBTAINED FROM THE DEPARTMENT OF TRANSPORTATION SERVICES BEFORE WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. CONSTRUCTION TRAFFIC CONTROL PLANS APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES AND/OR THE DEPARTMENT OF PLANNING AND PERMITTING MUST BE PROVIDED WHEN APPLYING FOR THE PERMIT.
- 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 -S ADOPTED BY THE DIRECTOR OF TRANSPORTATION, AND THE CURRENT U.S. FEDERAL HIGHWAYS -S ADMINISTRATION'S MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS, PART VI - TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS.
- WORK ON ANY CITY STREET AREA MAY BE PERFORMED ONLY BETWEEN THE HOURS OF 8:30 AM. TO 3:30 P.M., MONDAY THROUGH FRIDAY, UNLESS OTHERWISE PERMITTED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- DURING WORKING HOURS, THE CONTRACTOR SHALL PROVIDE FOR THROUGH TRAFFIC. DURING NON-WORKING HOURS, ALL TRENCHES SHALL BE COVERED WITH A SAFE NON-SLIP BRIDGING MATERIAL AND ALL LANES SHALL BE OPEN TO TRAFFIC.
- AS REQUIRED BY THE DEPARTMENT OF TRANSPORTATION SERVICES, THE CONTRACTOR SHALL PROVIDE OFF-DUTY POLICE OFFICERS TO CONTROL THE RIGHT-OF-WAY OF TRAFFIC.
- 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.
- ORMWAYS SHALL BE KEPT OPEN UNLESS THE OWNERS OF THE PROPERTY USING THESE RIGHTS-OF-WAY ARE OTHERWISE PROVIDED FOR SATISFACTORILY.
- 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 HIS ACTIVITIES.
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084 ONE (1) WEEK PRIOR TO ANY WORK BEING DONE ON SIGNS, POSTS AND PAVEMENT MARKINGS.
- NO EQUIPMENT SHALL BE STORED WITHIN STREET RIGHTS-OF-WAY EXCEPT AT LOCATIONS DESIGNATED IN WRITING AND APPROVED BY THE DEPARTMENT OF TRANSPORTATION SERVICES.
- THE DEPARTMENT OF HAWAIIAN HOME LANDS SHALL ENSURE THAT THE CONTRACTOR INSTALLS THE CONSTRUCTION TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCO AND THE HAWAII ADMINISTRATIVE RULES AS SPECIFIED IN TRAFFIC NOTE 7.

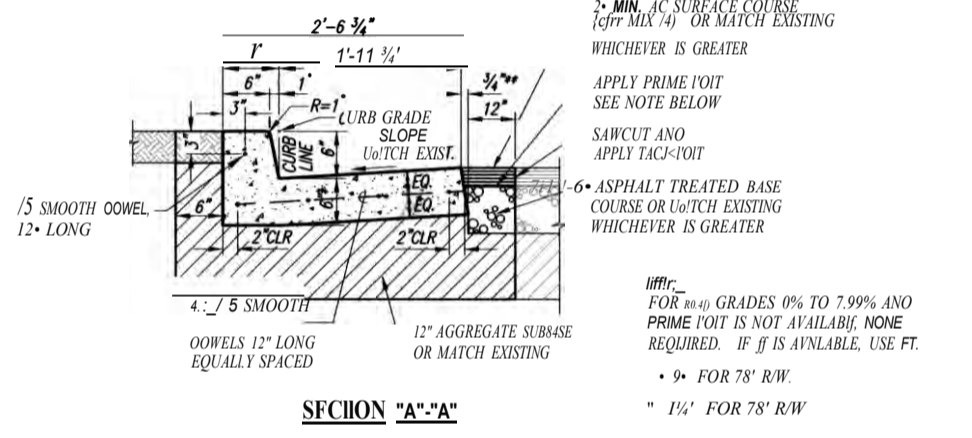
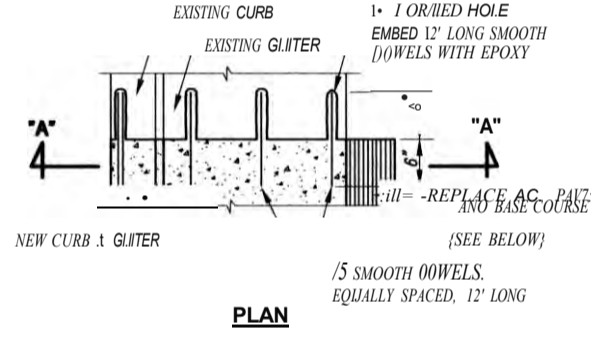
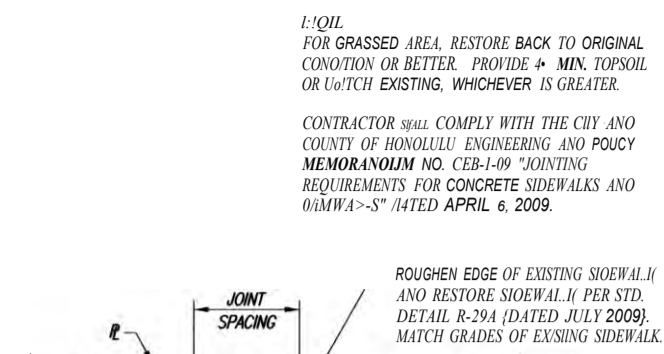
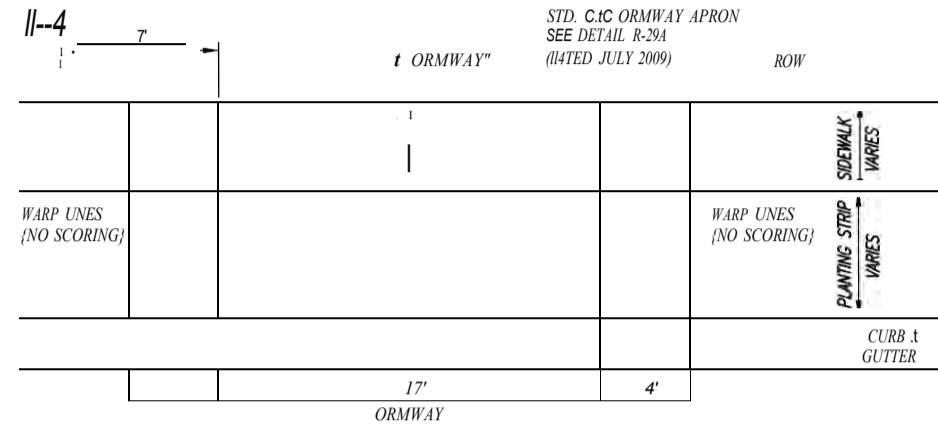
TRAFFIC SIGNALS AND TECHNOLOGY DIVISION NOTES

- THE CONTRACTOR SHALL NOTIFY THE TRAFFIC SIGNALS AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, THREE (3) WORKING DAYS PRIOR TO COMMENCING WORK ON THE TRAFFIC SIGNAL SYSTEMS (PHONE: 768-8387).
- THE TRAFFIC SIGNAL SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE TRAFFIC SIGNALS AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES, AND PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE EXISTING TRAFFIC SIGNAL FACILITIES, INCLUDING, BUT NOT LIMITED TO THE TRAFFIC SIGNAL RED OPTIC CABLE SYSTEMS AND INTERCONNECT SYSTEM, ANY AND ALL DAMAGES TO THE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT THEIR COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE TRAFFIC SIGNALS AND TECHNOLOGY DIVISION, DEPARTMENT OF TRANSPORTATION SERVICES.

DISABILITY AND COMMUNICATION ACCESS BOARD (PCAB) FE01.HMNTS

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. TEMPORARY PEDESTRIAN PASSAGEWAYS SHALL BE ACCESSIBLE AND SHALL COMPLY WITH ADOG 201.3 AND 206.1.

- LEGEND:
- SEE TYPICAL SECTIONS, OWG, NO. C-19 FOR SIDEWALK AND PLANNING STRIP WIDTHS.
 - ORMWAYS LOCATED OTHER THAN 7' FROM THE ORMWAY CENTERLINE.
 - CONTRACTOR SHALL COMPLY WITH THE CITY AND COUNTY OF HONOLULU ENGINEERING AND POLICY MEMORANDUM NO. CEB-1-09 "JOINTING REQUIREMENTS FOR CONCRETE SIDEWALKS AND ORMWAYS" DATED APRIL 6, 2009.



CLIMB AND GUTTER CONNECTION DETAIL

NOT TO SCALE

Commity Planq and Erigsleering, Inc.
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 HCIOUUUU, EWA, OAHU, HAWAII
 (DPP SUBD. FILE NO. 2019/SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

GENERAL NOTES - 1

DRAWN BY: RV ENGINEER: ES MCKEL BY:
 APPROVED: [Signature]

P:\Land Projects\DHHL East - Construction Drawings\Government Review #702-C-1-1-1-Notes-1.dwg, 1/13/2022 2:46:08 PM

WATER NOTES

- 1. UNLESS OTHERWISE SPECIFIED, ALL MATERIALS AND CONSTRUCTION OF WATER SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S WATER SYSTEM STANDARDS, DATED 2002. THE WATER SYSTEM STANDARDS CORROSION CONTROL STANDARDS, VOL. I/J, DATED 2021, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS.
2. ALL PIPES APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WATER SUPPLY.
3. UNLESS OTHERWISE SPECIFIED, ALL LATERALS AND CONNECTIONS SHALL BE COPPER TYPE 'C-1' WITH BOND METER SPUCE LENGTHS TO ACCOMMODATE EITHER CONNECTIONS.

- 35. CHLORINATION OF WATER SYSTEMS
a. THE CONTRACTOR SHALL PROVIDE A 4-WEEK ADVANCE NOTICE, IN WRITING, TO THE OWNER-IN-CHARGE FOR PROPOSED FLUSHING, RINING AND BACTERIAL TESIUNG OF THE NEW PIPELINE
b. THE CONTRACTOR SHALL HIRE A STATE OF HAWAII - DEPARTMENT OF HEALTH CERTIFIED LABORATORY TO PROVIDE WATER SAMPLING SERVICES AND TO DELIVER WATER SAMPLES TO THE MICRO LAB FOR ANALYSIS. WATER SAMPLES FOR BACTERIAL TESIUNG SHALL BE DELIVERED NO LATER THAN 2:30 P.M. ON THE DAY THE SAMPLES ARE TAKEN TO THE BOARD OF WATER SUPPLY MICROLAB LOCATED AT 630 S. BERETANIA ST., HONOLULU, HI 96843. THE MICRO LAB SHALL PERFORM ANALYSIS AND PROVIDE THEIR RESULTS TO THE OWNER-IN-CHARGE BY 4:30 P.M. ON THE FOLLOWING DAY (IN SOME CASES, FINAL RESULTS NOTIFICATION MAY TAKE UP TO 48 HOURS).

- 36. THE CONTRACTOR SHALL INSTALL ELECTRONIC MARKERS TO ALL MAINS AND TEST THE ELECTRONIC MARKERS PRIOR TO INSTALLATIONS TO VERIFY PROPER OPERATION. BOARD OF WATER SUPPLY PERSONNEL SHALL VERIFY THE NUMBER AND LOCATIONS OF PLACED ELECTRONIC MARKERS BEFORE FINAL PAVING OF THE PROJECT.
37. THE FOLLOWING CHLORINATION AND WAIFR SAMPLE COLLECTION PROCEDURE SHALL APPLY TO ALL WATER PIPELINE PROJECTS (ALL WORK TO BE COORDINATED THROUGH BOARD OF WAIFR SUPPLY INSPECTOR):
a. CHLORINATION AND WATER SAMPLE COLLECTION PROCEDURE SHALL APPLY TO ALL WATER PIPELINE PROJECTS:
i. STEP 1: CHLORINATE 1/4 IN. BY RINING WITH WATER AND INTRODUCING CHLORINE IN SUFFICIENT QUANTITY TO OBTAIN A 1/4 IN. CHLORINE CONCENTRATION OF 50 PARTS PER MILLION. LEAVE CHLORINATED WATER IN MAIN OVERNIGHT.

WATER NOTES (CONT)

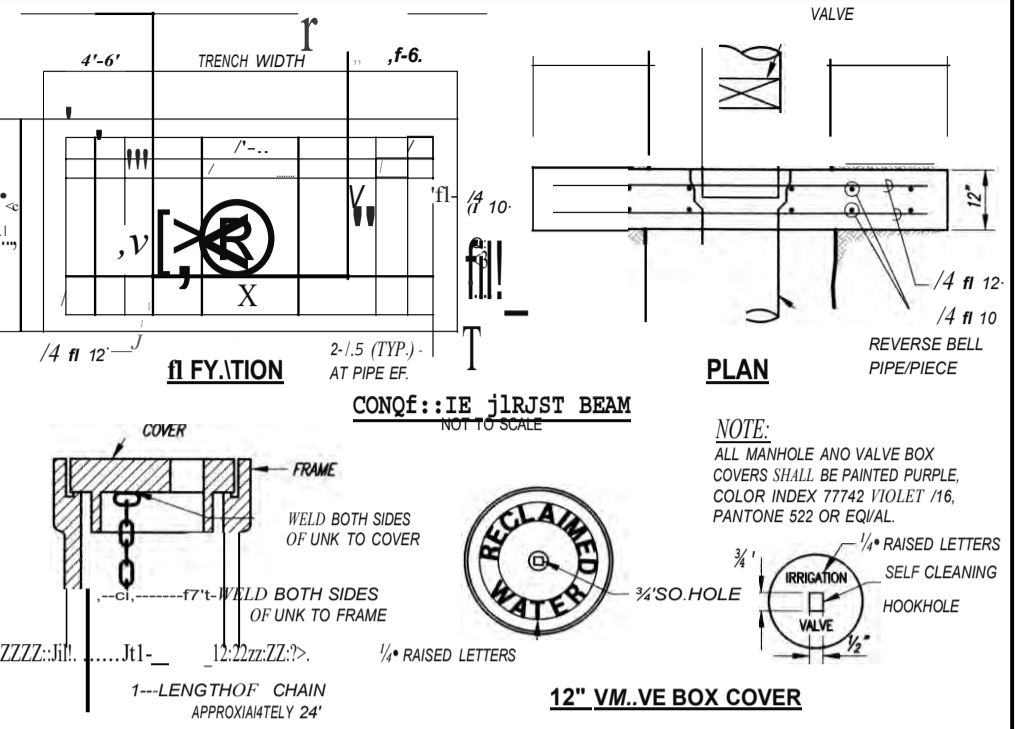
- ii. STEP 2: FLUSH MAIN WITH FRESH WATER UNTIL ALL CHLORINE HAS BEEN FLUSHED OUT AS EVIDENCED BY THE N,N-DIETHYL-P-PHENYLENEDIAMINE (DPO) TEST, THEN COLLECT A WATER SAMPLE WHILE CONTINUING TO FLUSH THE MAIN.
iii. STEP 3: REPEAT STEPS 1 AND 2 UNTIL COLLECTING THE SECOND WATER SAMPLE. STOP FLUSHING AND ALLOW THE WATER TO STAND IN THE MAIN OVERNIGHT.
iv. STEP 4: THOROUGHLY FLUSH THE MAIN WITH FRESH WATER UNTIL ALL WATER THAT HAD BEEN STANDING IN THE MAIN OVERNIGHT HAS BEEN FLUSHED OUT. STOP FLUSHING AND LET THE WATER STAND IN THE MAIN FOR ONE HOUR. COLLECT A WATER SAMPLE
b. THE MAIN IS DEEMED ACCEPTABLE AND CERTIFIED WHEN (i) THE THREE CONSECUTIVE WATER SAMPLES, COLLECTED 24 HOURS APART UNDER STEPS 1 AND 2, SHOW NO TC (TOTAL COLIFORM/ BACTERIA), NO E. COLI, LESS THAN 200 CFU/ML (COLONY FORMING UNITS PER ML) OF HPC (HETEROTROPHIC PLATE COUNT BACTERIA) OR LESS THAN 200 CFU/ML HPC USING THE 1/100 (10% PROBABLE NUMBER) METHOD AND TURBIDITY <1.0 NTU AND (ii) THE SAMPLE OF WATER HELD IN THE MAIN FOR ONE HOUR, COLLECTED UNDER STEP 4, ALSO SHOWS NO TC, NO E. COLI, LESS THAN 200 CFU/ML OF HPC OR LESS THAN 200 HPC USING THE 1/100 METHOD AND TURBIDITY <1.0 NTU.
c. CHLORINATION, FLUSHING, SAMPLING AND TESIUNG WILL BE EXTENDED SHOULD UNSATISFACTORY RESULTS BE ENCOUNTERED. ANY SAMPLE THAT SHOWS POSITIVE TC, E. COLI, HPC >200 CFU/ML, HPC >200 1/100 OR TURBIDITY >1.0 NTU IS UNSATISFACTORY.
d. STEPS 1 AND 2 MAY BE REPEATED BEFORE COLLECTING THE ONE HOUR HOLD SAMPLE SPECIFIED IN STEP 4. REPEATING STEPS 1 AND 2 IS REQUIRED UNTIL ALL EVENTS SAMPLES SHOW THE PRESENCE OF TC AND/OR E. COLI AND/OR INCREASING TOTAL BACTERIAL RESULTS FROM ONE SAMPLE TO THE NEXT.
e. WAIFR SAMPLES THAT SHOW THE PRESENCE OF ATYPICAL RESULTS, DEBRIS, HIGH TURBIDITY OR RESULTS INCONSISTENT WITH EXISTING WATER ARE SUBJECT TO RECONSTRUCTION. THE MANAGER RESERVES THE RIGHT TO REQUEST AND TEST ADDITIONAL WATER SAMPLES IN THE INTEREST OF SAFEGUARDING PUBLIC HEALTH AND SAFETY AT NO ADDITIONAL COST TO THE DEPARTMENT.
f. LIQUID CHLORINE, CHLORINE BASED LIQUID DISINFECTANTS OR CALCIUM HYPOCHLORITE THAT HAS BEEN TESTED AND CERTIFIED AS MEETING THE SPECIFICATIONS OF ANSI/NSF STANDARD 60, DRINKING WATER TREATMENT CHEMICALS - HEALTH EFFECTS, SHALL BE USED FOR THE CHLORINATION OF THE WATER MAINS.
d. PRIOR TO CHLORINATION, THE WATER MAINS SHALL BE THOROUGHLY FLUSHED.
e. THE INTERIOR SURFACES OF THE WATER MAINS SHALL BE EXPOSED TO THE CHLORINATING SOLUTION BY CUTTING/PIPING/RINING THE MAIN RELIEVE AIR POCKETS, FOR A 1.1 IN. MIN./100 FT. OF 24-HOURS AND THE FREE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TREATMENT.
f. SHOULD THE CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE WATER MAINS TO BE CHLORINATED.
g. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYSED TO ASSURE A FREE CHLORINE RESIDUAL OF AT LEAST 10 PPM.
h. SHOULD THE FREE CHLORINE RESIDUAL RESULTS INDICATE ADEQUATE CHLORINATION, THE WATER MAINS SHALL BE THOROUGHLY FLUSHED AND RELIEVED WITH WATER FROM THE EXISTING SYSTEM AND AGAIN TESTED FOR FREE CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE FREE CHLORINE RESIDUAL TEST RESULTS INDICATE THAT THE WATER IN THE WATER MAINS HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
i. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF CHLORINATED WATER TO SAFEGUARD PUBLIC HEALTH AND THE ENVIRONMENT IN ACCORDANCE WITH APPLICABLE STATE OF HAWAII DEPARTMENT OF HEALTH REQUIREMENTS A NEUTRALIZING CHEMICAL SHALL BE APPLIED TO THE WATER TO BE DISPOSED TO THOROUGHLY NEUTRALIZE THE CHLORINE RESIDUAL REMAINING IN THE WATER IN ACCORDANCE WITH BOARD OF WATER SUPPLY WATER SYSTEM STANDARDS (2002), AS AMENDED.
j. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A NATIONAL POLLUTANT DISCHARGE EVALUATION SYSTEM (NPDES) PERMIT FROM THE DEPARTMENT OF HEALTH. CLEAN WATER BRANCH PRIOR TO THE START OF CONSTRUCTION, FOR THE DISPOSAL OF WATER USED FOR HYDRO TESIUNG AND CHLORINATION, AS REQUIRED BY THE CONTRACT DOCUMENTS.
k. FOLLOWING THE ACCEPTABLE FLUSHING OF THE WATER MAINS, THREE (3) CONSECUTIVE DAYS OF ACCEPTABLE SAMPLES, TAKEN AT LEAST 24-HOURS APART, FROM REPRESENTATIVE POINTS SHALL BE TAKEN AND SUBJECT TO MICROBIOLOGICAL TESTS. FOR WATER UNES, AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE FROM THE END OF THE UNE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE OR INVALID TEST RESULTS WILL NOT BE ACCEPTABLE. AND THE PROCESS WILL BE REPEATED.
l. ALL MEASUREMENTS FOR CHLORINE RESIDUAL SHALL BE ANALYZED USING EPA APPROVED METHODS FOR DRINKING WATER.
m. ALL MICROBIOLOGICAL TESTS SHALL BE PERFORMED BY A LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH, STATE OF HAWAII AND THE WATER QUALITY COMMISSION OF THE BOARD OF WATER SUPPLY.
n. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.
o. CLEANING AND SWABBING PROCEDURES SHALL BE IN ACCORDANCE WITH BOARD OF WATER SUPPLY WAIFR SYSTEM STANDARDS (2002), AS AMENDED.
p. ALL MATERIALS IN DIRECT CONTACT WITH THE POTABLE WATER SHALL HAVE NATIONAL SANITATION FOUNDATIONS (NSF) APPROVALS. THE CONTRACTOR SHALL SUBMIT THESE APPROVALS TO THE BOARD OF WATER SUPPLY FOR INFORMATION ONLY PRIOR TO ITS APPLICATION.
30. BOARD OF WATER SUPPLY APPROVAL OF THESE PLANS DOES NOT CONSTITUTE A WATER CONVEYANCE. AVAILABILITY OF WATER WILL BE DETERMINED WHEN BUILDING PERMIT IS PRESENTED TO THE DEPARTMENT. WAIFR CONVEYANCE WILL DEPEND UPON THE STATUS OF THE WATER SYSTEM AT THE TIME WATER SERVICE IS AVAILABLE. THE WATER CONVEYANCE WILL BE ESTABLISHED WHEN THE PROJECT RECEIVES AN APPROVED BUILDING PERMIT FROM THE BUILDING DEPARTMENT. ALL WATER CONVEYANCE WILL BE CANCELED IN THE EVENT THE BUILDING PERMIT IS CANCELED.
31. DUCILE IRON RINGS SHALL BE USED FOR ALL TYPES OF RINGS.
32. AT UTILITY CROSSINGS WHERE PROPER CONNECTION UNDER A WATER MAIN IS DIFFICULT TO ACHIEVE, CLSM SHALL BE INSTALLED IN PLACE OF BACKFILL MATERIAL AND PIPE CUSHION MATERIAL. CLSM MIXTURE TO BE FURNISHED SHALL BE IN ACCORDANCE WITH DMSION 200 - MATERIALS, SECTION 209.06 CONTROLLED LOW STRENGTH MATERIAL (CLSM) OF THE BOARD OF WATER SUPPLY'S WATER SYSTEM STANDARDS AS AMENDED.
33. WHEN A UTILITY (GAS, SEWER, ELECTRICAL DUCT UNE, FIBER OPTIC, DRAINAGE, ETC.) CROSSES BELOW A BOARD OF WAIFR SUPPLY WATER MAIN, THE DESIGNER OF RECORD AND THEIR CONSTRUCTION ENGINEER SHALL BE RESPONSIBLE FOR DETERMINING THE ADEQUATE WATER MAIN STRUCTURAL SUPPORT AND SUBMIT THE CONSTRUCTION METHOD AND SHOP DRAWING, STAMPED BY A LICENSED ENGINEER AND REVIEWED AND ACCEPTED BY THE DESIGNER OF RECORD, TO THE BOARD OF WATER SUPPLY FOR REVIEW AND APPROVAL. ALL WORK SHALL BE AT NO COST TO THE BOARD OF WATER SUPPLY.
34. CONTRACTOR SHALL CUT, PLUG, AND REPAIR ALL EXISTING UNUSED LATERALS AT THE MAIN WHETHER OR NOT SHOWN ON THE PLANS. THE DAMAGED AREA SHALL BE REPAIRED TO AN EQUAL OR BETTER CONDITION THAN THE ORIGINAL AREA. ALL WORK SHALL BE DONE AT THE EXPENSE OF THE CONTRACTOR.
35. THE CONTRACTOR SHALL FURNISH AND INSTALL AN INSULATING CORPORATION STOP AND PETROLATUM WAX TAPE AT ALL TAPS FOR DI PIPE AND COPPER LATERAL CONNECTION ONLY.
36. NO DEVIATION TO THE BOARD OF WATER SUPPLY 2002 WAIFR SYSTEM STANDARDS SHALL BE ALLOWED WITHOUT THE MANAGER AND CHIEF ENGINEER'S APPROVAL.

NON-POTABLE WATER SYSTEM FOR IRRIGATION SYSTEMS

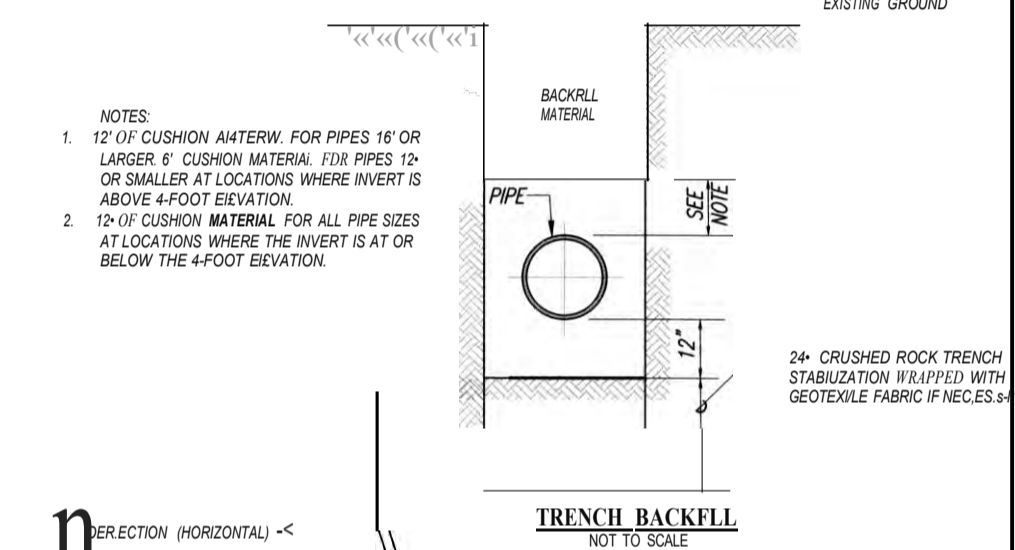
- 1. UNLESS OTHERWISE SPECIFIED, ALL IRRIGATION AND CONSTRUCTION OF WAIFR SYSTEM FACILITIES AND APPURTENANCES SHALL BE IN ACCORDANCE WITH THE CITY AND COUNTY OF HONOLULU BOARD OF WATER SUPPLY'S WATER SYSTEM STANDARDS, DATED 2002. THE WATER SYSTEM STANDARDS CORROSION CONTROL STANDARDS, VOLUME I, DATED 2021, AND THE DEPARTMENT OF HEALTH 'GUIDELINES FOR THE TREATMENT AND USE OF RECYCLED WATER' DATED JANUARY 2016, AND ALL SUBSEQUENT AMENDMENTS AND ADDITIONS. ALSO, RECYCLED WATER SYSTEM AND APPURTENANCE IDENTIFICATION IS AN IMPORTANT CONSIDERATION. PIPELINES, EQUIPMENT AND IRRIGATED AREAS SHALL BE CLEARLY IDENTIFIED IN ACCORDANCE WITH THE GUIDELINES.
2. ALL PIPES APPROVED BY THE BOARD OF WATER SUPPLY ARE BASED SOLELY ON THE ADEQUACY OF THE WAIFR SUPPLY.
3. RE-APPROVAL SHALL BE REQUIRED IF THIS PROJECT IS NOT UNDER CONSTRUCTION WITHIN A PERIOD OF 180 (2) YEARS.
4. ALL WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO A HYDROSTATIC TEST PRESSURE OF 150 PSI BY THE CONTRACTOR IN ACCORDANCE WITH OMSION JOO-CONSTRUCTION, SECTION 302.28, PIPE PRESSURE TEST OF THE 'WATER SYSTEM STANDARDS', DATED 2002. DURING THE 30-1 MINUTE PRESSURE TEST, THE PRESSURE SHALL NOT DROP MORE THAN 10 PSI.
5. THE CONTRACTOR SHALL NOTIFY BWS CAPITAL PROJECTS OMSION, CONSTRUCTION SECTION IN WRITING OR CALL (808)748-5730, AND SUBMIT SIX (6) SETS OF 24 X 36 APPROVED CONSTRUCTION PLANS ONE WEEK PRIOR TO COMMENCING WORK ON THE WAIFR SYSTEM.
6. 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 AND SHALL PAY FOR ALL DAMAGES TO EXISTING UTILITIES. THE CONTRACTOR SHALL NOT ASSUME THAT WHERE NO UTILITIES ARE SHOWN, THAT NONE EXIST.
7. PRIOR TO INSTALLATION, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL BY BOARD OF WATER SUPPLY, THE MANUFACTURER'S CERTIFICATION THAT ALL CAST IRON (GRAY OR DUCILE) RINGS FOR THE PROJECT CONFORM IN ALL RESPECTS TO THE WATER SYSTEM STANDARDS, DATED 2002.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL WATER UNES DURING CONSTRUCTION. THE CONTRACTOR SHALL BE ESPECIALLY CAREFUL WHEN EXCAVATING BEHIND WATER UNES, TEES AND BENDS WHEREVER THERE IS A POSSIBILITY OF WATER UNES BEING DAMAGED DUE TO THE REMOVAL OF THE EXISTING EARTH BEYOND THE EXISTING REACTION BLOCKS. THE CONTRACTOR SHALL TAKE WHATEVER MEASURES NECESSARY TO PROTECT THE WATER UNES, SUCH AS CONSTRUCTING SPECIFIC REACTION BLOCKS (WITH BWS APPROVAL) AND/OR MODIFYING HIS CONSTRUCTION METHOD.
9. INTERCONNECTION BETWEEN IRRIGATION/NON-POTABLE AND POTABLE MAINS SHALL BE ALLOWED.
10. MATERIALS FOR FRAMES AND COVERS OF MANHOLES, VE BOXES, AND METER BOXES SHALL CONFORM TO THE REQUIREMENTS SPECIFIED IN THE WATER SYSTEM STANDARD. THE IRRIGATION/NON-POTABLE COVERS SHALL BE CAST WITH THE WORDS 'RECYCLED WATER' AND SHALL BE PROVIDED WITH A 24-INCH LONG GALVANIZED STEEL COIL CHAIN, 1/16-INCH WITH 12.5 UNKS PER FOOT, AND BE WELDED TO THE FRAME AND COHR.
11. HORIZONTAL CLEARANCE OF 3 FEET AND VERTICAL CLEARANCE OF 12-INCHES SHALL BE MAINTAINED BETWEEN IRRIGATION/NON-POTABLE AND OTHER UNES.
12. VALVE COVERS, MANHOLE COVERS, FIRE HYDRANTS, METER COVERS AND BODIES SHALL BE ALL PAINTED OSHA PURPLE FOR IDENTIFICATION.
13. PRIOR TO ANY EXCAVATING, THE CONTRACTOR SHALL VERIFY IN THE FIELD THE LOCATION OF EXISTING WATER MAINS AND APPURTENANCES.
14. AT THE ELECTRICAL/CABLE/SIGNAL DUCTLINE WATER CROSSINGS, ADJUST ALL ELECTRICAL/CABLE/SIGNAL DUCTLINE ELEVATIONS TO MAINTAIN THE REQUIRED VERTICAL CLEAR SEPARATION FROM ALL WAIFR MAINS. CONFORMANCE TO THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS AS AMENDED SHALL BE AT NO COST AND ADHERED TO.
15. MAINTAIN THE REQUIRED MINIMUM HORIZONTAL CLEAR SEPARATION BETWEEN ALL WATER MAINS, AND NEAREST ELECTRICAL/CABLE/SIGNAL DUCTUNES PARALLELING THE WATER SYSTEM, CONFORMANCE TO THE BOARD OF WAIFR SUPPLY 2002 WATER SYSTEM STANDARDS AS AMENDED SHALL BE AT NO COST AND ADHERED TO.
16. MAINTAIN THE REQUIRED MINIMUM HORIZONTAL CLEAR SEPARATION BETWEEN ELECTRICAL/CABLE/SIGNAL APPURTENANCES (INCLUDING ANY TELEPHONE UNITS) AND THE NEAREST WAIFR MAINS OR WAIFR APPURTENANCE. CONTRACTOR SHALL VERIFY FOR ANY CONFLICTS AT EACH.
17. THE CONTRACTOR SHALL COORDINATE THE SECURING OF THE EXISTING WATER SYSTEM WITH THE BOARD OF WATER SUPPLY PRIOR TO EXCAVATING BEHIND OR REJOINING ANY EXISTING THRUST BLOCKS, STRUCTURAL STRUTS OR REACTION BLOCKS, OR ANY RINGS SUCH AS TEES, PLUGS, CAPS, BENDS, OFFSETS, AND VALVE, OR ANY OTHER PIPELINE APPURTENANCE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASSOCIATED DAMAGES RESULTING FROM FACILITIES TO ADEQUATELY SECURE THE EXISTING SYSTEM.
18. ANY ADJUSTMENTS TO THE EXISTING WAIFR SYSTEM REQUIRED DURING CONSTRUCTION, TO MEET THE REQUIREMENTS OF THE BOARD OF WATER SUPPLY STANDARDS, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE DONE BY THE CONTRACTOR AT NO COST TO THE BOARD OF WATER SUPPLY.
19. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE ASSUMPTIONS, DEDUCTIONS OR CONCLUSIONS HE/SHE MAY MAKE OR DERIVE FROM THE SUBSURFACE INFORMATION OR DATA FURNISHED ON THE PLANS. THE CONTRACTOR MUST SATISFY HIMSELF/HERSELF THROUGH HIS/HER OWN INVESTIGATIONS AS TO WHAT SUBSURFACE CONDITIONS ARE TO BE ENCOUNTERED.
20. THREE-INCH WIDE WARNING TAPE, PURPLE IN COLOR WITH THE WORDS 'CAUTION: NON-POTABLE WATER - DO NOT DRINK' PRINTED IN LETTERS NOT GREATER THAN 8 1/2 FEET SHALL BE INSTALLED DIRECTLY ON THE TOP OF ALL IRRIGATION/NON-POTABLE LATERALS AND DUCILE IRON PIPES. THE WARNING TAPE SHALL BE INSTALLED LONGITUDINALLY AND CONTINUOUSLY OVER THE ENTIRE LENGTH OF THE PIPE AND SHALL BE FASTENED TO THE PIPE WITH RUBBER REINFORCED TAPE AT 8 FEET ON CENTERS. LETTERS SHALL BE A 1/2 IN. OF 1/4 INCH.
21. UNLESS OTHERWISE NOTED, ALL WAIFR MAIN TRENCHES SHALL BE BACKFILLED AS CALLED FOR UNDER OMSION JOO-CONSTRUCTION, SECTION 302.03, TRENCH BACKFILL OF THE BOARD OF WATER SUPPLY 'WATER SYSTEM STANDARDS' DATED 2002. COMPACTION OF TRENCH BACKFILL SHALL MEET APPLICABLE REQUIREMENTS OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION' SEPTEMBER 1998, OF THE COUNTIES OF THE STATE OF HAWAII, OR THE STATE DEPARTMENT OF TRANSPORTATION STANDARDS FOR PROJECTS WITHIN STATE HIGHWAYS.
22. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF ALL DEWASTE ASSOCIATED WITH THE CONSTRUCTION ACTIVITY AND THE DISINFECTION AND HYDROTESING OPERATIONS TO SAFEGUARD PUBLIC HEALTH REQUIREMENTS, ALL PERMITS AND LICENSES FOR CONSTRUCTION WASTE DISPOSAL, INCLUDING ALL APPLICATIONS, CHARGES, FEES AND TAXES, ARE THE RESPONSIBILITY OF THE CONTRACTOR.
23. ALL AIR RELIEF VALVES SHALL HAVE A 1/2 IN. WORKING PRESSURE RANGE OF 0 TO 150 PSI.
24. PIPES AND RINGS:
A. VALVE AND RINGS, DUCILE IRON RINGS SHALL COMPLY WITH ANSI A118, AWWA C110, AWWA C911, AND ANSI C918. VALVE AND RINGS SHALL BE COLORED OSHA PURPLE OR EQUAL.
B. DUCILE IRON PIPES SHALL BE CLASS SJ. DUCILE IRON PIPES SHALL BE COLORED OSHA PURPLE, OR EQUAL.
C. ALL DUCILE IRON PIPES, VALVES, AND RINGS SHALL HAVE A BONDED DIELECTRIC COATING CONSISTING OF AN EXTERIOR 120X SOLIDS POLYURETHANE OR EPOXY SHOP COATING APPLICATION, IN USE OF A POLYETHYLENE WAX FOR BONDED TAPE COATING. PAYMENT FOR THE EXTERIOR BONDED DIELECTRIC COATING SHALL BE INCIDENTAL TO THE PRICE FOR DI PIPE, VALVE, IT, AND RINGS.
25. IDENTIFICATION PAINTING: ALL ABOVE GROUND ITEMS, INTERIORS OF VAULTS AND BOXES AND ACCESSIBLE ITEMS SHALL BE COLORED OSHA PURPLE, OR EQUAL. THESE ITEMS INCLUDE BUT ARE NOT LIMITED TO: MANHOLE COVERS AND FRAMES, VALVE COVERS AND FRAMES, METER BOX COVERS AND FRAMES, FIRE HYDRANTS, WATER METERS, AND BACKFLOW DEVICES.
26. THE CONTRACTOR/DEVELOPER SHALL OBTAIN A NPDES PERMIT PRIOR TO CHLORINATION AND/OR DEWATERING. A COPY OF THE PERMIT SHALL BE SUBMITTED TO THE BOARD OF WATER SUPPLY, CAPITAL PROJECTS OMSION, CONSTRUCTION SECTION.
27. THE CONTRACTOR SHALL NOTIFY A BWS CONSTRUCTION INSPECTOR WHEN WORK IS BEING DONE ON THE RECYCLED WAIFR SYSTEM. FOR ANY RECYCLED WATER SHUTDOWN, CONTRACTOR SHALL CONTRACT THE BOARD OF WAIFR SUPPLY WATER CONSERVATION BRANCH AT (808) 748-5844 AT LEAST 15 (5) WORKING DAYS PRIOR.
28. ALL DUCILE IRON PIPE AND RINGS, INCLUDING SECTIONS REQUIRING REINFORCED CONCRETE JACKETING, SHALL BE DUCILE IRON CLASS SJ, AND BONDED DIELECTRIC COATED AS PER THE BWS WATER SYSTEM STANDARDS AS AMENDED.
29. PIPE CUSHION SHALL BE OF HIGH RESISTIVITY MATERIAL. THE CONTRACTOR SHALL SUBMIT A SOIL CERTIFICATION THAT HIGH RESISTANT CUSHION WATER, HAS A RESISTIVITY GREATER THAN 5,000 OHM-CM. REMAINDER OF THE BACKFILL MATERIAL SHALL BE AS SPECIFIED IN THE BOARD OF WATER SUPPLY 2002 WATER SYSTEM STANDARDS. PIPE CUSHION AND BACKFILL MATERIAL SHALL CONTAIN NO HAZARDOUS SUBSTANCES ABOVE REGULATORY ACTION LEVELS INCLUDING BUT NOT LIMITED TO LEAD, ASBESTOS, MERCURY, CHROMIUM, CADMIUM, ZINC, STRONTIUM, AND POLYCHLORINATED BIPHENYLS (PCB).

REQUIREMENTS FOR PERMIT PROJECTS UNDER STATE HIGHWAY RIGHT-OF-WAY

- THE CONTRACTOR SHALL OBTAIN AND COMPLY WITH THE NATIONAL POLLUTANT DISCHARGE EVALUATION SYSTEM (NPDES) REQUIREMENTS FOR OAHU DISTRICT PERMIT PROJECTS - THIS IS AVAILABLE AT THE OAHU DISTRICT OFFICE AT 727 KAKI STREET (PH. 831-6793). DUE TO POTENTIAL COST IMPACTS, THE CONTRACTOR NEEDS TO BE AWARE OF THESE REQUIREMENTS.
THE CONTRACTOR SHALL COMPLETE AND SUBMIT A CONTRACTOR'S CERTIFICATE OF NPDES COMPLIANCE, INCLUDING COMPLETION OF THE 'BEST MANAGEMENT PRACTICE (BMP) CHECKLIST' AND SUBMIT A WRITTEN BMP PLAN AND DRAWINGS, PRIOR TO ISSUANCE OF THE PERMIT TO PERFORM WORK UNDER STATE HIGHWAYS.



MOOVED VM-VE BOX COVER DETAILS



TYPICAL ELECTRONIC MARKER INSTALLATION

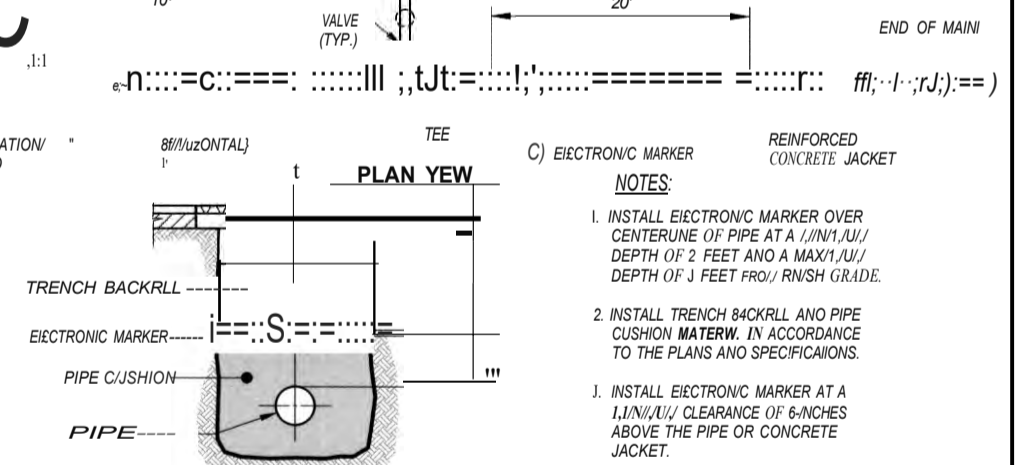
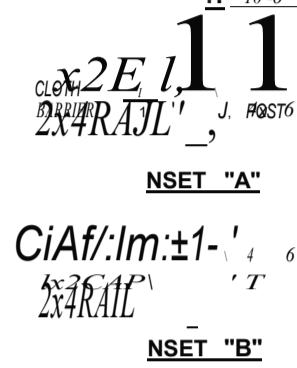
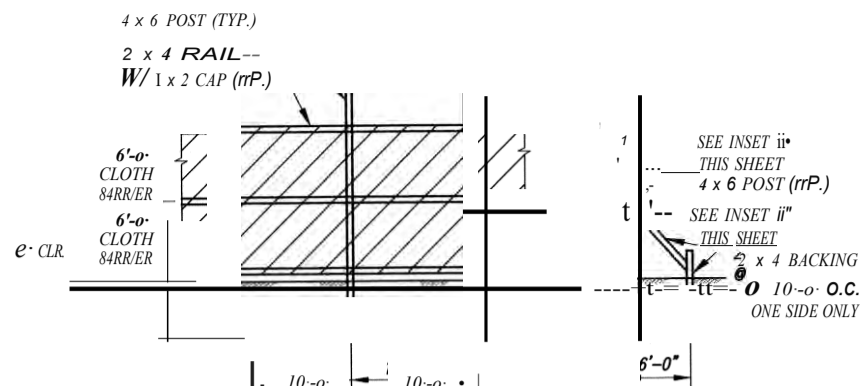


Table with 3 columns: REVISION DATE, DESCRIPTION, and DRAWN BY. It is part of the title block for the project.

Project title block for Co/Tiffinity Planning and Engineering, Inc. EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOOUU, EWA, OAHU, HAWAII. Includes logos, contact information, and a signature block for the engineer and supervisor.

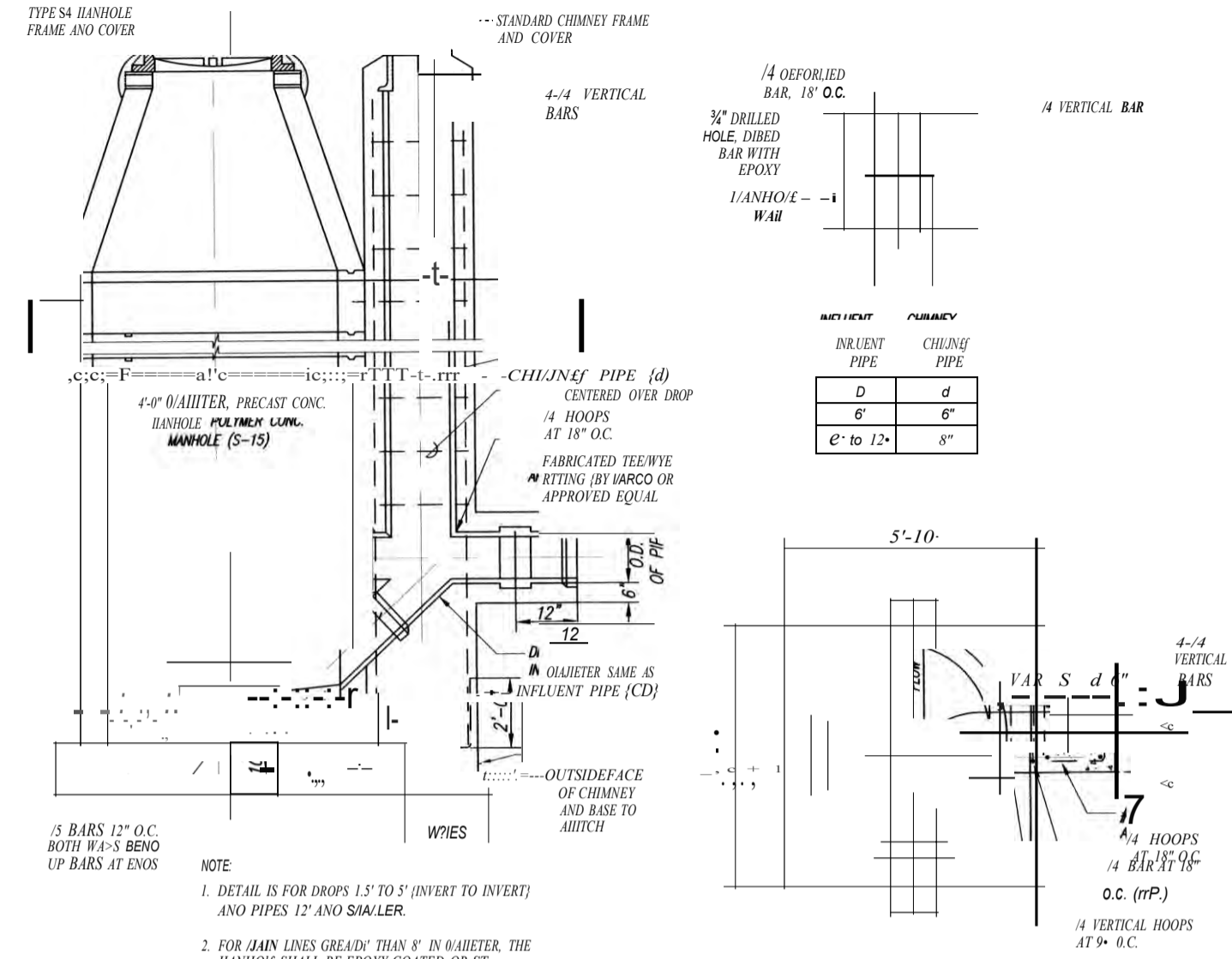
SEWER NOTES <PRIVATE / CHL. OW.ED>

- ALL SEWER CONSTRUCTION SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY'S "STANDARD SPECIFICATIONS - SEPT 1986, THE DEPARTMENT OF ENVIRONMENTAL SERVICES' WASTEWATER SYSTEM DESIGN STANDARDS - JULY 2011, AND WASTEWATER SYSTEM STANDARD DETAILS - JULY 2011, CURRENT CITY PRACTICES AND THE REVISED ORDINANCES OF HONOLULU, 1990 AS AMENDED.
- IN THE EVENT THAT ANY CHANGE IN ALIGNMENT OR GRADE FOR THE PROPOSED SEWERS ARE REQUIRED DUE TO UNFORSEEN CONDITIONS WHICH ARE TO BE PRESENTED TO THE DEPARTMENT OF PLANNING AND PERMITTING (OPP) FOR APPROVAL.
- THE CONTRACTOR SHALL NOTIFY THE INSPECTION SECTION, CML ENGINEERING BRANCH, OPP, AT 768-8084 TO ARRANGE FOR INSPECTION SERVICES AND SUBMIT FIVE (5) SETS OF APPROVED CONSTRUCTION PLANS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF SEWER WORK. THE CONTRACTOR SHALL PAY FOR ALL INSPECTION COSTS.
- CRUSHED ROCK CRADLE IS PERMITTED WHERE SOIL IS STABLE. IN AREAS OF UNSTABLE SOIL, THE NUMBER OF THE PLANS AND THE CONSTRUCTION ENGINEER WILL DETERMINE THE PIPE SUPPORT REQUIRED.
- THE UNDERGROUND PIPES, CABLES OR DUCTS KNOWN TO EXIST BY THE ENGINEER FROM HIS RESEARCH OF RECORDS ARE INDICATED ON THE PWS. THE CONTRACTOR SHALL VERIFY THE LOCATION AND DEPTH OF THE FACILITIES, INCLUDING AND AFFECTING SEWER LINES, IN THE PRESENCE OF THE WASTEWATER INSPECTOR AND EXERCISE PROPER CARE IN EXCAVATING THE AREA THE CONTRACTOR SHALL BE RESPONSIBLE AND SHALL PAY FOR ALL DAMAGE TO UTILITIES.
- SEWER LATERAL SHALL BE CLEAR OF AND NOT CONFLICTING WITH ANY OTHER UTILITIES. MINIMUM HORIZONTAL AND VERTICAL CLEARANCES SHALL BE STRICTLY OBSERVED AND FOLLOWED.
- SLOPE FOR SEWER LATERALS SHALL BE 2.00%.
- BUILDING PLUMBING FACILITIES SHALL BE CONTROLLED BY SEWER LATERAL INVERTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING CONTINUOUS SEWER SERVICE TO ALL AFFECTED AREAS DURING CONSTRUCTION.
- THE CONSULTING ENGINEER SHALL SUBMIT TO THE WASTEWATER BRANCH, OPP "AS-BUILT" TRACINGS AND ELECTRONIC FILES OF THE CONSTRUCTION PLANS AS ACTUALLY CONSTRUCTED, SHOWING ALL CHANGES FROM THE ORIGINAL PLANS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SEWAGE SPILLS CAUSED DURING CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE STATE DEPARTMENT OF HEALTH AND FOLLOW APPROPRIATE SAMPLING AND ANALYSIS PROCEDURES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PUBLIC NOTIFICATIONS AND PRESS RELEASES.
- THE CONTRACTOR SHALL INSTALL "RAINSTOPPER" MANHOLE INSERTS IN ALL MANHOLES WITH TYPE "SA" FRAME AND COVER.
- THE CONTRACTOR SHALL OBTAIN APPROVAL FOR ADVANCE SEWER RISER AGREEMENT AT THE OPP AND OBTAIN BUILDING PERMIT FOR PLUMBING WORK BEFORE ANY ADVANCE RISER IS MADE.
- ALL SEWER PIPE JOINTS WITHIN EASMENTS SHALL BE WRAPPED WITH GEOTEXTILE ROOT BARRIER.
- SAC PIPE CRADLE SEALS SHALL BE INSTALLED 10 FEET FROM ALL SEWER MANHOLES TO PREVENT SOIL INTRUSION. SEE DETAIL, THIS SHEET.
- CONFINED SPACE
FOR ENTRY BY CITY PERSONNEL, INCLUDING INSPECTORS, INTO A PERMITTED CONFINED SPACE AS DERIVED 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:
1. FULL BODY HARNESSES FOR UP TO 100 PERSONNEL
2. LIFELINE AND ASSOCIATED CLIPS
3. INGRESS/EGRESS AND FALL PROTECTION EQUIPMENT
4. 00-WAY RADIOS (WALKIE-TALKIES) IF OUT OF LINE-OF-SIGHT
5. EMERGENCY (ESCAPE) RESPIRATOR (10 MINUTE OPERATION)
6. CELLULAR TELEPHONE TO CALL FOR EMERGENCY ASSISTANCE
7. CONTINUOUS GAS DETECTOR (CALIBRATED) TO DETECT OXYGEN, HYDROGEN SULFIDE, CARBON MONOXIDE AND FLAMMABLES (CAPABLE OF MONITORING AT A DISTANCE AT LEAST 30-FEET AWAY)
8. PERSONAL MULTI-GAS DETECTOR TO BE CARRIED BY INSPECTOR
8. CONTINUOUS FORCED AIR VENTILATION ADEQUATE TO PROVIDE SAFE ENTRY CONDITIONS
C. ONE ATTENDANT/RESCUE PERSONNEL TOPSIDE (TTH), IF CONDITIONS WARRANT IT.
17. WHEN CONNECTING TO AN EXISTING SEWER LINE, THE CONTRACTOR SHALL ABIDE BY ALL CONDITIONS THAT THE STATE DEPARTMENT OF HEALTH SETS FORTH TO PREVENT ANY WASTEWATER SPILL THAT MAY OCCUR. THE CONTRACTOR SHALL NOTIFY THE CITY'S INSPECTOR FIVE (5) WORKING DAYS PRIOR TO THE ACTUAL CONNECTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY FINES AND PENALTIES DUE TO ANY SPILLS RESULTING FROM THE CONNECTION.
18. NO RUNGS SHALL BE INSTALLED INSIDE NEW SEWER MANHOLES.
19. FOR SEWER MANHOLE ADJUSTMENTS UPWARD LESS THAN 3'; SEE STD. DETAIL S-28. FOR S/H ADJUSTMENTS UPWARD GREATER THAN 3' OR FOR ANY ADJUSTMENTS DOWNWARD, RECONSTRUCT WITH TOP FROM BELOW THE CONE SECTION.
20. IF THE CONTRACTOR ENCOUNTERS ROW MONITORING DEVICES SUCH AS SPEC. SEW. MANHOLE COVERS DISEMPOWERED WITH SOLAR PANELS, CONTACT COLLECTION SYSTEMS MAINTENANCE, ENV AT 768-7272 TO COORDINATE TEMPORARY REMOVAL.
21. THE CONTRACTOR SHALL MAINTAIN VISIBILITY AND MAINTENANCE ACCESS TO ALL SEWER MANHOLE LOCATIONS AT ALL TIMES, INCLUDING DURING NON-WORK HOURS AND PAVING OPERATIONS.
22. THE CONTRACTOR SHALL USE A MANHOLE DEBRIS CATCHING DEVICE WHEN PERFORMING MANHOLE HEIGHT ADJUSTMENT WORK AND REMOVE ANY CONSTRUCTION DEBRIS THAT HAS FALLEN INTO THE MANHOLE. DISPOSAL OF CONSTRUCTION DEBRIS IN THE SEWER SYSTEM IS STRICTLY PROHIBITED.
23. FOR PRECAST SEWER MANHOLES, THE CONSULTING ENGINEER SHALL SUBMIT FOUR (4) SETS OF SHOP DRAWINGS TO WASTEWATER BRANCH, O.P.P. FOR APPROVAL. AFTER THE SHOP DRAWINGS ARE APPROVED, THE MANUFACTURER SHALL NOTIFY THE INSPECTION SECTION, CML ENGINEERING BRANCH, O.P.P. AT 768-8084 TO ARRANGE FOR INSPECTION SERVICES FOR CONCRETE POURS MADE AT ITS PLANT SEVEN (7) DAYS PRIOR TO POUR.



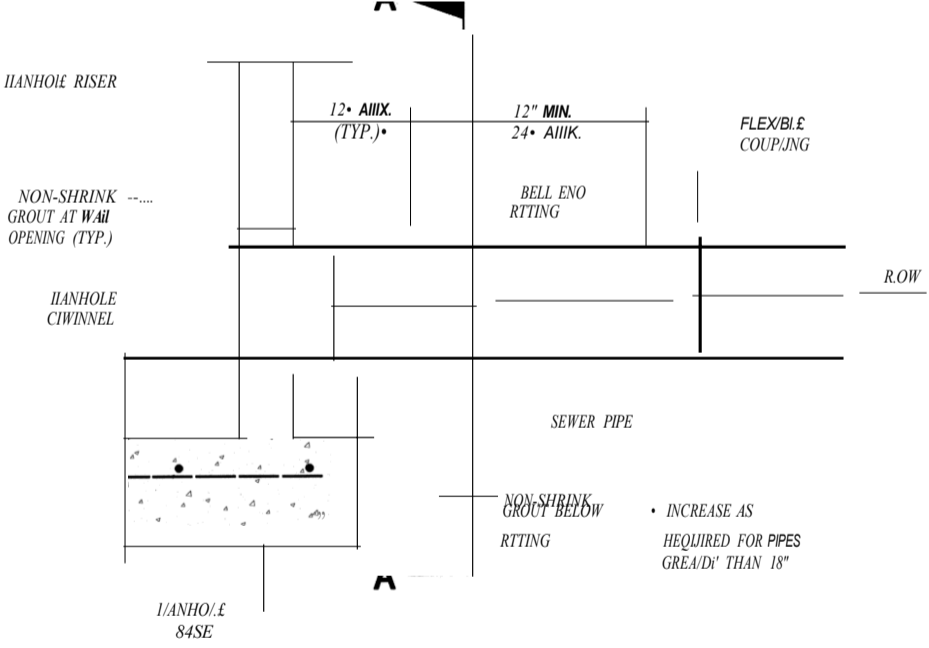
- NOTES:**
- CLOTH BARRIER TO BE HURAFI 140N OR APPROVED EQUAL.
 - LUMBER SIZES ARE NOMINAL INCHES.
 - 1 x 2 CLOTH BARRIER CAPS TO BE NAILED 12" O.C.
 - BURLAP IS NOT ACCEPTABLE AS THE CLOTH BARRIER.
 - CLOTH TO HAVE NO HORIZONTAL SEAMS.
 - VERTICAL SEAMS TO BE MADE OVER UPRIGHTS ONLY.
 - ALL SEAMS TO BE CAPPED WITH JINMUJ 1 x 2.
 - ALL JOINTS TO BE SECURELY FASTENED BY MECHANICAL MEANS.

DETAIL - DUST FENCE
NOT TO SCALE



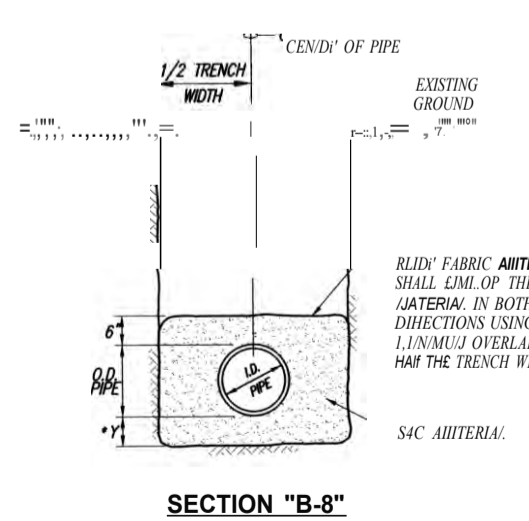
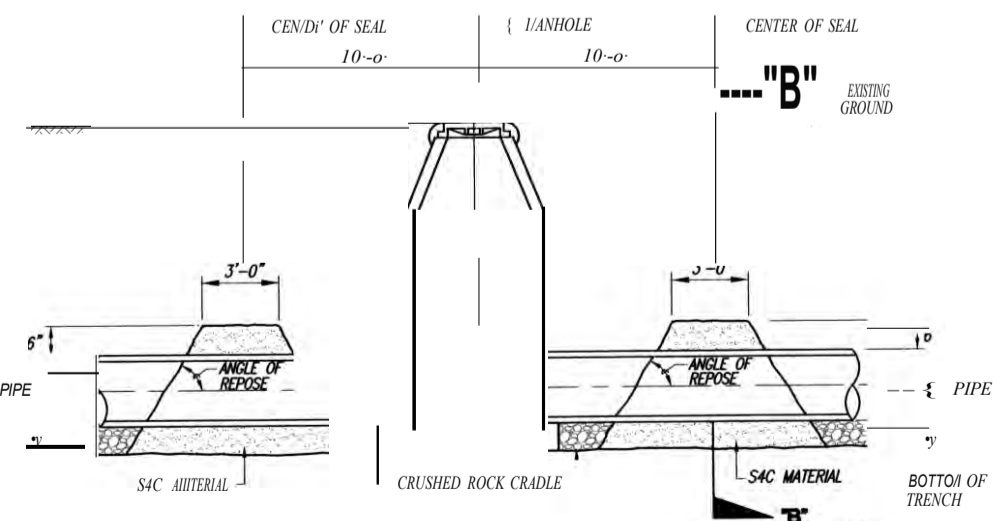
- NOTE:**
- DETAIL IS FOR DROPS 1.5' TO 5' (INVERT TO INVERT) AND PIPES 12" AND SMALLER.
 - FOR MAIN LINES GREATER THAN 8" IN DIAMETER, THE MANHOLE SHALL BE EPOXY COATED OR STIM REINFORCED POLYMER CONCRETE.
 - FOR HIGH INFLUENT PIPE, THE TEE/WYE RING AND CHIMNEY CLUTE WILL MOVE AWAY FROM THE MH WALL, THIS GAP SHALL BE FILLED WITH REINFORCING STIM AND CONCRETE, AS SHOWN, SO CHIMNEY AND BASE REMAIN CONNECTED TO MH WALL.

SHALLOW DROP MAN-HOLE
(SEWER MANS 12-NCH AN> SMA) IER
NOT TO SCALE



- NOTES:**
- FOR PIPE, PROVIDE PRE-FABRICATED, APPROVED PPE SANDED MANHOLE MANHOLE WITH GASKETED BELL END. PROVIDE GASKETED BELL END.
 - A GASKETED FLEXIBLE BELL END MAY BE USED IN LIEU OF A FLEXIBLE COUPLING.
 - BELL END FITTING USED ON INFLUENT SEWER PIPE. PLAIN END USED ON EFFLUENT PIPE.

SECTION A-A
MAN-HOLE PPE CONNECTION
WALL PPE FITT3
SCALE: 3/4" = 1'-0"



- NOTES:**
- SEALS SHALL BE PLACED 10 FT. UPSTREAM AND DOWNSTREAM FROM EACH MANHOLE.
 - SEALS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO CRUSHED ROCK CRADLE.
 - THE CONTRACTOR SHALL CONTACT SAC MATERIAL BY NOTIFYING AND DRAINING. UPON DRAINING, A VIBRATORY MACHINE SHALL BE USED UNTIL NO VISIBLE EVIDENCE OF FURTHER CONSOLIDATION EXISTS.

SEAL DETAL
NOT TO SCALE

Convnv,ity Planning and Engineering, Inc.
11889 Chuanan Street, Suite 101, Honolulu, HI 96821
FAS EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBO FILE NO. 2019SUB-171)
OWNER: K. DELUOPER, DEPARTMENT OF HAWAIIAN HOME LANDS
TAX IDAP KEY: 9 1-17: Portion 161

GER-ERAL NOTES - 3

DRA BY: RV ENGINEER: 86 O&E-ED BI
APPROV: _____

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND TO THE BEST OF MY KNOWLEDGE AND BELIEF IT COMPLIES WITH ALL APPLICABLE CODES AND REGULATIONS. I AM NOT PROVIDING ANY DESIGN OR CONSTRUCTION SERVICES FOR THIS PROJECT. MY LIABILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THIS PROJECT. LICENSE EXPIRATION DATE: 04/11/22

SPECIAL PROVISIONS FOR PVC PLASTIC SEWER PIPE (FOO PFES 6" TO 12" IN DIAMETER ON...)

- I. POLYVINYL CHLORIDE (PVC) PLASTIC SEWER PIPE AND APPURTENANCES USED ON THIS PROJECT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 21 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986, EXCEPT AS MODIFIED HEREIN.
 - A. GENERAL PVC GRAVITY SEWER PIPE AND FITTINGS SHALL CONFORM TO THE REQUIREMENTS OF AWWA C-900/C-905, CLASS 100PSI, DR-25. THE PIPE SHALL BE GREEN IN COLOR.
 - B. ACCEPTANCE THE BASIS FOR ACCEPTANCE SHALL BE THE INSPECTION OF PIPE, FITTINGS AND JOINTS. THE TESTS SPECIFIED HEREIN AND IN SECTION 21, AND COMPLIANCE WITH THE SPECIFICATIONS. AT THE TIME OF MANUFACTURE, EACH LOT OF PIPE AND FITTINGS SHALL BE INSPECTED FOR DEFECTS AND TESTED FOR IMPACT, STIFFNESS AND FLATTENING IN ACCORDANCE WITH ASTM D2454. THE ENGINEER MAY REQUIRE CERTIFICATION BY THE MANUFACTURER THAT THE TEST RESULTS COMPLY WITH SPECIFICATION REQUIREMENTS. WHEN THE PIPE IS DELIVERED TO THE JOB SITE, THE ENGINEER MAY REQUIRE THE CONTRACTOR TO PROVIDE ADDITIONAL TESTING TO INSURE THE QUALITY OF THE PIPE AT NO EXPENSE TO THE CITY. PIPE WHICH IS NOT INSTALLED WITHIN 120 DAYS OF THE LATEST FACTORY TEST SHALL NOT BE USED WITHOUT PRIOR APPROVAL OF THE ENGINEER.
 - C. SELECTION OF TEST PIPE WHEN TESTING IS REQUIRED BY THE ENGINEER, ONE TEST PIPE SHALL BE SELECTED AT RANDOM BY THE ENGINEER FROM EACH 1200 LINEAR FEET OR FRACTION THEREOF OF EACH SIZE OF PIPE DELIVERED TO THE JOB SITE BUT NO LESS THAN ONE TEST PIPE PER LOT. A LOT SHALL BE DEFINED AS PIPE HAVING THE SAME IDENTIFICATION MARKING. THE LENGTH OF SPECIMEN OF EACH SELECTED PIPE SHALL BE A MINIMUM OF 8 FEET.
 - D. CELL CLASSIFICATION PIPE SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-S, 13364-A, OR 13364-B AS DERIVED IN ASTM D784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 10784. THE FITTINGS SHALL BE MADE OF PVC PLASTIC HAVING A CELL CLASSIFICATION OF 12454-S, 12454-C, OR 13364-C. PVC COMPOUNDS OF OTHER CELL CLASSIFICATIONS SHALL BE PRE-QUALIFIED BY THE MANUFACTURER.
 - E. JOINTS PIPE JOINTS SHALL BE BELL AND SPIGOT TYPE WITH AN ELASTOMERIC GASKET. THE GASKETED JOINTS SHALL BE MANUFACTURED WITH A SOCKET CONFIGURATION WHICH WILL PRECLUDE IMPROPER INSTALLATION OF THE GASKET AND WILL INSURE THE GASKET REMAINS IN PLACE DURING THE JOINING OPERATION. ALL PIPE SHALL HAVE A HOME MARK ON THE SPIGOT END TO INDICATE PROPER PENETRATION WHEN THE JOINT IS MADE.
 - F. IDENTIFICATION MARKS ALL PIPE FITTINGS AND COUPLINGS SHALL BE CLEARLY MARKED AT AN INTERVAL NOT TO EXCEED 5 FEET AS FOLLOWS:
 - (1) NOMINAL PIPE DIAMETER.
 - (2) PVC CELL CLASSIFICATION.
 - (3) COMPANY, PLANT, SHIFT, SIZE, AND DATE DESIGNATIONS.
 - (4) SERVICE DESIGNATION AND LEGEND.

G. DIMENSIONS AND TOLERANCES:

TABLE 2 - PIPE DIMENSION (INCHES)

NOMINAL SIZE	AVERAGE O.D.	TOLERANCE ON AVERAGE	MINIMUM WALL THICKNESS	APPROX. WT./20' LENGTH (LBS.)
6	6.275	±0.011	0.180	49.4
8	8.400	±0.012	0.240	88.5
10	10.500	±0.015	0.310	138.6
12	12.500	±0.018	0.360	198.1

H. CHEMICAL RESISTANCE THE PVC COMPOUND FOR CELL CLASSIFICATIONS NOT SPECIFICALLY IDENTIFIED IN ITEM D ABOVE SHALL BE PREQUALIFIED BY THE PIPE MANUFACTURER BY MEETING THE CHEMICAL RESISTANCE TESTS WHICH FOLLOW. COMPOUND SAMPLES AND HOLED TEST SPECIMENS SHALL BE PREPARED IN ACCORDANCE WITH ASTM D543.

TENSILE AND ZOO IMPACT EXPOSURE SPECIMENS SHALL BE INVERTED IN THE SOLUTIONS SPECIFIED IN TABLE 2 FOR A PERIOD OF 112 DAYS. TEST SPECIMENS SHALL BE CONDITIONED TO CONSTANT WEIGHT AT 110°F (43.3°C) BEFORE AND AFTER SUBMERSION. THE SOLUTIONS SHALL BE KEPT AT A TEMPERATURE OF 77°F (25°C) AT 28-DAY INTERVALS. SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND TESTED.

TABLE 2 - TEST SOLUTIONS

CHEMICAL SOLUTION	CONCENTRATION (%)
SULFURIC ACID	20
SODIUM HYDROXIDE	5
AMMONIUM HYDROXIDE	5
NITRIC ACID	1
FERRIC CHLORIDE	1
SOAP	0.1
DETERGENT (NEAR ALKYL BENZYL SULFONATE OR LAS)	0.1
BACTERIOLOGICAL	BOD NOT LESS THAN 70 PPM

* VOLUPTIC PERCENTAGES OF CONCENTRATED REAGENTS OF C.P. GRADE

WEIGHT CHANGE SPECIMENS SHALL BE 2 INCHES IN DIAMETER AND MAY BE HOLED DISCS OR DISCS CUT FROM THE PIPE WALL. SPECIMENS SHALL BE CONDITIONED FOR SEVEN DAYS AT 43 ± 2°C, COOLED IN A DESICCATOR FOR THE THREE HOURS AT 25 ± 2°C, WEIGHED, AND THEN INVERTED IN THE SOLUTIONS. AT 4 WEEK INTERVALS, SELECTED SPECIMENS SHALL BE REMOVED, WASHED, SURFACE DRIED AND WEIGHED. THESE SAME SPECIMENS SHALL THEN BE RECONDITIONED FOR SEVEN DAYS AT 43 ± 2°C, COOLED IN A DESICCATOR FOR THREE HOURS AT 25 ± 2°C AND AGAIN WEIGHED.

INITIAL AND POST EXPOSURE SPECIMENS SHALL MEET THE FOLLOWING REQUIREMENTS WHEN TESTED AT 25 ± 2°C:

PROPERTY	ASTM TEST METHOD	C.W. CLASS		
		12454	13364	13364
TENSILE STRENGTH (TENSILE), PSI	D 638	7000	6000	6000
IMPACT STRENGTH (FT-LBS/IN)	D 256 METHOD A	0.65	1.5	1.5
WEIGHT CHANGE, %	D 543	1.5	1.5	1.5

IF ANY SPECIMEN FAILS TO MEET THE REQUIREMENTS AT ANY TIME DURING THE 112 DAY EXPOSURE PERIOD, THE MATERIAL WILL BE SUBJECT TO REJECTION.

I. TRENCH EXCAVATION TRENCHES FOR PVC SEWER PIPE SHALL BE EXCAVATED AND PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 11 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION EXCEPT AS MODIFIED HEREIN.

(1) MAXIMUM EXCAVATION, THE MAXIMUM ALLOWABLE TRENCH WIDTH SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE PLUS 18 INCHES FOR PIPE UP TO 12 INCHES. IF THE TRENCH EXCAVATION EXCEEDS THE COMPUTED MAXIMUM ALLOWABLE TRENCH WIDTH WHETHER BY EXCAVATION, COLLAPSE, OR BY GROUND MOVEMENT, THE CONTRACTOR SHALL PROVIDE AT HIS OWN EXPENSE ADDITIONAL BEDDING, ANOTHER TYPE OF BEDDING, AND/OR A HIGHER STRENGTH OF PIPE DESIGNATED BY THE ENGINEER WHERE SHORING IS REQUIRED. THE ALLOWABLE WIDTH OF THE TRENCH SHALL BE INCREASED ONLY BY THE THICKNESS OF THE SHEATHING.

J. PIPE BEDDING WHERE UNSUITABLE MATERIAL IS ENCOUNTERED AT THE SUBGRADE AND ADDITIONAL EXCAVATION IS REQUIRED, THE VOID CREATED BY THE ADDITIONAL EXCAVATION SHALL BE RILLED AND COMPACTED WITH BEDDING MATERIAL SPECIFIED ON THE PLANS OR SPECIAL PROVISIONS. WHERE CONCRETE IS SPECIFIED TO BED THE PIPE, THE TOP OF THE CONCRETE SHALL BE CONSIDERED AS THE TOP OF THE BEDDING.

BEDDING MATERIAL SHALL CONSIST OF ONE OF THE FOLLOWING:

- (1) BEACH SAND.
- (2) NO. 8 OR NO. 67 AGGREGATE CONFORMING TO THE GRADATION REQUIREMENTS OF ASTM C-33.
- (3) JET SET ALTER AGGREGATE.
- (4) WASH FREE-DRAINING GRANULAR MATERIAL HAVING A MINIMUM SAND EQUIVALENT OF 100 OR HAVING A COEFFICIENT OF PERMEABILITY GREATER THAN 0.001 CENTIMETER PER SECOND.
- (5) OTHER MATERIAL APPROVED BY THE ENGINEER.

BEDDING MATERIAL SHALL BE PLACED SO THAT THE PIPE IS SUPPORTED FOR THE FULL LENGTH OF THE BARREL WITH FULL BEARING ON THE BOTTOM SEGMENT OF THE PIPE EQUAL TO A MINIMUM OF 0.4 TIMES THE OUTSIDE DIAMETER OF THE BARREL. IF THE PIPE IS TO BE LAID IN A ROCK EXCAVATION, THE ROCK SHALL BE REMOVED SUCH THAT NO RISERS, ROCKS, OR SOILD PROJECTIONS SHALL BE WITHIN 6 INCHES OF THE SEWER PIPE HORIZONTALLY AND THERE SHALL BE AT LEAST 4 INCHES OF BEDDING BELOW THE PIPE.

COMPACTION OF THE BEDDING FROM THE BOTTOM OF THE PIPE TO 12 INCHES ABOVE THE PIPE BARREL BY JETTING WILL BE PERMITTED PROVIDED THAT THE FOUNDATION MATERIAL WILL NOT SOFTEN OR BE OTHERWISE DAMAGED BY THE APPLIED WATER. FLOODING OR PONDING METHODS OF ACHIEVING THE REQUIRED RELAX DENSITY WILL NOT BE PERMITTED. THE SIZE AND LENGTH OF JET PIPE, QUANTITIES AND PRESSURE OF WATER, AND JETTING LOCATIONS SHALL BE SUFFICIENT TO COMPACT THE BEDDING TO 87% MINIMUM RELAX DENSITY. COMPACTION OF THE BARREL FROM 12 INCHES ABOVE THE PIPE BARREL TO THE FINISH SURFACE SHALL CONFORM TO THE REQUIREMENTS OF SECTION 11.4 OF THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION.

SPECIAL PROVISIONS FOR PVC PLASTIC SEWER PIPE (CQNT)

- K. ANDREL TEST OF PVC PIPE ANDREL TEST SHALL BE PERFORMED NO SOONER THAN 90 DAYS AFTER THE TRENCH BACKFILL IS COMPLETED IN ROADWAY AREAS. THE JOINTY PERIOD SHALL BEGIN AFTER INSTALLATION AND COMPACTION OF BEDDING BACKFILL AND SUBBASE TO WITHIN 2 FEET OF THE FINISHED PAVEMENT GRADE. A RIGID ANDREL SHALL BE PULLED THROUGH THE PIPE BY HAND BETWEEN ADJACENT HOLES TO MEASURE FOR OBSTRUCTIONS (DEFLECTIONS, JOINT OFFSETS AND LATERAL PIPE INTRUSIONS). THE ANDREL SHALL BE A CROSS SECTION EQUIVALENT TO A CIRCLE HAVING A DIAMETER AT LEAST 95 PERCENT OF THE SPECIFIED AVERAGE INSIDE DIAMETER OF THE PIPE. THE MINIMUM LENGTH OF THE CIRCULAR PORTION OF THE ANDREL SHALL BE EQUAL TO THE NOMINAL DIAMETER OF THE PIPE. THE TEST SHALL BE PERFORMED BY THE CONTRACTOR IN THE PRESENCE OF THE ENGINEER. ALL MATERIAL, EQUIPMENT AND LABOR REQUIRED TO PERFORM THE TEST SHALL BE PROVIDED BY THE CONTRACTOR AT NO COST TO THE CITY. ANY SECTION OF PIPE THAT FAILS TO PERMIT PASSAGE OF THE ANDREL WILL NOT BE ACCEPTED UNTIL PROPERLY REPAIRED OR REPLACED AND RETESTED.
2. BEDDING FOR PVC SEWER SHALL BE CLASS "B" AS SHOWN ON S-47 OF THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION UNLESS OTHERWISE NOTED.
3. THE MAXIMUM DESIGN DEFLECTION (FLATTENING) FOR PLASTIC PIPE SHALL BE 5 PERCENT. THE MAXIMUM SDR (STANDARD DIMENSION RATIO OF PIPE OUTSIDE DIAMETER TO PIPE WALL THICKNESS) SHALL BE AS FOLLOWS:
 4. SPECIAL WATERTIGHT HOLE COUPLINGS PER STANDARD DETAIL S-48 WILL BE REQUIRED FOR ALL HOLE CONNECTIONS. COUPLINGS MAY BE CAST IN PLACE INTO CAST-IN-PLACE HOLES OR INTO PRECAST CONCRETE HOLES WITH NON-SHRINK OR EXPANSION TYPE GROUT.
 5. FOR CONNECTIONS OF PVC LATERAL SEWERS TO MAINS OF DIFFERENT MATERIALS, AN APPROVED SADDLE WITH FITTING CONSTRUCTED OF THE SAME MATERIAL AS THE MAIN LINE SHALL BE INSTALLED. CONNECTION TO THE SADDLE FITTING SHALL BE MADE BY MEANS OF AN APPROVED FLEXIBLE RUBBER COUPLING IN ACCORDANCE WITH THE COUPLING MANUFACTURER'S INSTALLATION RECOMMENDATIONS OR BY OTHER MEANS ACCEPTABLE TO THE ENGINEER.
 6. PSC CONSULTANTS, LLC LETTER DATED APRIL 3, 2009, RECOMMENDS APPROVAL OF THE USE OF PVC PIPE FOR THE EAST KAPOLEI II DEVELOPMENT EAST-WEST ROAD AND ROAD T PROJECT.
 7. PVC PIPE SHALL BE LIMITED TO USE IN AGRICULTURAL, RESIDENTIAL AND APARTMENT ZONED AREAS AND IN SIZES FROM 6 INCHES TO 12 INCHES IN DIAMETER.

Community Planning and Engineering, Inc.
 P.O. Box 1000, Honolulu, HI 96808
 Phone: (808) 535-1100
 Fax: (808) 535-1101
 www.cpeinc.com

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 HONOLULU, EWA, OAHU, HAWAII
 (DPP SUBD. ALE NO. 2019/SUB-171)
 OWNER: DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

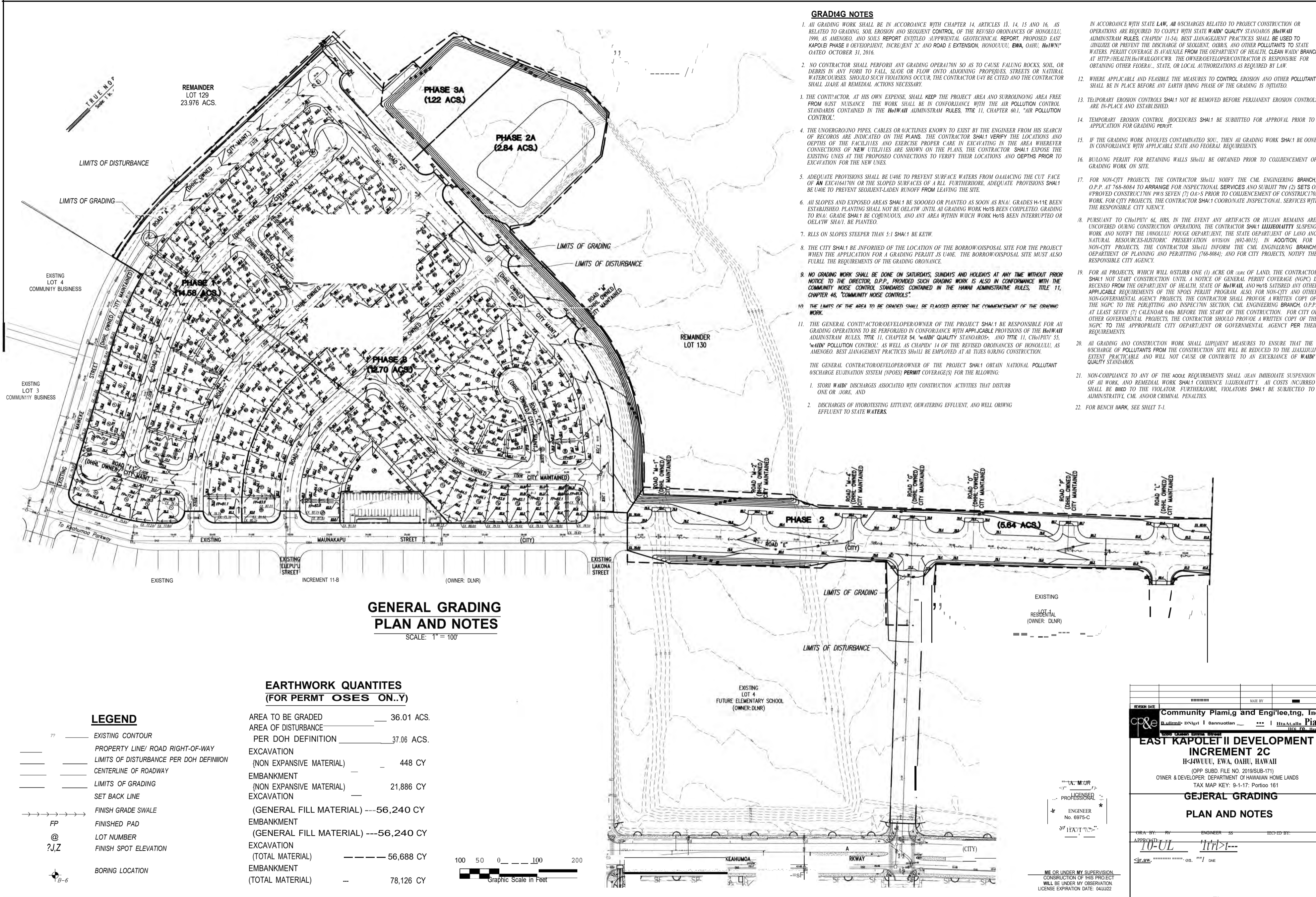
GENERAL NOTES - 4

DRAWN BY: RV, CO	ENGINEER: 66	CHECKED BY: AIM
------------------	--------------	-----------------

APPROVED: _____

THIS WORK WAS PREPARED FOR ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER. THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

AUG 11 2022
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 EA/1



GRADING NOTES

1. ALL GRADING WORK SHALL BE IN ACCORDANCE WITH CHAPTER 14, ARTICLES 11, 14, 15 AND 16, AS RELATED TO GRADING, SOIL EROSION AND SEQUENT CONTROL, OF THE REVISED ORDINANCES OF HONOLULU, 1990, AS AMENDED, AND SOILS REPORT ENTITLED "SUPPLEMENTAL GEOTECHNICAL REPORT, PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT, INCREMENT 2C AND ROAD E EXTENSION, HONOLULU, EWA, OAHU, HAWAII" DATED OCTOBER 31, 2016.
 2. NO CONTRACTOR SHALL PERFORM ANY GRADING OPERATION SO AS TO CAUSE FALLING ROCKS, SOIL, OR DEBRIS IN ANY FORM TO FALL, SLIDE OR FLOW ONTO ADJOINING PROPERTIES, STREETS OR NATURAL WATERCOURSES. SHOULD SUCH VIOLATIONS OCCUR, THE CONTRACTOR SHALL BE CITED AND THE CONTRACTOR SHALL TAKE ALL REMEDIAL ACTIONS NECESSARY.
 3. THE CONTRACTOR, AT HIS OWN EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST AND NOISE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 60.1, "AIR POLLUTION CONTROL".
 4. THE UNDERGROUND PIPES, CABLES OR UTILITIES KNOWN TO EXIST BY THE ENGINEER FROM HIS SEARCH OF RECORDS ARE INDICATED ON THE PLANS. THE CONTRACTOR SHALL VERIFY THE LOCATIONS AND DEPTHS OF THE UTILITIES AND EXERCISE PROPER CARE IN EXCAVATING IN THE AREA WHEREVER CONNECTIONS OF NEW 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.
 5. ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SURFACE WATERS FROM OAKING THE CUT FACE OF AN EXCAVATION OR THE SLOPED SURFACES OF A RILL. FURTHERMORE, ADEQUATE PROVISIONS SHALL BE MADE TO PREVENT SEQUENT-LADEN RUNOFF FROM LEAVING THE SITE.
 6. ALL SLOPES AND EXPOSED AREAS SHALL BE SOOLED OR PLANTED AS SOON AS PRACTICABLE. GRADES SHALL BE ESTABLISHED. PLANTING SHALL NOT BE DELAYED UNTIL ALL GRADING WORK HAS BEEN COMPLETED. GRADING TO FINAL GRADE SHALL BE CONTINUOUS, AND ANY AREA WITHIN WHICH WORK HAS BEEN INTERRUPTED OR DELAYED SHALL BE RE-PLANTED.
 7. RILLS ON SLOPES STEEPER THAN 5:1 SHALL BE KEPT.
 8. THE CITY SHALL BE INFORMED OF THE LOCATION OF THE BORROW/ DISPOSAL SITE FOR THE PROJECT WHEN THE APPLICATION FOR A GRADING PERMIT IS MADE. THE BORROW/ DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
 9. NO GRADING WORK SHALL BE DONE ON SATURDAYS, SUNDAYS AND HOLIDAYS AT ANY TIME WITHOUT PRIOR NOTICE TO THE DIRECTOR, D.P.P. PROVIDED SUCH GRADING WORK IS ALSO IN CONFORMANCE WITH THE COMMUNITY NOISE CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES, TITLE 11, CHAPTER 46, "COMMUNITY NOISE CONTROLS".
 10. THE LIMITS OF THE AREA TO BE GRADED SHALL BE FLAGGED BEFORE THE COMMENCEMENT OF THE GRADING WORK.
 11. THE GENERAL CONTRACTOR/ DEVELOPER/ OWNER OF THE PROJECT SHALL BE RESPONSIBLE FOR ALL GRADING OPERATIONS TO BE PERFORMED IN CONFORMANCE WITH APPLICABLE PROVISIONS OF THE 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 GENERAL CONTRACTOR/ DEVELOPER/ OWNER OF THE PROJECT SHALL OBTAIN NATIONAL POLLUTANT DISCHARGE PERMIT (NPDES) PERMIT COVERAGE(S) FOR THE FOLLOWING:
1. STORED WASTE DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE, AND
 2. DISCHARGES OF HYDROTHERMAL EFFLUENT, SEWERAGE EFFLUENT, AND WELL DRIVING EFFLUENT TO STATE WATERS.

12. WHERE APPLICABLE AND FEASIBLE THE MEASURES TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTHWORK PHASE OF THE GRADING IS INITIATED.
13. TEMPORARY EROSION CONTROLS SHALL NOT BE REMOVED BEFORE PERMANENT EROSION CONTROLS ARE IN PLACE AND ESTABLISHED.
14. TEMPORARY EROSION CONTROL PROCEDURES SHALL BE SUBMITTED FOR APPROVAL PRIOR TO APPLICATION FOR GRADING PERMIT.
15. IF THE GRADING WORK INVOLVES CONTAMINATED SOIL, THEN ALL GRADING WORK SHALL BE DONE IN CONFORMANCE WITH APPLICABLE STATE AND FEDERAL REQUIREMENTS.
16. BONDING PERMIT FOR RETAINING WALLS SHALL BE OBTAINED PRIOR TO COMMENCEMENT OF GRADING WORK ON SITE.
17. FOR NON-CITY PROJECTS, THE CONTRACTOR SHALL NOTIFY THE CML ENGINEERING BRANCH, O.P.P. AT 768-8084 TO ARRANGE FOR INSPECTION SERVICES AND SUBMIT TWO (2) SETS OF PROPOSED CONSTRUCTION PERMITS SEVEN (7) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION WORK. FOR CITY PROJECTS, THE CONTRACTOR SHALL COORDINATE INSPECTION SERVICES WITH THE RESPONSIBLE CITY AGENCY.
18. PURSUANT TO CHAPTER 60.1, HRS, IN THE EVENT ANY ARTIFACTS OR 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 NOTIFY THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING (768-8084); AND FOR CITY PROJECTS, NOTIFY THE RESPONSIBLE CITY AGENCY.
19. 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 NGPC 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, CML ENGINEERING BRANCH, O.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.
20. ALL GRADING AND 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 EXCESSIVE OF WASTE QUALITY STANDARDS.
21. NON-COMPLIANCE TO ANY OF THE ABOVE REQUIREMENTS SHALL JEOPARDISE SUSPENSION OF ALL WORK, AND REMEDIAL WORK SHALL COMMENCE IMMEDIATELY. ALL COSTS INCURRED SHALL BE Borne BY THE VIOLATOR. FURTHERMORE, VIOLATORS SHALL BE SUBJECT TO ADMINISTRATIVE, CIVIL AND/OR CRIMINAL PENALTIES.
22. FOR BENCH MARK, SEE SHEET T-1.

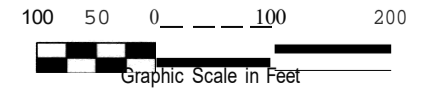
GENERAL GRADING PLAN AND NOTES
SCALE: 1" = 100'

EARTHWORK QUANTITIES (FOR PERMIT USES ONLY)

AREA TO BE GRADED	36.01 ACS.
AREA OF DISTURBANCE	37.06 ACS.
EXCAVATION (NON EXPANSIVE MATERIAL)	448 CY
EMBANKMENT (NON EXPANSIVE MATERIAL)	21,886 CY
EXCAVATION (GENERAL FILL MATERIAL)	56,240 CY
EMBANKMENT (GENERAL FILL MATERIAL)	56,240 CY
EXCAVATION (TOTAL MATERIAL)	56,688 CY
EMBANKMENT (TOTAL MATERIAL)	78,126 CY

LEGEND

- EXISTING CONTOUR
- PROPERTY LINE/ ROAD RIGHT-OF-WAY
- LIMITS OF DISTURBANCE PER DOH DEFINITION
- CENTERLINE OF ROADWAY
- LIMITS OF GRADING
- SET BACK LINE
- FINISH GRADE SWALE
- FP FINISHED PAD
- @ LOT NUMBER
- 2/JZ FINISH SPOT ELEVATION
- B-6 BORING LOCATION



REVISION DATE: _____ MADE BY: _____

Community Planning and Engineering, Inc.
Bullitt - Design | Innovation | Integrity | Hawaii, Inc.

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
14-4444, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2019/SUB-171)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17; Portion 161

GENERAL GRADING PLAN AND NOTES

ORA BY: RV ENGINEER: SS RECD BY: _____

APPROVED: *[Signature]*

10-UL *[Signature]*

DATE: 10/11/22

ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/02/22

C:\Construction Drawings\Government Review #706 C-5 General Grading Plan.dwg, 1/13/2022 2:52:28 PM

TRUE NORTH
Scale: 1 in. = 40 ft.

SECTION A-A:
SEE DWG. NO. C-10

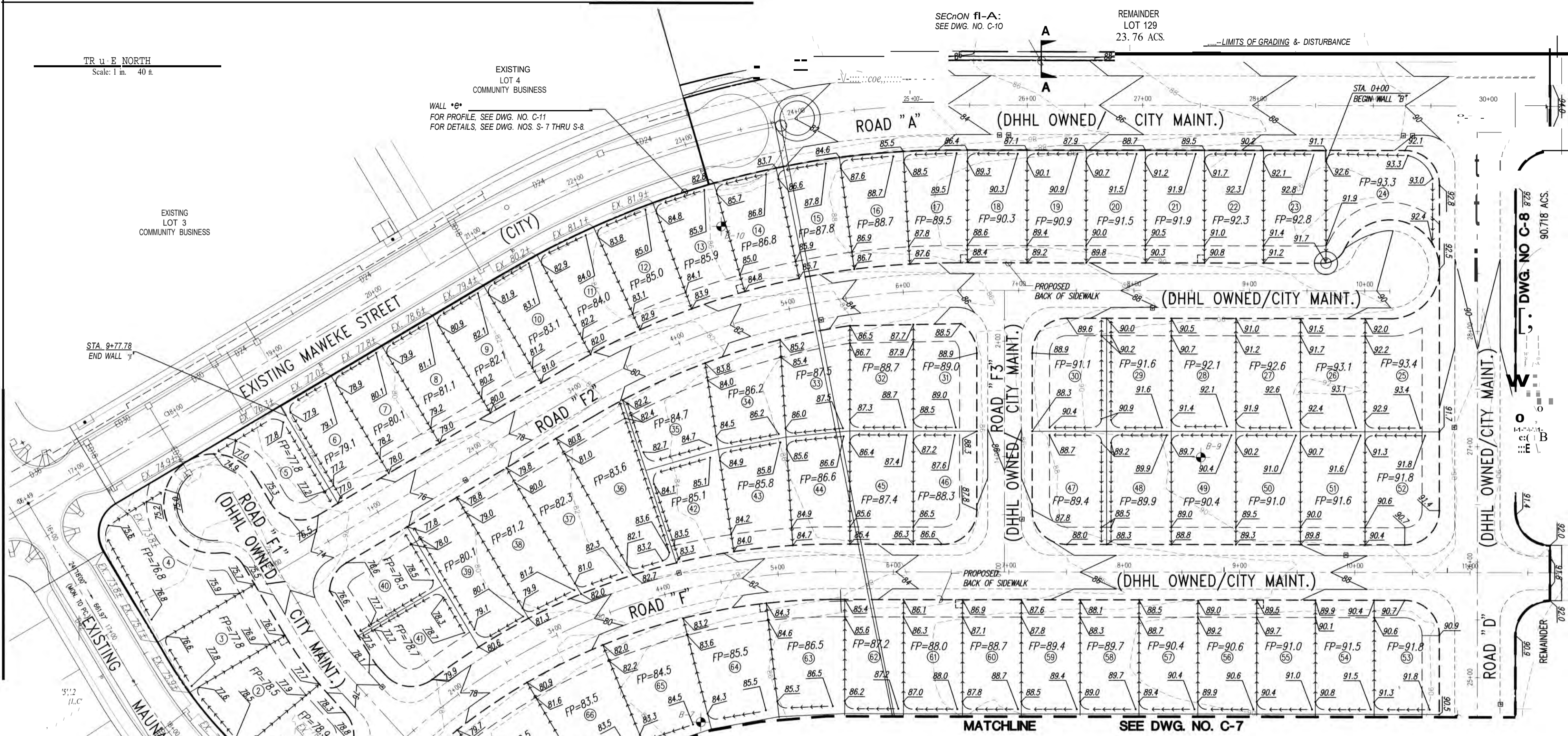
REMAINDER
LOT 129
23.76 ACS.

---LIMITS OF GRADING & DISTURBANCE

EXISTING
LOT 4
COMMUNITY BUSINESS
WALL "C"
FOR PROFILE, SEE DWG. NO. C-11
FOR DETAILS, SEE DWG. NOS. S-7 THRU S-8.

EXISTING
LOT 3
COMMUNITY BUSINESS

STA. 9+77.78
END WALL "A"



LEGEND

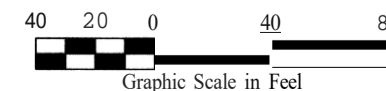
- 75 --- EXISTING CONTOUR
- 78 --- ROADWAY GRADING CONTOUR
- --- CENTERLINE OF ROADWAY
- --- SET BACK LINE
- --- PROPERTY LINE
- --- LIMITS OF GRADING
- --- LIMITS OF DISTURBANCE PER DOH DERRISION
- --- PROPOSED BACK OF SIDEWALK
- FP FINISHED PAD
- @ LOT NUMBER
- 73.7 FINISH SPOT ELEVATION
- --- EXIST. DRAIN LINE W/ SIZE
- --- BORING LOCATION

LOT GRADING PLAN - 1

SCALE: 1"=40'

NOTE:

1. SEE DWG. NO. C-5 FOR EARTHWORK SUMMARY.



W. HUI
LICENSED PROFESSIONAL ENGINEER
No. 6975-C

ME OR UNDER MY SUPERVISION
CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/30/22

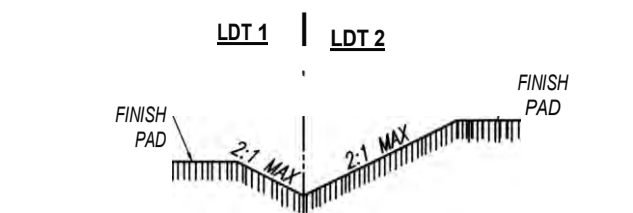
Commoity Planning and Engineering, Inc.
EAST KAPOLEI II DEVELOPMENT
INCREMENT 2C
OUUUU, EWA, OAHU, HAWAII
(DPP SUBD. ALE NO. 2019/SUB-171)
OWNER: DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 161

LOT GRADING PLAN - 1
WALL "B" - PLAN

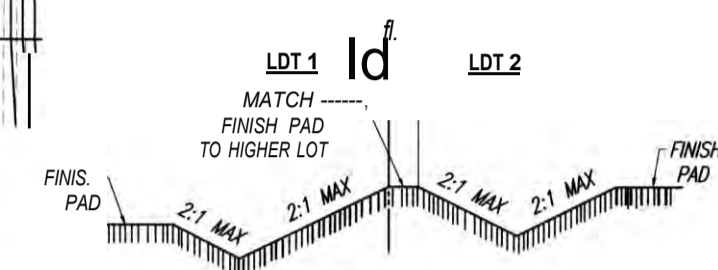
OWNER: LO ENGINEER: SS CHECKED BY:
APPROVED: (FOR GRADING ONLY)

DATE: 04/20/22

TRUE NORTH
Scale: 1 in. = 40 ft



TYPICAL SINGLE SWALE SECTION
AT ADJONN3 LOTS
NOT TO SCALE

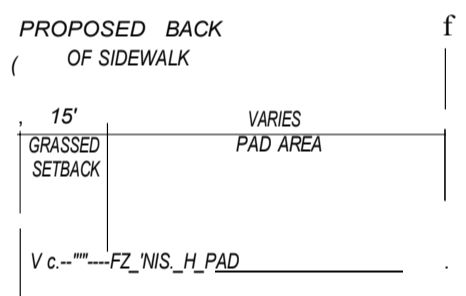


TYPICAL DOUBLE SWALE SECTION
AT ADJOINING LOTS
NOT TO SCALE

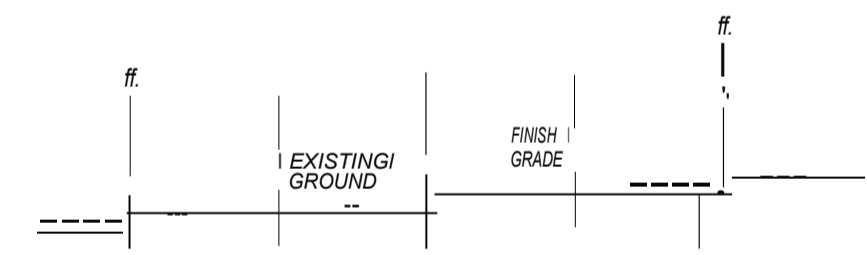
REMAINDER
LOT 130
90.718 ACS.

LEGEND

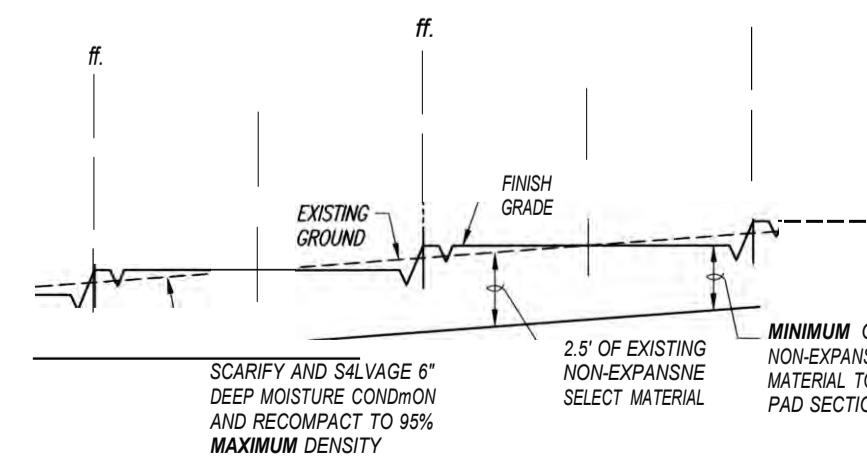
- - - - - EXISTING CONTOUR
- - - - - ROADWAY GRADING CONTOUR
- - - - - CENTERLINE OF ROADWAY
- - - - - SET BACK LINE
- - - - - PROPERTY LINE
- - - - - LIMITS OF GRADING
- - - - - LIMITS OF DISTURBANCE PER DOH DEFINITION
- - - - - PROPOSED BACK OF SIDEWALK
- - - - - FINISH GRADE SWALE PATTERN
- FP FINISHED PAD
- @ LOT NUMBER
- 73.7 FINISH SPOT ELEVATION
- - - - - EXIST. DRAIN LINE W/ SIZE
- R-6 BORING LOCATION



TYPICAL LOT SECTION
NOT TO SCALE

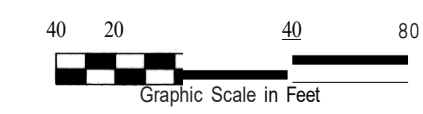


TYPICAL SINGLE SWALE LOT SECTION
NOT TO SCALE



TYPICAL DOUBLE SWALE LOT SECTION
NOT TO SCALE

LOT GRADING PLAN - 2
SCALE: 1"=40'



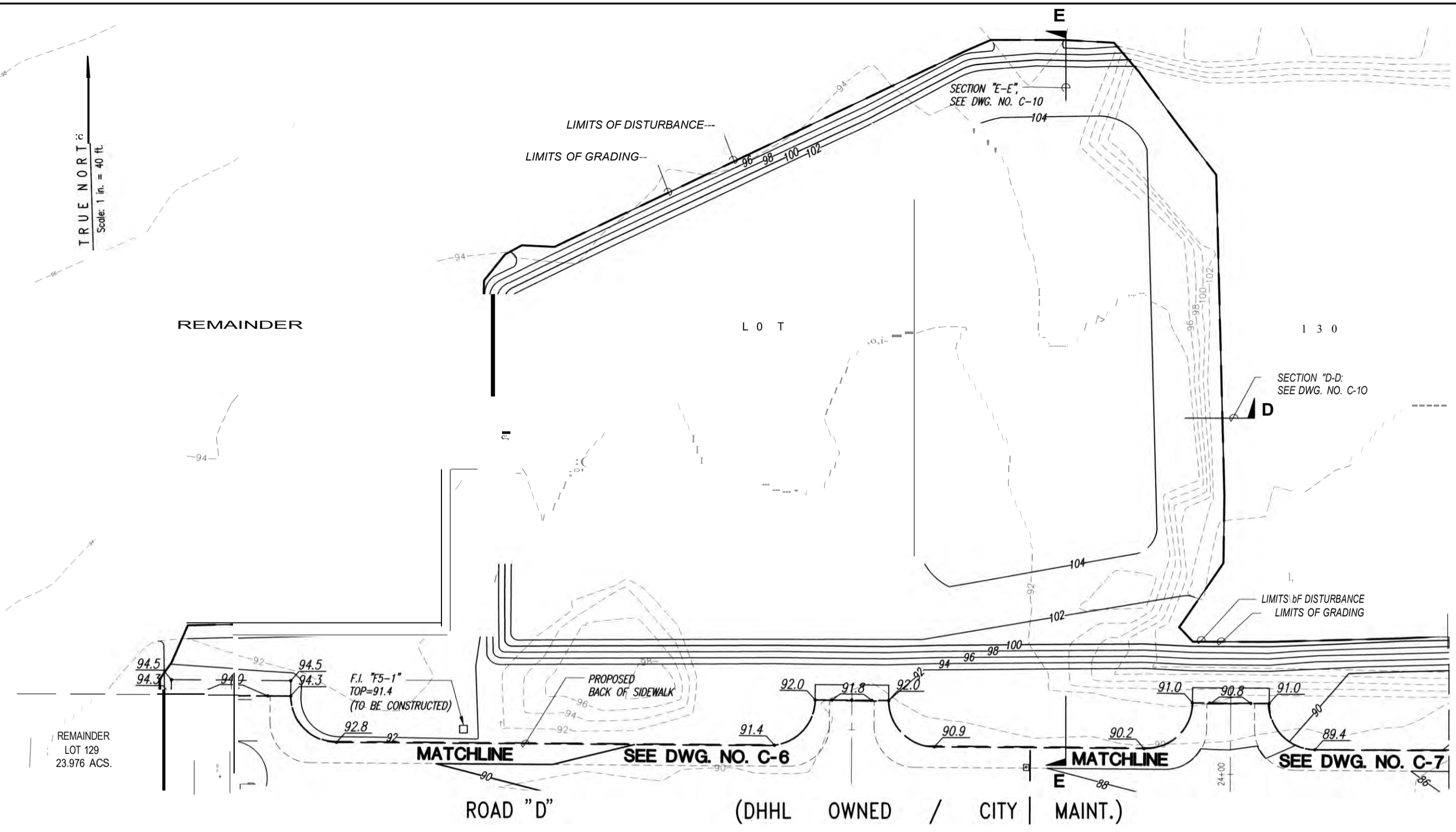
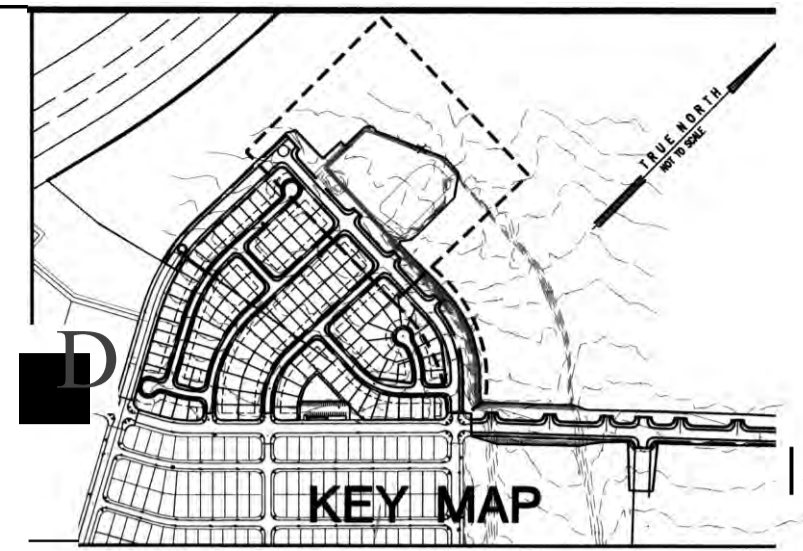
Connooly Planning and Engineering, Inc.
 228 Queen Emma Street, Honolulu, HI 96813
 EAST KAPOLET II DEVELOPMENT
 INCREMENT 2C
 HILO, HAWAII
 OHP SUBO FILE NO. 2019/SUB-171
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

**LOT GRADING PLAN - 2
WALL "A" - PLAN**

DRAWN BY: LO ENGINEER: SS CHECKED BY: [Signature]
 APPROVED: [Signature] (FOR GRADING ONLY)
 I, [Signature], LICENSED PROFESSIONAL ENGINEER No. 6975-C, MEET UNDER MY SUPERVISION THE REQUIREMENTS OF THIS PROJECT AND WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/1/22

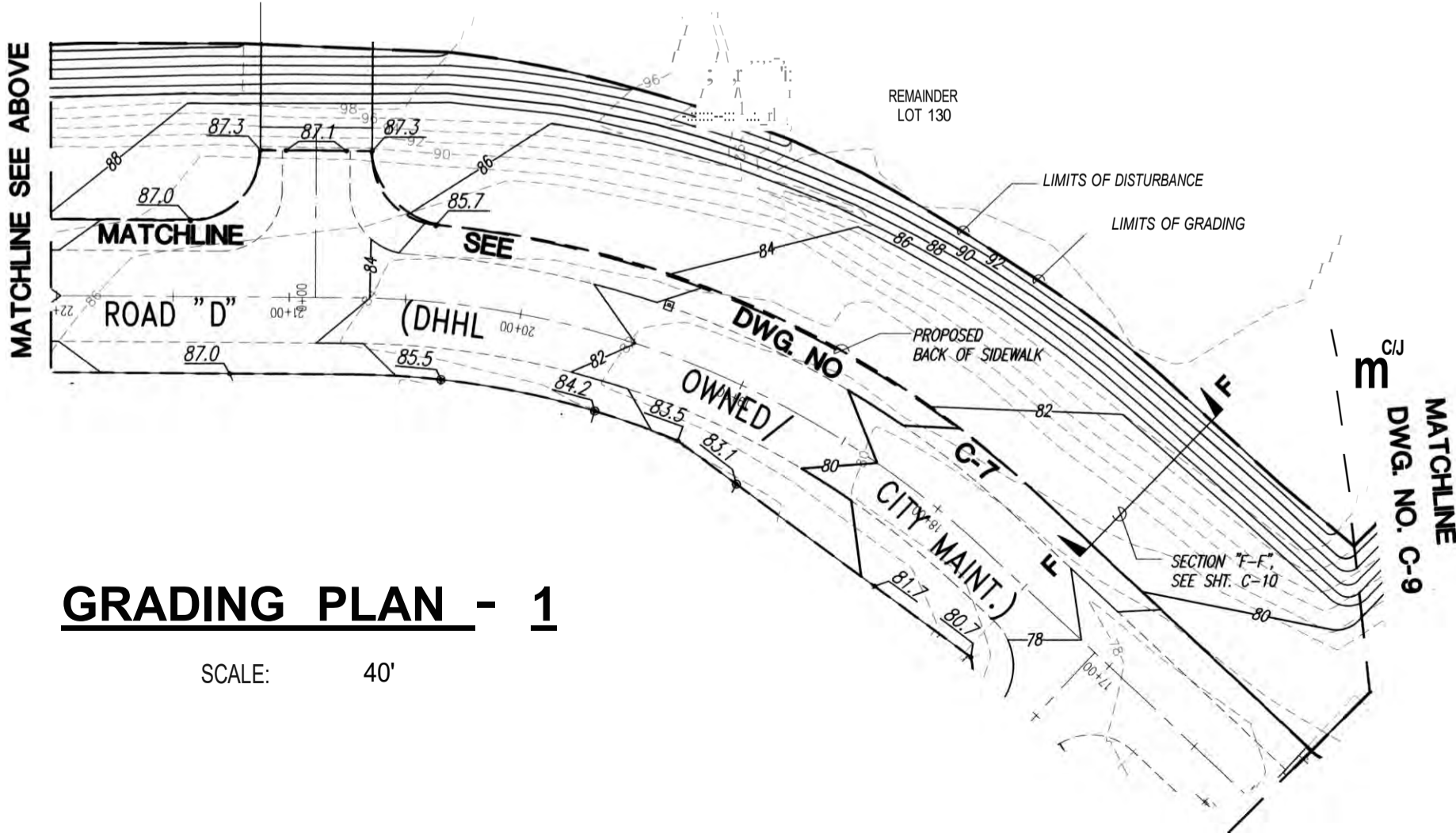
P:\land Projects\DHHL East 11.14.21\11.14.21.dwg, 1/14/2022 12:07:46 PM

TRUE NORTH
Scale: 1 in. = 40 ft.



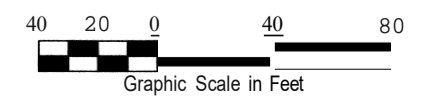
LEGEND

- 78 - - - - EXISTING CONTOUR
- - - - 78 - - - - ROADWAY GRADING CONTOUR
- — — — CENTERLINE OF ROADWAY
- — — — PROPERTY LINE
- - - - LIMITS OF GRADING
- - - - LIMITS OF DISTURBANCE PER DOH DERRITION
- - - - PROPOSED BACK OF SIDEWALK
- FP RUSHED PAD
- @ LOT NUMBER
- 73.7 FINISH SPOT ELEVATION
- 1'- EXIST. DRAIN LINE W/ SIZE
- B-6 BORING LOCATION



GRADING PLAN - 1

SCALE: 40'



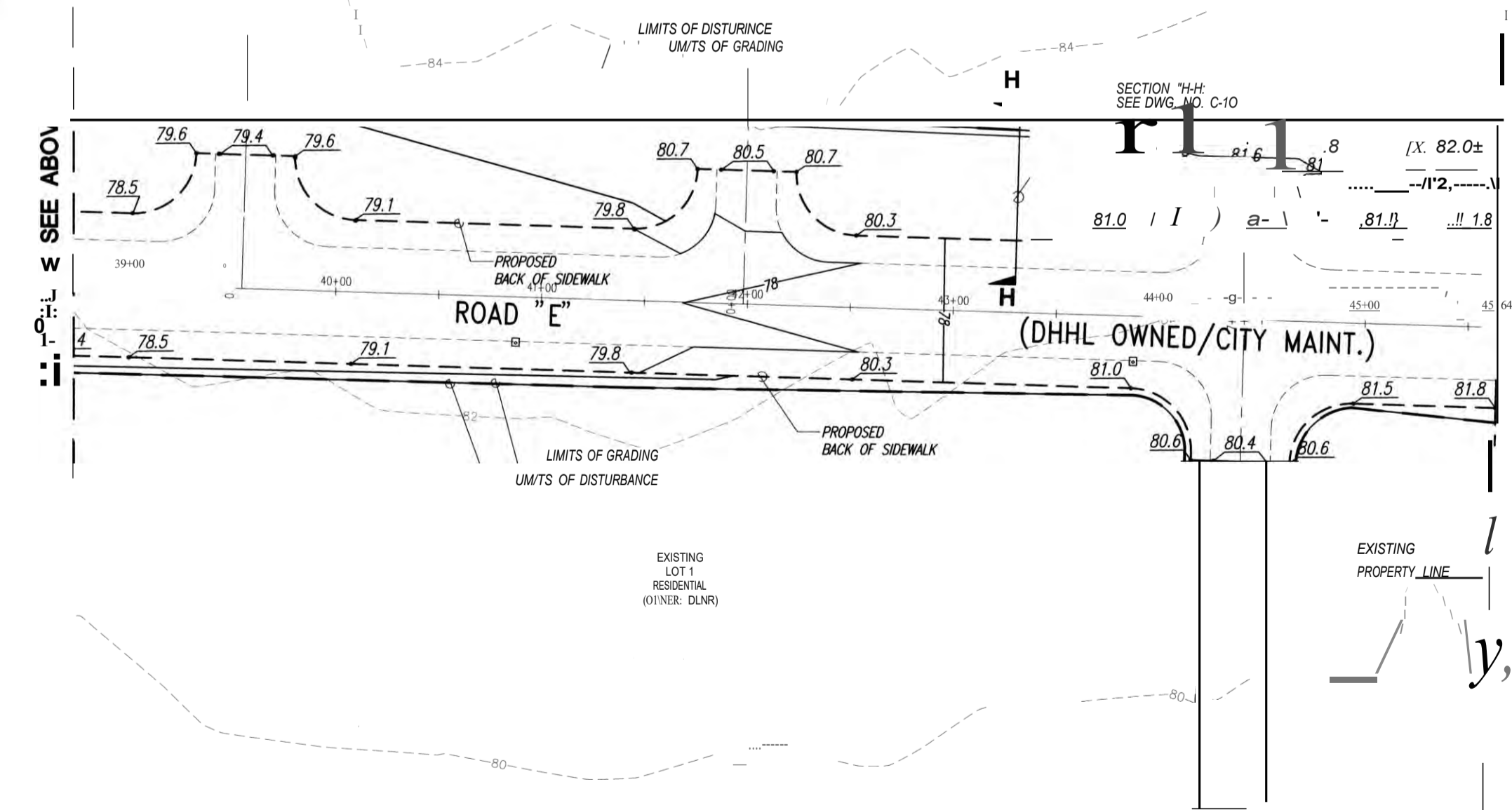
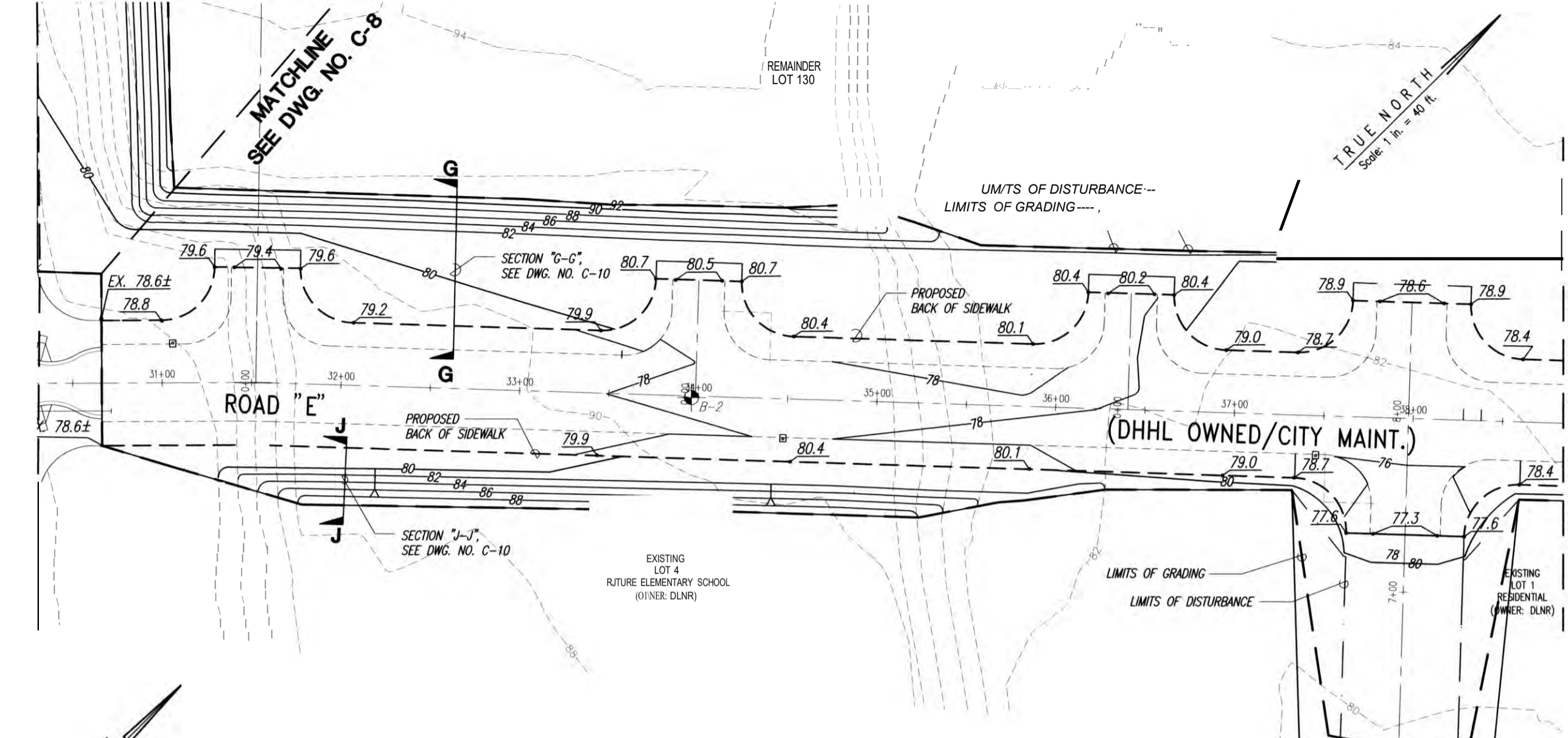
THIS MAP WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/01/22

Community Planning and Engineering, Inc.
 1286 Queen Emma Street
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 HOOILUU, EWA, OAHU, HAWAII
 (DPP SUBO. FILE NO. 2019/SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

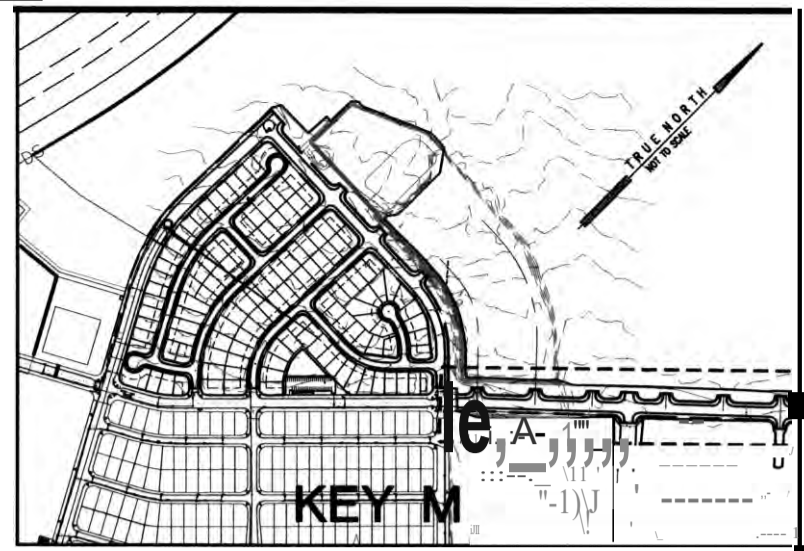
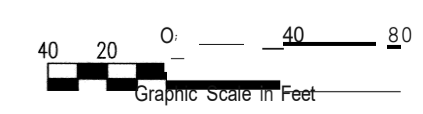
GRADING PLAN - 1

DRAWN BY: LO ENGINEER: SS CHECKED BY: JHIII
 APPROVED: *W. A. H. H.*

P:\Land Projects\DHHL East Kapolei II\Increment II-C\Construction Drawings\Government Review\7109-10 C-8 to C-9 Berm and Road E Grading Plan.dwg, 1/14/2022 11:37:40 AM

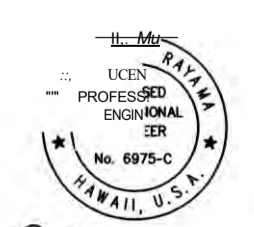


GRADING PLAN - 2
SCALE: 1" = 40'



LEGEND

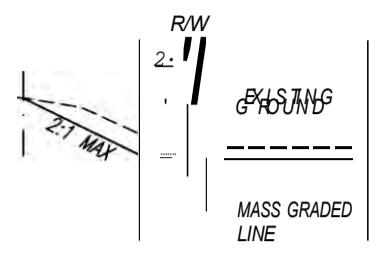
- 78 --- EXISTING CONTOUR
- 78 --- ROADWAY GRADING CONTOUR
- --- CENTERLINE OF ROADWAY
- --- PROPERTY LINE
- --- LIMITS OF GRADING
- --- UM/TS OF DISTURBANCE PER DOH DEFINITION
- --- PROPOSED BACK OF SIDEWALK
- FP FINISHED PAD
- @ LOT NUMBER
- 73.7 FINISH SPOT ELEVATION
- " EXIST. DRAIN LINE W/ SIZE
- B-6 BORING LOCATION



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 01/30/22

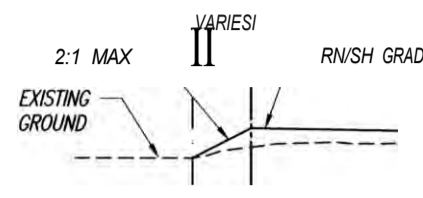
REVISION DATE	BY	DATE
Comm.nty Planning and Engineering, Inc. c:\w\DN\alt\... EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HOOJUUU, EWA, OAHU, HAWAII (OPP SUBO. FILE NO. 2019/SUB-171) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 161		
GRADING PLAN - 2		
DRAWN BY: LD	ENGINEER: SC	CHECKED BY: JMM
APPROVED: <i>[Signature]</i> DATE: 1/14/22		

LIMITS OF GRADING & DISTURBANCE AREA

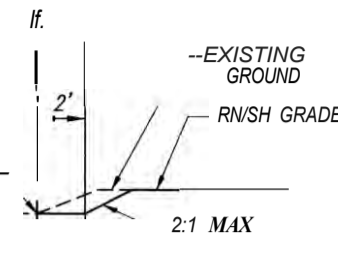


SECTION A-A'
SCALE: 1"=5'

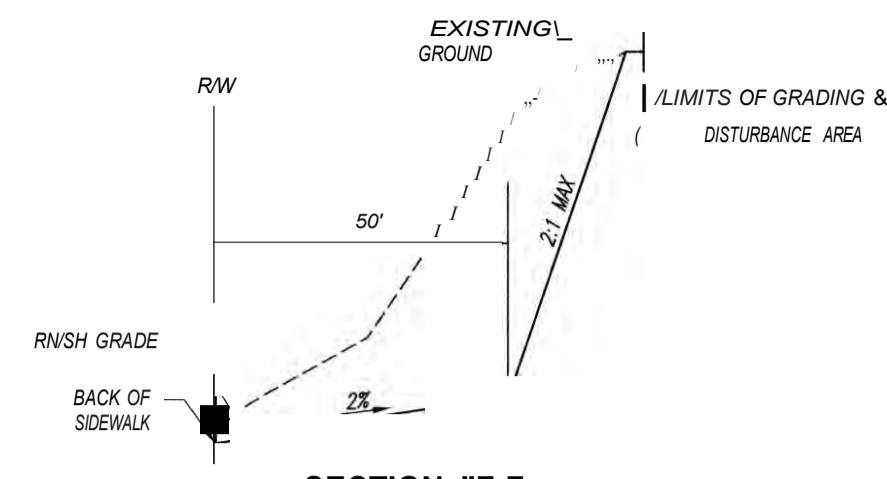
LIMITS OF GRADING & DISTURBANCE AREA



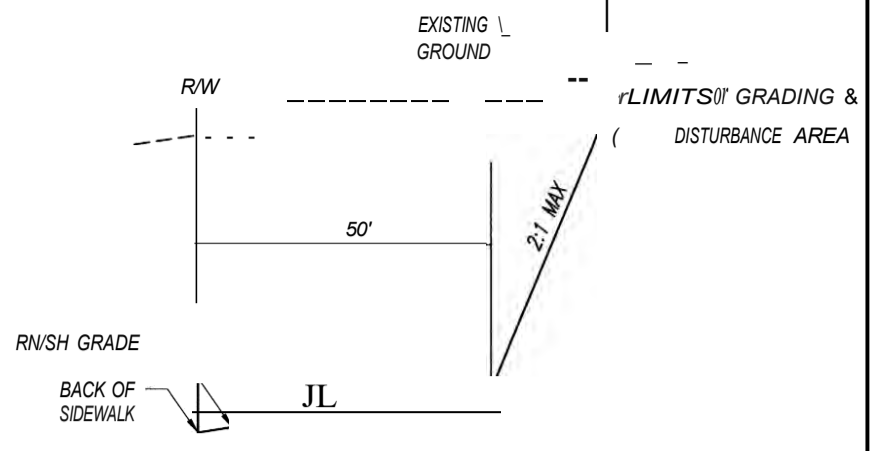
SECTION e-e'
SCALE: 1"=4'



SECTION c-c'
SCALE: 1"=5'

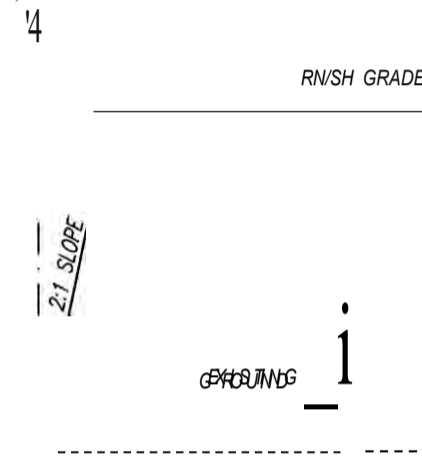


SECTION F-F'
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'



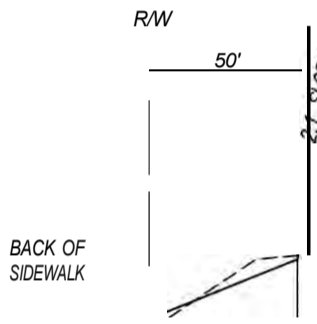
SECTION G-G'
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'

LIMITS OF GRADING & DISTURBANCE AREA



SECTION 0-0'
SCALE: HORIZ. 1"=40'
VERT. 1"= 4'

LIMITS OF GRADING & DISTURBANCE AREA

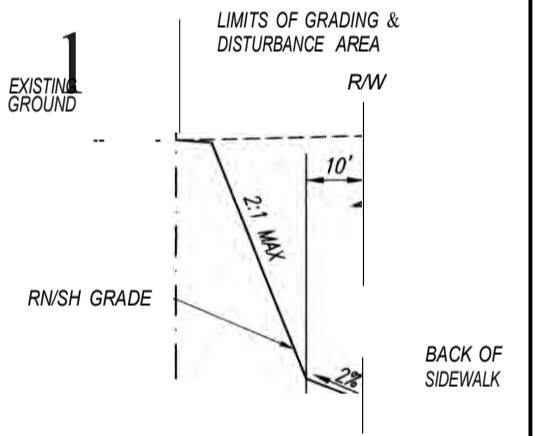


SECTION E-E'
SCALE: HORIZ. 1"=40'
VERT. 1"= 4'

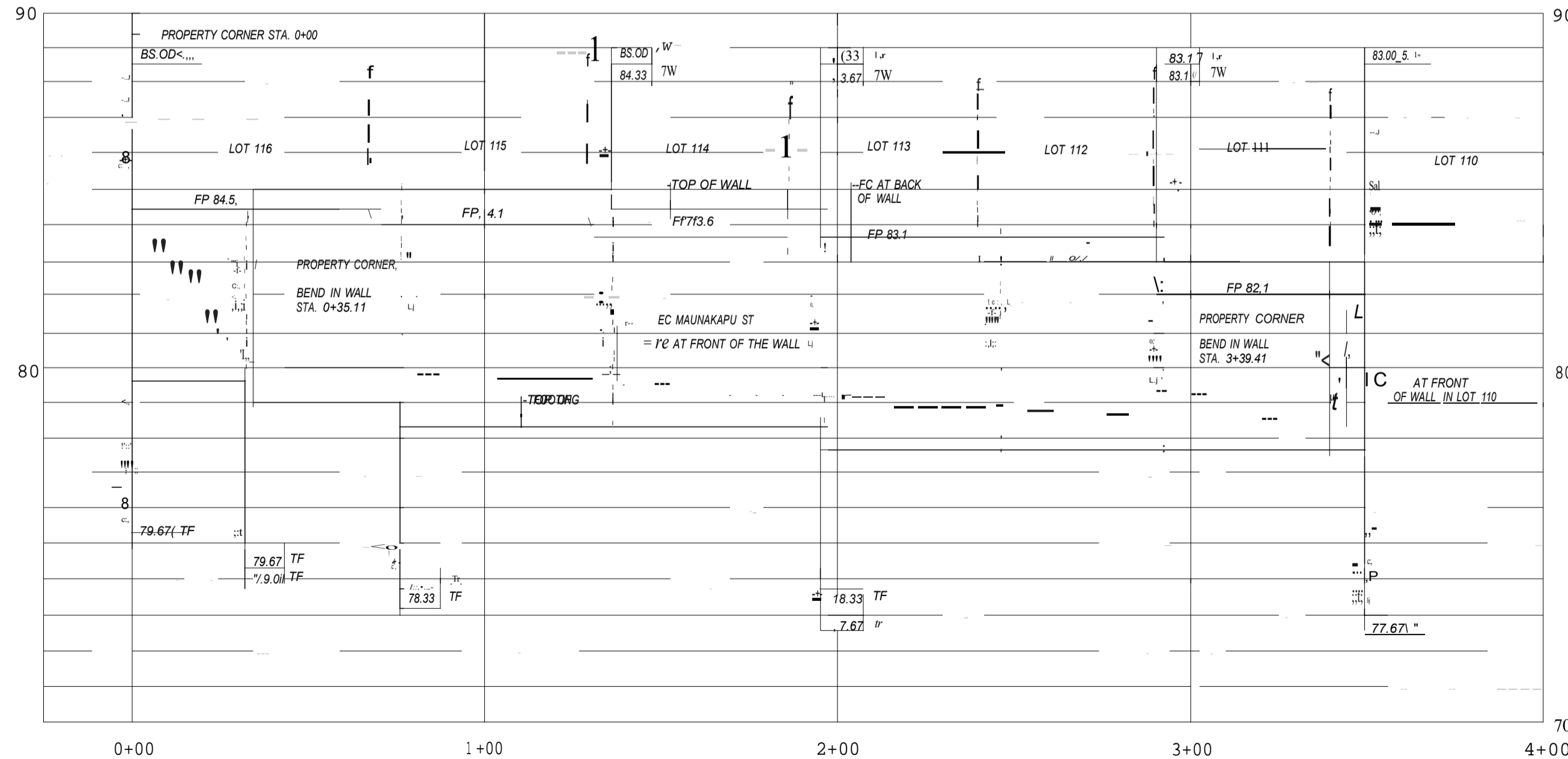
R/SH GRADE

LIMITS OF GRADING & DISTURBANCE AREA

SECTION H-H'
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'



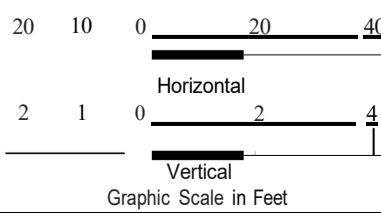
SECTION J-J'
SCALE: HORIZ. 1"=20'
VERT. 1"= 4'



PROFILE - WALL A-A
SCALE: HORIZ. 1"=20'
VERT. 1"= 2'

LEGEND

- TW : TOP OF WALL
- TF : TOP OF FOOTING
- EC : EXISTING GRADE
- 1'0" : R/SH GRADE
- FP : R/SH PAD ELEVATION
- W.C. : WALL CONTROL JOINT
- E.C. : WALL EXPANSION JOINT



LICENSED PROFESSIONAL ENGINEER
No. 6975-C
- 73/4 -
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION CONSTRUCTION OF THIS PROJECT MUST BE UNDER MY OBSERVATION LICENSE EXPIRATION DATE: 04/30/22

Community Planning and Engineering, Inc.
1288 Kalia Blvd., Suite 100, Honolulu, HI 96813
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HOONIUU, EWA, OAHU, HAWAII
(OPP SUBO. FILE NO. 2019SUB-171)
OWNER: DEVELOPER, DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 161

GRADT, IG SECTIONS AND PROFILE - WALL A-A

DRAWN BY: LO, CO ENGINEER: SS CHECKED BY: AMM

APPROVED: [Signature]

DATE: 04/20/22

0+

Z

I-

[- - -]-

OF THE WALL

FP=80.1

tis

Horizontal

/4

FP=81.1

4

Vertical

0
=

80

1 2 3 4

Graphic Scale in Feet

-

|

-fOP OL: 1+ -

0

E

3

...

FOOTING

1

1

2

3

4

5

W

80.63
Ir

TF

8

ii.

+

FG AT FRONT

11.

TF

8

TF

1/4

1.

OF WALL IN

9

96

TF

79.30

LOT 5

9

79.

J

Lu

30

PROPERTY

CORNER

BEND IN

WALL

H O O U U U ,
E W A ,
O A H U ,
H A W A I I
O P P
S U B D . F I L E
N O .
2 0 1 9 / S U B -
1 7 1)

M a s t e r P l a n ,
1 6 0 3 4 4 H i l a n a
**E A S T K A P O L E I I I
D E V E L O P M E N T
I N C R E M E N T 2 C**

6+00

7+00

8+00

9+00

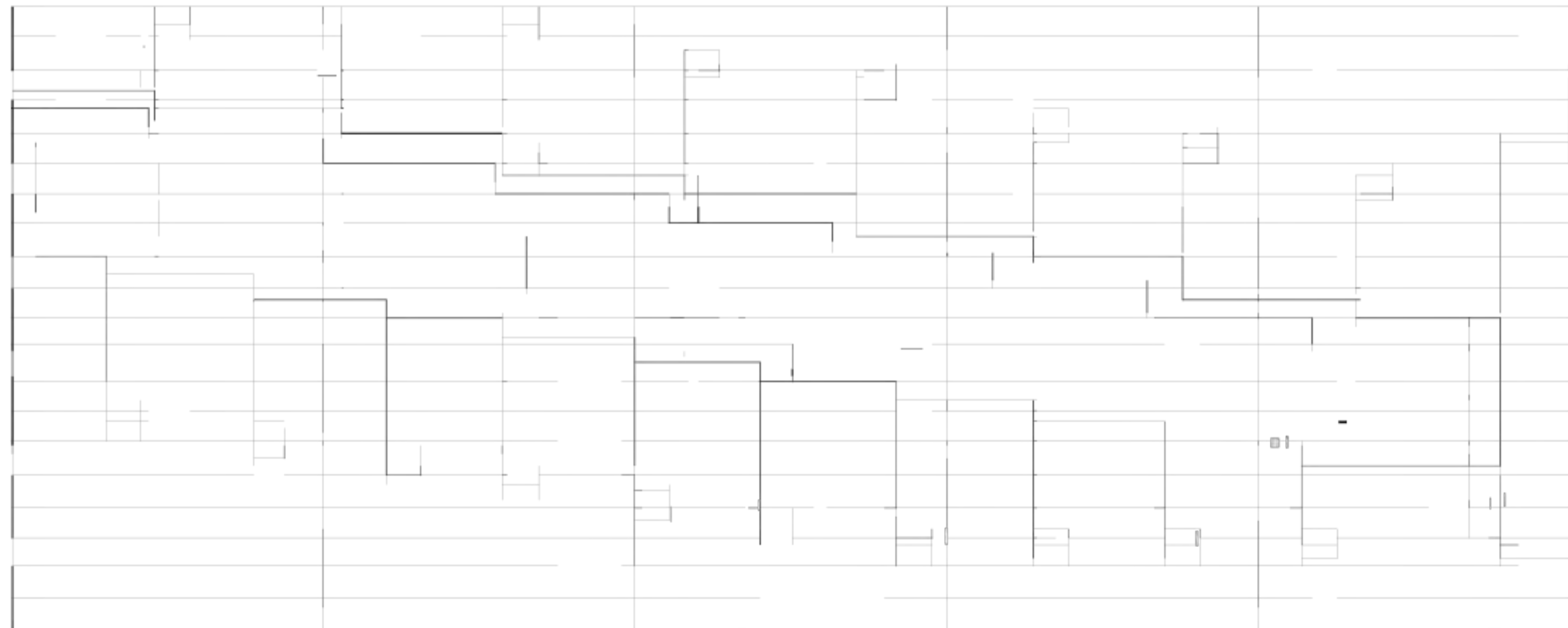
10+00

70

SCALE: HORIZ. = 1" = 20'
VERT. 1" = 2'

No. 6975-C
I.L.A. II C.
THIS WORK WAS PREPARED
BY ME OR UNDER MY SUPERVISION
IN FULL COMPLIANCE WITH THE
CONSTRUCTION OF THIS PROJECT
I WILL BE UNDER MY OBSERVATION
LICENSE EXPIRATION DATE: 04/30/22
DWG. NO. C-11

DRAWN BY: LO, CO ENGINEER: SS CHECKED BY:
APPROVAL: FU, PMSH, FHR, NO.
SHEET JL OF 109 SHEETS



REVISION	DATE	BY	CHKD.
C&E ENGINEERING, INC. 1000 S. 10th Street, Suite 100 Lincoln, NE 68502 Phone: (402) 441-1111 Fax: (402) 441-1112 Email: info@candee.com			

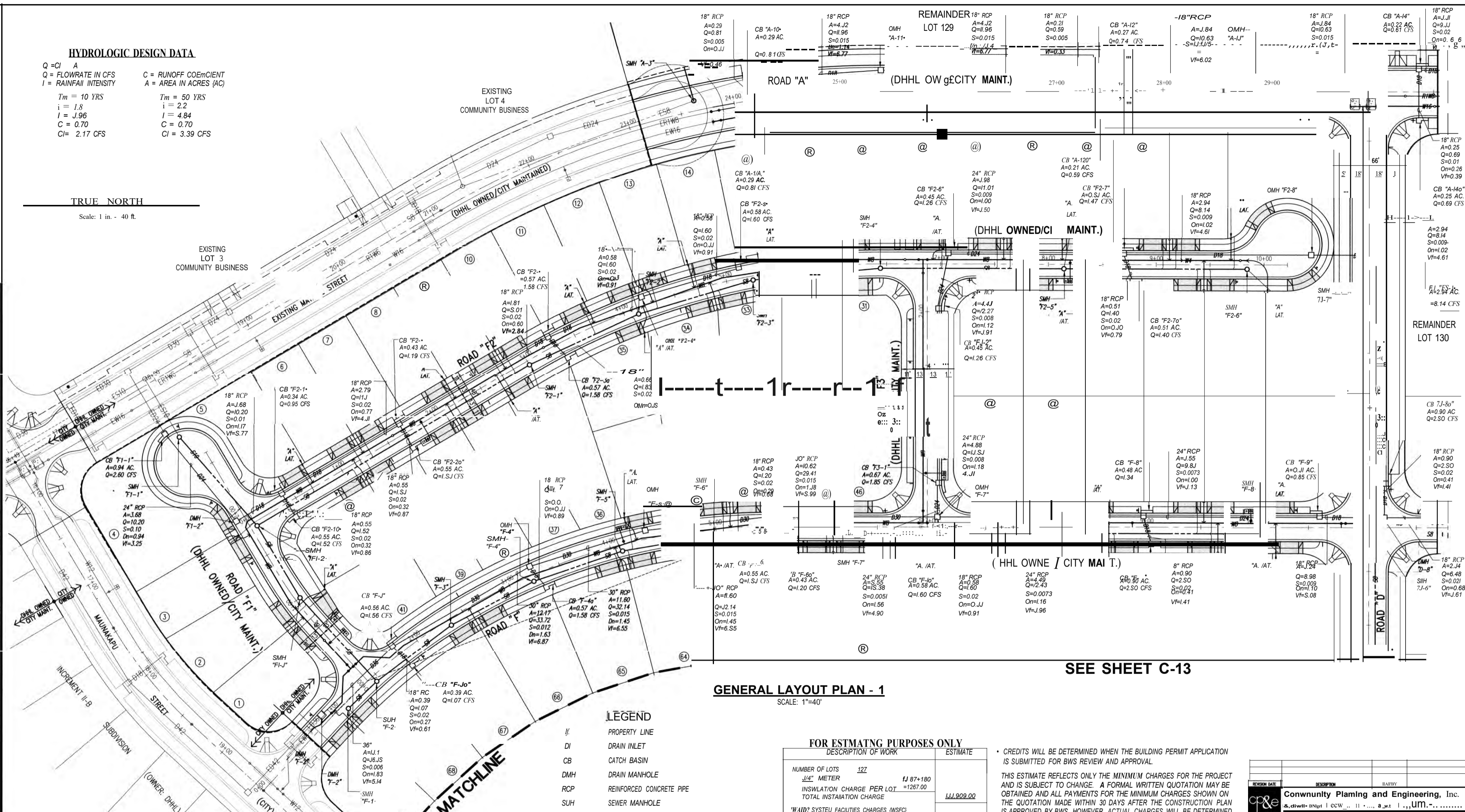
HYDROLOGIC DESIGN DATA

Q = CI A
 Q = FLOWRATE IN CFS
 I = RAINFALL INTENSITY
 Tm = 10 YRS
 i = 1.8
 I = J.96
 C = 0.70
 CI = 2.17 CFS

C = RUNOFF COEFFICIENT
 A = AREA IN ACRES (AC)
 Tm = 50 YRS
 i = 2.2
 I = 4.84
 C = 0.70
 CI = 3.39 CFS

TRUE NORTH

Scale: 1 in. = 40 ft.



GENERAL LAYOUT PLAN - 1

SCALE: 1"=40'

LEGEND

—	PROPERTY LINE
DI	DRAIN INLET
CB	CATCH BASIN
DMH	DRAIN MANHOLE
RCP	REINFORCED CONCRETE PIPE
SUH	SEWER MANHOLE
A	AREA IN ACRES
Q	DRAIN RUNOFF IN CUBIC FEET PER SECOND
M M	DRIVEWAY
—	CENTERLINE OF ROADWAY
036	NEW DRAINLINE W/ SIZE
SB	NEW SEWERLINE W/ SIZE
W12	NEW WATERLINE W/ SIZE
RWB	NEW NON-POTABLE WATERLINE W/ SIZE
D16	EXISTING DRAINLINE W/ SIZE
SW	EXISTING SEWERLINE W/ SIZE
W2	EXISTING WATERLINE W/ SIZE
RWB	EXISTING NON-POTABLE WATERLINE W/ SIZE

FOR ESTIMATING PURPOSES ONLY

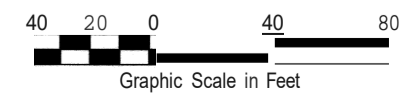
DESCRIPTION OF WORK	ESTIMATE
NUMBER OF LOTS 127	
J/A' METER 11 87+180	
INSULATION CHARGE PER LOT =1267.00	
TOTAL INSTANTIAION CHARGE	163,909.00
W/AID? SYSTU FACILITIES CHARGES (WSPC) (SOURCE AND TRANSMISSION)	
{127 LOTS} 111.91/EU x MINIMUM 20 FU PER LOT= 12JSB.gg/OT	
TOTAL WSPC	1299,491.40
-CREDIT	
S/N	
S/N	
IRRIGATION SERVICE (STREET TREES)	
METER	
INSTANTIAION CHARGE	
W/AID? SYSTU FACILITIES CHARGE	
TOTAL	1,633,400.40

CREDITS WILL BE DETERMINED WHEN THE BUILDING PERMIT APPLICATION IS SUBMITTED FOR BWS REVIEW AND APPROVAL.

THIS ESTIMATE REFLECTS ONLY THE MINIMUM CHARGES FOR THE PROJECT AND IS SUBJECT TO CHANGE. A FORMAL WRITTEN QUOTATION MAY BE OBTAINED AND ALL PAYMENTS FOR THE MINIMUM CHARGES SHOWN ON THE QUOTATION MADE WITHIN 30 DAYS AFTER THE CONSTRUCTION PLAN IS APPROVED BY BWS. HOWEVER, ACTUAL CHARGES WILL BE DETERMINED WHEN THE BUILDING PERMIT APPLICATION IS SUBMITTED FOR BWS REVIEW. ALL CHARGES IN EXCESS OF THE MINIMUM WILL ALSO BE SUBJECT TO THE 30 DAY PERIOD. IF PAYMENTS ARE NOT RECEIVED WITHIN THE 30 DAY PERIOD, THE PROJECT WILL BE SUBJECT TO THE PREVAILING RATES.

- NOTES:**
- THESE PLANS ARE IN CONFORMANCE WITH THE WASTEWATER MASTER PLAN FOR EAST KAPOLEI II DEVELOPMENT, TMK: 9-1-17 POR. 71 AND 88, APPROVED APRIL 22, 2009.
 - SEWER LINES WILL BE DHHL OWNED.
 - SEWER CONNECTION TO THE CITY'S MUNICIPAL SEWER SYSTEM FOR EAST KAPOLEI DEVELOPMENT INCREMENT 2C (2017/CP-253) IS CONTINGENT ON THE CONSTRUCTION, COMPLETION, AND ACCEPTANCE BY THE CITY OF EAST KAPOLEI II DEVELOPMENT ROAD "T" (2010/CP-193) AND ALL OTHER NECESSARY DOWNSTREAM SEWER IMPROVEMENTS.

SEE SHEET C-13



REVISION DATE: _____ DESCRIPTION: _____ DRAWN BY: _____

Conwnunity Planning and Engineering, Inc.
 1150 W. ...
 HONOLULU, HAWAII

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 H O U U U U, EWA, OAHU, HAWAII
 (OPP SUBD. FILE NO. 2019/SUB-171)
 O & R DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

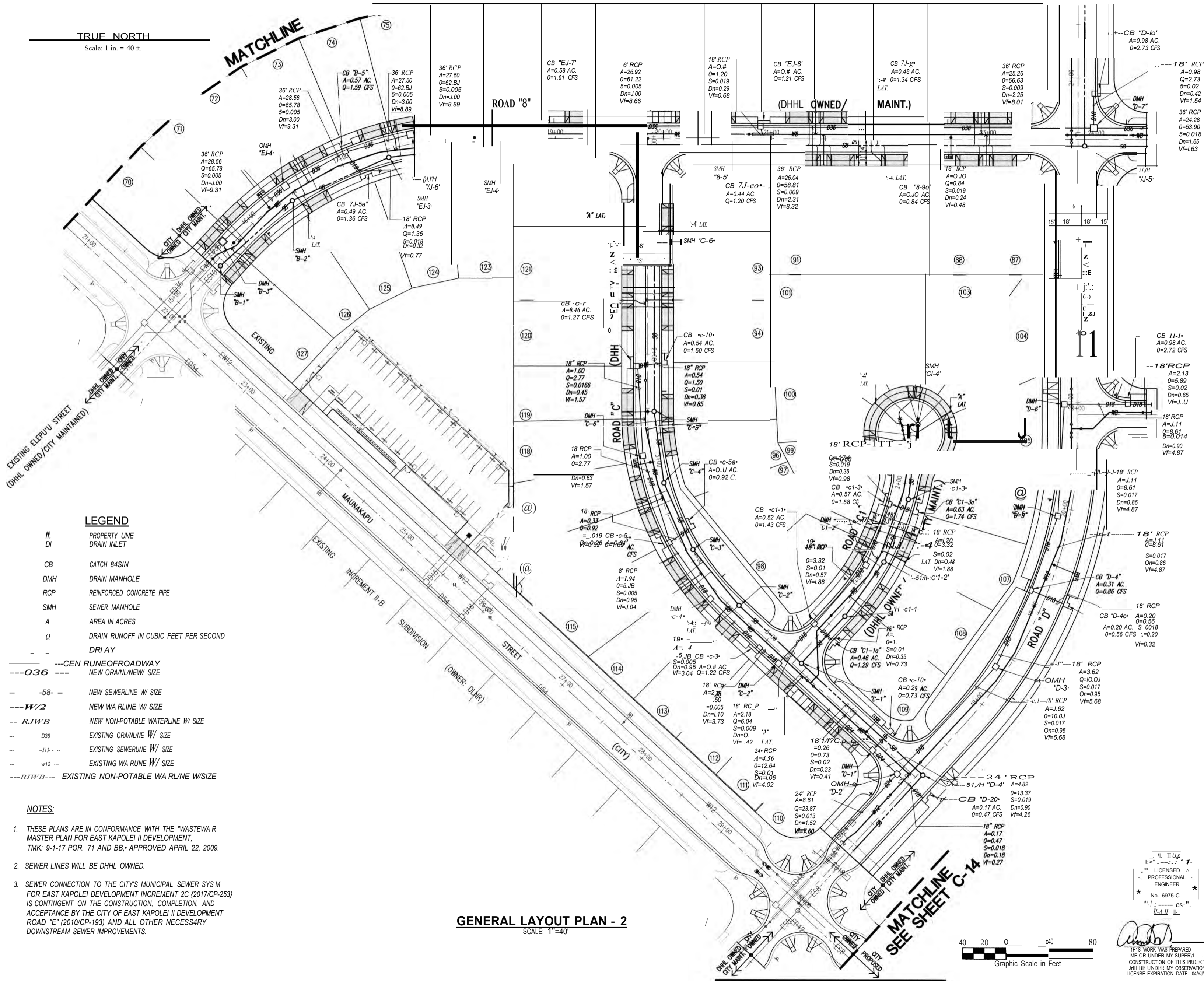
GENERAL LAYOUT PLAN 1

DATE: 2/1/22
 DRAWN BY: RV ENGINEER: SS CHECKED BY: MMH
 APPROVED: _____ DATE: 2/1/22
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. LICENSE NO. 6975-C. LICENSE EXPIRATION DATE: 04/02/22

DWG. NO. C-12 SHEET 11 109 SHEETS

P:\Land Projects\DHHL East Kapolei II\Increment 11-C\Construction Drawings\Government Review #1\1-15-15 C.dwg, 1/14/2022 8:42:08 AM

TRUE NORTH
Scale: 1 in. = 40 ft.



REMAINDER
LOT 130

ROAD "M"
(DHHL OWNED/
CITY MAINT.)

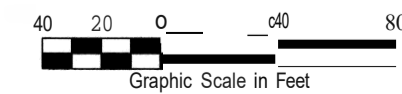
LEGEND

- ff. PROPERTY LINE
- DI DRAIN INLET
- CB CATCH BASIN
- DMH DRAIN MANHOLE
- RCP REINFORCED CONCRETE PIPE
- SMH SEWER MANHOLE
- A AREA IN ACRES
- Q DRAIN RUNOFF IN CUBIC FEET PER SECOND
- DRI AY
- CEN RUNE OF ROADWAY
- 036 NEW ORAINLINE/NEW SIZE
- 58--- NEW SEWERLINE W/ SIZE
- W/2 NEW WA RLNE W/ SIZE
- R/WB NEW NON-POTABLE WATERLINE W/ SIZE
- D36 EXISTING ORAINLINE W/ SIZE
- S13--- EXISTING SEWERLINE W/ SIZE
- w12--- EXISTING WA RUNE W/ SIZE
- R/WB--- EXISTING NON-POTABLE WA RLNE W/SIZE

NOTES:

1. THESE PLANS ARE IN CONFORMANCE WITH THE "WASTEWATER MASTER PLAN FOR EAST KAPOLEI II DEVELOPMENT, TMK: 9-1-17 POR. 71 AND BB, APPROVED APRIL 22, 2009.
2. SEWER LINES WILL BE DHHL OWNED.
3. SEWER CONNECTION TO THE CITY'S MUNICIPAL SEWER SYSTEM FOR EAST KAPOLEI II DEVELOPMENT INCREMENT 2C (2017/CP-253) IS CONTINGENT ON THE CONSTRUCTION, COMPLETION, AND ACCEPTANCE BY THE CITY OF EAST KAPOLEI II DEVELOPMENT ROAD "E" (2010/CP-193) AND ALL OTHER NECESSARY DOWNSTREAM SEWER IMPROVEMENTS.

GENERAL LAYOUT PLAN - 2
SCALE: 1"=40'



COMMUNITY PLAIRLIG AND ENGINEERING, INC.
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 STATE OF HAWAII

REVISION DATE	BY	DATE
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOUULU, EWA, OAHU, HAWAII (DPP SUBO. ALE NO. 2019/SUB-171) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 161		
GENERAL LAYOUT PLAN - 2		
DRAWN BY: RV	ENGINEER: SS	CHECKED BY: MH
APPROVED: THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THIS PROJECT. I WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22		
DATE: 2/4/22	DATE: 2/4/22	DATE: 2/4/22
DATE: 2/4/22	DATE: 2/4/22	DATE: 2/4/22
DATE: 2/4/22	DATE: 2/4/22	DATE: 2/4/22
DATE: 2/4/22	DATE: 2/4/22	DATE: 2/4/22

P:\land Projects\DHHL East Kapolei - 2017-2022\13-15-C-12 to C-14 General Layout Plan 1:3 Gk.dwg, 1/14/2022 8:45:10 AM

EROSION PREVENTION / SEDIMENT CONTROL NOTES:

1. THE CONTRACTOR SHALL FOLLOW THE GUIDELINES IN THE CITY AND COUNTRY OF HONOLULU; "RULES RELATING TO WATER QUALITY"
2. MEASURE TO CONTROL EROSION AND OTHER POLLUTANTS SHALL BE IN PLACE BEFORE ANY EARTHWORK IS INITIATED.
3. SLOPE PROTECTION
SLOPE PROTECTION IS REQUIRED ON AREAS WITH SLOPES GREATER THAN 15% AND ON AREAS OF MODERATE SLOPE THAT ARE PRONE TO EROSION UNLESS THEY ARE BEING ACTIVELY WORKED. USE DIMENSION UPSTREAM OF SLOPE (DIKES, SWALES, SLOPE DRAINS) TO MAINTAIN WATER AROUND THE SLOPE PROVIDE A 10-FT BUFFER ZONE AT THE TOE OF SLOPE. ONLY 5 ACRES MAY BE DISTURBED AT ANYTIME ON SLOPES GREATER THAN 15%.
4. TEMPORARY STABILIZATION
TEMPORARY STABILIZATION IS REQUIRED ON DISTURBED AREAS WHICH ARE AT ANAL GRADE OR WHEN THE DISTURBED AREA WILL NOT BE WORKED FOR 14 CONSECUTIVE DAYS OR MORE.
5. 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.
6. PRESERVE EXISTING VEGETATION CLEARLY MARK THE AREAS TO BE PRESERVED WITH FLAGS OR TEMPORARY FENCING, WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
7. MINIMIZE SOIL COMPACTION
AREAS WHERE ANAL STABILIZATION OR INFILTRATION PRACTICES WILL BE INSTALLED SHALL BE PROTECTED FROM EXCESSIVE COMPACTION DURING CONSTRUCTION. VEHICLE AND EQUIPMENT USE SHALL BE RESTRICTED OR TECHNIQUES TO CONDITION THE SOILS TO SUPPORT VEGETATION SHALL BE IMPLEMENTED IN THE AREAS THAT HAVE BEEN COMPACTED AND ARE DESIGNATED TO REMAIN VEGETATED OR POST-CONSTRUCTION INFILTRATION AREAS. CLEARLY MARK THE AREAS TO BE AVOIDED WITH FLAGS OR TEMPORARY FENCING. WHERE TEMPORARY FENCING IS USED, FENCING MUST BE ADEQUATELY SUPPORTED BY POSTS AND MAINTAINED IN AN UPRIGHT POSITION.
8. PERIMETER CONTROLS
PERIMETER CONTROLS ARE REQUIRED DOWNSLOPE OF ALL DISTURBED AREAS. MAINTAIN DOWNSTREAM VEGETATED BUFFER AREA.
9. INLET PROTECTION
A. 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.
B. 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.
C. SEDIMENT BARRIERS AND INLET PROTECTION DEVICES MUST BE UNOCCLUDED AND CLEANED WHEN PERFORMANCE IS COMPROMISED.
D. TORN, WEATHERED OR SAGGING SEDIMENT BARRIERS OR INLET PROTECTION DEVICES MUST BE REPAIRED OR REPLACED IMMEDIATELY.
10. SEDIMENT BASINS
SEDIMENT BASINS MUST BE KEPT IN EFFECTIVE OPERATING CONDITION AND SEDIMENT SHALL BE REMOVED TO MAINTAIN AT LEAST ONE HALF OF THE DESIGN CAPACITY AT ALL TIMES.
11. TRACKING CONTROL
A. MINIMIZE SEDIMENT TRACK-OUT ONTO 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.
B. VEHICULAR PARKING AND MOVEMENTS ON PROJECT SITES MUST BE CONFINED TO PAVED SURFACES OR PREDEANED PARKING AREAS AND VEHICLE PATHS, WHICH SHALL BE MARKED WITH FLAGS OR BOUNDARY FENCING.
C. 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.
D. 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.
12. BEST MANAGEMENT PRACTICES (BMPs) SHALL NOT BE REMOVED UNTIL ANAL STABILIZATION IS COMPLETE FOR THAT PHASE.
13. REFER TO CITY AND COUNTY OF HONOLULU BEST MANAGEMENT PRACTICES MANUAL - CONSTRUCTION, FOR MORE INFORMATION ON BMPs.
14. THE FOLLOWING BMPs WERE DETERMINED TO BE NOT APPLICABLE BASED ON THE SPECIFIC SITE CONDITIONS. AS CONSTRUCTION PROGRESSES, REVISIONS MAY BE NECESSARY AND WILL BE PROHIBITED TO D.P.P. INSPECTORS.
A. VELOCITY DISSIPATION DEVICES
B. BUFFER ZONES
C. DEWATERING OPERATIONS BMPs
D. SEDIMENT TRAPS
E. SEDIMENT BARRIERS
F. DIVERSION BMPs TO MAINTAIN RUNOFF FROM UPSTREAM AREAS AROUND DISTURBED AREAS OF THE SITE.
15. AN ESCP COORDINATOR RESPONSIBLE FOR IMPLEMENTING THE ESCP AT THE PROJECT SITE MUST BE DESIGNATED. THE NAME, PHONE NUMBER, MAILING ADDRESS AND EMAIL ADDRESS OF THE ESCP COORDINATOR SHALL BE SUBMITTED TO THE D.P.P. DIRECTOR IN WRITING AT LEAST 2 WEEKS PRIOR TO COMMENCING ANY WORK.
16. ALL DEVELOPMENT MUST BE PERFORMED ACCORDING TO A WRITTEN PROJECT SCHEDULE APPROVED BY THE D.P.P. DIRECTOR. THE SCHEDULED START DATE SHALL BE SUBMITTED TO THE D.P.P. DIRECTOR. THE SCHEDULED START DATE SHALL BE SUBMITTED TO THE D.P.P. DIRECTOR IN WRITING 2 WEEKS PRIOR TO COMMENCING ANY WORK.
17. THE CONTRACTOR, DEVELOPER, AND/OR OWNER SHALL OBTAIN WRITTEN APPROVAL FROM THE DIRECTOR AT EACH STAGE OF DEVELOPMENT BEFORE PROCEEDING TO THE NEXT STEP IN DEVELOPMENT DESCRIBED IN THE ESCP.

EROSION AND SEDIMENT CONTROL PLAN SHEET NO. RAJ-1 RESPONSE PLAN:

- PROJECT SEQUENCE:
1. INSTALL STABILIZED CONSTRUCTION ENTRANCES, PERIMETER CONTROLS, INLET PROTECTION, AND TEMPORARY FENCING FOR PROTECTED AREA, CLEARING AND GRUBBING AS NECESSARY FOR THE INSTALLATION OF THESE BMPs.
 2. CONSTRUCT TEMPORARY SEDIMENT BASINS. STABILIZE IMMEDIATELY.
 3. CONSTRUCT TEMPORARY BERMS TO DIRECT RUNOFF INTO THE SEDIMENT BASINS. STABILIZE IMMEDIATELY.
 4. INSTALL PERMANENT DRAINAGE SYSTEM WITH TEMPORARY INLET PROTECTION FOR INLETS THAT DO NOT DRAIN TO THE SEDIMENT BASINS. CLEAR AND GRUB AS NEEDED FOR INSTALLATION.
 5. CLEAR AND GRADE THE SITE IN ONLY ONE OF THE FOLLOWING THREE AREAS AND IN ANY ORDER: AREA 1 (PHASE 1), AREA 2 (PHASES 2 AND 2A), AND AREA 3 (PHASES 3 AND J4). MULTIPLE AREAS MAY NOT BE WORKED CONCURRENTLY. RELOCATE, RECONSTRUCT AND MAINTAIN THE BMPs AS NEEDED TO KEEP THEM EFFECTIVE AT ALL TIMES. INITIAL TEMPORARY STABILIZATION IN THE ACTIVE AREA ONCE GRADING IS COMPLETED AND PRIOR TO COMMENCING GRADING IN THE NEXT AREA.
 6. INITIAL STABILIZATION OF STEEP SLOPES (> 15%) WITH HYDROSEEDING AS SOON AS GRADING IS COMPLETED ON THOSE AREAS. INSTALL PERMANENT IRRIGATION SYSTEM PRIOR TO PERMANENT SEEDING.
 7. PROCEED CONSTRUCTION WITH LEAST POSSIBLE DISTURBANCE OF VEGETATIVE AREAS AND TEMPORARY STRUCTURES.
 8. PLANT PERMANENT GROUND COVER ACCORDING TO THE LANDSCAPING PLAN AS SOON AS POSSIBLE.
 9. REMOVE OR DISMANTLE TEMPORARY EROSION CONTROL STRUCTURES AFTER FULL ESTABLISHMENT OF PERMANENT VEGETATIVE COVER.
 10. PRACTICE GOOD HOUSEKEEPING MEASURES THROUGHOUT THE DURATION OF CONSTRUCTION.
 11. INSPECTIONS WILL BE PERFORMED WEEKLY.

- RAIN RESPONSE PLAN:
1. THE FOLLOWING WILL BE PERFORMED WHEN HEAVY RAINS, TROPICAL STORM OR HURRICANE IS IMMINENT OR IS FORECASTED IN THE NEXT 48 HOURS.
 2. TEMPORARY SUSPENSION OF ACTIVE GRADING, AND TRENCHING.
 3. INSPECT ALL SEDIMENT BASINS, TEMPORARY DITCHES/SWALES, PERIMETER CONTROLS, AND INLET PROTECTION DEVICES, AND MAINTAIN AS NEEDED. REINSTALL ANY PERIMETER CONTROLS THAT WERE REMOVED DUE TO ACTIVE WORK IN THE AREA IF A SEVERE STORM IS EXPECTED, REMOVE INLET PROTECTION DEVICES TO PREVENT FLOODING ON SURROUNDING STREETS.
 4. COVER OR RELOCATE MATERIAL STOCKPILES AND LIQUID MATERIAL CONTAINERS TO AVOID CONTACT WITH RAINWATER.
 5. PLACE SPILL PADS OR OIL-ONLY SPILL PADS UNDER CONSTRUCTION VEHICLES TO PREVENT RUNOFF FROM CONTACT WITH RAINWATER.
 6. IMMEDIATELY AFTER THE APPROACHING HEAVY RAINS, TROPICAL STORM OR HURRICANE AND REPLACE OR MAINTAIN BMPs AS NEEDED.

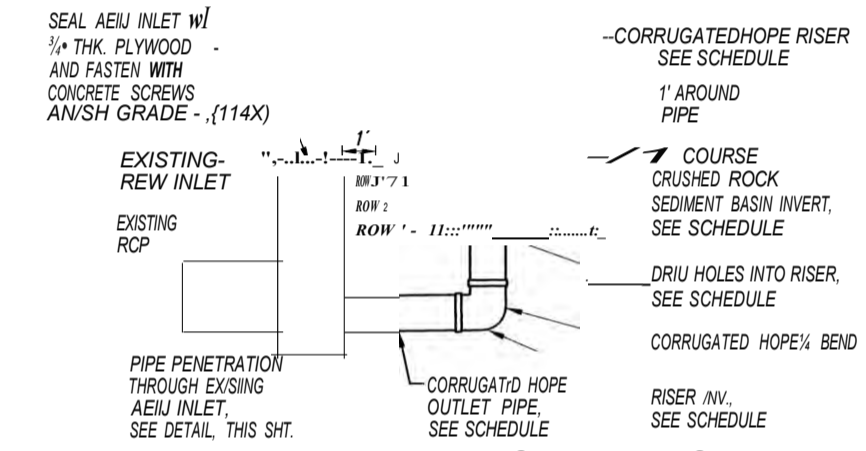
GOOD B.L.'s:

1. STREET SWEEPING AND VACUUMING. ALL POLLUTANTS DISCHARGED FROM CONSTRUCTION SITE TO OFF-SITE AREAS MUST BE SWEEPED OR VACUUMED EACH DAY BEFORE LEAVING THE JOB SITE.
2. 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 HAZARDOUS SUBSTANCES, STOCKPILES AND OTHER SOURCES OF POLLUTION SHALL NOT BE STORED IN BUFFER AREA, NEAR AREAS OF CONCENTRATED FLOW, OR AREAS AROUND THE MS4, RECEIVING WATERS, OR DRAINAGE IMPROVEMENTS THAT DISCHARGE OFF-SITE. PRIMARY AND SECONDARY CONTAINMENT CONTROLS AND COVERS SHALL BE IMPLEMENTED TO THE MEP.
3. SPILL PREVENTION AND CONTROL. 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 MATERIAL. AT A MINIMUM, ALL PROJECTS SHALL CLEANUP ALL LEAKS AND SPILLS IMMEDIATELY.
4. 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 ARE DEPARTMENT, AND HONOLULU POLICE DEPARTMENT OF THE DISCHARGE BY TELEPHONE. 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 LATER THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
5. NONHAZARDOUS MATERIALS.
IN THE EVENT THAT NONHAZARDOUS 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 LATER THAN 3 DAYS AFTER NOTIFICATION BY PHONE.
6. 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.
7. 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.
8. VEHICLE AND EQUIPMENT MAINTENANCE
ELIMINATE AND MINIMIZE THE DISCHARGE OF POLLUTANTS TO STORM 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.
9. 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 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.
10. 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 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.
11. STOCKPILE MANAGEMENT
STOCKPILES SHALL NOT BE LOCATED IN DRAINAGEWAYS, 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.
12. LIQUID WASTE MANAGEMENT.
LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOWING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SIMILAR VOLUME AND TO LIQUID WASTE MANAGEMENT. LIQUID WASTE SHALL BE CONTAINED IN A CONTROLLED AREA SUCH AS A HOWING PIT, SEDIMENT BASIN, ROLL-OFF BIN, OR PORTABLE TANK OF SIMILAR 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.
13. 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. FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READ 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.
14. CONTAMINATED SOIL MANAGEMENT.
AT MINIMUM CONTAIN CONTAMINATED MATERIAL SOIL BY SURROUNDING WITH IMPERMEABLE LINED BERMS OR COVER EXPOSED CONTAMINATED MATERIAL WITH PLASTIC 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.
15. BMP AND SITE MAINTENANCE
INSPECT BMP AND SITE ON A REGULAR BASIS, DURING AND AFTER ANY STORM GENERATING RUNOFF TO DETERMINE MAINTENANCE REQUIREMENTS OF THE INSTALLED SYSTEMS. ALL MAINTENANCE RELATED TO A STORM EVENT SHOULD BE COMPLETED WITHIN 48 HOURS OF THE STORM EVENT. MAINTENANCE TASKS INCLUDE, BUT ARE NOT LIMITED TO THE FOLLOWING:
A. REMOVAL OF SEDIMENT FROM BARRIERS AND SEDIMENTATION DEVICES.
B. REPLACEMENT OR REPAIR OF WORN OR DAMAGED SILT FENCE OR ALTER SOCK FABRICS.
C. REPLACEMENT OR REPAIR OF DAMAGED INLET PROTECTION.
D. REPAIR OF DAMAGED SOIL STABILIZATION MEASURES.
16. DUST CONTROL
DUST FROM THE PROJECT SITE SHALL NOT BE TRANSPORTED OR DISCHARGED TO OFF-SITE AREAS. THE WORK MUST BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS CONTAINED IN THE HAWAII ADMINISTRATIVE RULES: TITLE 11 CHAPTER 60.1, "AIR POLLUTION CONTROL." PROVIDE CONTROL OF DUST BY ONE OR MORE OF THE FOLLOWING:
A. MULCHING TO A DEPTH OF NO LESS THAN 1 INCH
B. SPRINKLING EXPOSED SOILS WITH WATER TO MAINTAIN MOISTNESS AT A DEPTH OF 2-3 INCHES DURING WORKING HOURS AND NOT TO GENERATE ANY RUNOFF.
C. VERTICAL DUST BARRIERS NO LESS THAN 6 FEET IN HEIGHT, CONSTRUCTED OF MATERIALS CAPABLE OF EFFECTIVELY PREVENTING THE SPREAD OF DUST PARTICLES

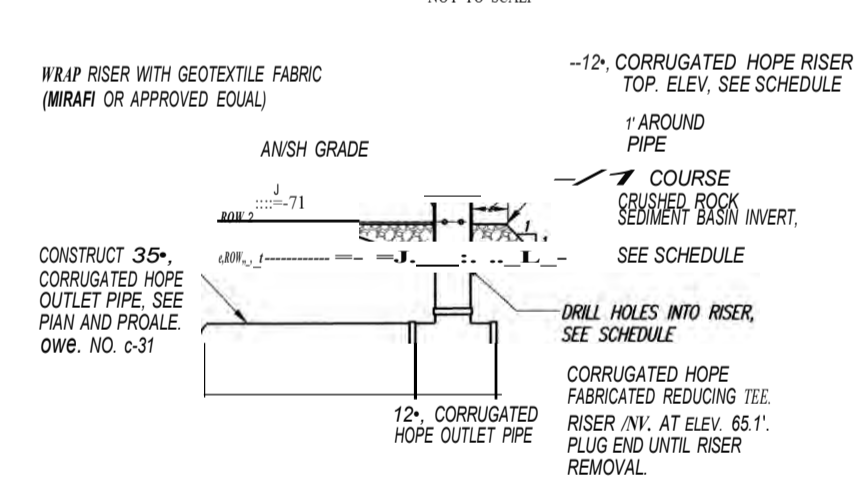
SEDIMENT BASIN	SEDIMENT BASIN #1	SEDIMENT BASIN #2	SEDIMENT BASIN #3	SEDIMENT BASIN #4	SEDIMENT BASIN #5
BASIN LOCATION	ROAD "H"	ROAD "F"	ROAD "S"	ROAD "O" & "I"	ROAD "G"
OVERFLOW ELEV. (FT.)	82.2	74.8	81.7	76.6	75.3
INVERT ELEV. (FT.)	79.2	70.3	76.2	74.1	72.3
OUTLET STRUCTURE	RISER #1	RISER #2	RISER #3	RISER #4	RISER #5
RISER (MATERIAL)	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE
DIA. OF RISER (IN.)	12	12	12	18	12
TOP OF RISER (FT.)	81.2	73.8	80.7	76.4	74.3
OUTLET PIPE (MATERIAL)	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE	CORRUGATED HOPE
DIA. OF OUTLET PIPE (IN.)	12	12	12	18	36
INVERT OF RISER (FT.)	78.0	68.4	71.6	72.6	66.9
SLOPE OF OUTLET PIPE (%)	1.54	2.0	0.96	1.26	0.892
PERFORATION SCHEDULE	RISER #1	RISER #2	RISER #3	RISER #4	RISER #5
ROW NUMBER	1	2	1	2	1
HOLE DIAMETER (IN.)	1	1	1	1	1
NUMBER OF HOLES	2	2	8	6	2
HOLE (VERTICAL) SPACING CENTER TO CENTER (IN.)	0.75*	12	0.75*	12	0.75*
DRAWDOWN TIME	RISER #1	RISER #2	RISER #3	RISER #4	RISER #5
DRAWDOWN TIME (HRS.)	39	68	61	72	41

*VERTICAL SPACING FROM BASIN INVERT TO CENTER OF HOLE (ROW 1)

DETAIL - TEMPORARY RISER (SEDIMENT BASIN #1-#4)



DETAIL - TEMPORARY RISER (SEDIMENT BASIN #5)



DETAIL - PIPE PENETRATION

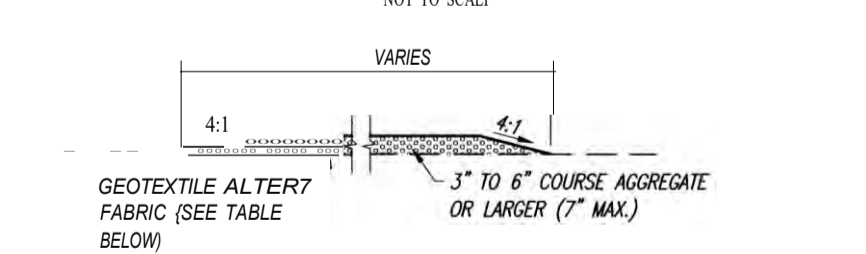
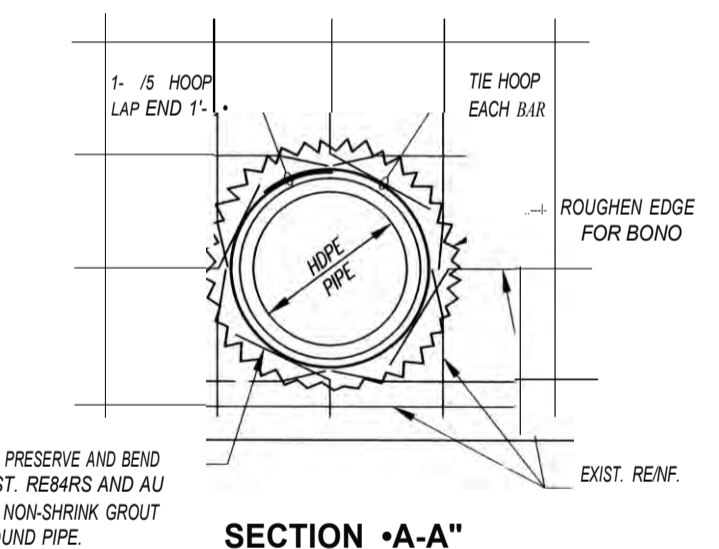
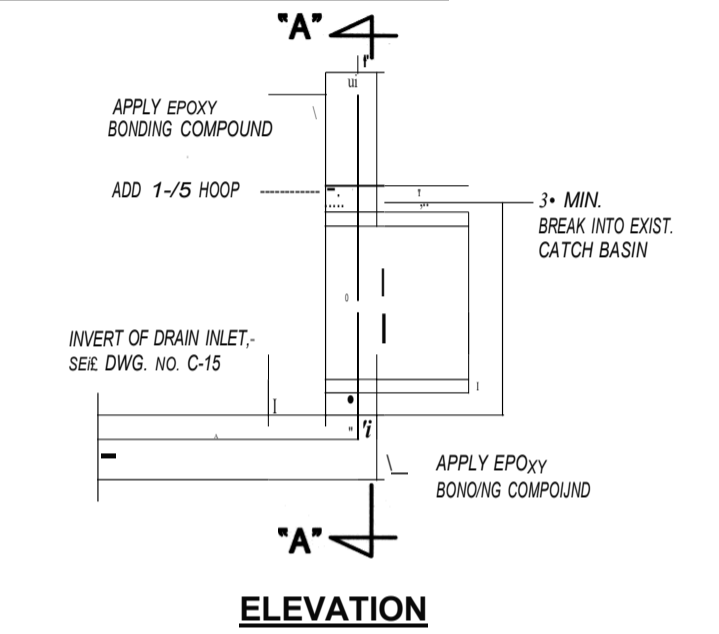
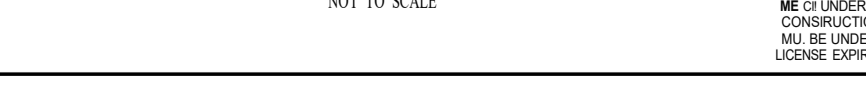


TABLE A GEOTEXTILE REQUIREMENTS	
PHYSICAL PROPERTY	REQUIREMENTS
GRAB TENSILE STRENGTH	220 LB (ASTM D1682)
ELONGATION FAILURE	60% (ASTM D1682)
MULLEN BURST STRENGTH	430 LB (ASTM D3768)
PUNCTURE STRENGTH	125 LB (ASTM D751, MODIFIED)
EQUIVALENT OPENING	SIZE 40-80 (U.S. STD SIEVE, CW-02215)

DETAIL - CO-TERRATION INGRESS/EGRESS

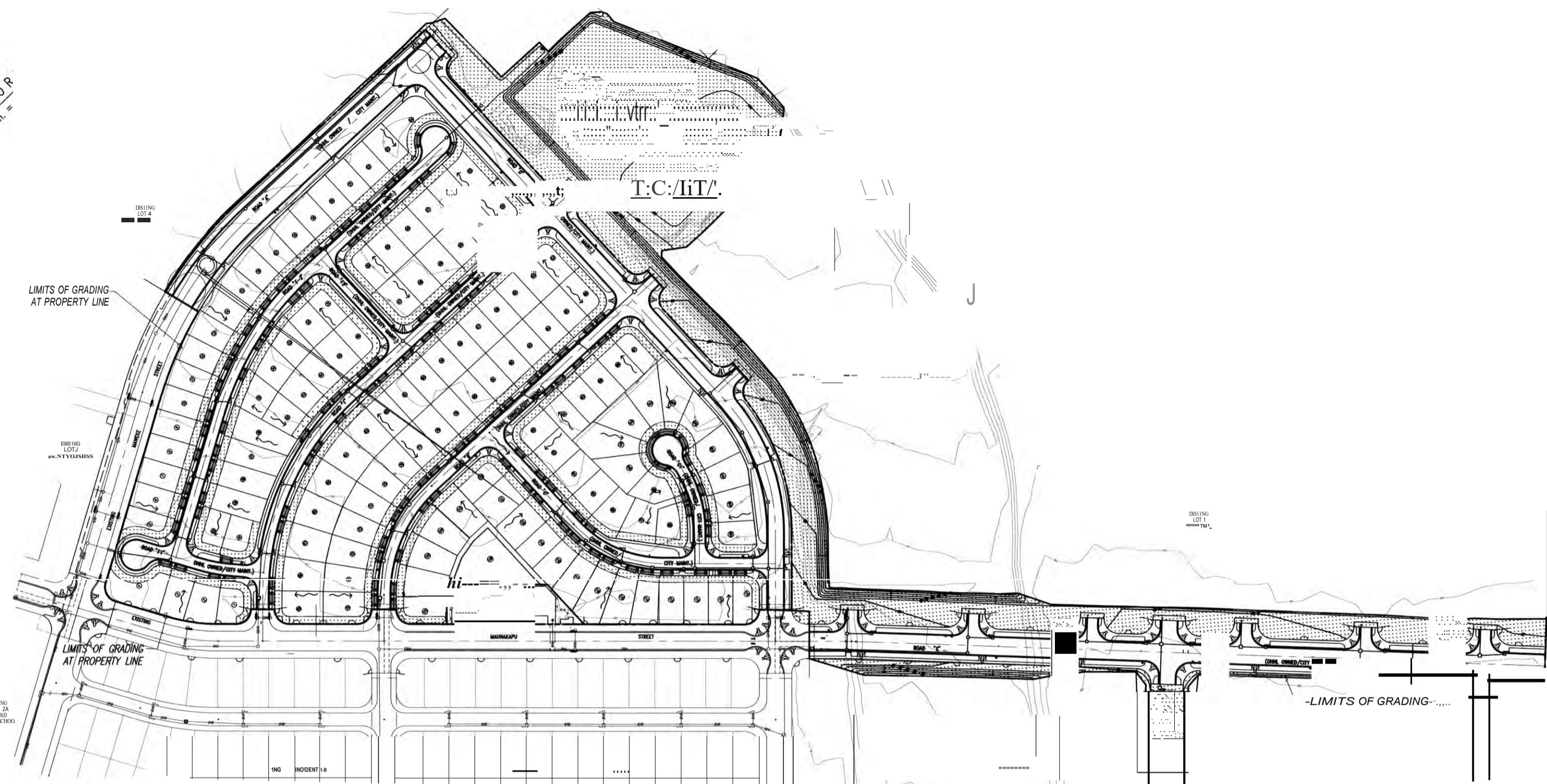


DETAIL - PIPE PENETRATION



Community Planning and Engineering, Inc.
 1111 Kalia Road, Suite 100, Honolulu, HI 96813
 (808) 943-1111
EAST KAPOLEI II DEVELOPMENT
INCREMENT 2C
 HONOLULU, OAHU, HAWAII
 (OPP SUBO. FILE NO. 2019/SUB-171)
 OYINER / DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161
EROSION AND SEDIMENT CONTROL NOTES
 DRAWN BY: RV EN-INEER: EG CHECKED BY: AMB
 APPROVED:
 ME OR UNDER MY SUPERVISION-CONSTRUCTION OF THIS PROJECT MUST BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/22/2025
 DWG. NO. C-16

TRUE NORTH
Scale: 1" = 120'



POST CONSTRUCTION BMP PLAN
SCALE 1" = 120'

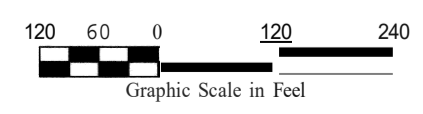
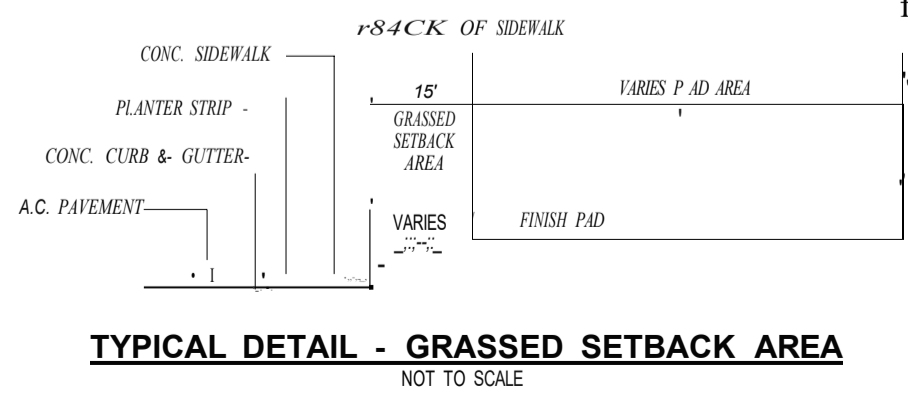
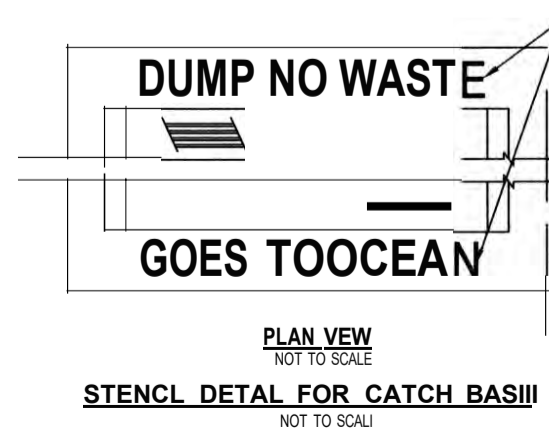
- POST-CONSTRUCTION BMPs (PRIORITY A)**
LID SITE DESIGN STRATEGIES:
- MINIMIZE IMPERVIOUS SURFACE
 - DIRECT RUNOFF TO LANDSCAPED AREAS
- SOURCE CONTROL BMPs**
- DIRECT RUNOFF TO LANDSCAPED AREAS
 - PERMANENT STABILIZATION
 - Amx STENCIL ONTO CATCH BASINS. SEE DUAL THIS SHEET.
- TREATMENT CONTROL BMP**
- EXISTING DETENTION BASINS WILL ACT AS PERMANENT OFF-SITE DETENTION BASINS. SEE LOCATION MAP ON DWG. NO. C-15. SEE APPROVED "DRAINAGE MASTER PLAN FOR DHHL EAST KAPOLEI II DEVELOPMENT" DATED JULY 2008.

- LEGEND**
- EXISTING GRADE
 - SURFACE WATER FLOW
 - LIMITS OF GRADING
 - LIMITS OF DISTURBANCE
 - GRASSED LANDSCAPED AREA

DUMP NO WASTE1

GOES TO OCEAN 1 -

SPECIFICATIONS:
MATERIAL: ALUMINUM ALLOY (CAST ALUMINUM), 1/4" OR EQUAL
LETTERING: HEIGHT OF LETTERS SHALL BE 2" HIGH AND 1/8" WIDE. THE UNDER SIDE OF ALL LETTERING SHALL BE V-SHAPED.
POSITION: THE STENCIL SHOULD BE CENTERED ON THE TOP EDGE OF THE CATCH BASIN AND SHALL BE A MINIMUM OF 8" AWAY FROM THE FRONT FACE OF THE INLET.
IMPRESSION: THE STENCIL SHALL BE PRESSED 1/4" INTO THE GREEN CONCRETE WHEN THE INLET IS MADE.

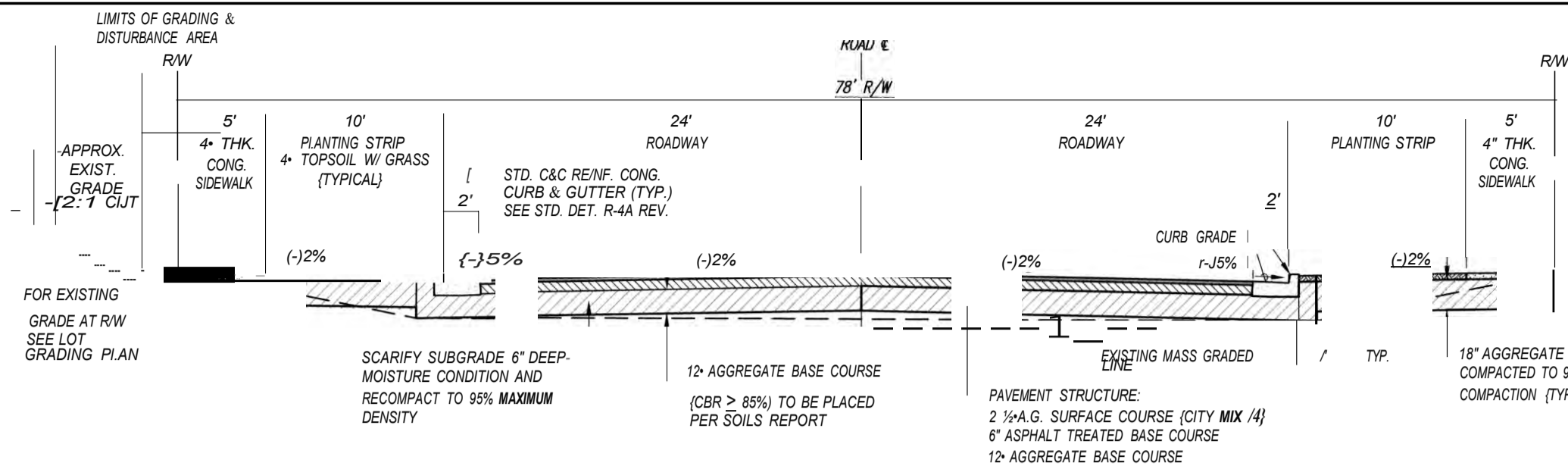


IL-1111
LICENSED PROFESSIONAL ENGINEER
No. 6975-C

ME OR UNDER MY SUPERVISION
CONSTRUCTION OF THIS PROJECT
I AM UNDER MY OBSERVATION
LICENSE EXPIRATION DATE: 04/30/22

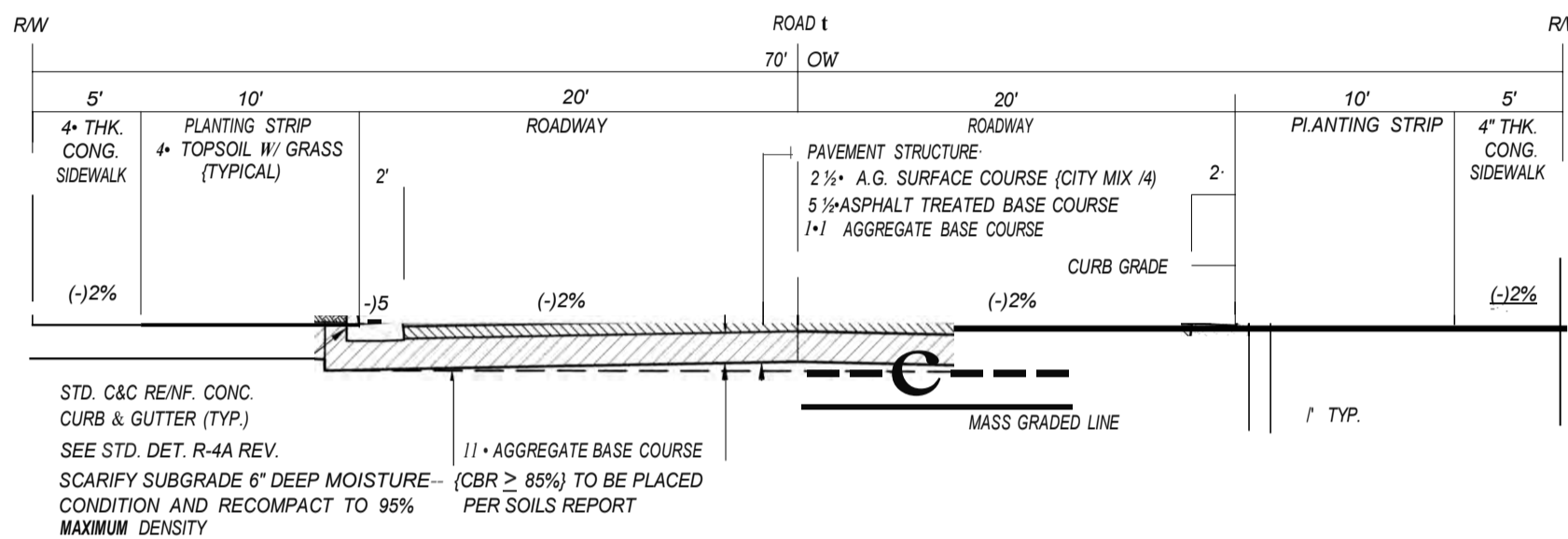
REVISION DATE	BY	DATE
Community Planning and Engineering, Inc.		
1111 W. DILLON ST. #1000, HONOLULU, HI 96813		
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C		
HOONANU, EWA, OAHU, HAWAII		
(DPP SUBO, FILE NO. 2019SUB-171)		
OPERATED BY DEPARTMENT OF HAWAIIAN HOME LANDS		
TAX MAP KEY: 9-1-17; Portico 161		
POST CONSTRUCTION BMP PLAN		
DRAWN BY: MN	ENGINEER: SS	CHECKED BY:
APPROVED:		
		DATE:
ENGINEER BRAND, O.P.P.	DATE	
PK	POD-ET	PWR

P:\Land Projects\DHHL East Kapolei II - Construction Drawings\Government Review #719 C-18 Post-Construction BMP Plan.dwg, P. 11, 01/14/2022 11:24:12 AM



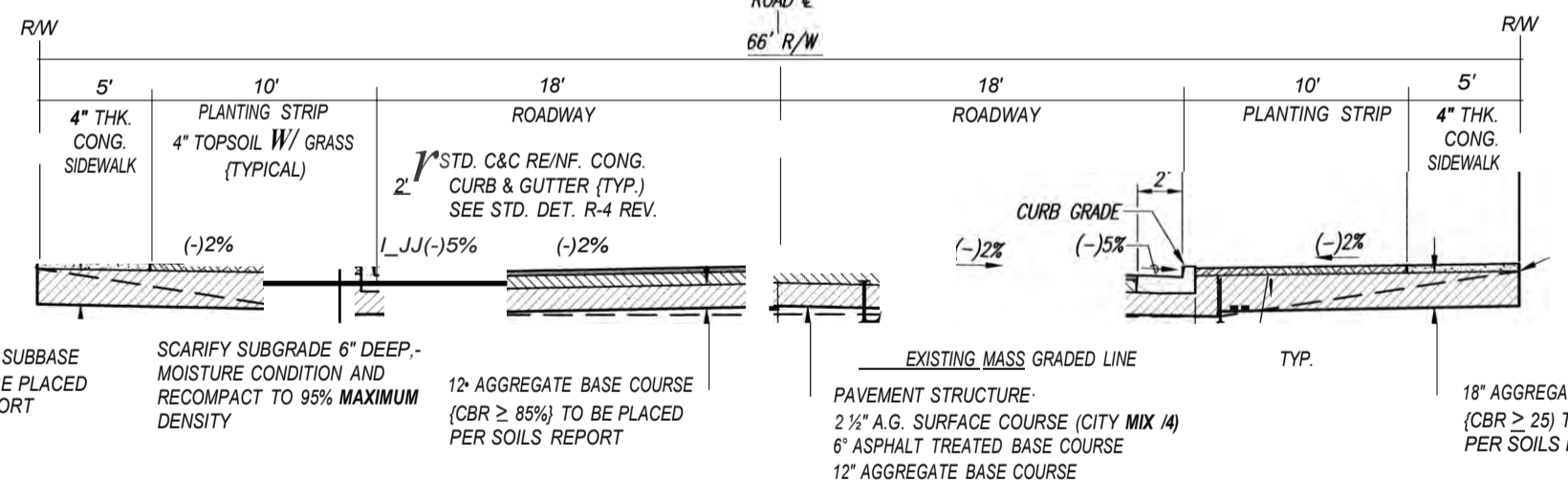
78' R/W ROAD A & E (STA. 44+41.39 TO STA. 44+64.39)

SCALE: 1" = 5'-0"



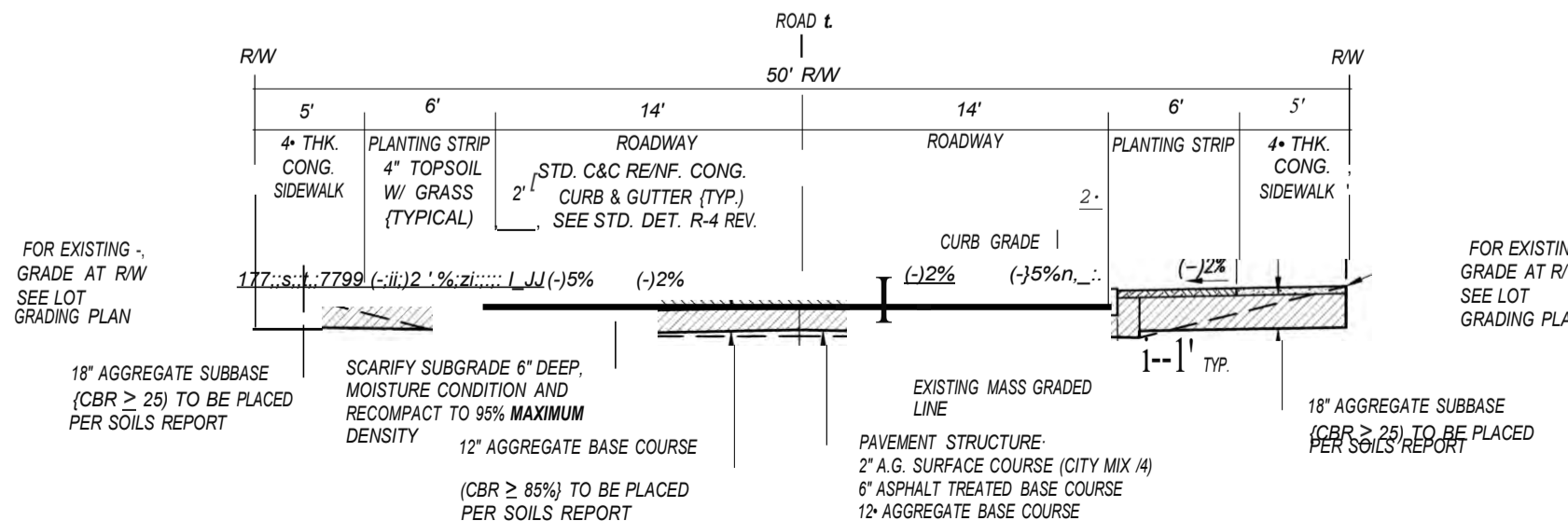
70' R/W ROAD E (STA. 30+66.39 TO STA. 44+41.39)

SCALE: 1" = 5'-0"



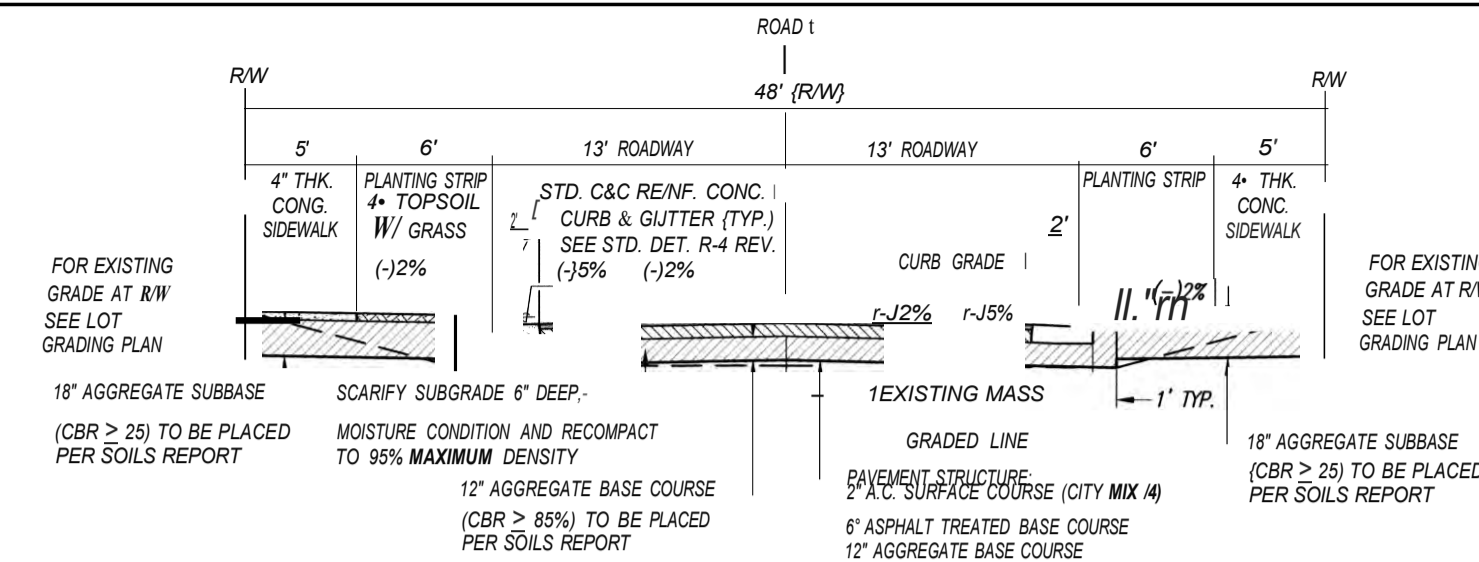
66' R/W ROAD D

SCALE: 1" = 5'-0"



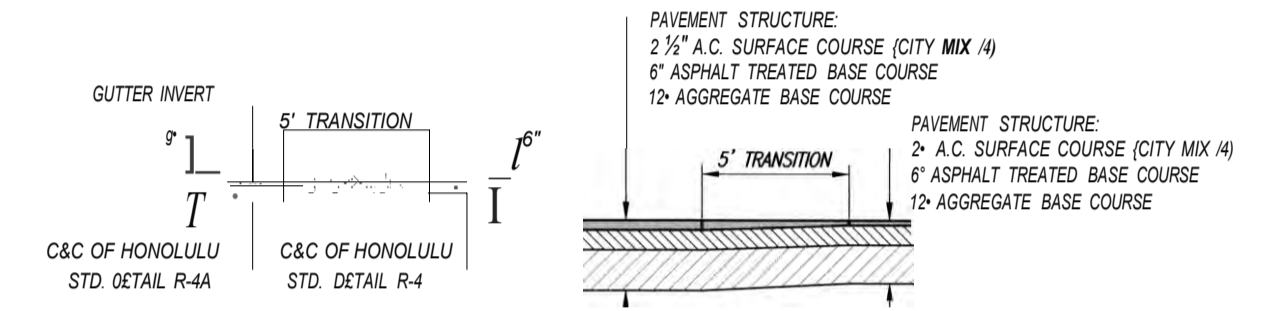
50' R/W ROAD E

SCALE: 1" = 5'-0"



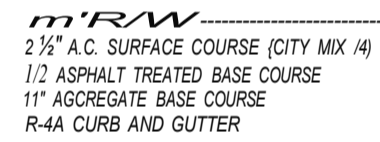
48' R/W ROADS C, C1, F, Fr, F2 & Fa

SCALE: 1" = 5'-0"



SECTION B-B

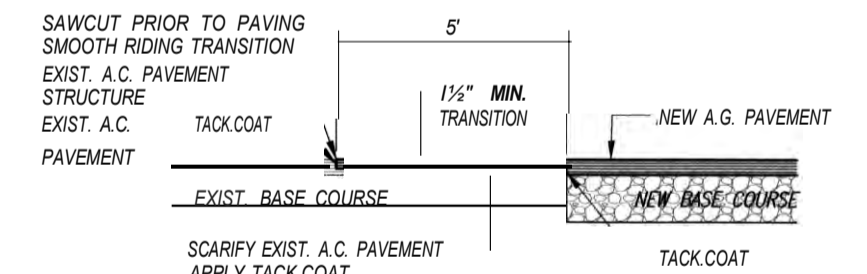
SECTION C-C



PLAN

PAVEMENT AND CURB THICKNESS TRANSITION

NOT TO SCALE



SMOOTH RIDING CONNECTION DETAIL

NOT TO SCALE

NOTES:

- FOR COMPACTION REQUIREMENTS FOR PAVEMENT SECTIONS, SEE PROJECT SOILS REPORT TITLED: "SUPPLEMENTAL GEOTECHNICAL EXPLORATION REPORT PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT INCREMENT 2C AND ROAD E EXTENSION: HONOLULU, EWA, OAHU, HAWAII, DATED OCTOBER 31, 2016.
- AREAS TO REDEM ALL (INCLUDING SELECT MATERIAL), THE GROUND SURFACE SHALL BE AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT OF SUBBASE MATERIAL. IF NOT AT LEAST 2% ABOVE OPTIMUM THEN GROUND SURFACE SHALL BE SCARIFIED TO A DEPTH OF SIX INCHES, MOISTURE CONDITIONED TO AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT AND RECOMPACTED.
- AT ROADWAY AREAS, CONTRACTOR SHALL CONTINUALLY WATER SUBGRADE SO THAT SUBGRADE DOES NOT DRY OUT AND SUBGRADE MOISTURE SHALL BE AT LEAST 2% ABOVE OPTIMUM MOISTURE CONTENT PRIOR TO PLACEMENT OF BASE COURSE.
- CONTRACTOR SHALL COMPLY WITH THE CITY AND COUNTY OF HONOLULU ENGINEERING AND POLICY MEMORANDUM NO. CE-1-09. JOINTING REQUIREMENTS FOR CONCRETE SIDEWALKS AND DRIVEWAYS DATED APRIL 6, 2009.
- THE 4" CONCRETE SIDEWALK SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY AND COUNTY STANDARD DETAIL R-28 REVISED.

AGGREGATE SUBBASE THICKNESS		
LOCATION	THICKNESS	COMMENTS
UNDER CONCRETE SIDEWALKS AND CONCRETE MEDIAN	18"	EXTEND 2 FT. INTO PLANTING STRIP
CONCRETE DRIVEWAYS	24"	EXTEND 3 FT. INTO PLANTING STRIP
CONCRETE CURB RAMPS	24"	EXTEND 3 FT. INTO PLANTING STRIP WHERE APPLICABLE

APPROVED: [Signature]
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 DATE: 11/13/2022

Community Planning and Engineering, Inc.
 12398 Ohiwa Street, Honolulu, HI 96821
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 HONOLULU, EWA, OAHU, HAWAII
 (OPP SUBO. FILE NO. 2019/SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

TYPICAL ROADWAY SECTIONS

APPROVED: [Signature]
 DATE: 11/13/2022

P:\Land Projects\DHHL East Kapolei\2022\11-13-2022\11-13-2022 4:49:08 PM

TRUE NORTH

Scale: 1 in. = 40 ft.

STA. 16+44.53 o/s 9.2'-----
CONSTRUCT
SPECIAL OMH 73-4"
INV.=71.74-36"
(SEE NOTE 1)

STA. 17+36.34 o/s 0.46' RT.-----
1-8" 1/2 BEND (H)
I-CONC. BLOCK

STA. 17+06.97-----
CONSTRUCT
SPECIAL CB 73-5"
TYPE "B"
INV.=73.56-18"
INV.=12.06-36"

STA. 17+67.30 o/s 10'
CONSTRUCT
SPECIAL OMH 73-6"
INV.=72.36-36"
(SEE NOTE 1)

STA. 18+85.89-----
CONSTRUCT
SPECIAL CB "B"-7"
TYPE "S"
INV.=72.96-36"

STA. 18+74
o/s 4' LT.
1-8" 1/32 BEND (H)
I-CONC. BLOCK

STA. 19+37
o/s 4' LT.
FH CONN.
1-B"x6" TEE, DI
1-6" GV, DR14
1-VALVE BOX
20 LF 6" DI PIPE,
CL 53
1-FH (HT.=4.0)
1-FH EXTENSION PIECE
2-CONC. BLKS.
1-CONC. PAD
1-BLUE REFLECTIVE
MARKER

STA. 19+70.41
1-8" CONNECTOR
PIECE (V)
STA. 19+80.41
ROAD 73" o/s 4'
=STA. (j)+04
ROAD "C" o/s 5'
B"x6" TEE, 01
3-8" GV, CL150
3-VALVE BOXES
TYPE "A"
INSTALL ST. SURVEY MON.
ELEV.=

STA. 20+19.25
1- 3/4" ARV (WP=57.4 PSI)
1-ARV BOX
-STA. 20+82.50 o/s 4'
1-8" 1/4 BEND (TV)
STA. 20+87 o/s 4'
1-8" 1/4 BEND (BV)
STA. 20+89.89
CONSTRUCT
SPECIAL CB "S"-a
TYPE i1.
INV.=81.97-18"
INV.=73.97-36"
TYPE i1"
LATERAL

STA. 22+66 o/s 4' LT. -
FH CONN.
1-6" GV, CL 150
1-VALVE BOX
20 LF 6" OF PIPE, CL 53
1-FH (HT.=4.0)
1-FH EXTENSION PIECE
2-CONC. BLKS.
1-CONC. PAD
1-BLUE REFLECTIVE MARKER
STA. 22+42.94
CONSTRUCT
SPECIAL CB "B"-9"
TYPE "A"
INV.=84.31-18"

STA. 23+77.33 ROAD "A" o/s 4.2' LT.--STA. 23+85.74 ROAD "D"
=STA. 23+48.35 ROAD "O" o/s 6' LT.
TYPE "S"
INV.=83.31-18"
REMAINDER
LOT 130
(OWNER: DLNR/DHLL)

STA. 23+97.75 ROAD 73" o/s 10.4'
STA. 23+54.16 ROAD "D" o/s 14.4'
SPECIAL SPECIAL DMH "O"-1
INV.=83.15-18"
STA. 23+83.33 ROAD "A"
=STA. 23+43.74 ROAD "O"
=ST. SURVEY MON.
ELEV.=

STA. 24+34 o/s 4'
1- 3/4" ARV (WP=55.8 PSI)
1-ARV BOX

STA. 24+51.33 o/s
ENO 35
1-3 PLUG
INV.=17.62
STA. 24+51.33 o/s 4'
ENO aW
1-8" CAP W/ 2 1/2" C.O.
1-VALVE BOX
INV.=86.2

STA. 24+46.33
END ROAD CONC. SIDEWALK,
CURB AND GUTTER, A.C. PAVT
AND PLANTING STRIP. INSTALL TEMP.
WOODEN BARRICADE. SEE DETAIL R-16.
STA. 24+51.33 o/s 6.7'
ENO S5
1-B" PLUG
INV.=82.12

ROAD D
(DHL OWNED/CITY MAINT.)
SE: DWG. NO. C-25

EASEMENT U-9 (10-FT. WIDE)
FOR "H" PURPOSES IN FAVOR OF
THE CITY AND COUNTY OF HONOLULU
- STA. 23+89.33 ROAD "S" o/s 6'

LEGEND

WB	WATER LINE W/ SIZE
D18	DRAIN LINE W/ SIZE
89.67	EXIST. WATER LINE W/ SIZE
ED	EXIST. DRAIN LINE W/ SIZE
CP	EXIST. SEWER LINE W/ SIZE
TS	CONNECTOR PIECE
	CATHODIC TEST STATION NUMBER

ROAD "B" :HHL OW ED/Cir MAINTAINED

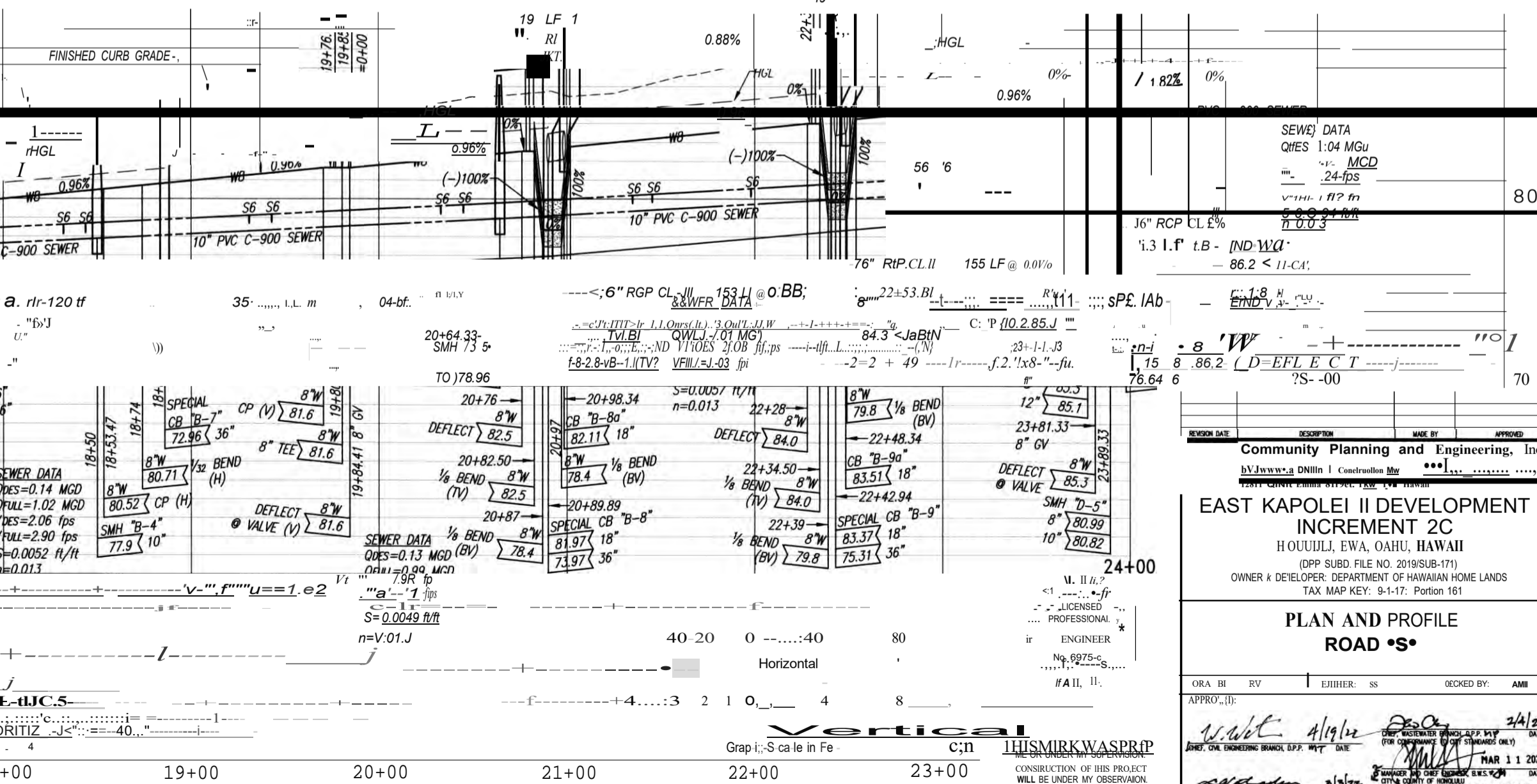
ROAD "C"
(DHL OWNED
CITY MAINTAINED)
SEE DWG. NO. C-22

- NO. E STD. OET. R-25A
1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
 2. CONTRACTOR SHALL COMPLY WITH THE CITY'S JOINTING POLICY DATED 4/6/09 FOR NEW SIDEWALKS AND DRIVEWAY APRONS.
 3. FOR SEWER LINE STATIONS, SEE DWG. NO. C-54.
- SEE CATHODIC TEST STATIONS.
OWE Nos. C-P-1 THRU C-P-6.

PLAN

SCALE: 1"=40'

- CURVE DATA
- | | |
|----------|----------|
| 14' | 14' |
| 4718'00" | 4718'00" |
| 6:2 | 2939.00' |
| R | 303' |
| T | 132.69' |
| C | 243.10' |
| L | 250.14' |



Community Planning and Engineering, Inc.
East Kapolei II Development
Increment 2C
Hououli, Ewa, Oahu, Hawaii
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 161
PLAN AND PROFILE
ROAD "S"
APPROVED: [Signature] 2/1/22
DATE: MAR 11 2022
DWG. NO. C-21
SHEET 22 OF 109 SHEETS

P:\land Projects\DHLL East Kapolei II - Construction Drawings\Government Review #722.C21 P 1 of 1 - 1/14/2022 8:55:20 AM

P:\land Projects\DHHL East Kapolei - C-23 98P Road C1 & Road Midway, 1/13/2022 4:51:57 PM

STA. 1+30.10 o/s 0' STA. 1+68.87 o/s 1.9' LT. CD STA. 0+30.02 o/s 3.62' RT. (I) STA. 2+50 o/s 7' LT.

1-8" 1/2 BEND (H) 1-CONC. BLK. STA. 1+15.01 ROAD "C" o/s 7.0'... STA. 0+50.50 o/s 3.75' LT. 1-8" 1/4 BEND (TV) 1-6" 1/4 BEND (BV)...

NEW DRIVEWAY APRON (TYP) SEE STD. DET. R-29A. DATED JULY 2009. STA. 1+0+08.50 ROAD "E" o/s 9.4'... STA. 0+00.00 ROAD "C" 1'... STA. 0+06 ROAD "C" 1' o/s 6'...

STA. 0+00.00 ROAD "C" 1'... STA. 0+06 ROAD "C" 1' o/s 6'... STA. 5+37.94 ROAD "C" o/s 0'... STA. 0+09.00 o/s 24.64' RT....

ROAD "C" (DHHL OWNED/ CITY MAINTAINED) SEE DWG. NO. C-22 NEW CURB RAMP (TYP.)... STA. 0+33.39 o/s 0.25' RT....

SEWER DATA... CUL-UT... CURB GRADE... WATERLINE... 18" RCP CL. III 49 LF @ 0.93%... 8" PVC C-900 SEWER...

18" RCP CL. III 49 LF @ 0.93%... INV. 8" DI PIPE, CL. 53... 8" PVC C-900 SEWER... 1+08.14... 74.17... 2+54.68...

SMB... 8" 80.38... 12x8" TEE... 8" 81... 81.91 (-H) 8W 8W... 81.50 (+H)...

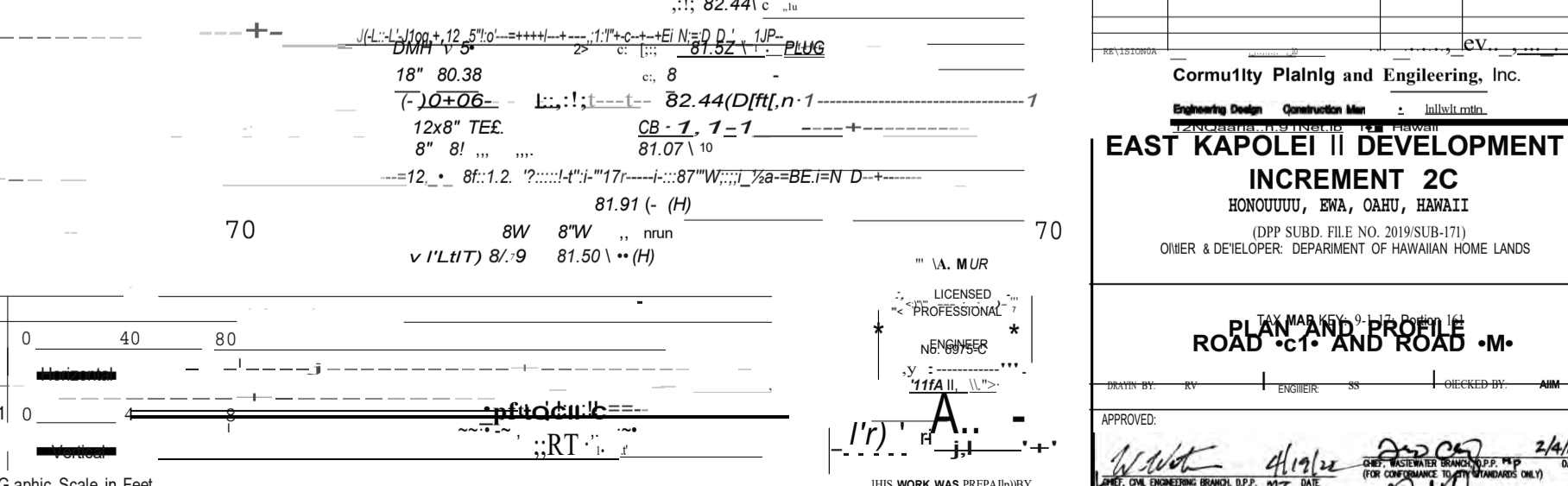
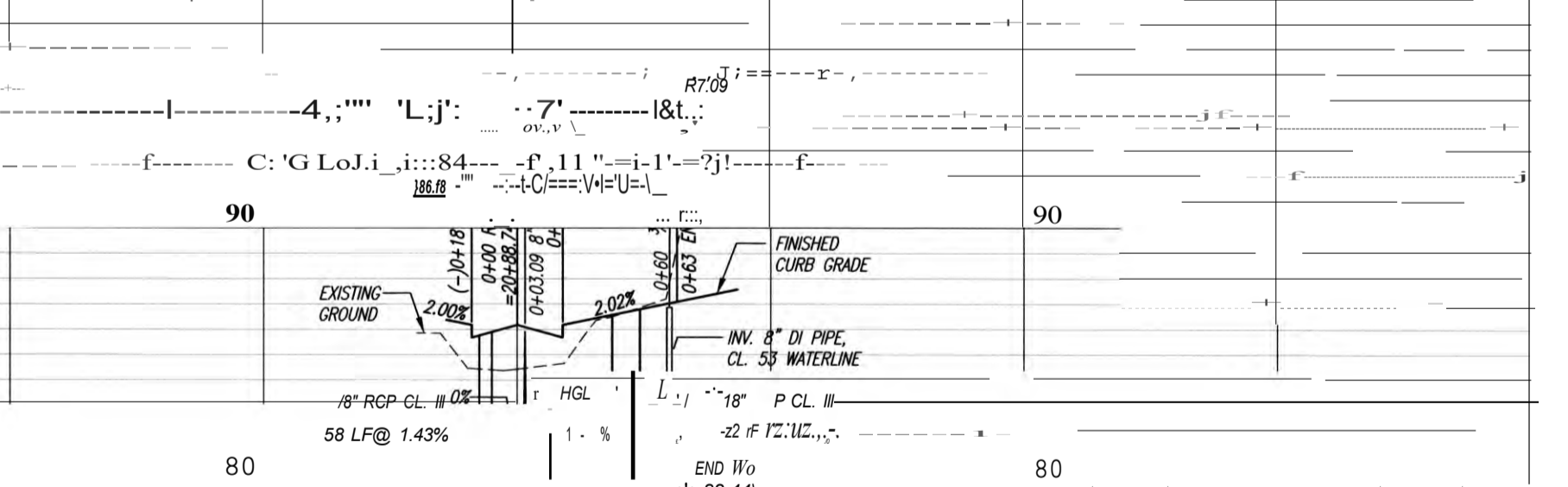
0+37.39... 1+00... 2+00... 3+00... SCALES: HORIZ. 1"=40' VERT. 1"=4'

TRUE NORTH Scale: 1 in. = 40 ft. STA. 0+00.00 ROAD "M" =STA. 20+88.74 ROAD "J" INSTALL ST. SURVEY MON. ELEV.=... STA. 0+28.89 o/s 2' LT. 1-8" 1/4 BEND (HJ)...

REMAINDER LOT 130 (OWNER: DLNR/DHHL) STA. 0+46 ROAD "M" CONSTRUCT CB "M-1" TYPE "M" INV.=81.07-18" EASEMENT U-10 (10-FT. WIDE) FOR UTILITY PURPOSES IN FAVOR OF THE CITY AND COUNTY OF HONOLULU...

STA. 0+00.00 ROAD "M" EXT. o/s 9.4' =STA. 20+98.16 ROAD "D" o/s 12.5' CONSTRUCT DMH "D-6" INV.=80.38-18" (SEE NOTE 1) STA. 0+06 ROAD "M" EXT. o/s 12.87' RT. =STA. 20+75.87 ROAD "D" EXT. o/s 6' RT....

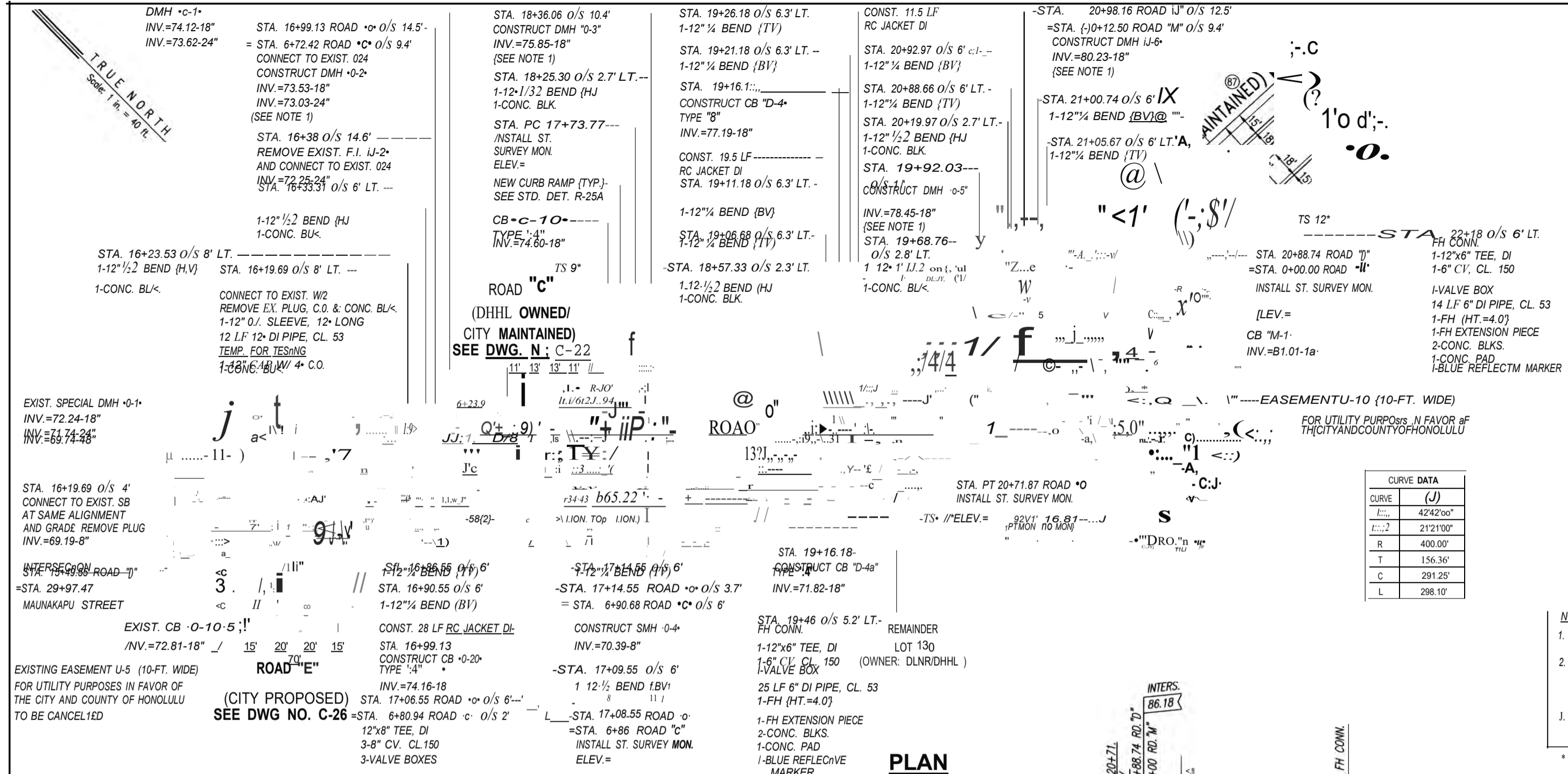
PLAN SCALE: 1"=40' NOTE: 1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER. 2. CONTRACTOR SHALL COMPLY WITH THE CITY'S JOINTING POLICY DATED 4/6/09 FOR NEW SIDEWALKS AND DRIVEWAY APRONS. 3. FOR SEWER LINE STATIONS, SEE DWG. NO. C-54. *FOR CATHODIC TEST STATIONS, SEE DWG. NOS. CP-1 THRU CP-6.



Graphic Scale in Feet 0 40 80 120 160 200 240 280 320 360 400 440 480 520 560 600 640 680 720 760 800 840 880 920 960 1000

Community Planning and Engineering, Inc. Engineering Design Construction Manager: J. J. MURPHY. EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, MA, OAHU, HAWAII (DPP SUBD. FILE NO. 2019/SUB-171) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS. PLAN AND PROFILE ROAD "C" AND ROAD "M". APPROVED: [Signatures] DATE: 2/4/22

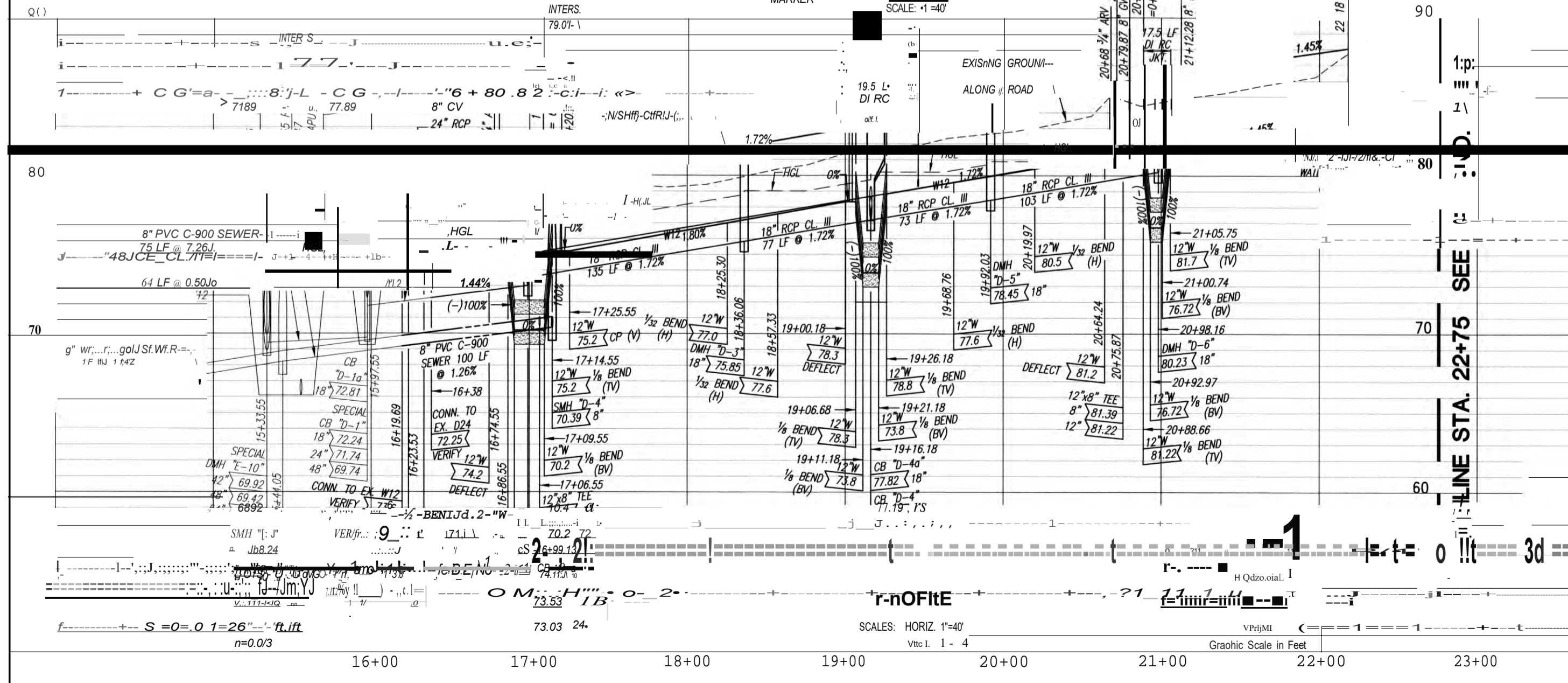
P:\Projects\2022\1713\2022_45726_Plan.dwg, 1/13/2022 4:57:26 PM



CURVE DATA	
CURVE	(J)
L1	4242'00"
L2	2121'00"
R	400.00'
T	156.36'
C	291.25'
L	298.10'

NOTE:
 1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
 2. CONTRACTOR SHALL COMPLY WITH THE CITY'S JOINING POLICY DATED 4/6/09 FOR NEW SIDEWALKS AND DRIVEWAY APRONS.
 3. FOR SEWER LINE STATIONS, SEE DWG. NO. C-54.
 * FOR CATHODIC TEST STATIONS, SEE DWG. NOS. CP-1 THRU CP-6.

- LEGEND**
- CENTERLINE
 - W22 WATER LINE W/ SIZE
 - O18 DRAIN LINE W/ SIZE
 - SB SEWER LINE W/ SIZE
 - W12 EXIST. WATER LINE W/ SIZE
 - EB24 EXIST. DRAIN LINE W/ SIZE
 - CP EXIST. SEWER LINE W/ SIZE CONNECTOR PIECE
 - TS CATHODIC TEST STATION NUMBER



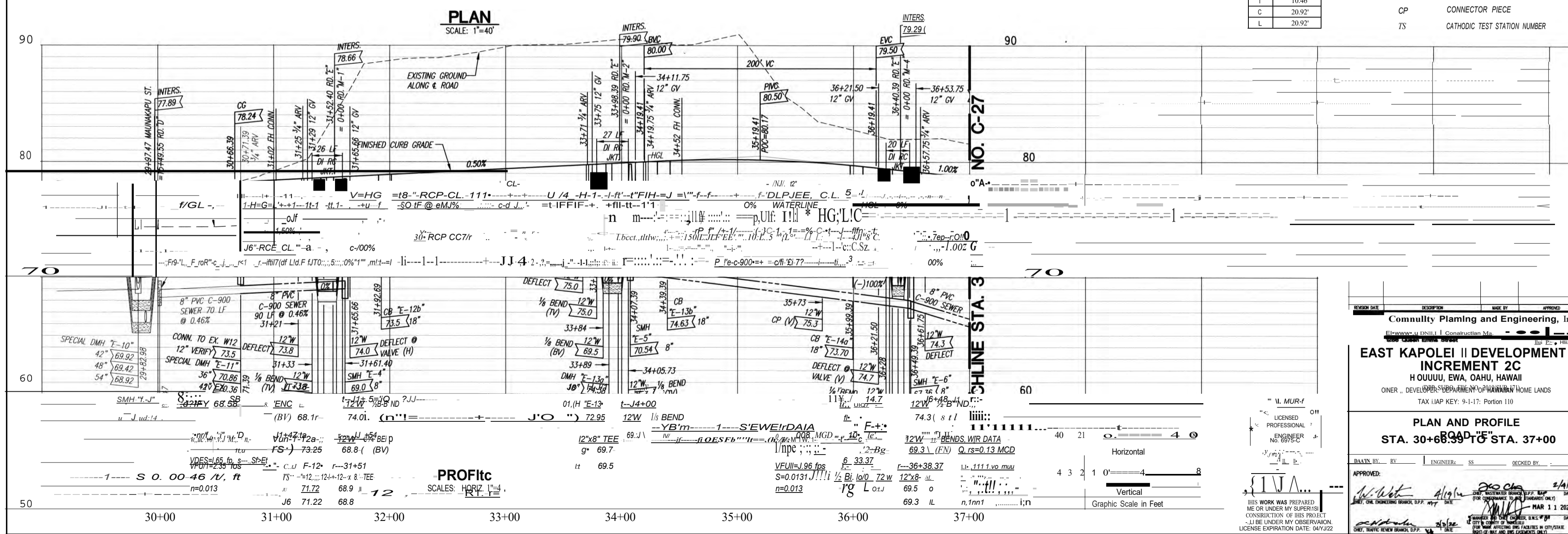
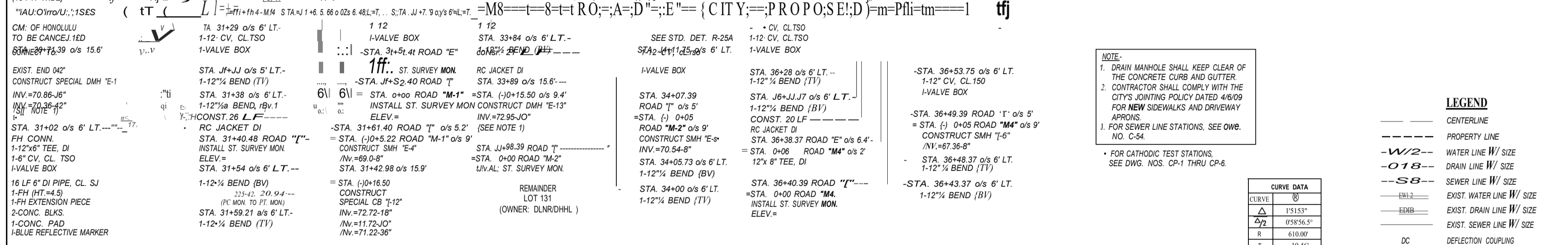
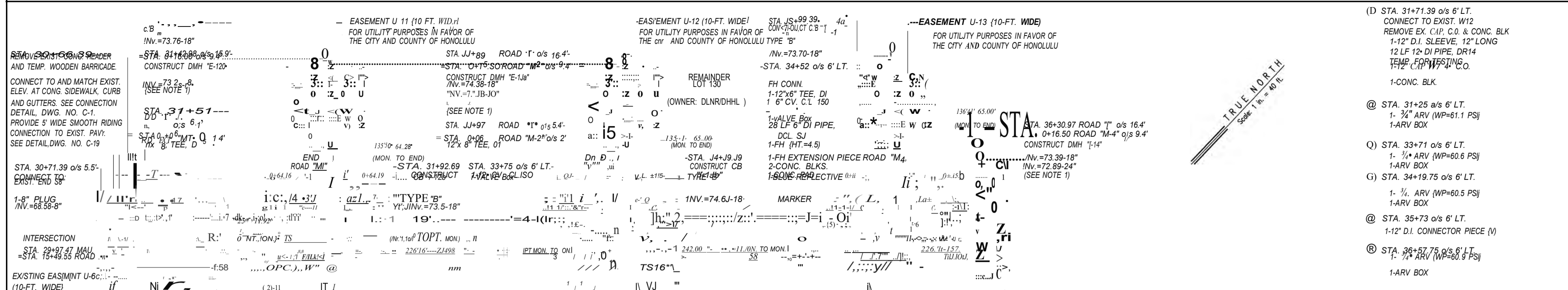
SCALES: HORIZ. 1"=40'
 VERT. 1"=4'
 Graphic Scale in Feet

Community Planning and Engineering, Inc.
 EAST KAPOLEI II DEVELOPMENT
 INCREMENT 2C
 H O U U U , E W A , O A H U , H A W A I I
 (OPP SUBD. FILE NO. 2019-SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 110

**PLAN AND PROFILE
 ROAD "C"
 STA. 0+00 TO STA. 22+75**

DRA. BY: RV CHECKED BY: MAI
 APPROVED: [Signature] DATE: 1/11/22
 LICENSE NO. 6975-C
 LICENSE EXPIRATION DATE: 04/1/22

DWG. NO. C-24 Sht. of 109 SHEETS



- (D) STA. 31+71.39 o/s 6' LT. CONNECT TO EXIST. W12 REMOVE EX. CAP, C.O. & CONC. BLK 1-12" D.I. SLEEVE, 12" LONG 12 LF 12" DI PIPE, DR14 TEMP. FOR TESTING 1-12" CAP W/4" C.O. 1-CONC. BLK.
- @ STA. 31+25 a/s 6' LT. 1- 3/4" ARV (WP=61.1 PSI) 1-ARV BOX
- Q) STA. 33+71 o/s 6' LT. 1- 3/4" ARV (WP=60.6 PSI) 1-ARV BOX
- G) STA. 34+19.75 o/s 6' LT. 1- 3/4" ARV (WP=60.5 PSI) 1-ARV BOX
- @ STA. 35+73 o/s 6' LT. 1-12" D.I. CONNECTOR PIECE (V)
- ® STA. 36+57.75 o/s 6' LT. 1- 7/8" ARV (WP=60.9 PSI) 1-ARV BOX

NOTE:
 1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
 2. CONTRACTOR SHALL COMPLY WITH THE CITY'S JOINTING POLICY DATED 4/6/09 FOR NEW SIDEWALKS AND DRIVEWAY APRONS.
 3. FOR SEWER LINE STATIONS, SEE OWE. NO. C-54.

• FOR CATHODIC TEST STATIONS, SEE DWG. NOS. CP-1 THRU CP-6.

CURVE DATA	
Δ	1°51'53"
Δ/2	0°55'56.5"
R	610.00'
T	10.46'
C	20.92'
L	20.92'

LEGEND

- CENTERLINE
- PROPERTY LINE
- W/2- WATER LINE W/ SIZE
- 018- DRAIN LINE W/ SIZE
- S8- SEWER LINE W/ SIZE
- EW12 EXIST. WATER LINE W/ SIZE
- ED18 EXIST. DRAIN LINE W/ SIZE
- ES12 EXIST. SEWER LINE W/ SIZE
- DC DEFLECTION COUPLING
- CP CONNECTOR PIECE
- TS CATHODIC TEST STATION NUMBER

REVISION DATE DESCRIPTION MADE BY APPROVED

Community Planning and Engineering, Inc.
 1508 KAHUNA STREET, SUITE 100, HONOLULU, HI 96813
 TEL: 808-955-1111 FAX: 808-955-1112

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 H O U U U U, EWA, OAHU, HAWAII
 OWNER: DEVELOPER'S DEPARTMENT OF LAND AND NATURAL RESOURCES
 TAX MAP KEY: 9-1-17: Portion 110

PLAN AND PROFILE
ROAD "E"
STA. 30+66.39 TO STA. 37+00

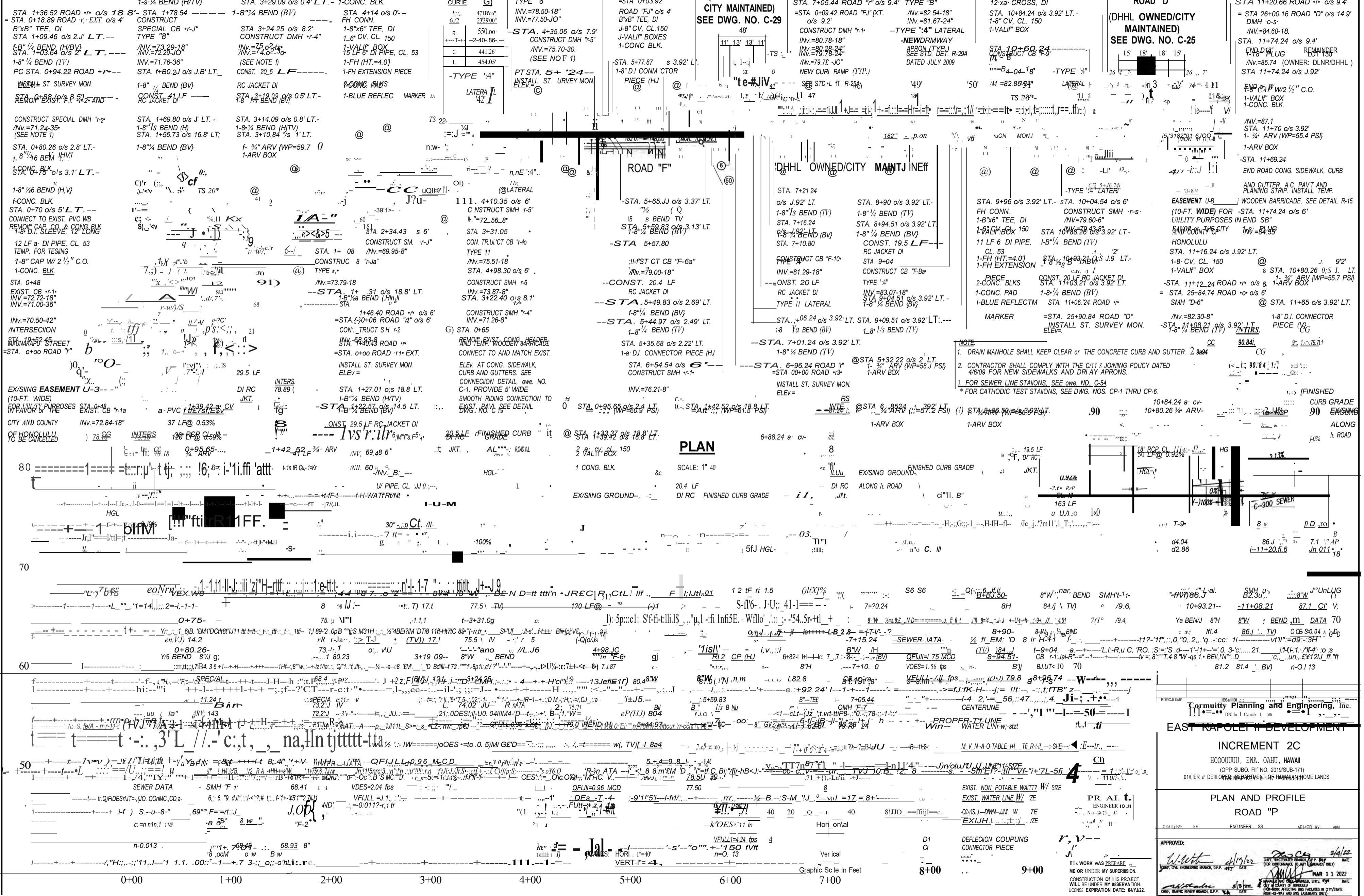
DATE: 1/19/2022
 ENGINEER: SS
 CHECKED BY: [Signature]
 APPROVED: [Signature] DATE: MAR 11 2022

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND UNDER MY OBSERVATION. I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. LICENSE EXPIRATION DATE: 04/30/22

DWG. NO. C-26 SHEET 27 OF 109 SHEETS

P:\Land Projects\DHHL East Kapolei II Construction Drawings\Government\1719\2022 50823 PM

TRUE NORTH
Scale: 1 in. = 40 ft.



CURVE DATA

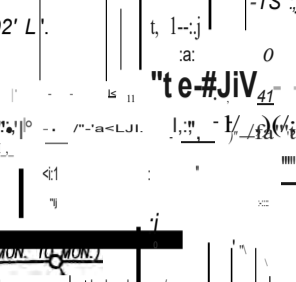
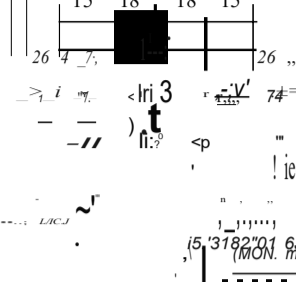
Curve	Station	Length	Radius	Chord	Delta
1	4718.00	6.72	233900'	6.72	179.00
2	550.00	2.40	86.00	2.40	161.00
3	441.26	4.54	454.05'	4.54	111.00

PLAN

SCALE: 1" = 40'

ROAD "D"
(DHHL OWNED/CITY MAINTAINED)
SEE DWG. NO. C-25

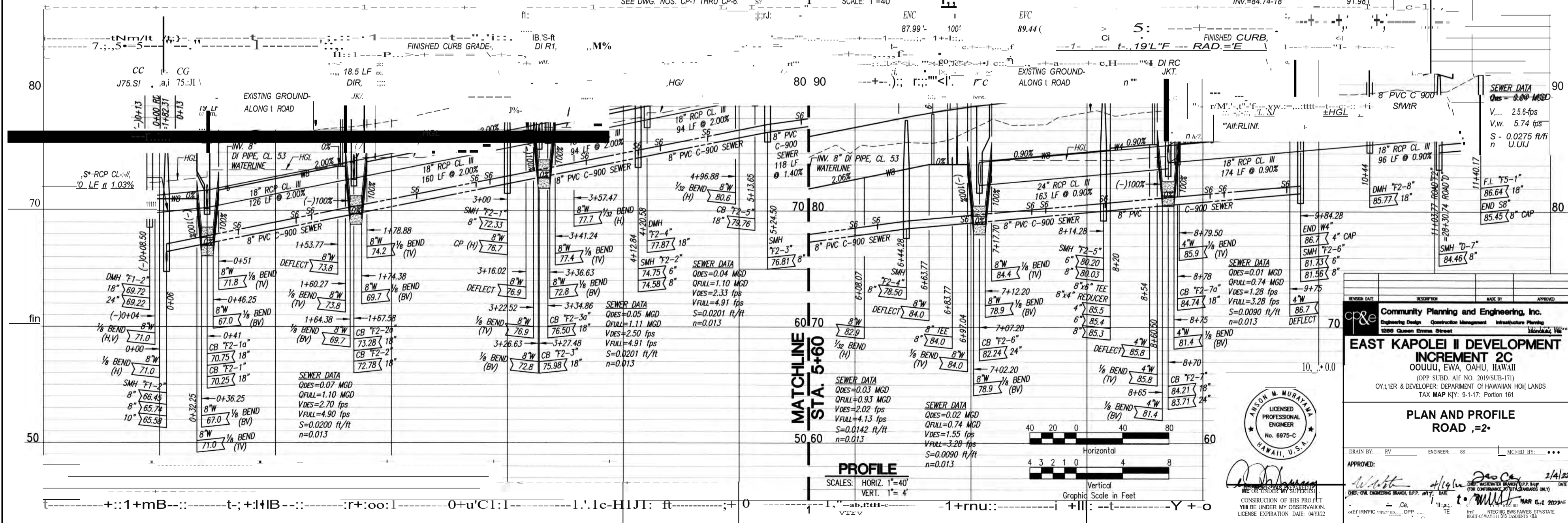
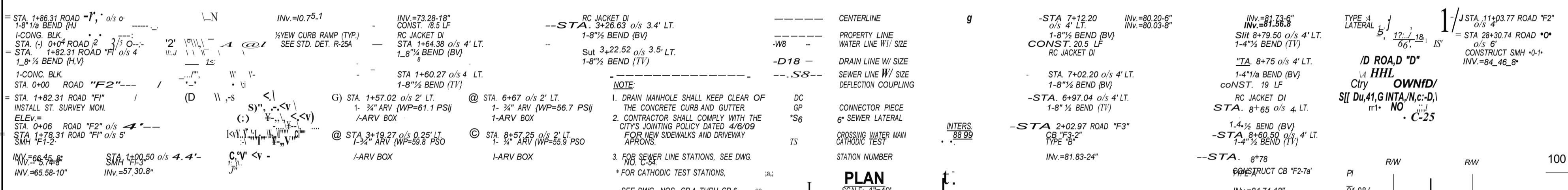
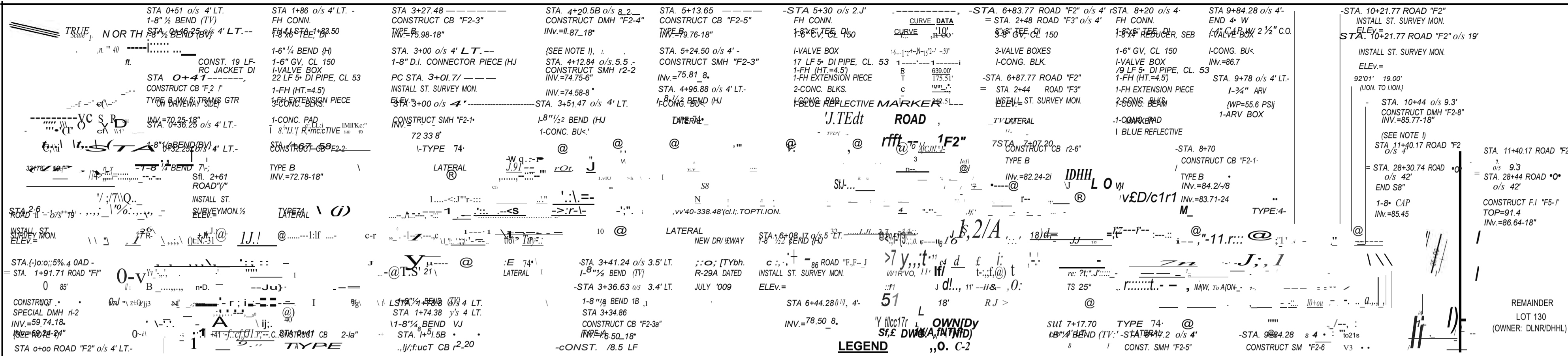
ROAD "F3"
(DHHL OWNED/CITY MAINTAINED)
SEE DWG. NO. C-29



- NOTE
- DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
 - CONTRACTOR SHALL COMPLY WITH THE C/11 JOINING POLICY DATED 4/6/09 FOR NEW SIDEWALKS AND DRI AY APRONS.
 - FOR SEWER LINE STATIONS, SEE DWG. NO. C-54
 - FOR CATHODIC TEST STATIONS, SEE DWG. NOS. CP-1 THRU CP-6

Comunity Planning and Engineering, Inc.
EAST KAPOLEI DEVELOPMENT
INCREMENT 2C
HOOUUUU, EWA, OAHU, HAWAII
(OPP. SUBO. FILE NO. 2019/SUB-171)
01/11/19 THE DEVELOPER'S IMPROVEMENTS OF HAWAIIAN HOME LANDS
PLAN AND PROFILE
ROAD "P"
APPROVED: [Signatures]
DATE: 2/14/22
DWG. NO. C-28
SHEET 11 OF 109 SHEETS

C:\Construction Drawings\Government Review\7/29/23 C-28 P&P Road F.dwg, 1/14/2022 10:49:40 AM



Community Planning and Engineering, Inc.
 Engineering Design Construction Management Infrastructure Planning
 2299 Queen Emma Street Honolulu, HI 96813

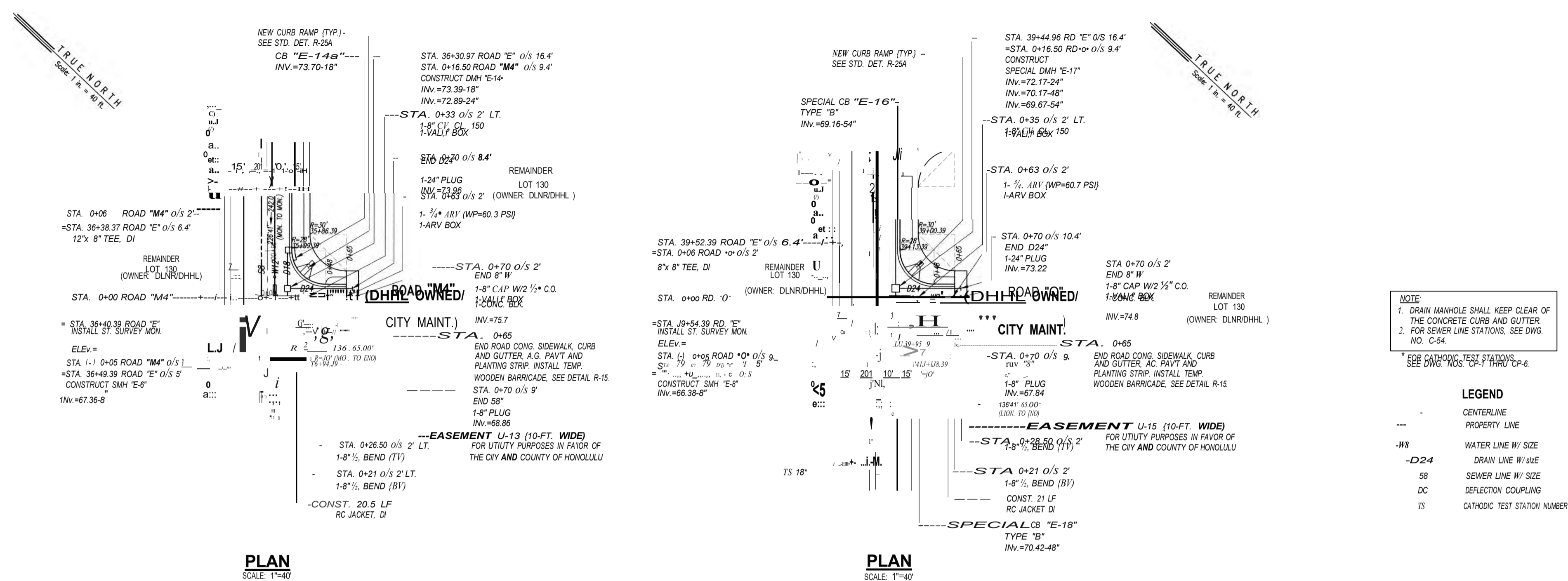
**EAST KAPOLEI II DEVELOPMENT
 INCREMENT 2C**
 OOUU, EWA, OAHU, HAWAII
 (OPP SUBD. AIF NO. 2019/SUB-171)
 OY1.1ER & DEVELOPER, DEPARTMENT OF HAWAIIAN HOI/LANDS
 TAX MAP KEY: 9-1-17, Portion 161

**PLAN AND PROFILE
 ROAD #2**

APPROVED: [Signature] DATE: 2/4/22
 [Signature] DATE: 2/4/22

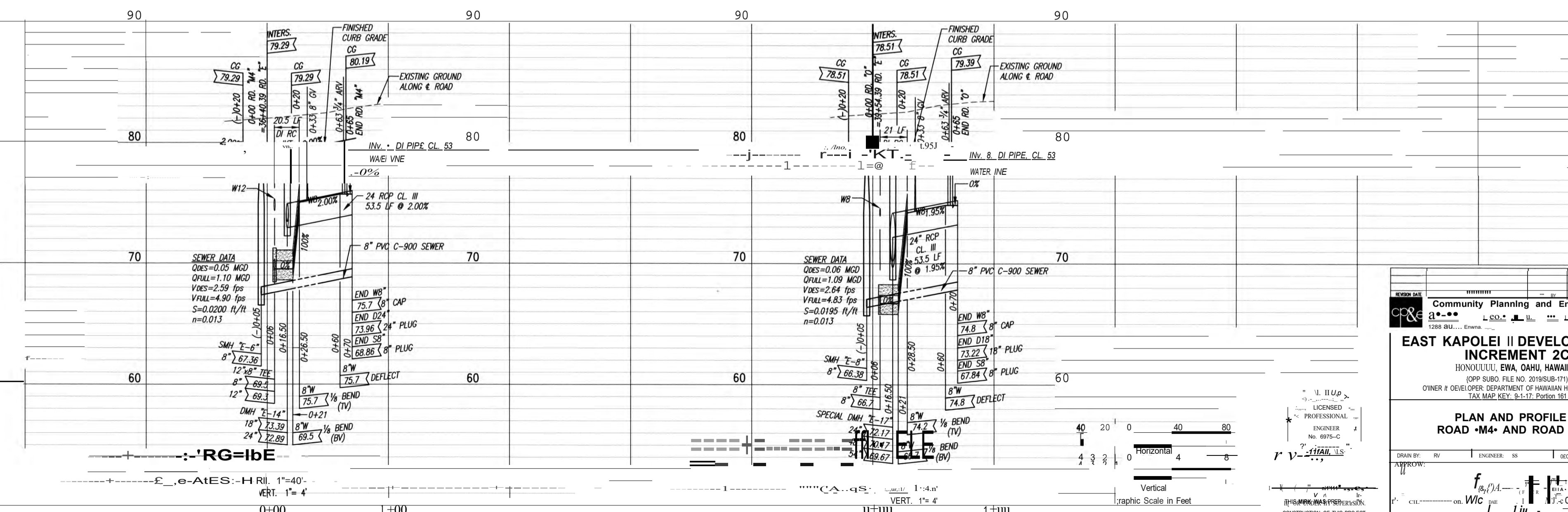
CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/1/22

Review #7331 C-30 P&P Road F2.dwg, 1/14/2022, 12:27:46 PM
 2022-02-04 10:00:00
 2022-02-04 10:00:00
 2022-02-04 10:00:00



PLAN
SCALE: 1"=40'

PLAN
SCALE: 1"=40'



RG=IbE

CA=AS

NOTE:
1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
2. FOR SEWER LINE STATIONS, SEE DWG. NO. C-54.

LEGEND

-	CENTERLINE
---	PROPERTY LINE
-W8	WATER LINE W/ SIZE
-D24	DRAIN LINE W/ SIZE
58	SEWER LINE W/ SIZE
DC	DEFLECTION COUPLING
TS	CATHODIC TEST STATION NUMBER

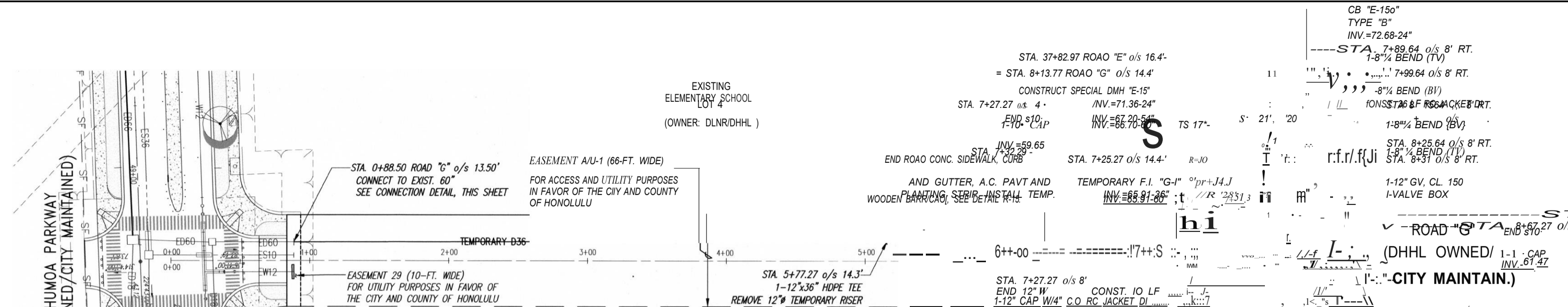
Community Planning and Engineering, Inc.
1288 AU... Emma... Kwa... Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBO. FILE NO. 2019/SUB-171)
OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 161

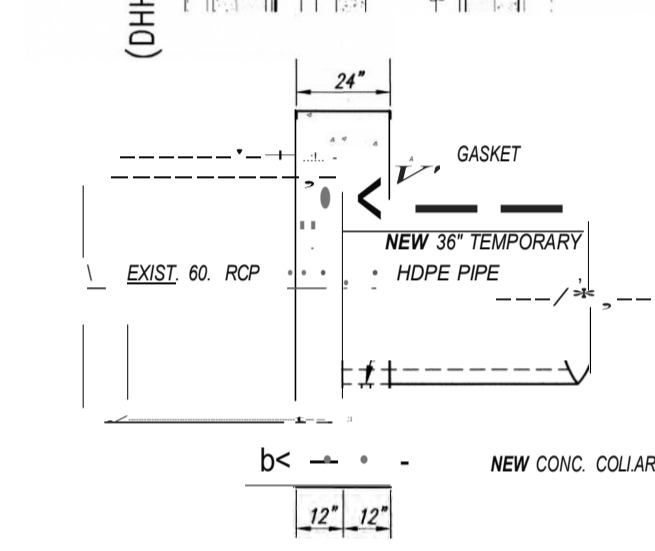
PLAN AND PROFILE ROAD M4 AND ROAD O

DRAIN BY: RV ENGINEER: SS DECIDED BY: JH/2-1
APPROVED: f... J...
DATE: MAR 11 2022
CONSTRUCTION OF THIS PROJECT WILL BE UNDER HIS OBSERVATION
LICENSE EXPIRES: 04/12/22

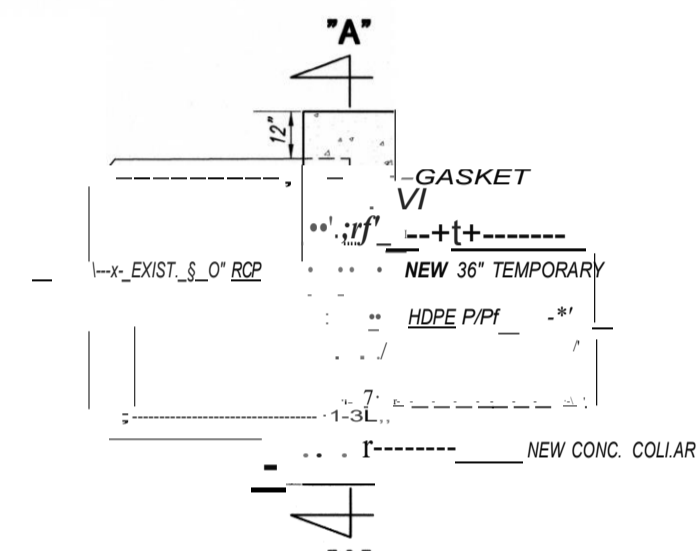
TRUE NORTH
Scale: 1" = 40' ft.



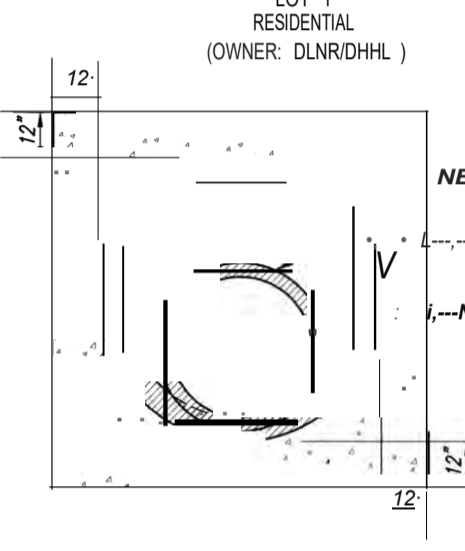
PLAN
SCALE: 1"=40'



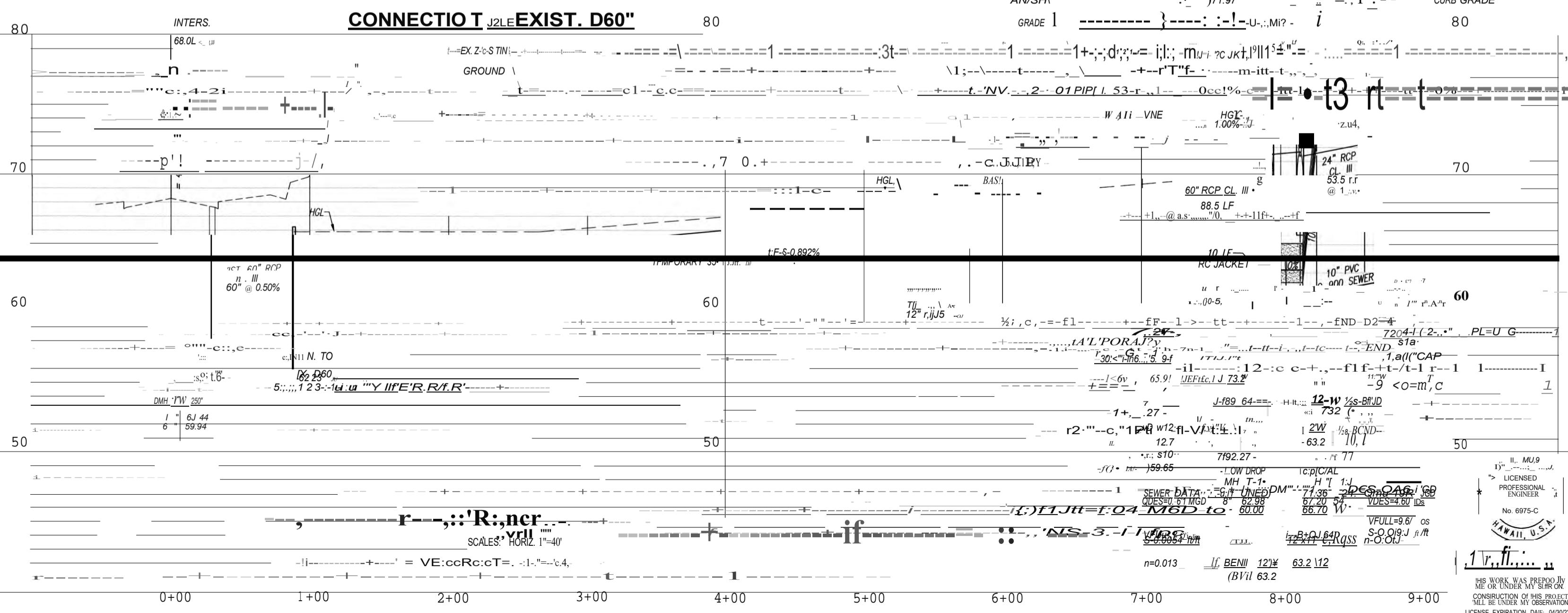
PLAN



ELEV.



SECTION

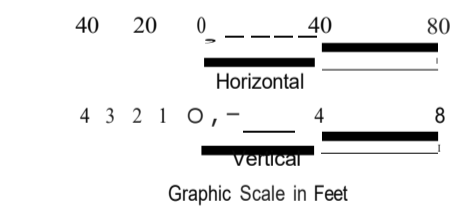


CONNECT TO EXIST. D60"

SCALE: HORIZ. 1"=40'

NOTE:
1. DRAIN MANHOLE SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.
2. FOR SEWER LINE STATIONS, SEE DWG. NO. C-54.

CATHODIC TEST STATIONS SEE DWG. NOS. CP-1 THRU CP-6.

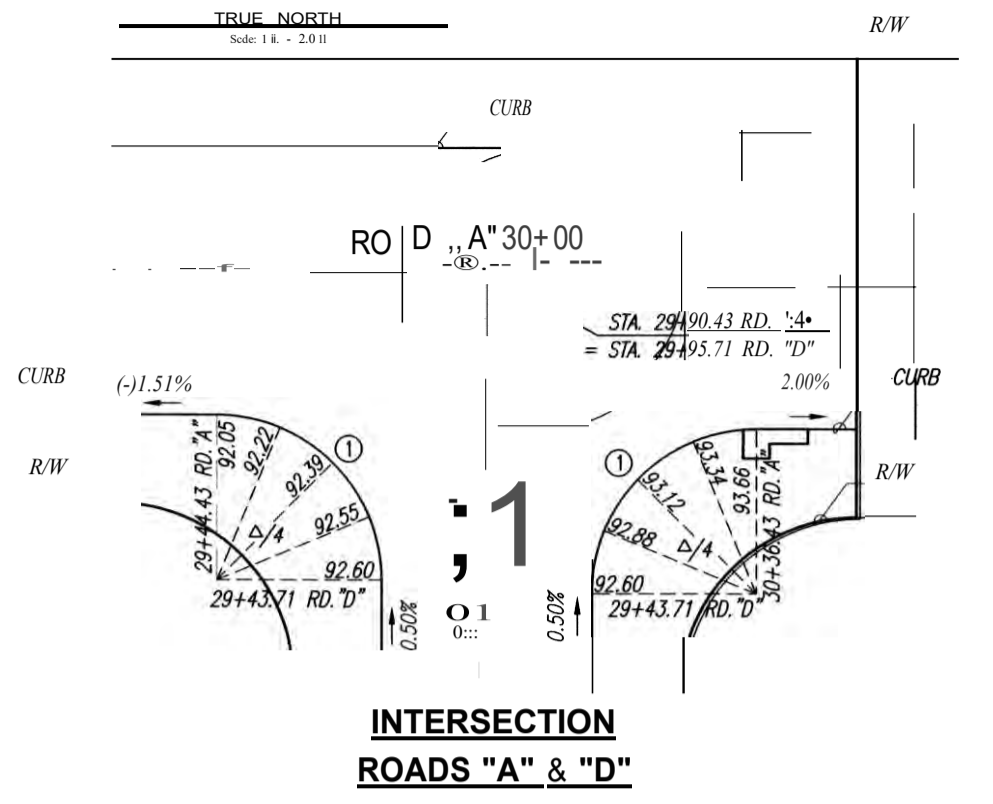


Community Planning and Engineering, Inc.
B. WWW. C. W. L. M. A. I. A. A. P. R. A. T. I. O. N. S. P. R. A. C. T. I. C. I. T. Y.

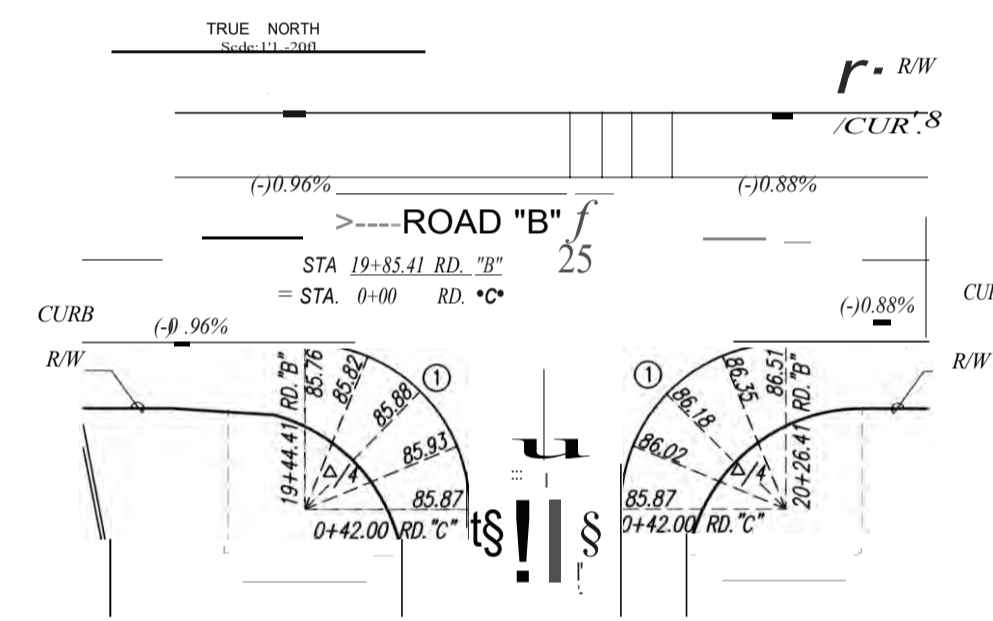
**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2C
OUUUU, EWA, OAHU, HAWAII**
(OPP SUBD. FILE NO. 2019/SUB-171)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17; Portion 161

PLAN AND PROFILE
DRAWN BY: RV | ENGINEER: SS | CHECKED BY: AMM
APPROVED: [Signature]
DATE: 11/11/2022
SHEET OF 102 SHEETS

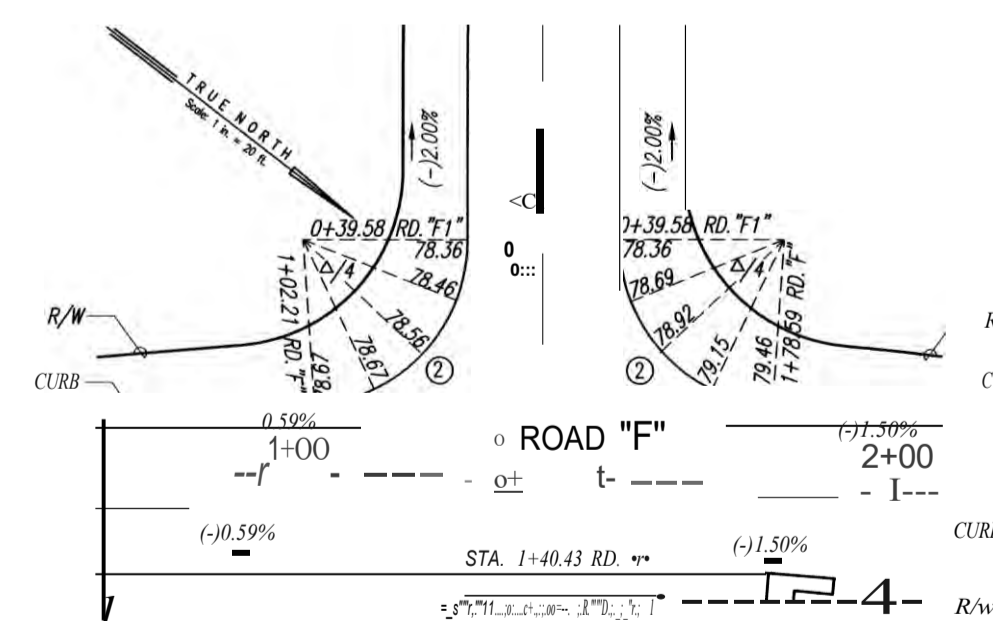
C:\Construction Drawings\Government Review\735 C-34 R&P Drainline C.dwg, 1/11/2022 10:11:11 AM



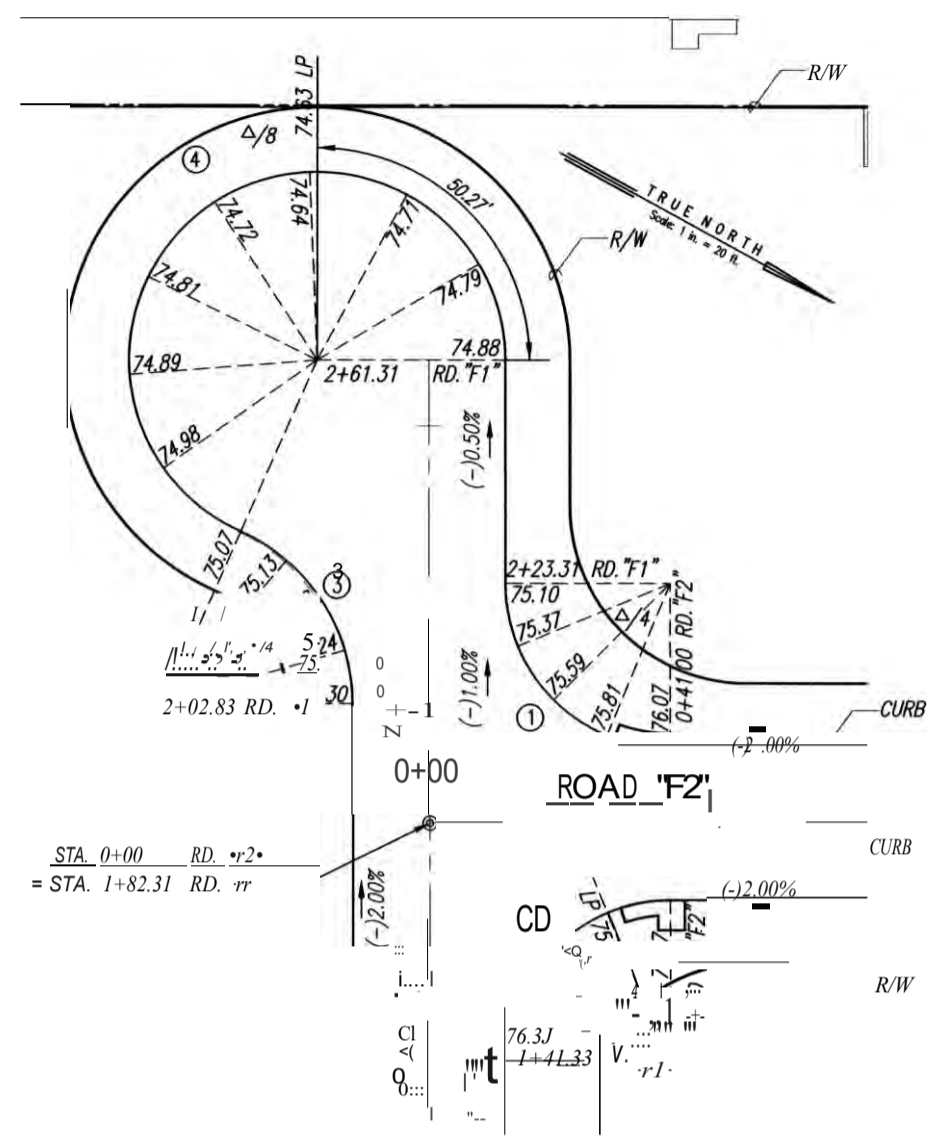
**INTERSECTION
ROADS "A" & "D"**



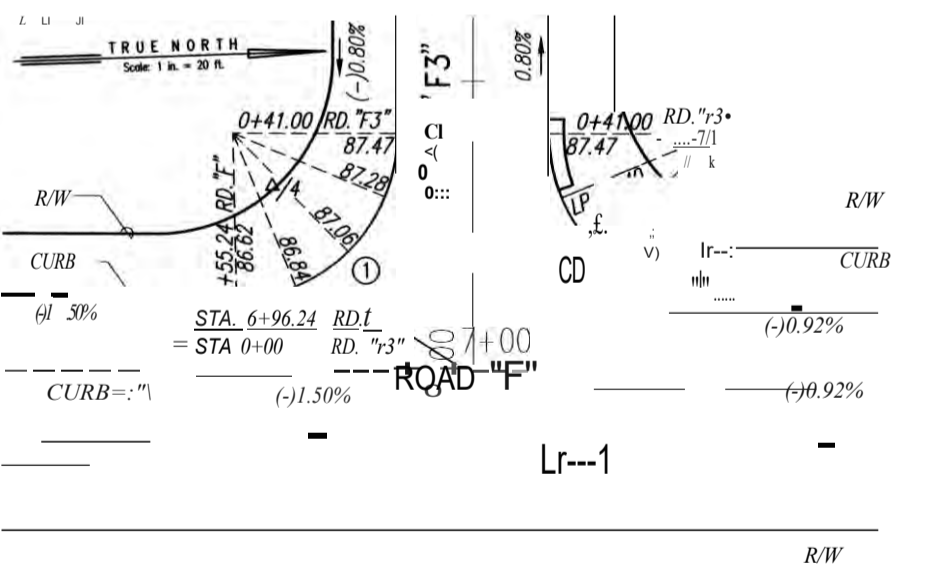
**INTERSECTION
ROADS "B" & "C"**



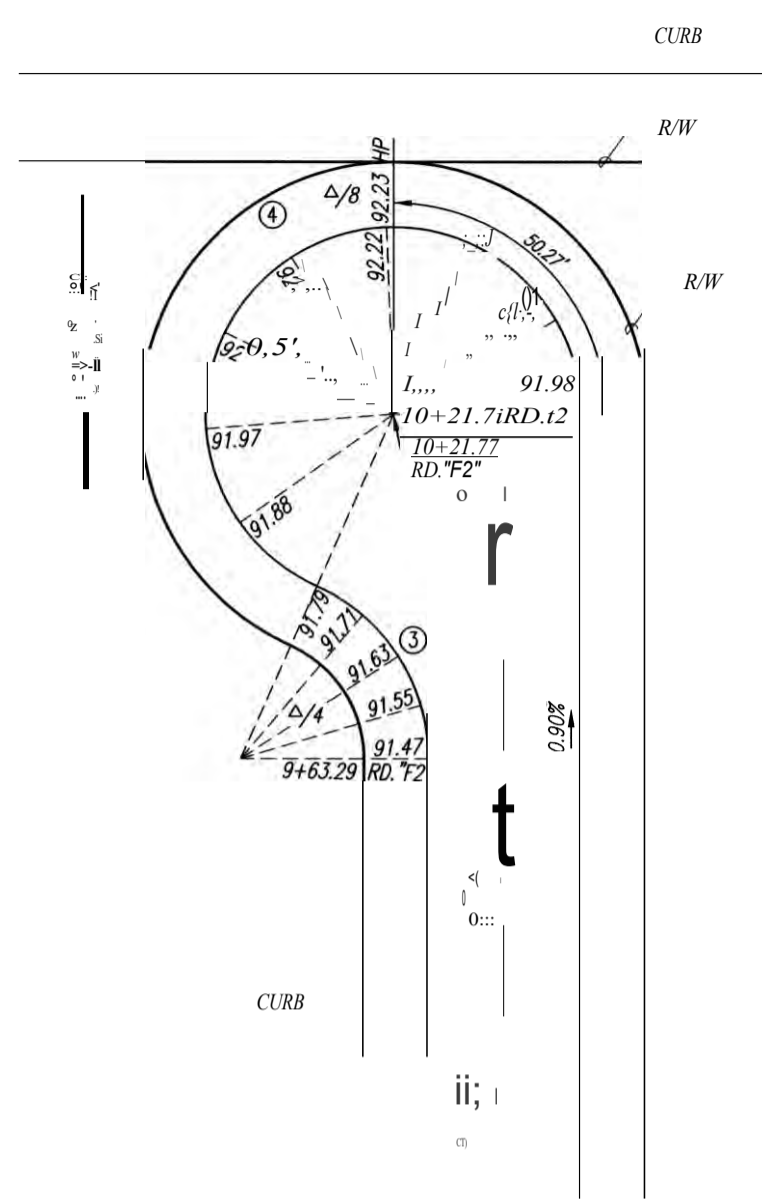
**INTERSECTION
ROADS "F" & "F1"**



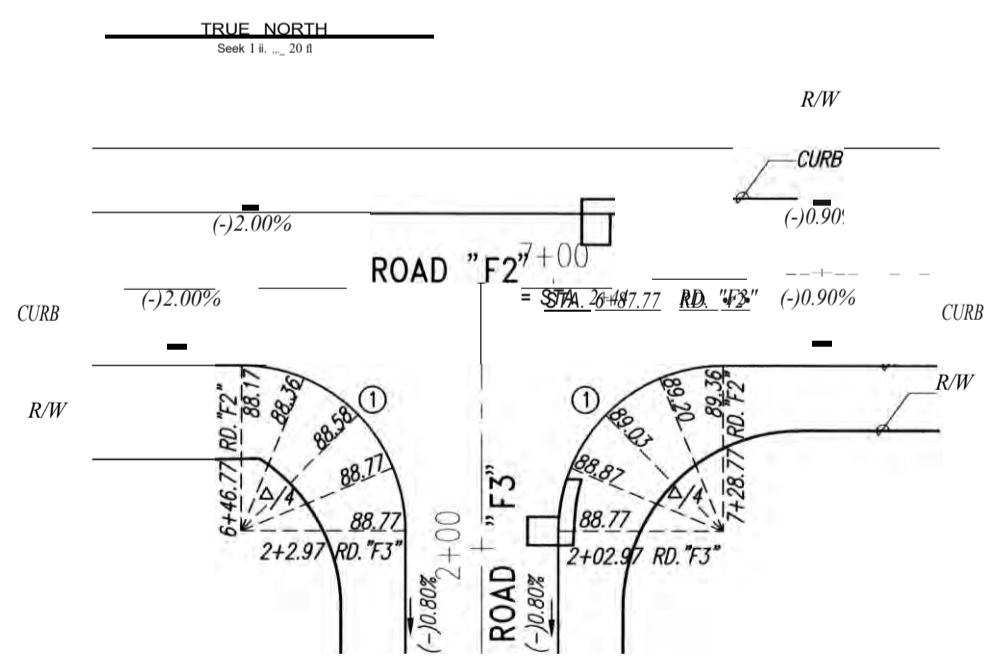
**INTERSECTION
ROADS "F2" & "F1"**



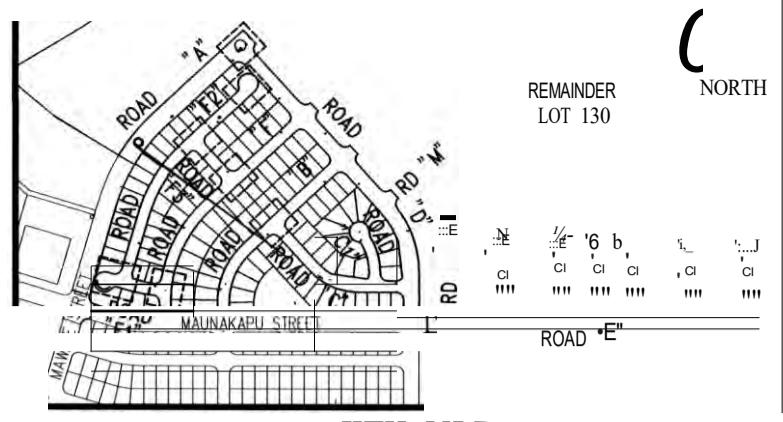
**INTERSECTION
ROADS "F" & "F3"**



**CUL-DE-SAC
ROAD "F2"**



**INTERSECTION
ROADS "F2" & "F3"**

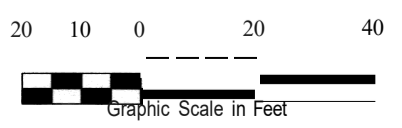


**KEY MAP
NOT TO SCALE**

CURB DATA				
CURVE	(1)	(2)	(3)	(4)
L	90°0'00"	86°01'19"	66°01'50"	246°01'50"
M/2	45°00'00"	43°00'40"	33°00'55"	123°00'55"
R	28.00'	28.00'	32.00'	32.00'
T	28.00'	26.12'	20.79'	49.25'
C	39.60'	38.20'	34.87'	53.67'
L	43.98'	42.04'	36.88'	137.41'

CURB RETURNS

SCALE: 1" = 20'



M. HILL
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C

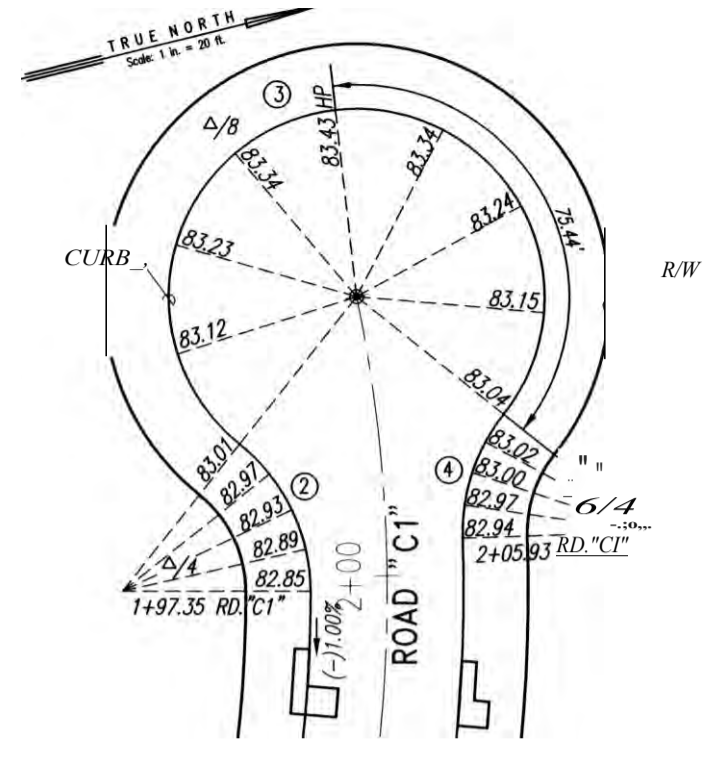
THIS WORK WAS PREPARED UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER UNDER MY OBSERVATION.

Community Planning and Engineering, Inc.
 1520 Ocean Avenue Street
 EAST KAPOLEI II DEVELOPMENT
 INCREMENT 2C
 HONOLULU, HAWAII
 (DPP SUBD. FILE NO. 2019/SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

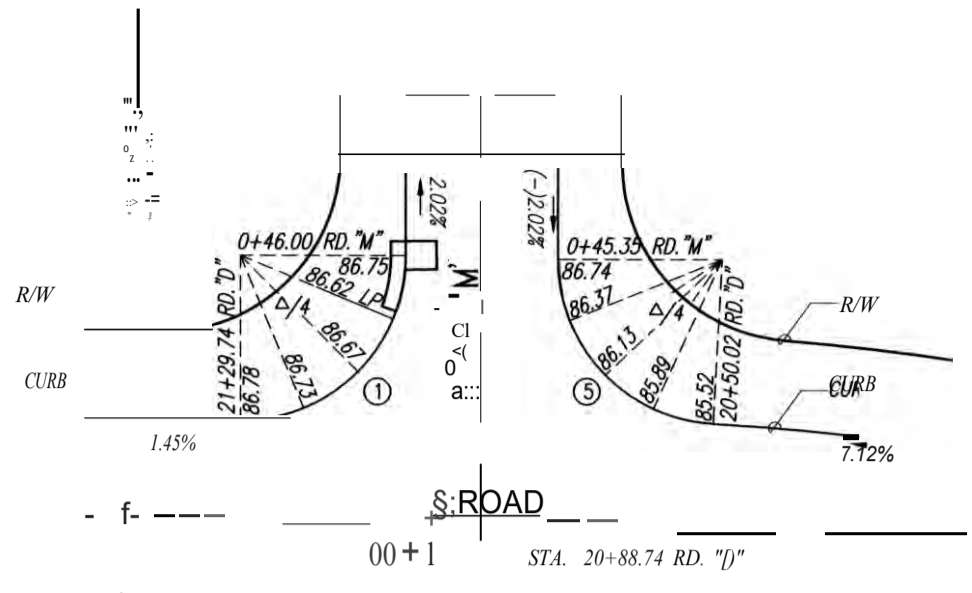
CURB RETURNS - 1

APPROVED: *Walter A. Lopez*
 ENGINEER

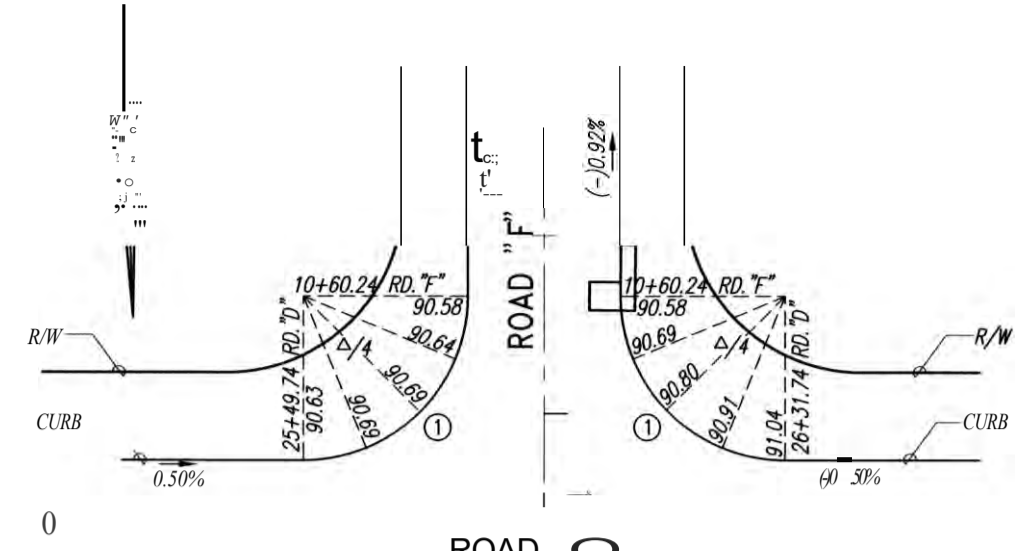
1/14/2022 7:33:57 AM
 Review W736-38 C-35
 1/14/2022 7:33:57 AM



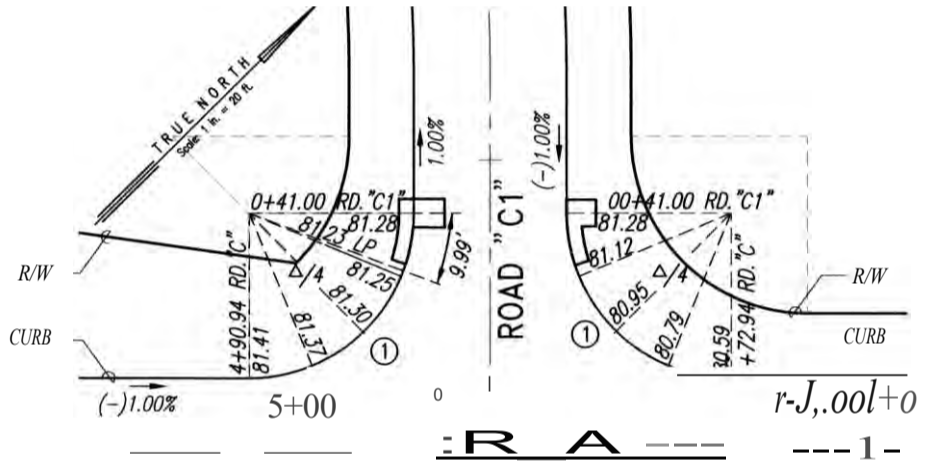
**CUL-DE-SAC
ROAD "C1"**



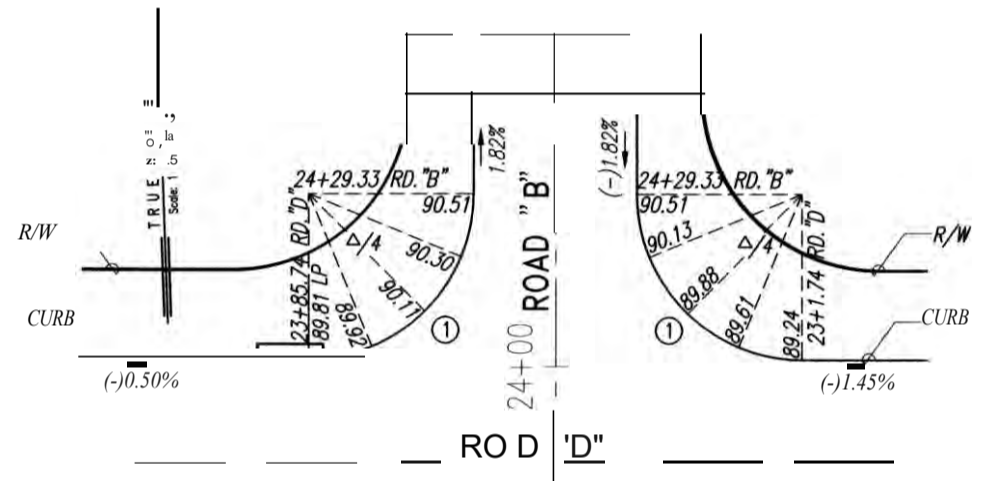
**INTERSECTION
ROAD "M" & "J"**



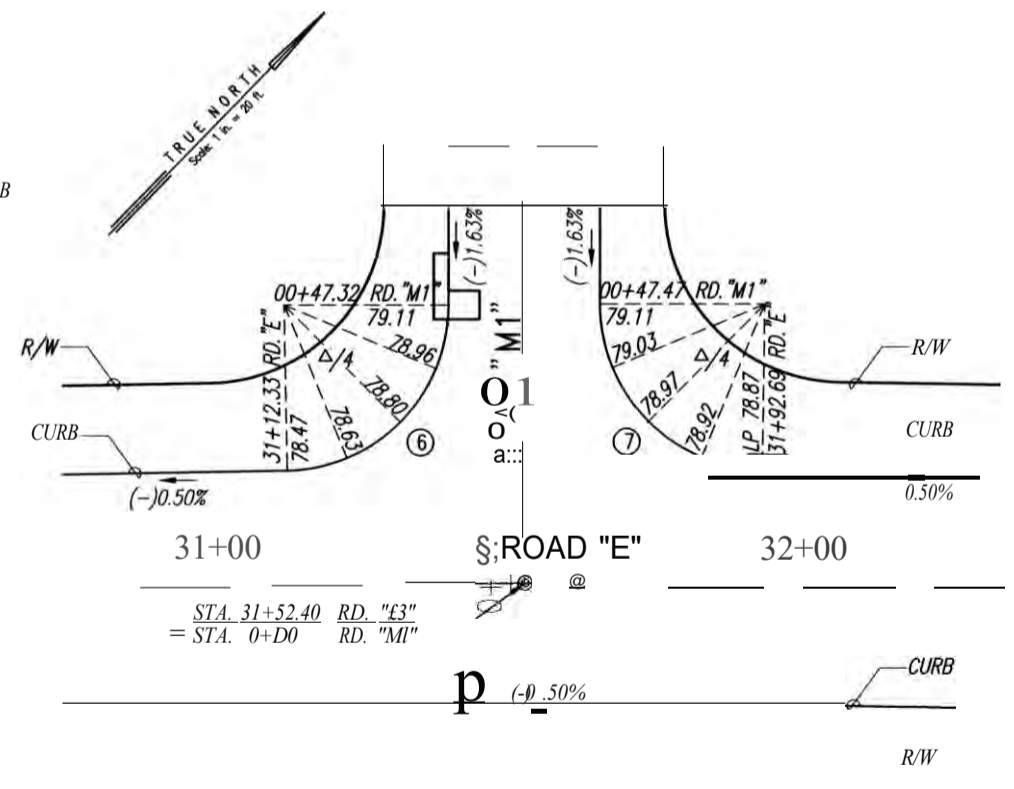
**INTERSECTION
ROADS "D" & "F"**



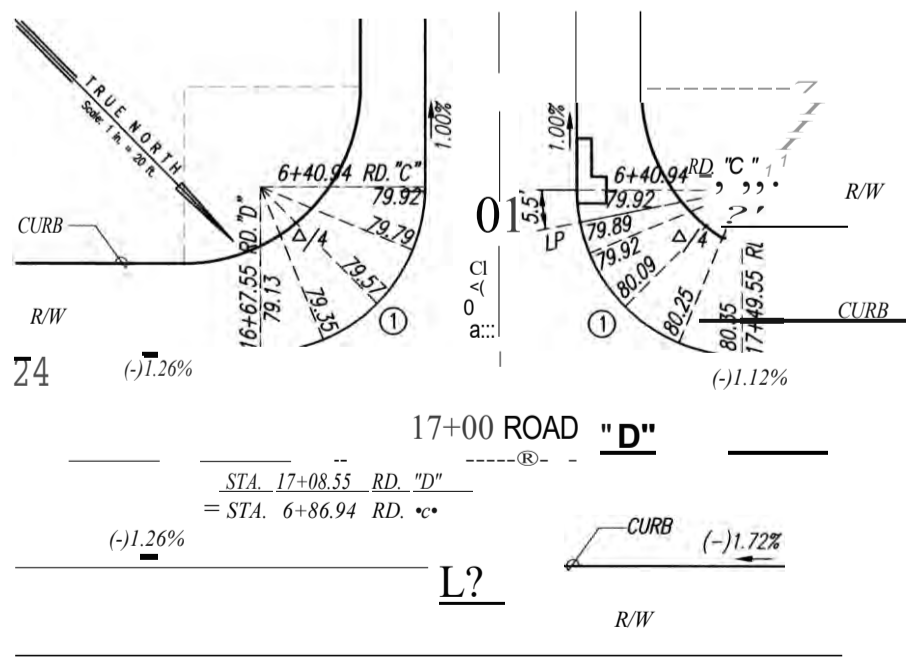
**INTERSECTION
ROADS "C" & "C1"**



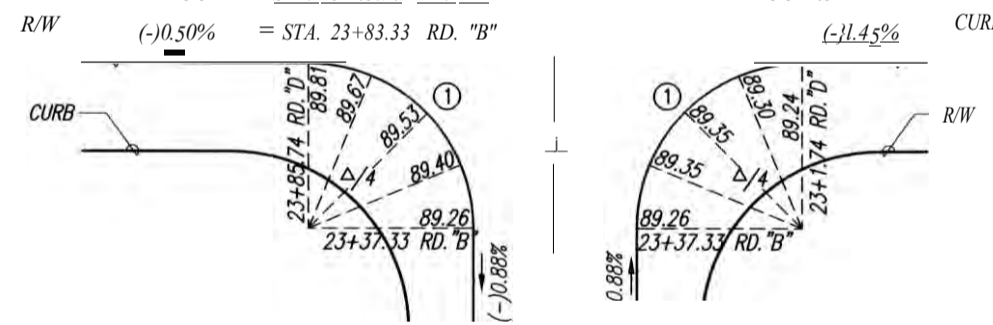
**INTERSECTION
ROADS "B" & "D"**



**INTERSECTION
ROAD "E" & "M1"**



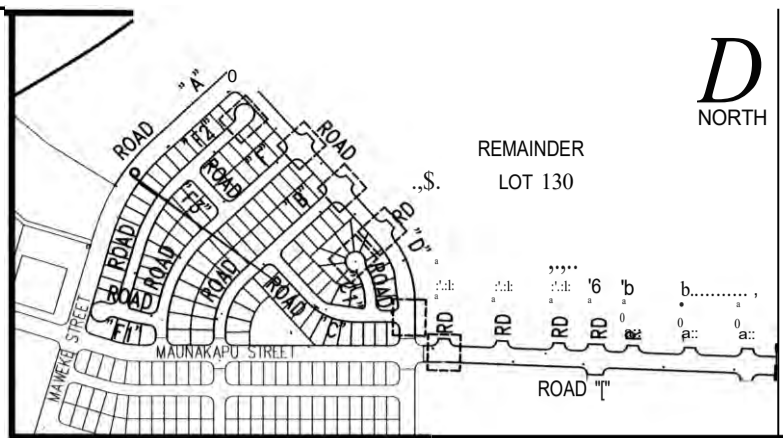
**INTERSECTION
ROADS "D" & "L"**



**INTERSECTION
ROADS "D" & "B"**

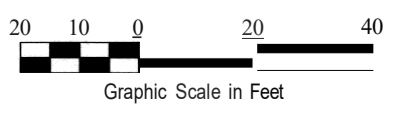
CURVE	CURB DATA						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
L	90'00"00"	51'31"16"	270'(0)8'46.5"	40'37"52"	870'4'31"	88'52"50"	89'09"10"
R	45'00"00"	25'45"38"	135'(0)4'23"	20'18"56"	43'32"15.5"	44'26"25"	44'34"35"
T	28'00'	32'00'	32'00'	32'00'	28'00'	28'00'	28'00'
C	28'00'	16'19'	31'92'	11'85'	26'56'	27'46'	27'59'
L	39'60'	27'82'	45'20'	22'22'	38'51'	39'21'	39'30'
C	43'98'	28'77'	150'88'	22'69'	42'48'	43'44'	43'57'

CURB RETURNS
SCALE: 1" = 20'



KEY MAP
NOT TO SCALE

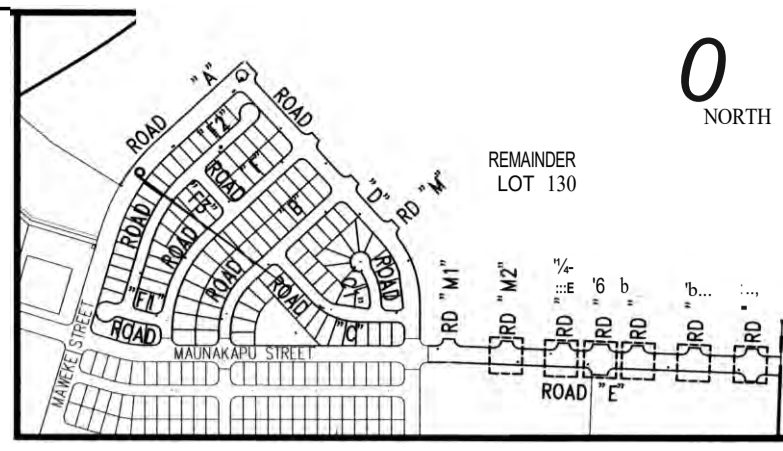
DATE	WWW	BY
<p>Community Planning and Engineering, Inc. & dwww.a..... I. ConsiuallanMaa 1000 Chancery Street HONOLULU, HAWAII</p>		
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, EWA, OAHU, HAWAII (OPP. SUBO. FILE NO. 2019/SUB-171) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 161</p>		
<p>CURB RETURNS - 2</p>		
DRAWN BY:	CO. IJFN	ENGINEER: SS
<p>APPROVED:</p> <p><i>W. White</i> <i>Aligie</i></p> <p>ME OR UNDER MY SUPERVISION CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE (HAWAIIAN) DATE: 01/22/22</p>		
DATE:	01/22/22	DATE:



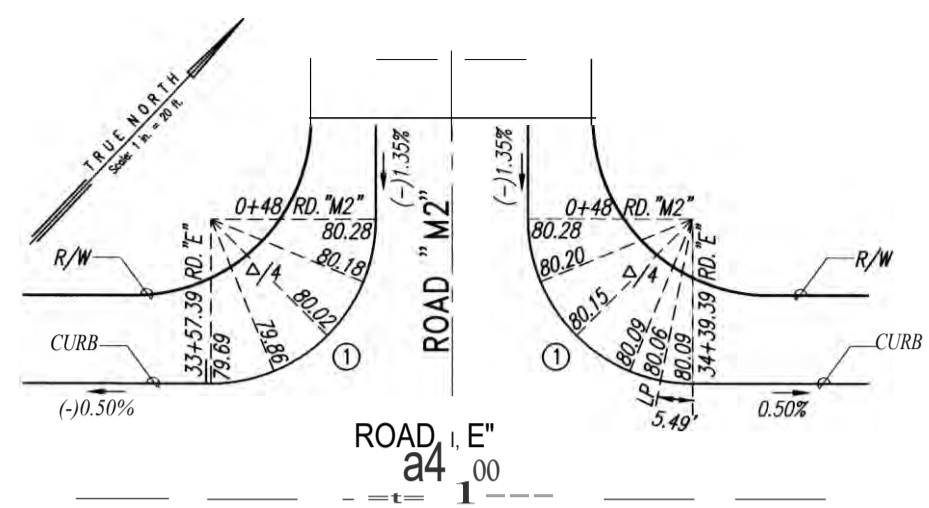
U. MUR
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 1/11/22

P:\Land Projects\DHHL East 11.0\11-01-22\Construction Drawings\Government 11-01-22\1/14/2022 7:59:34 AM

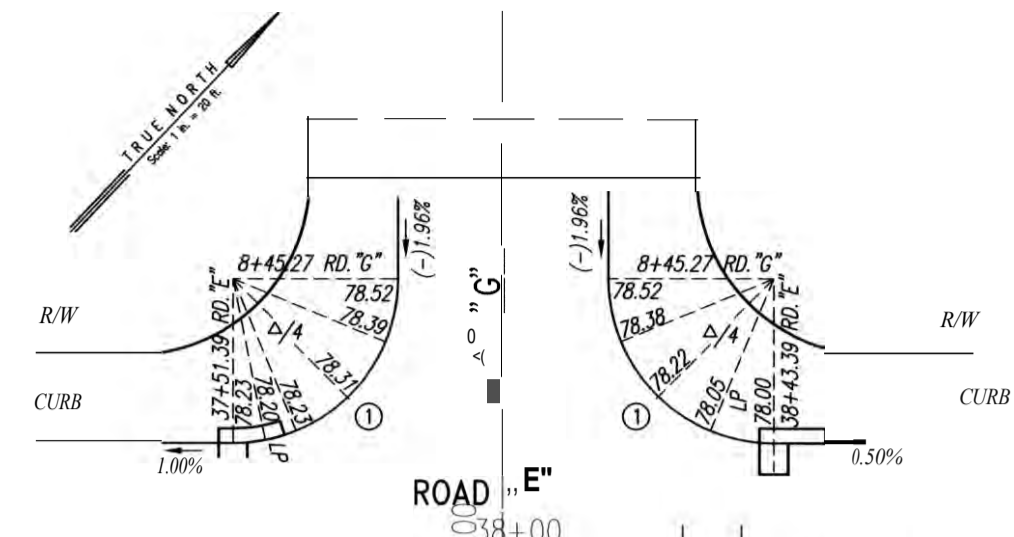
0
NORTH



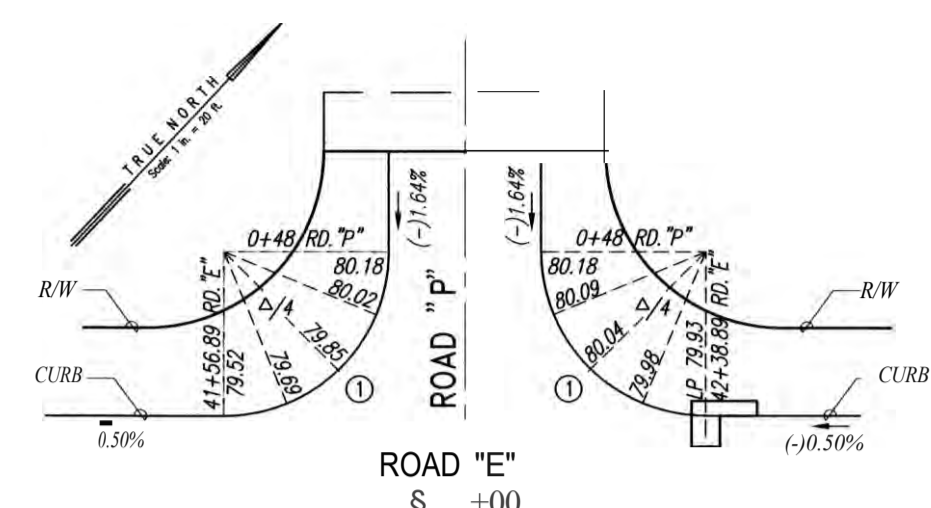
KEY MAP
NOT TO SCALE



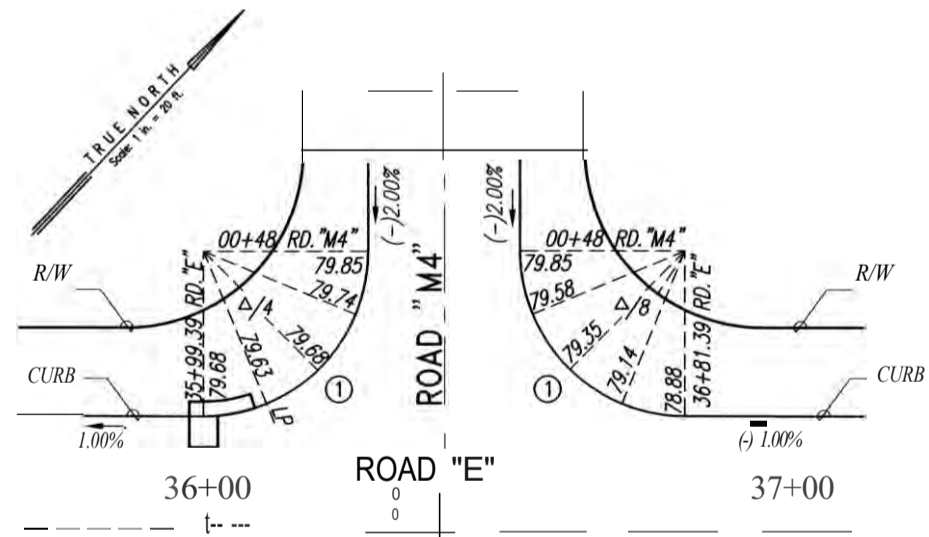
INTERSECTION
ROAD "E" & "M2"



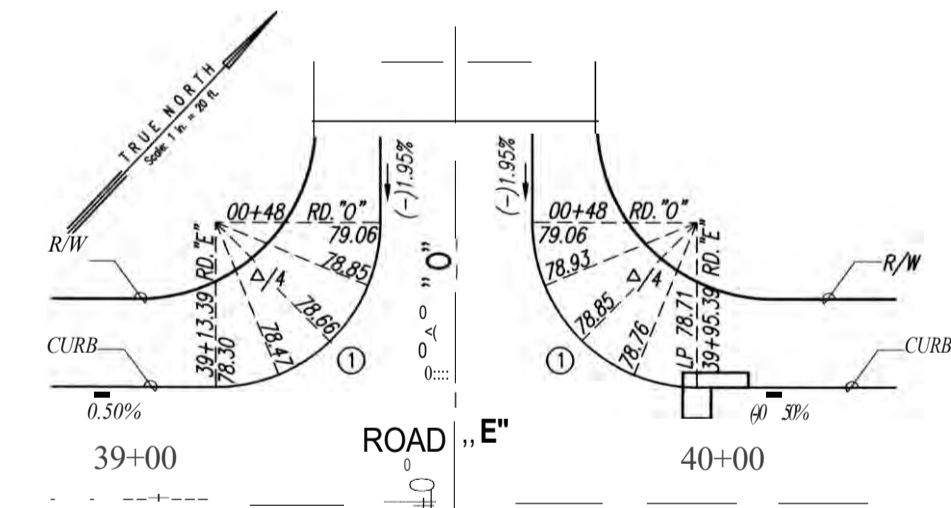
INTERSECTION
ROAD "E" & "G"



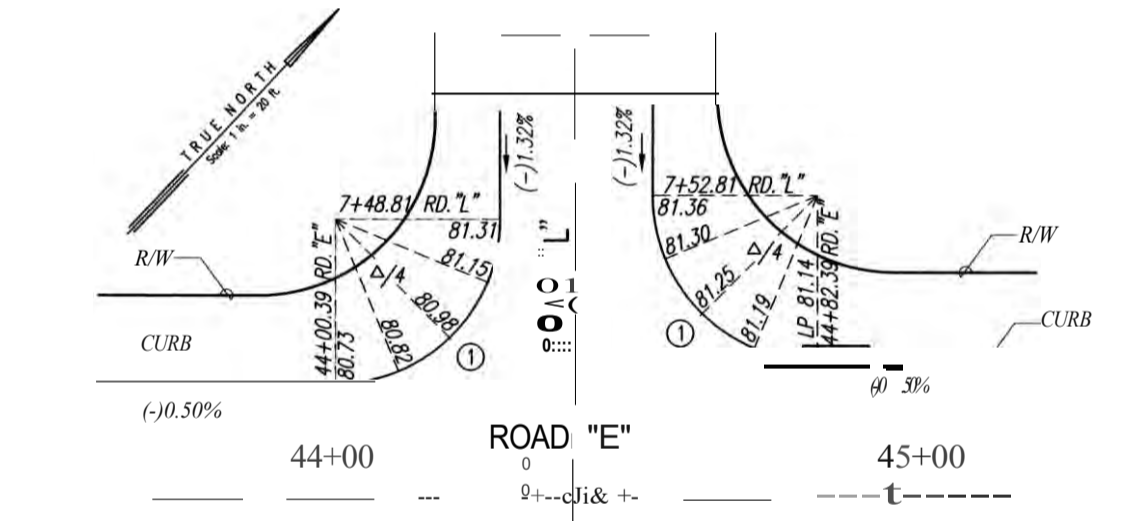
INTERSECTION
ROAD "E" & "P"



INTERSECTION
ROAD "E" & "M4"



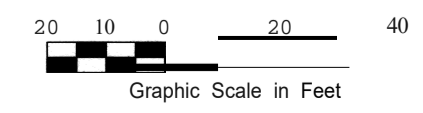
INTERSECTION
ROAD "E" & "O"



INTERSECTION
ROAD "E" & "L"

CURB DATA	
CURVE	(1)
.6	9000'00"
6/2	4510'00"
R	28.00'
T	28.00'
C	39.60'
L	43.98'

CURB RETURNS
SCALE: 1" = 20'



Professional Engineer
No. 6975-C
HAWAII

CONSTRUCTION OF THIS PROJECT
MAY BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 01/1/22

CP&E Community Planning and Engineering, Inc.
1288 A, Emma Bldg.
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HCU, IIOUUTU, ENA, OARU, HAWAII
(OPP. SUBO. FILE NO. 2019SUB-171)
01/NER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX WAP KEY: 9-1-17; Portion 161

CURB RETURNS - 3

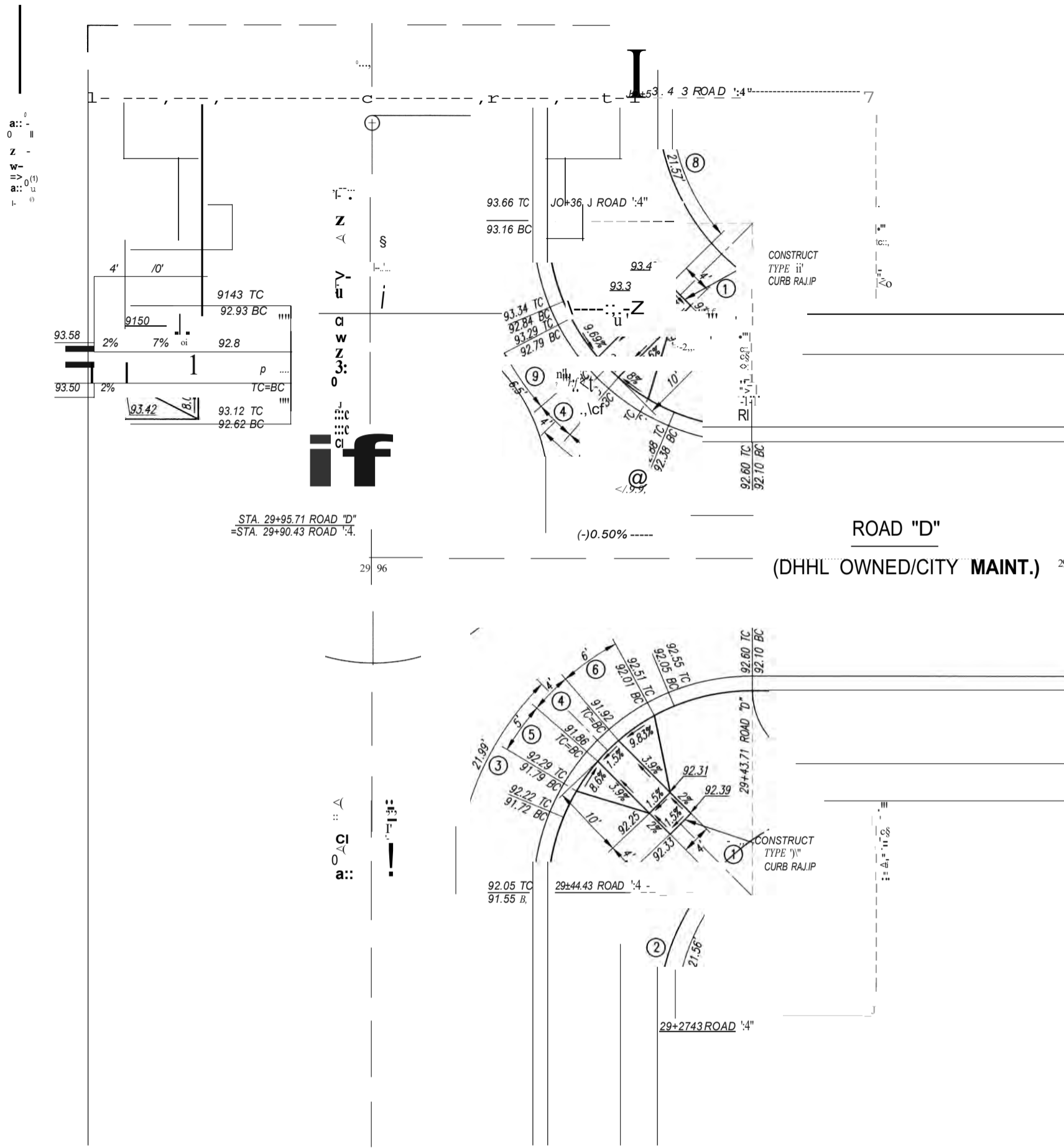
DRAWN BY: CO, MFM ENGINEER: SS CHECKED BY: AIM

APPROVED: *[Signature]* **4, r--**

DATE: 01/1/22

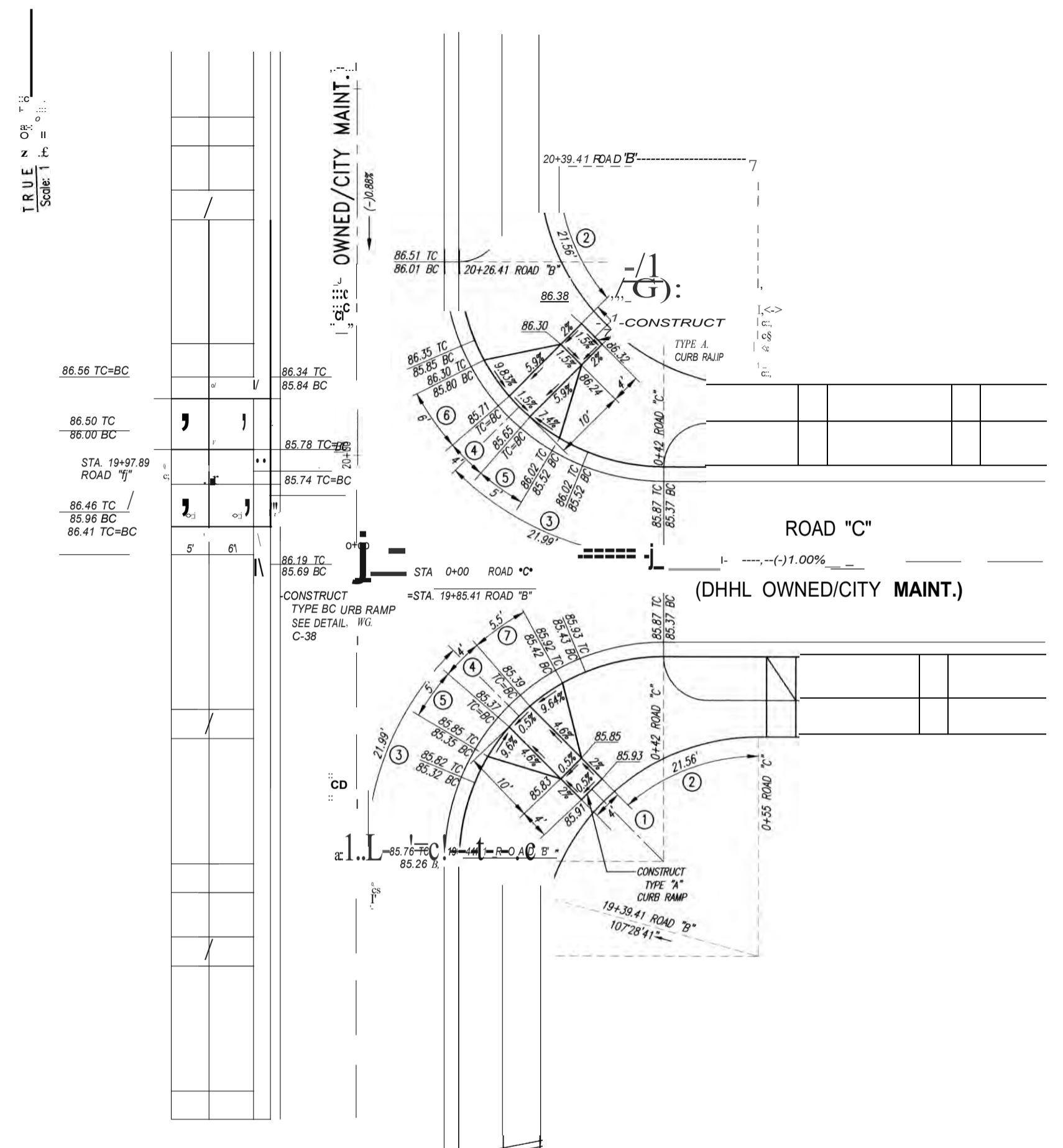
DWG. NO. **C-37** SHEET 38 of 109 SHEETS

East Kapolei II Increment 11-C Construction Drawings Government Review #736-38 C-35 to C-37 Curb Returns.dwg, 1/14/2022 7:42:42 AM

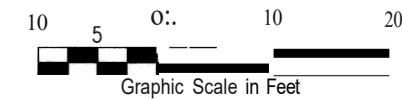


**INTERSECTION
ROADS "A" & "D"**

CURVE DATA										
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	CURVE
6.	90-00-00	41°10'39"	45-00-00	8°11'32"	10°13'53"	12°16'40"	11°15'16"	41°11'44"	13°18'02"	6.
lo./2	45°00'00"	20°35'19.5"	22-30-00	4°05'46"	5°06'56.5"	6°08'20"	5°37'38"	20°35'52"	6°39'01"	lo./2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	28.00'	R
T	28.00'	11.27'	11.60'	2.01'	2.51'	3.01'	2.76'	11.28'	3.28'	T
C	39.60'	21.10'	21.42'	4.00'	4.99'	5.99'	5.49'	21.11'	6.49'	C
L	43.98'	21.56'	21.99'	4.00'	5.00'	6.00'	5.50'	21.57'	6.50'	L

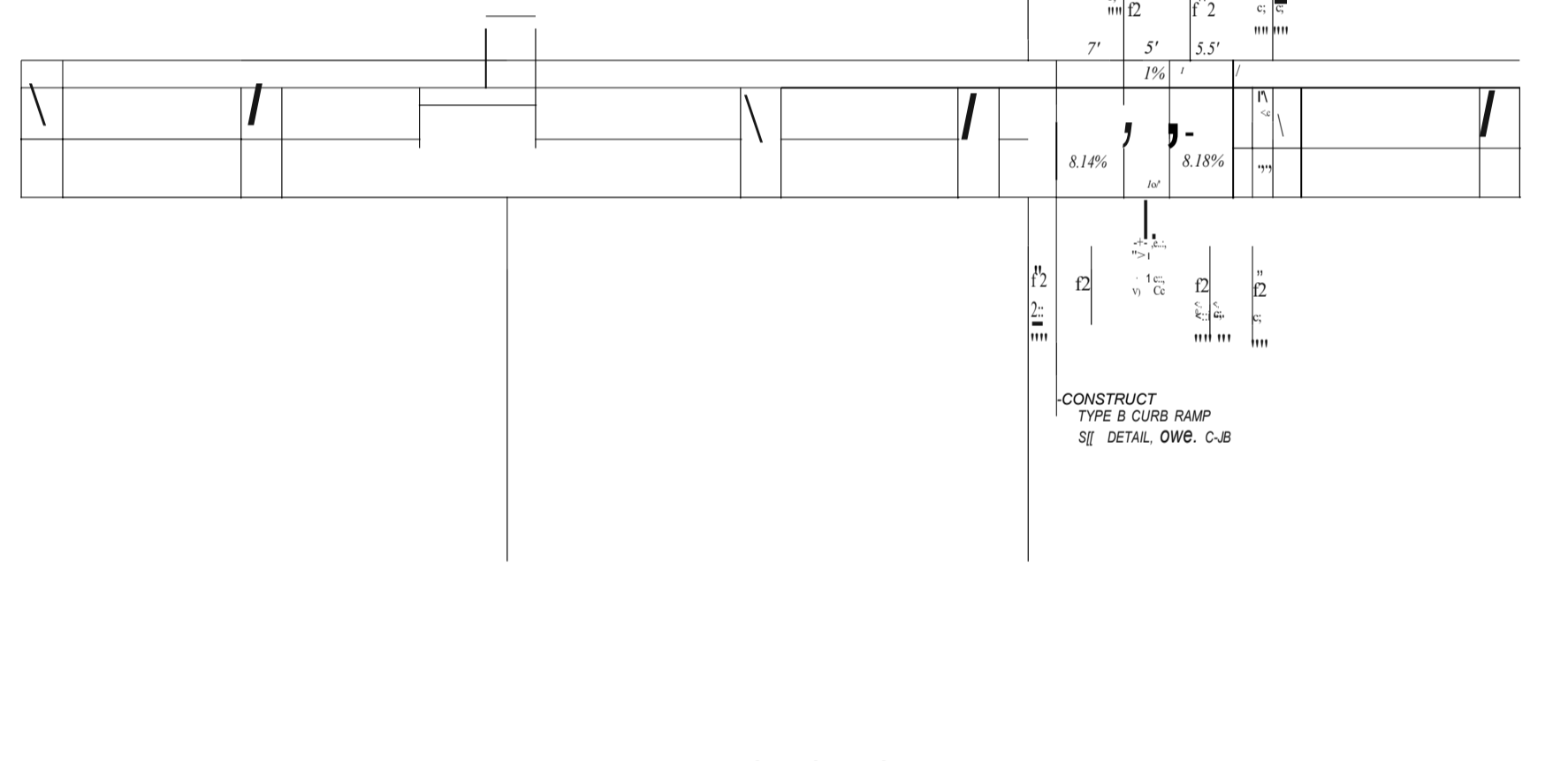
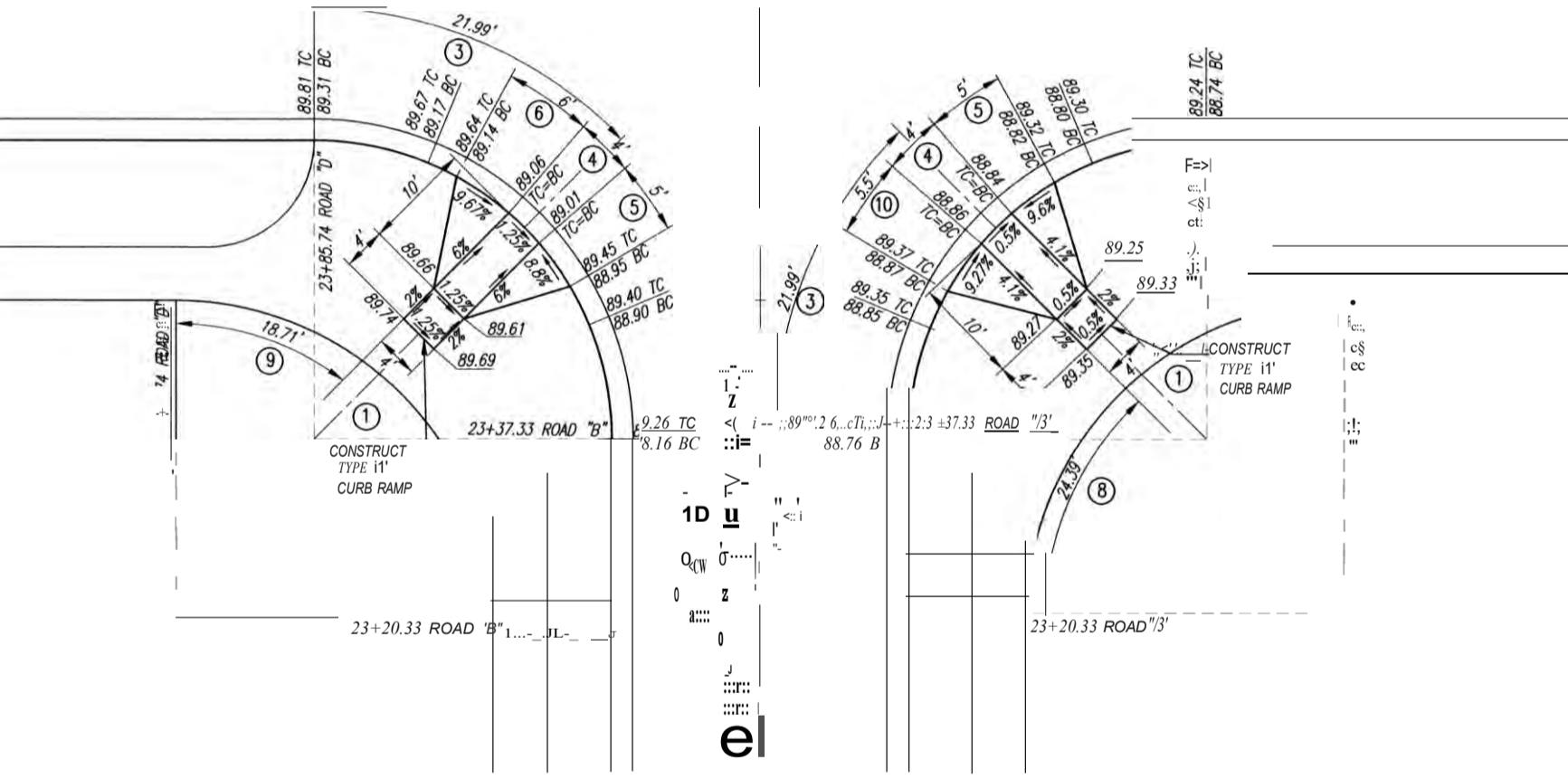
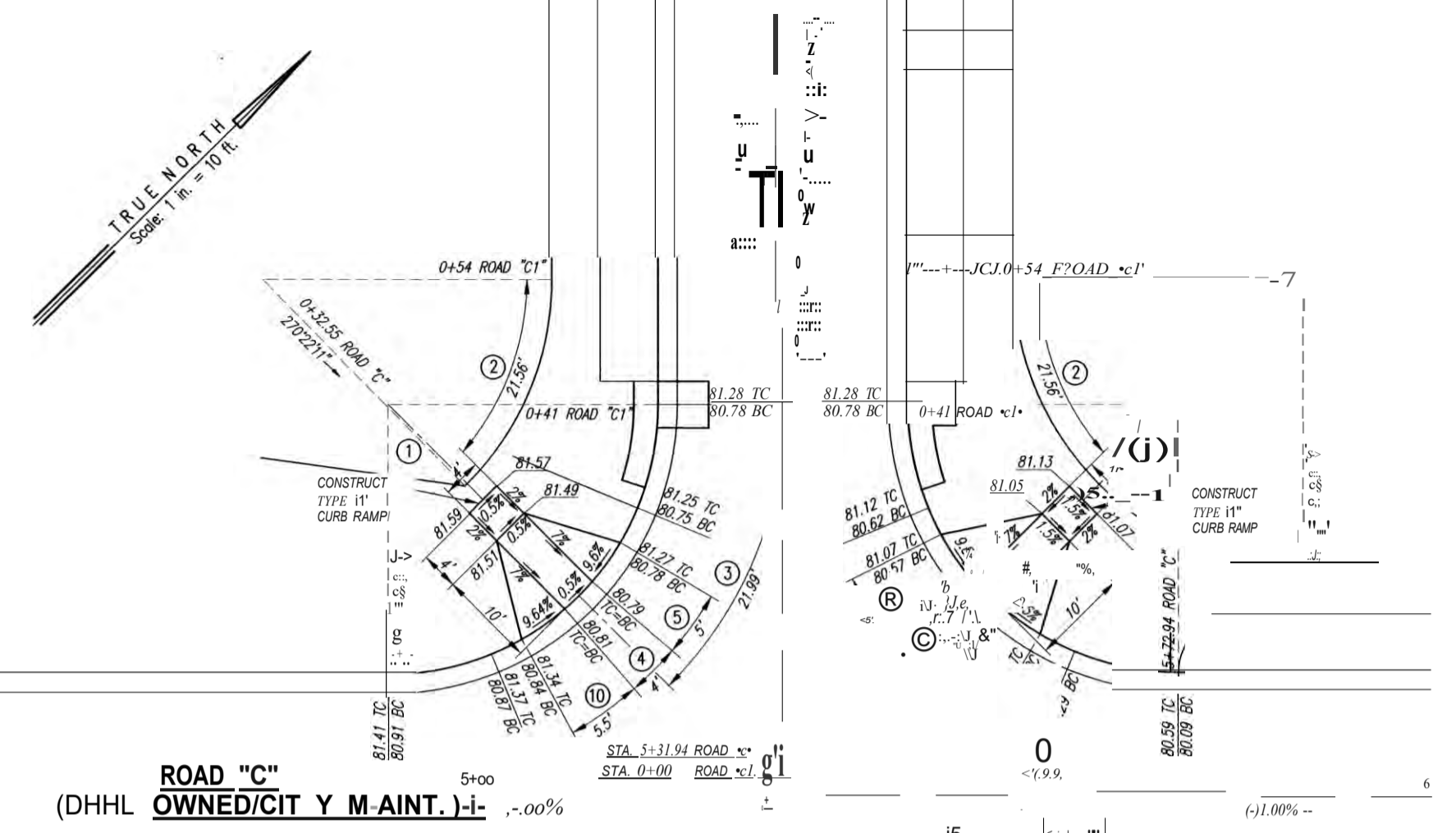
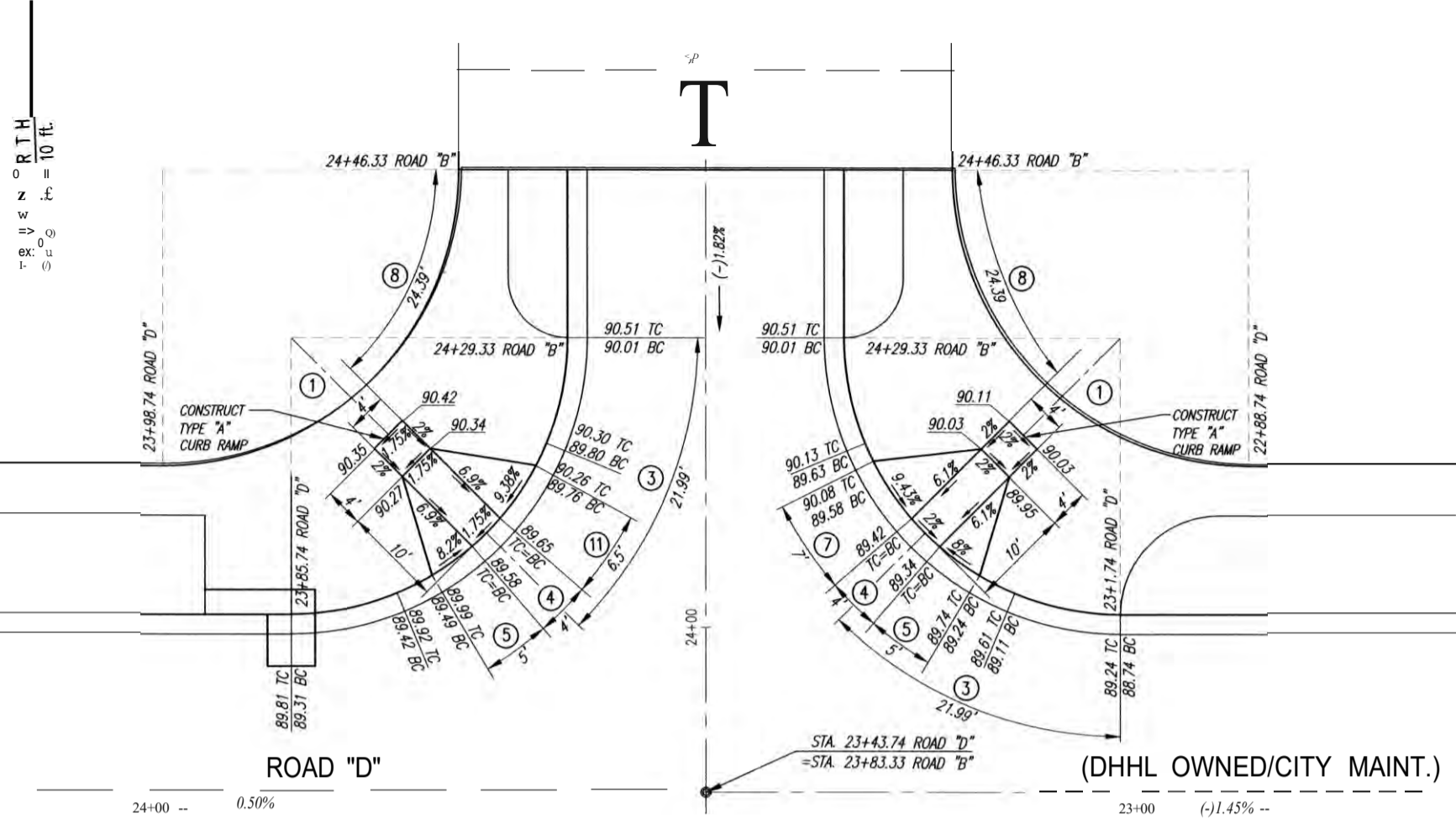


**INTERSECTION
ROADS "B" & "C"**



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

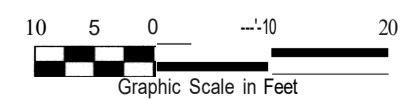
REVISION DATE	REVISION	BY
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HIJIOOUII, EWA, OAHU, HAWAII (DPP SUBD. REF. NO. 2019SUB-171) OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 161		
CURB RAMP DETAILS - 1		
APPROVED DRAWN BY: <i>[Signature]</i>	ENGR. CO: <i>[Signature]</i>	ENGINEER: <i>[Signature]</i>
DESIGNED BY: <i>[Signature]</i>	CHECKED BY: <i>[Signature]</i>	AMM



**INTERSECTION
ROADS "D" & "B"**

**INTERSECTION
ROADS "C" & "C1"**

CURVE DATA												
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	CURVE
T ₁	90-00-00	4110'39"	45-00-00	811'32"	1013'53"	1216'40"	1419'26"	45'34'5r	35'41'r	1115'16"	1318'03"	T ₂
T ₂	45-00-00	20'35'19.5"	22-30-00	4'05'46"	5'06'56.5"	6'08'20"	7'09'43"	2317'28.5"	17'52'8.5"	5'37'38"	6'39'01.5"	T ₁
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	30.00'	28.00'	28.00'	R
T	28.00'	11.27'	11.60'	2.01'	2.51'	3.01'	3.52'	12.91'	9.67'	2.76'	3.26'	T
C	39.60'	21.10'	21.42'	4.00'	4.99'	5.99'	6.98'	23.72'	18.41'	5.49'	6.49'	C
L	43.98'	21.56'	21.99'	4.00'	5.00'	6.00'	7.00'	24.39'	18.71'	5.50'	6.50'	L



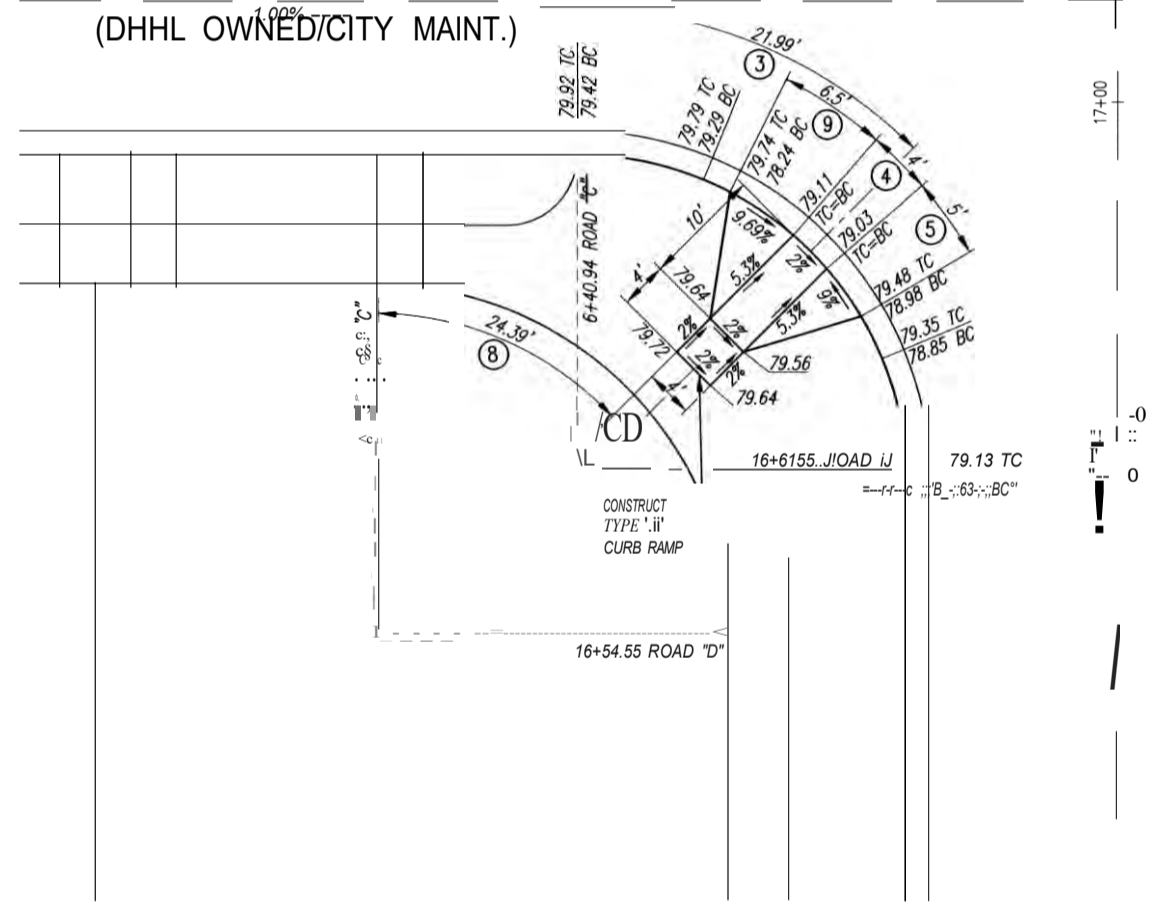
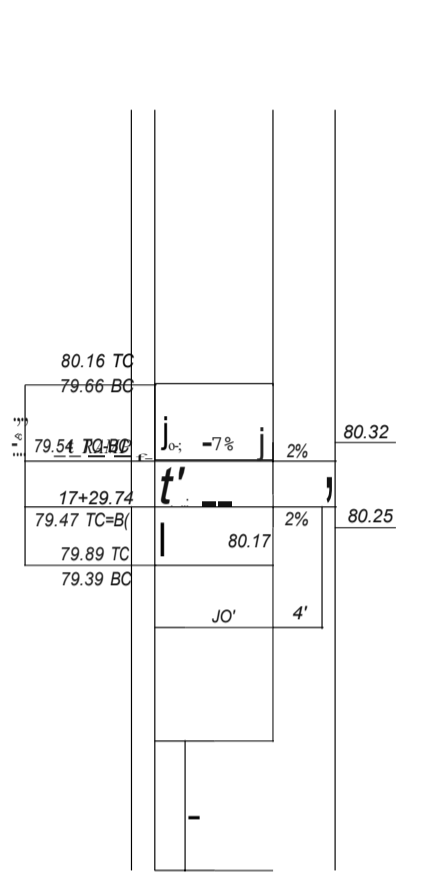
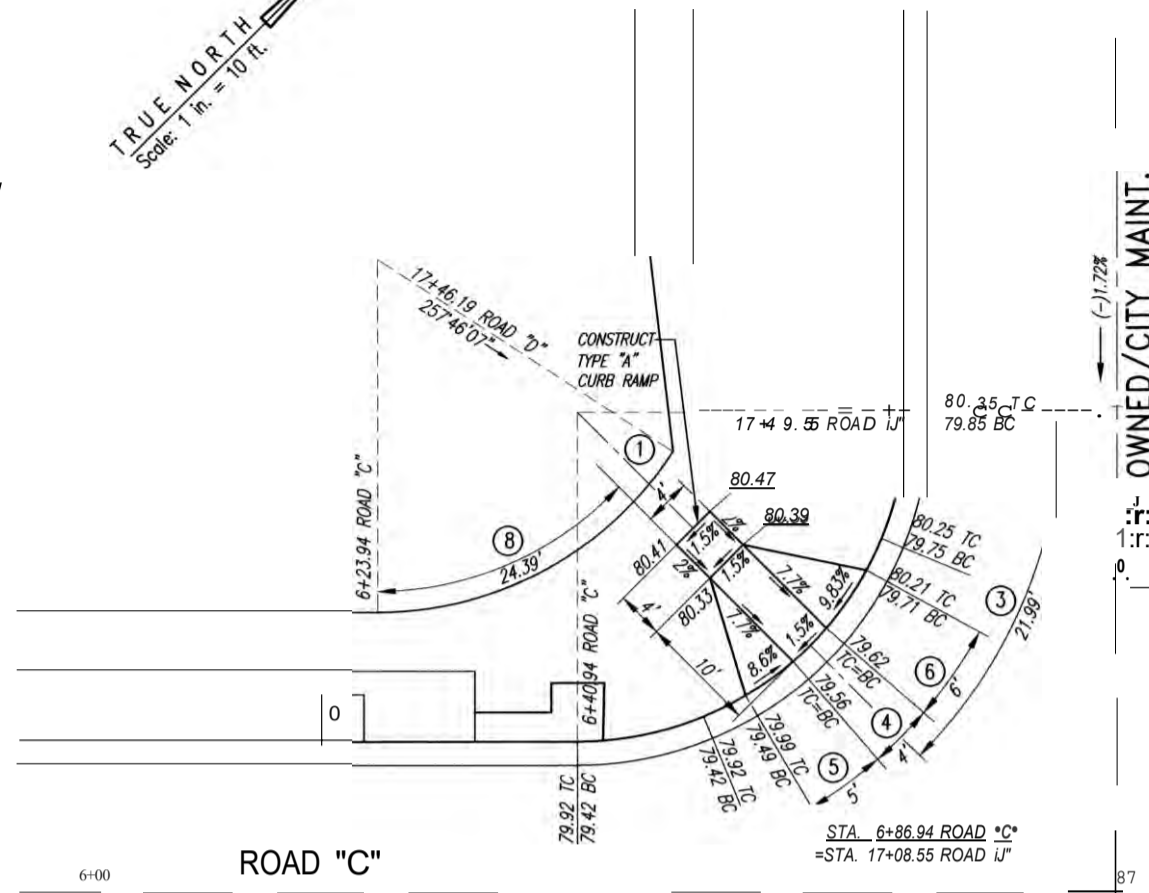
LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 EAST KAPOLEI II DEVELOPMENT
 INCREMENT 2C
 HONOLULU, EWA, OAHU, HAWAII
 (OPP SUBD. FILE NO. 2019/SUB-171)
 PREPARED & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

**East Kapolei II Development
Increment 2C**
 HONOLULU, EWA, OAHU, HAWAII
 (OPP SUBD. FILE NO. 2019/SUB-171)
 PREPARED & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161

CURB RAMP DETAILS - 2

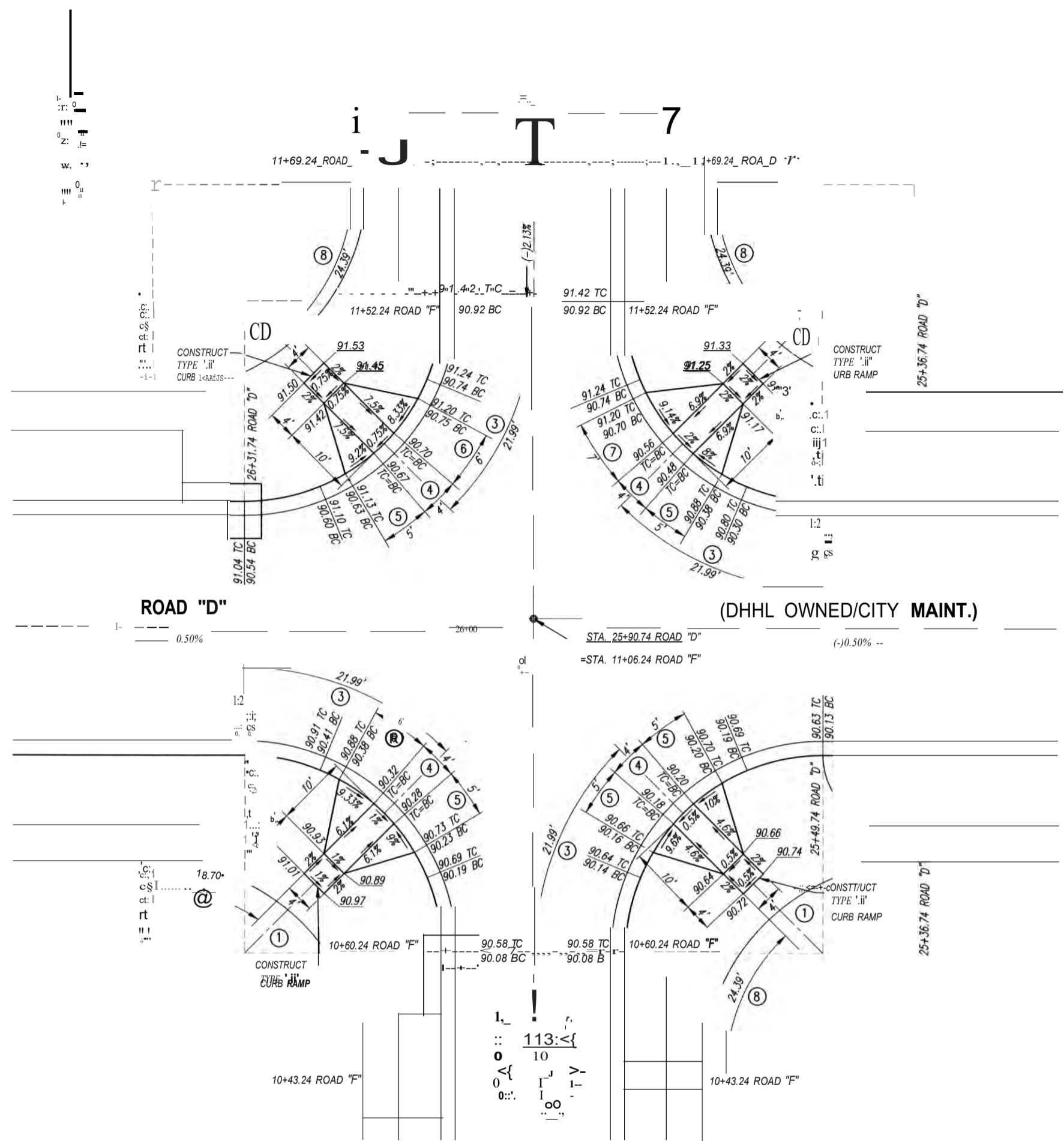
DRAWN BY: MFM/CO ENH/INTR: SS CHECKED BY:
 APPROVED:

10/1/2022

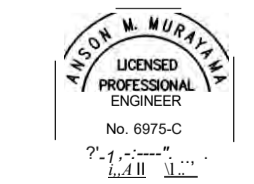
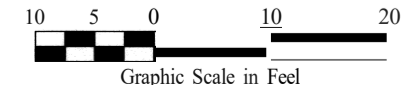


**INTERSECTION
ROADS "C" & "D"**

CURVE DATA										
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	CURVE
6.	90-00-00	33°42'52"	45-00-00	811'32"	1013'53"	12-13'40"	1419'26"	45-34'57"	1318'03"	6.
E=2	45-00-00	17°51'26"	22-30-00	4-05-45	51'6"56.5"	61'8"20"	7°09'43"	231'7"28.5"	5-39'01.5"	102
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	28.00'	R
T	28.00'	9.67'	11.60'	2.01'	2.51'	3.01'	3.52'	12.91'	3.26'	T
C	39.60'	18.40'	24.43'	4.00'	4.99'	5.99'	6.98'	23.72'	6.49'	C
L	43.98'	18.70'	21.99'	4.00'	5.00'	6.00'	7.00'	24.39'	6.50'	L



**INTERSECTION
ROADS "D" & "F"**

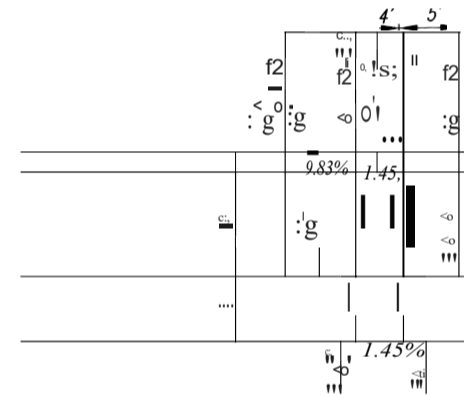
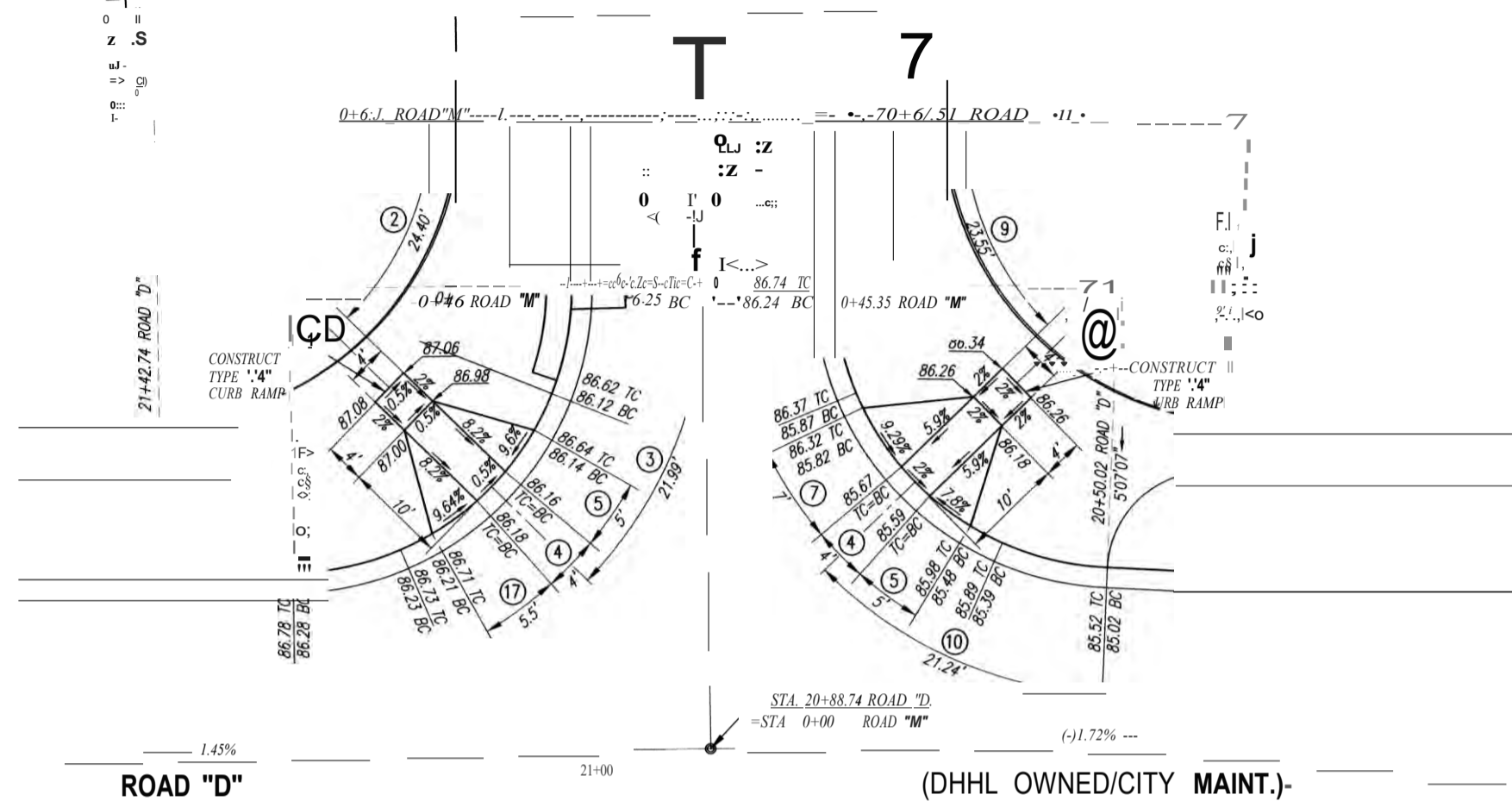


THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE: EXPIRATION DATE: 04/1/22

REVISION DATE	*****
<p>CO&E CONSULTANTS AND ENGINEERS, INC. 12N 521, Emma Street, Honolulu, Hawaii</p>	
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HOOIUUUU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2019/SUB-171) OTHER 1K DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9 1-17: Portion 161</p>	
<p>CURB RAMP DETAILS - 3</p>	
DRAWN BY: WFL, CO	ENGINEER: SS
CHECKED BY: AMM	
APPROVED:	
<p>DATE: 11/1/22</p>	

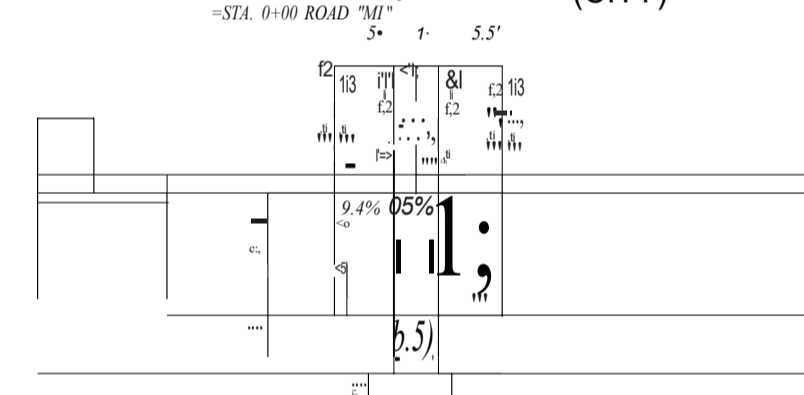
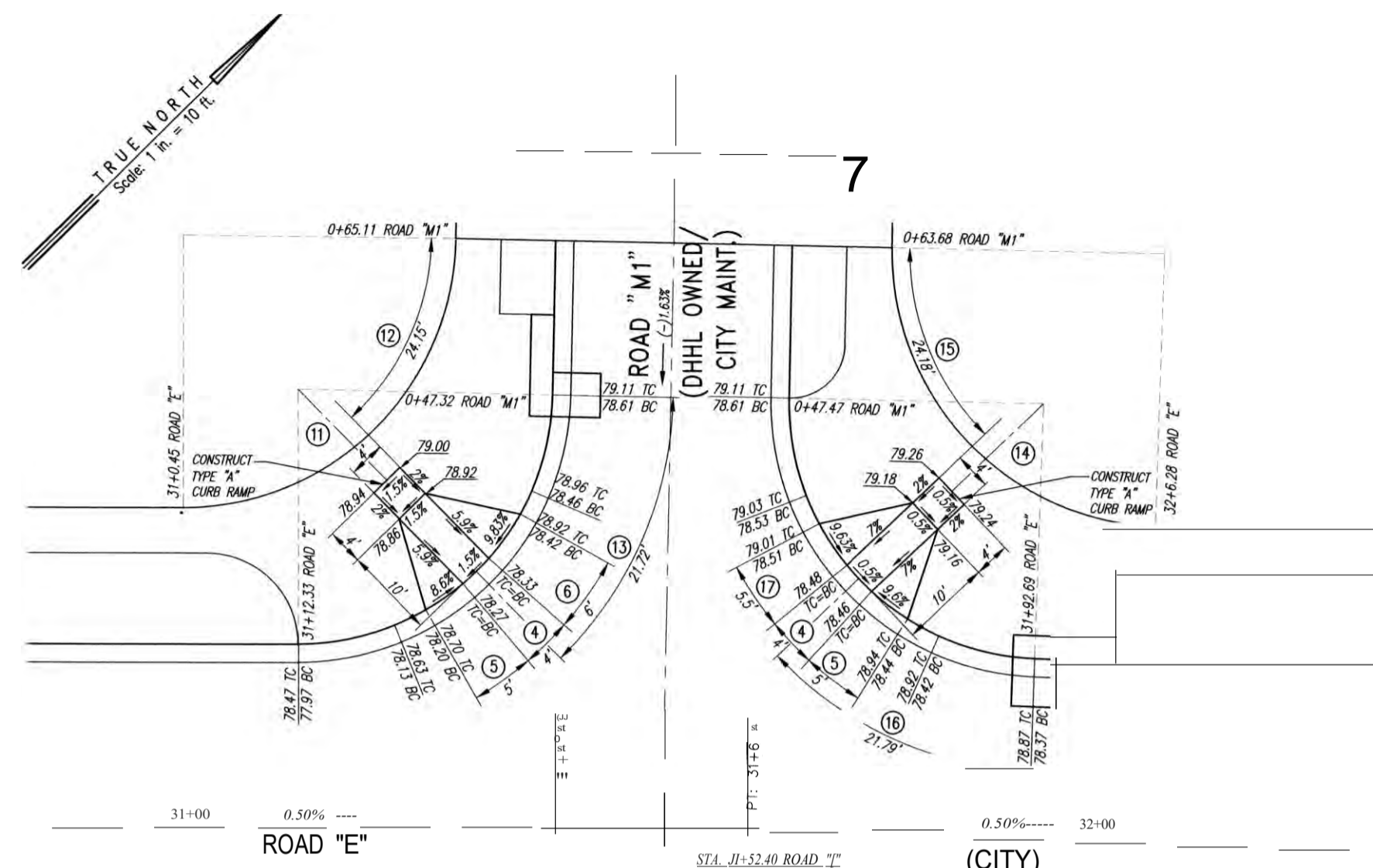
Paland Projects\DHHL East - C-47 Curb Ramp Details.dwg, 1/14/2022 7:59:01 AM
 C:\Users\jquinn\OneDrive\Documents\Projects\Paland Projects\DHHL East - C-47 Curb Ramp Details.dwg, 1/14/2022 7:59:01 AM

TRUE NORTH
Scale: 1 in. = 10 ft.

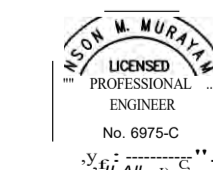
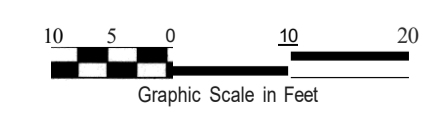


INTERSECTION ROAD "D" & "M"

CURVE DATA																		
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	CURVE
BC	9000.00	45.3455	45.00.00	811.42"	1013.53"	1216.40"	1419.26"	87.01.38"	44.58.38"	43.26.57"	88.52.50"	46.07.23"	44.56.25"	89.09.10"	46.11.49"	44.54.95"	11.43.16"	BC
"-/2	45°00'00"	231727.5"	22°30'00"	4°05'46"	5°06'56.5"	6°08'20"	7°09'43"	43°32'19"	22°29'19"	21°43'24"	44°26'25"	23°03'41.5"	2213°12.5"	44°34'35"	23°05'24.5"	2217°17.5"	5°31'38"	"-/2
R	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	28.00'	28.00'	30.00'	28.00'	28.00'	30.00'	28.00'	28.00'	R
T	28.00'	12.92'	11.60'	2.01'	2.51'	3.01'	3.52'	26.54'	12.42'	11.16'	27.46'	12.77'	11.44'	27.59'	23.53'	11.48'	2.76'	T
C	39.60'	23.74'	24.43'	4.00'	4.99'	5.99'	6.98'	22.94'	22.95'	20.73'	39.21'	23.50'	21.18'	39.30'	12.79'	21.24'	5.49'	C
L	43.98'	24.40'	21.99'	4.00'	5.00'	6.00'	7.00'	42.48'	23.55'	21.24'	43.44'	24.15'	21.72'	43.57'	24.18'	21.79'	5.50'	L



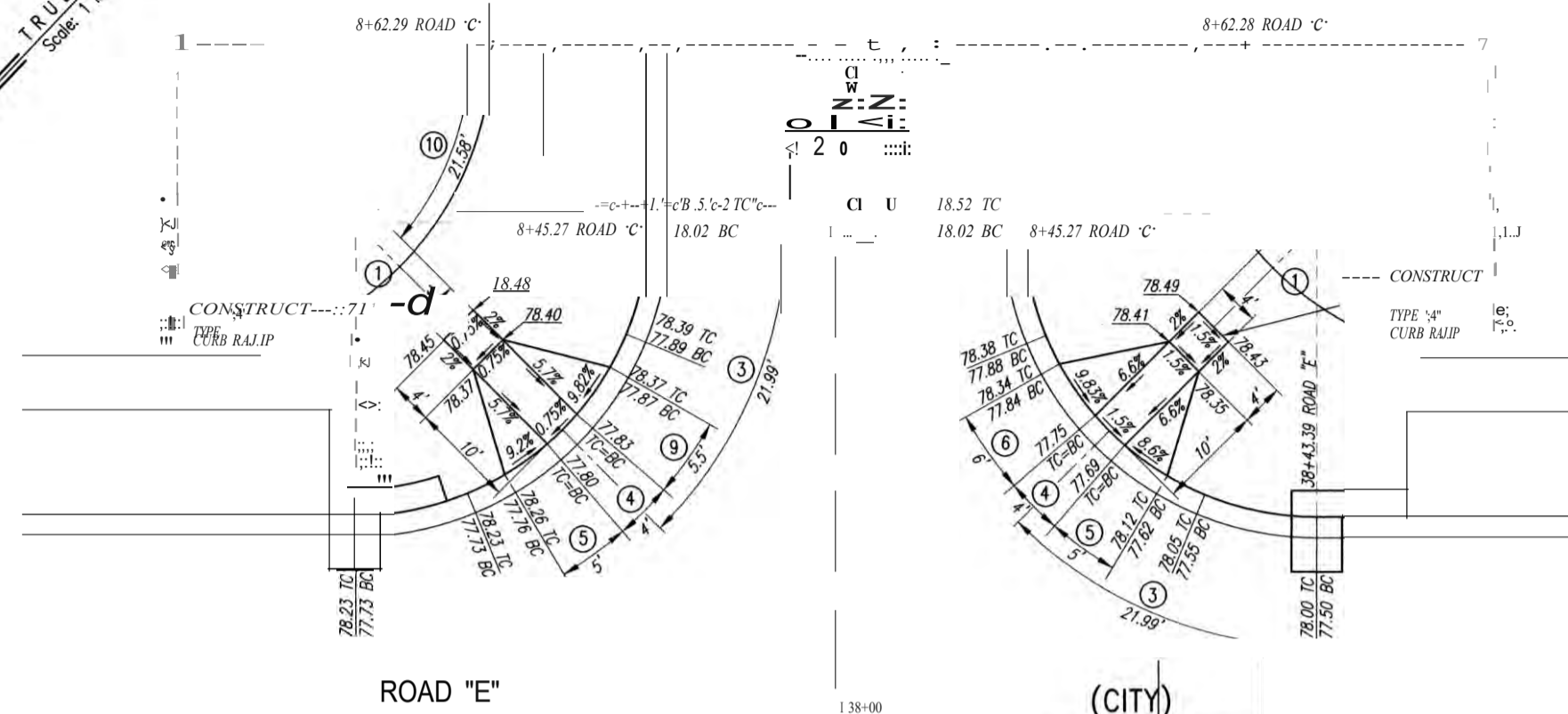
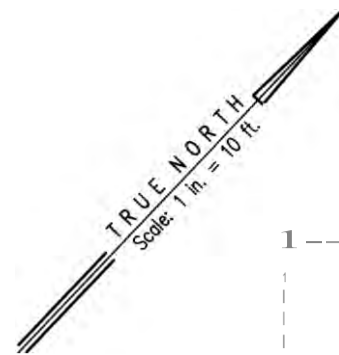
INTERSECTION ROAD "E" & "M1"



THIS WORK WAS PREPARED
ME OR UNDER MY SUPERVISION
CONSTRUCTION OF THIS PROJECT
MAY BE UNDER MY OBSERVATION.
LICENSE EXPIRATION DATE: 04/1/22

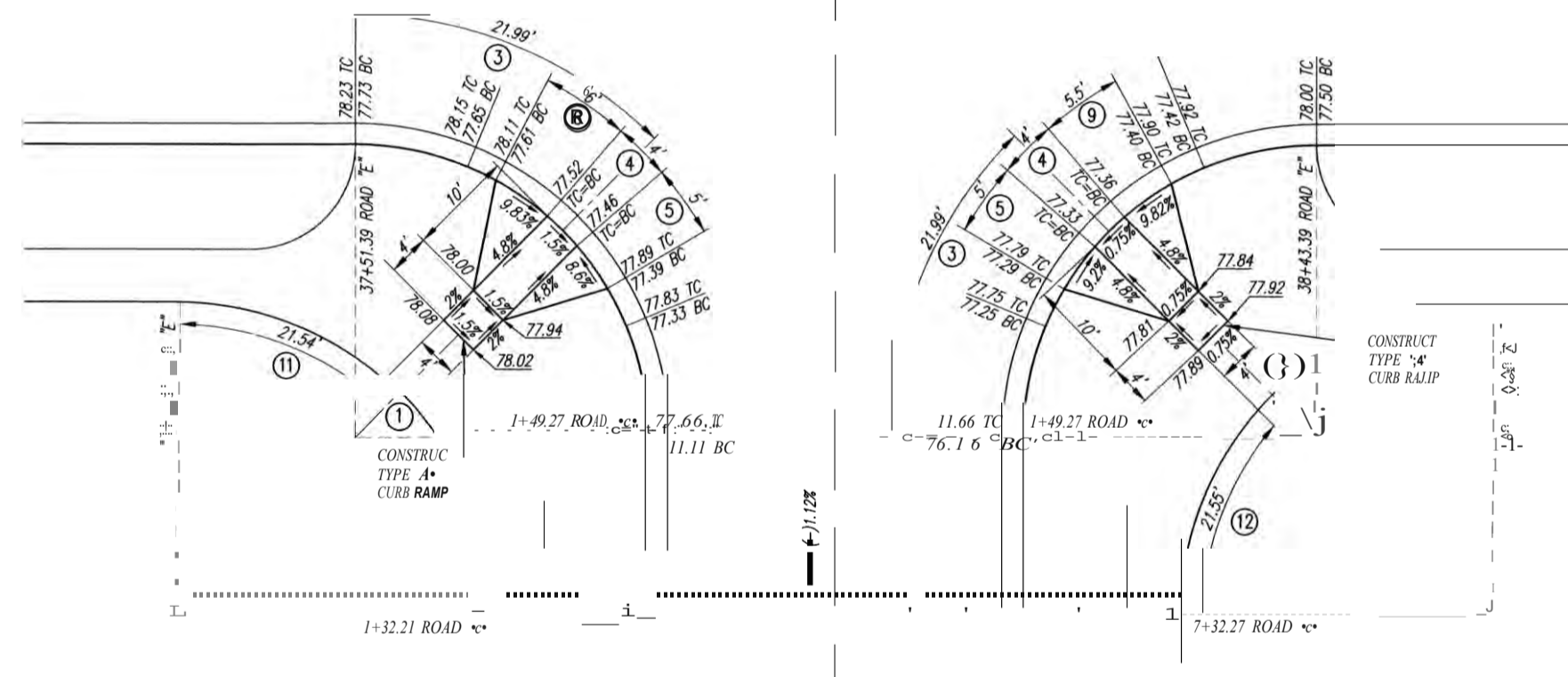
REVISION DATE:	ESM:CRM	BY:	
Community Planning and Engineering, Inc. HAWAIIAN DNLH can.tnacion aw.t .otm Plw**			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C H-4000UU, EWA, OAHU, HAWAII (DPP SUBD. FILE NO. 2019/SUB-171) 01NER & Dem.OPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portioo 161			
CURB RAMP DETAILS - 4			
DRA BY:	EN, CO	INCINEIR, SS	CHECKED BY: AIM
APPROV:			
DWG. NO. C-42 SHEET 43 OF 109 SHEETS			

P:\Land Projects\DHHL\Las... 1/14/2022 8:00:29 AM



ROAD "E"

(CITY)



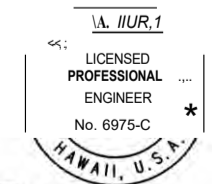
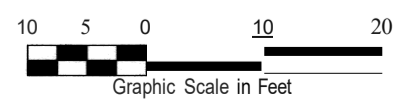
ROAD "E"

(CITY)

**INTERSECTION
ROAD "E" & "G"**

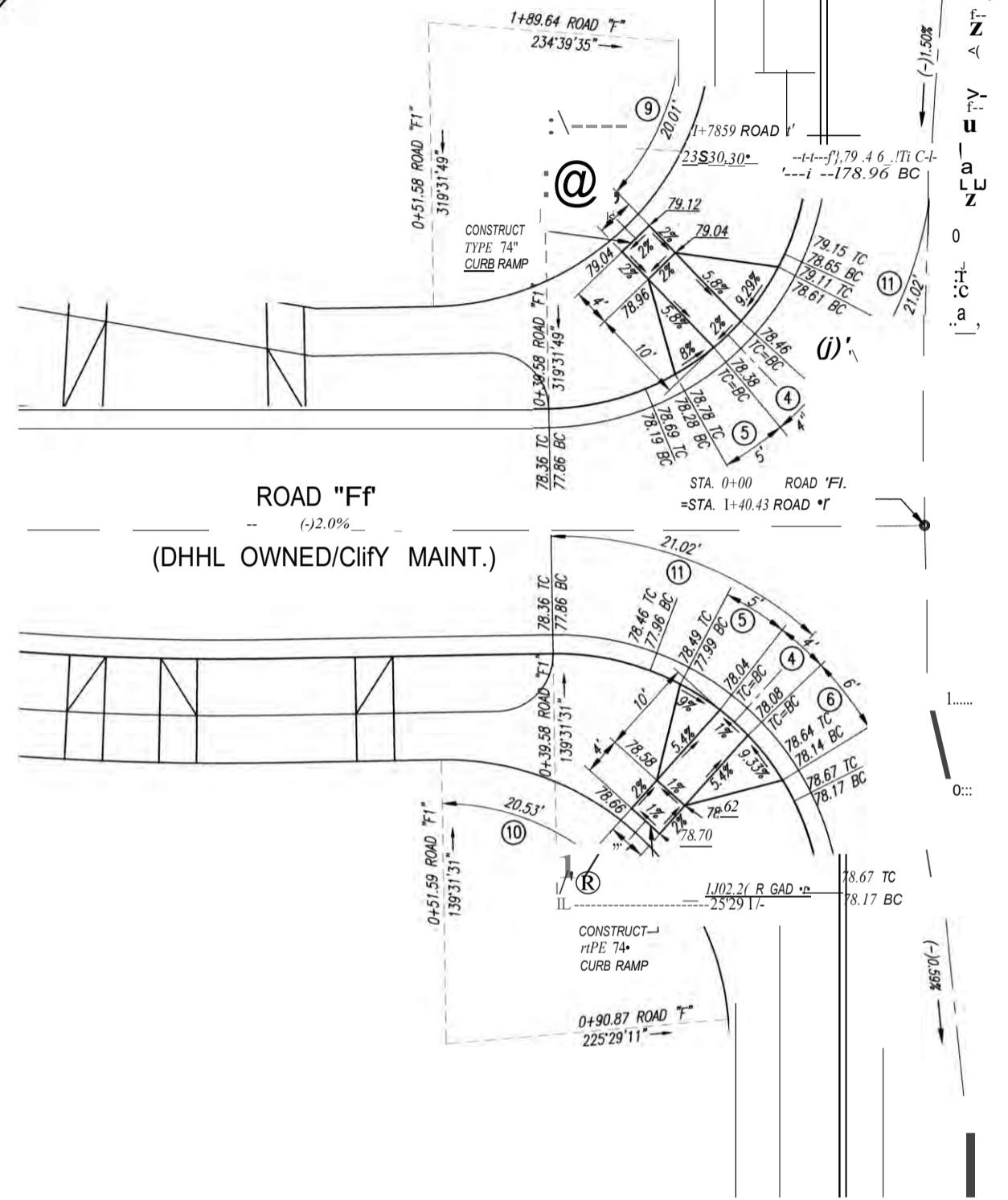
**INTERSECTION
ROAD "E" & "O"**

CURVE DATA														
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	CURVE
6	9000.00'	4110339'	450000'	81132'	101353'	121640'	141926'	453457'	111515'	411253'	410818'	4110927'	463602'	6
6/2	450000'	2033519.5'	2230000'	40545'	50656.5'	60820'	710943'	231728.5'	53738'	203626.5'	203409'	203443.5'	231801'	6/2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	28.00'	30.00'	30.00'	R
T	28.00'	11.27'	11.60'	2.00'	2.51'	3.01'	3.52'	12.91'	2.76'	11.28'	11.26'	11.26'	12.92'	T
C	39.60'	21.10'	21.42'	4.00'	5.00'	5.99'	6.98'	23.72'	5.49'	21.12'	21.08'	21.09'	23.73'	C
L	43.98'	21.56'	21.99'	4.00'	5.00'	6.00'	7.00'	24.39'	5.50'	21.58'	21.54'	21.55'	24.40'	L

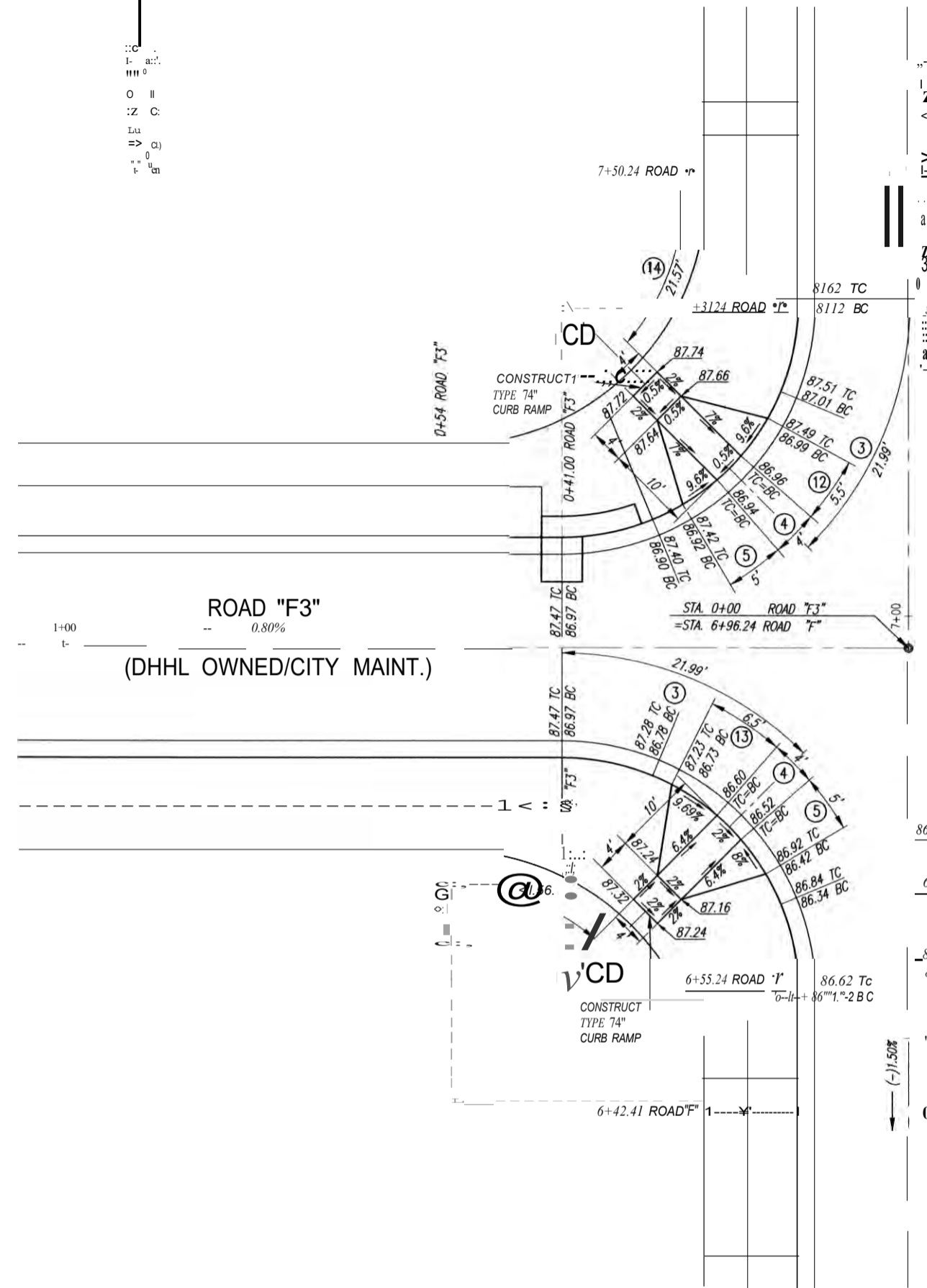


REVISION DATE: _____ DESCRIPTION: _____ DRAWN BY: _____ CHECKED BY: _____
COIT1RU'ity Planning and Engineering, Inc.
 1001 W. Iolani Mall, Suite 100, Honolulu, HI 96813
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 HONOLULU, EWA, OAHU, HAWAII
 (DPP SUBC. FILE NO. 2019SUB-174)
 OWNER / DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portion 161
CURB RAMP DETAILS - 6
 DRAWN BY: _____ MIN. CO. _____ EN-DR. _____ SS _____ CHECKED BY: _____
 APPROVED: _____ DATE: _____
 DWG. NO. **C-44**
 SHEET OF 109 SHEETS **FU-+-**

P:\Land Projects\DHHL East Kapolei II - C-44 Construction Drawings\Government Review\7140-48 C-39 to C-47 Curb Ramp Details.dwg, 1/14/2022 8:04:12 AM

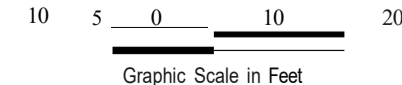


**INTERSECTION
ROADS "F1" & "F"**



**INTERSECTION
ROADS "F3" & "F"**

CURVE	CURVE DATA														CURVE
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	
6.	90-00-00	4110'39"	45-00-00	811'32"	1013'53"	1216'40"	1419'26"	8601'19"	3812'59"	3912'34"	43'00'40"	11'15'16"	1318'03"	4171'44"	6.
6/2	45-00-00	20'35"19.5"	22-30-00	4'05"46"	5'06"56.5"	6'08"20"	7'09"43"	43'00"39.5"	19'06"29.5"	19'36"17"	21-30-20	5'37"38"	6'39'01.5"	20'35"52"	6/2
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	30.00'	28.00'	28.00'	28.00'	30.00'	R
T	28.00'	11.27'	11.60'	2.01'	2.51'	3.01'	3.52'	26.12'	10.39'	10.69'	11.03'	2.76'	3.26'	11.28'	T
C	39.60'	21.10'	24.43'	4.00'	4.99'	5.99'	6.98'	38.20'	19.64'	20.13'	20.53'	5.49'	6.49'	21.11'	C
L	43.98'	21.56'	21.99'	4.00'	5.00'	6.00'	7.00'	42.04'	20.01'	20.53'	21.02'	5.50'	6.50'	21.57'	L

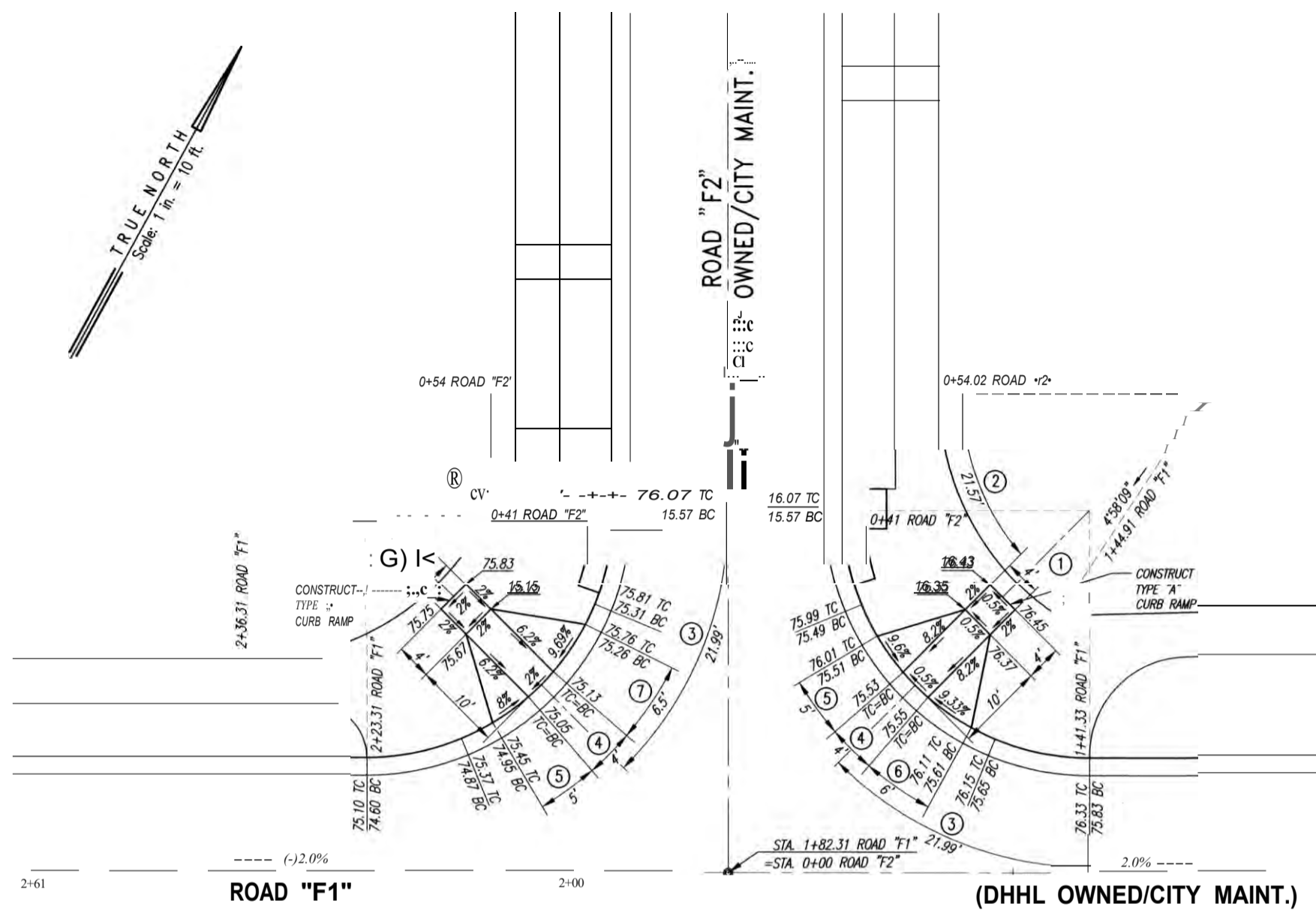
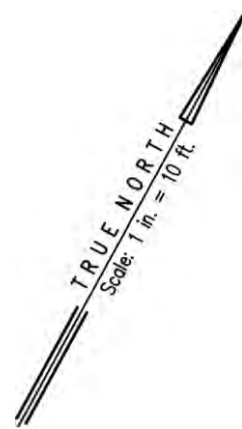


U. MUJI
PROFESSIONAL ENGINEER
No. 8875-C

ME OR UNDER MY SUPERVISION
CONSTRUCTION OF THIS PROJECT
SHALL BE UNDER MY OBSERVATION
LICENSE EXPIRATION DATE: 0-4/30/12

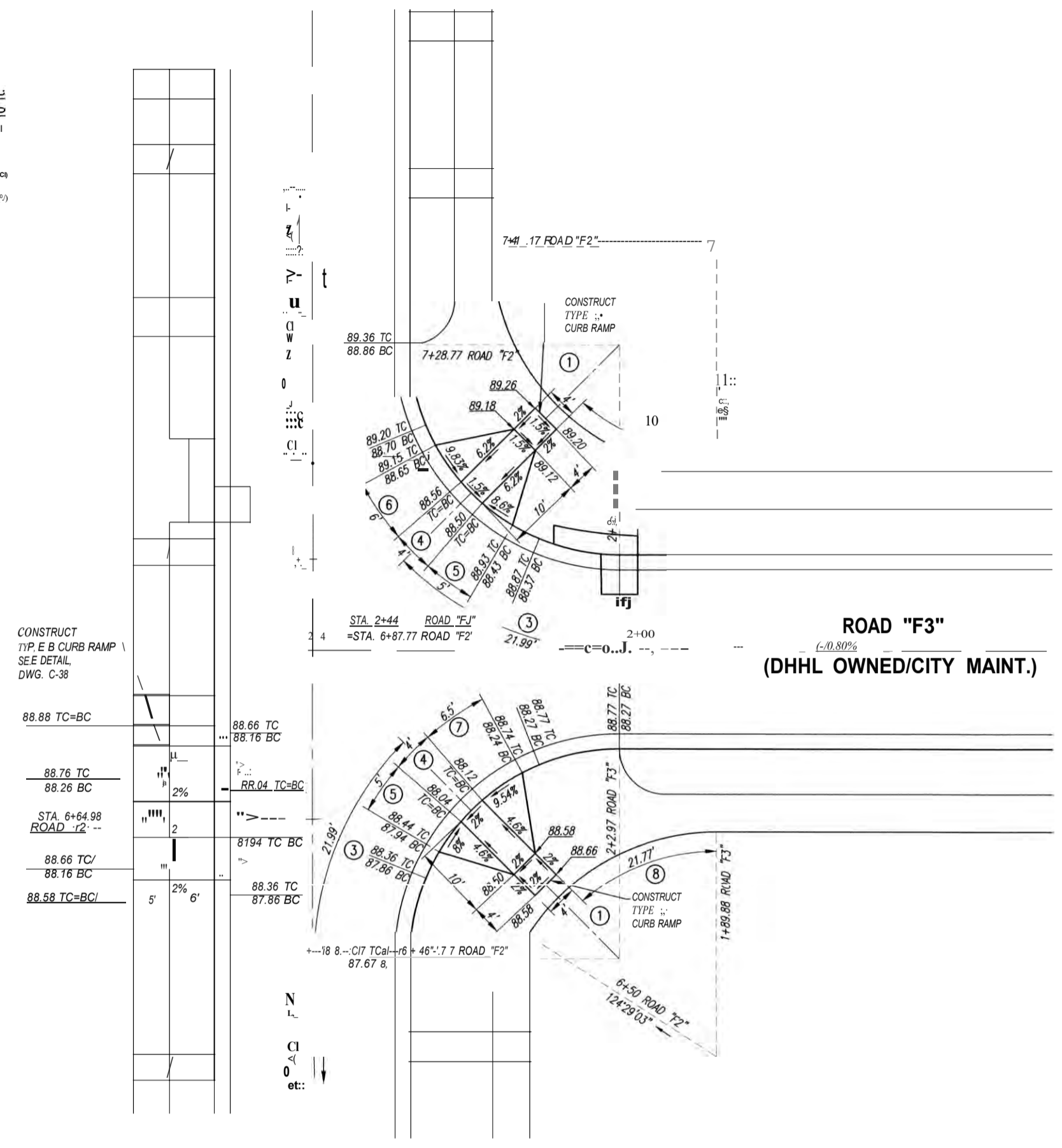
REVISION DATE	REVISION BY
<p>CONVUNTY PLANNING AND ENGINEERING, INC. 4141 KALANANAKU DRIVE, SUITE 200, HONOLULU, HAWAII 96815 TEL: (808) 551-1111 FAX: (808) 551-1112 WWW.CONVUNTY.COM</p>	
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, EWA, OAHU, HAWAII (OPP. SUBD. FILE NO. 2019/SUB-171) OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 161</p>	
<p>CURB RAMP DETAILS - 8</p>	
DRAWN BY: M.C.	ENGINEER: U. MUJI
APPROVED:	
<p>DATE: 04/19/22</p>	

P:\Land Projects\DHHL East Kapolei II\Increment 2C - 09 - 17 - 17\1742022 01156 AM



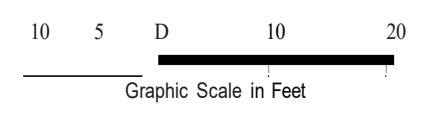
**INTERSECTION
ROADS "F1" & "F2"**

GRAPHIC SCALE
1" = 10 FT.



**INTERSECTION
ROADS "F3" & "F2"**

CURVE DATA											
CURVE	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	CURVE
L	90-00-00	41°11'44"	45-00-00	81°13'21"	107°3'53"	127°6'40"	137°8'03"	41°18'19"	41°26'38"	41°70'39"	L
t _{1/2}	45-00-00	20-35'52"	22°30-00	4-05'45"	5'06'56.5"	5-03-20	5-39-01.5"	20-39-9.5"	20-43'19"	20°35'19.5"	t _{1/2}
R	28.00'	30.00'	28.00'	28.00'	28.00'	28.00'	28.00'	30.00'	30.00'	30.00'	R
T	28.00'	11.28'	11.60'	2.01'	2.51'	3.01'	3.26'	11.31'	21.22'	11.27'	T
C	39.60'	21.10'	24.43'	4.00'	4.99'	5.99'	6.49'	21.16'	11.35'	21.10'	C
L	43.98'	21.57'	21.99'	4.00'	5.00'	6.00'	6.50'	21.77'	21.70'	21.56'	L



I. U. P.
 C. LICENSED
 PROFESSIONAL
 ENGINEER
 No. 6975-C
 4/11/22

Community Planning and Engineering, Inc.
 HONOLULU, EWA, OAHU, HAWAII
 (DPP SUBD. FILE NO. 2019SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portoo 161

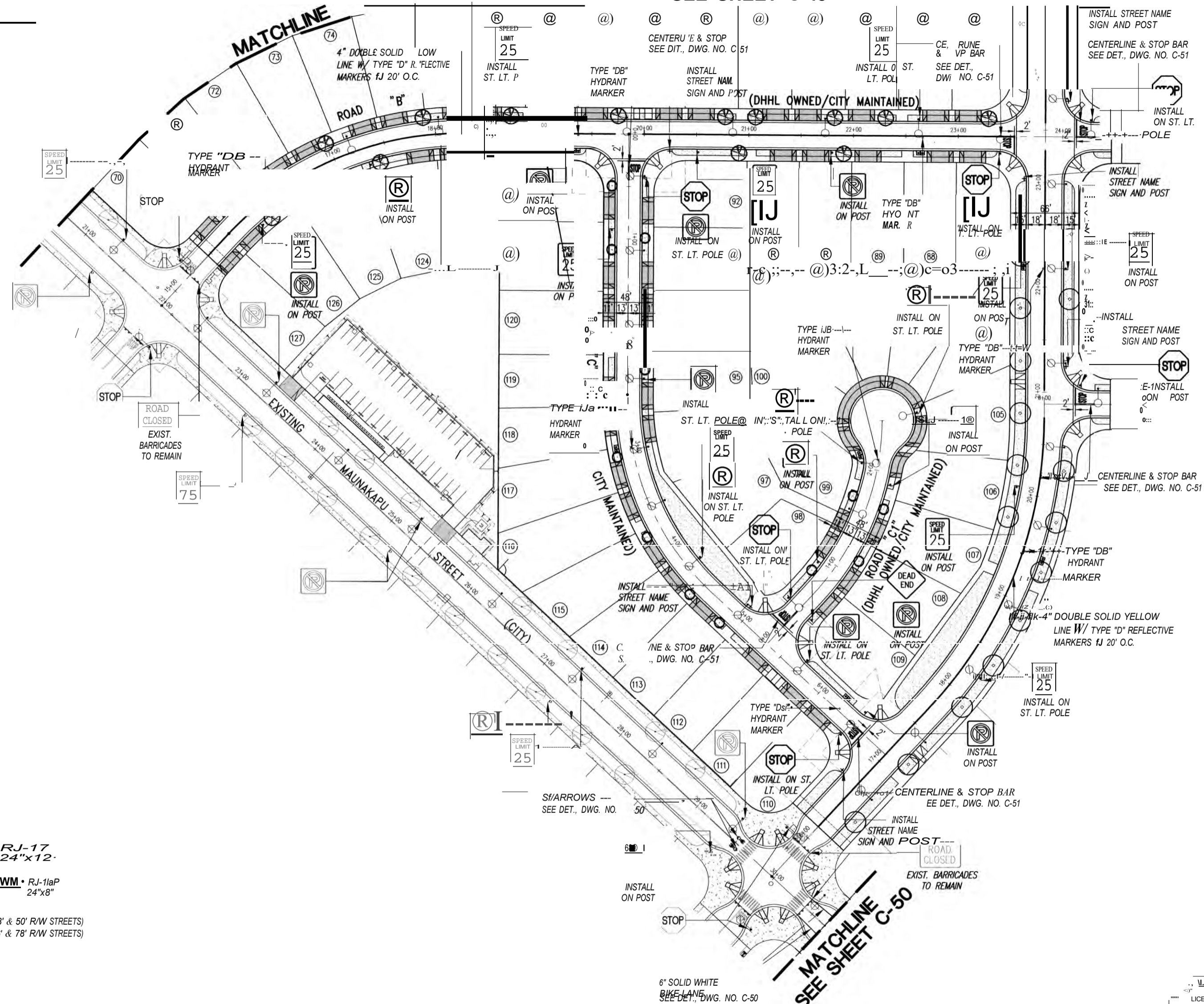
**EAST KAPOLEI II DEVELOPMENT
INCREMENT 2C**

CURB RAMP DETAILS - 9

DRAWN BY: MFK, CO ENGINEER: SS CHECKED BY: AMM
 APPROVED: [Signature] DATE: 4/19/22

TRUE NORTH
Scale: 1 in. = 50 ft.

SEE SHEET C-48



LEGEND

- S--- STREET LIGHT (ST. LT.)
- to TRAmc SIGN w/ POST
- o SIGN POST ONLY (AS NOTED)

SIGN SCHEDULE

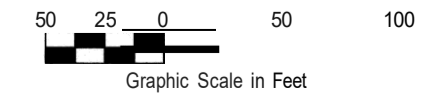
- R2-1(25) 24"xJO" RJ-4 24"x24"
- RJ-17 24"x12" RJ-4 12"x12"
- NO U TURN RJ-4 10"x18"
- WM • RJ-11aP 24"x8"
- RI-1 10"xJO" RB-Ja 12"x12" (FOR 48' & 50' R/W STREETS)
- WM • RJ-11aP 24"x8"
- Mw,4-1 10"xJO" IBEGIN 12x6
- E11 j 12x5

EXISTING SIGNS

- ROAD CLOSED
- SPEED LIMIT 25
- NO U TURN

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 2

SCALE: 1"=50'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Comm. City Planning and Engineering, Inc.
Engineering Design Construction Management Infrastructure Planning

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HONOLULU, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2019/SUB-171)
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9-1-17: Portion 161

TRAFFIC SIGNS AND PAVEMENT MARKING PLAN - 2

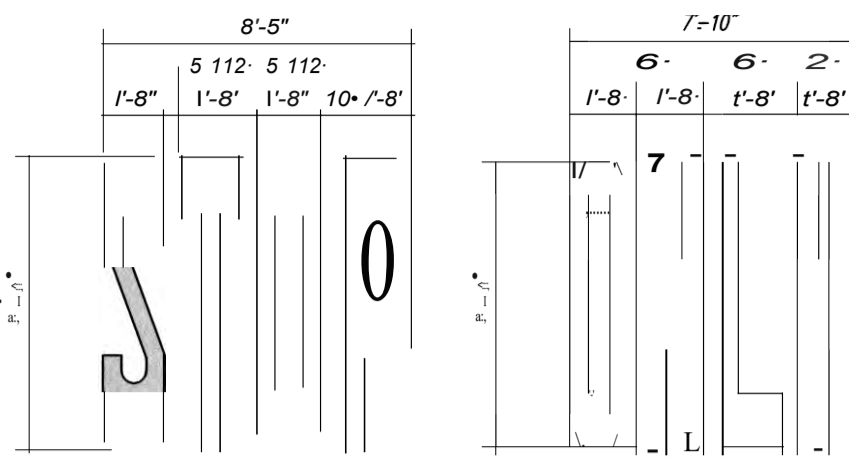
DRAWN BY: COI, MFN ENGR BY: SS CHECKED BY: AMM
APPROVED:

1/31

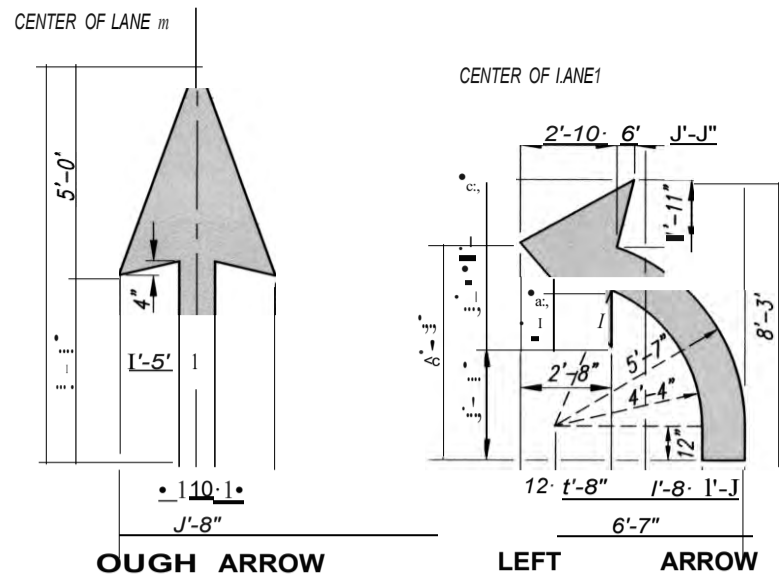
FILE POST FWD NO

C:\Construction Drawings\Government Review\749-51\14\2022 8:20:31 AM

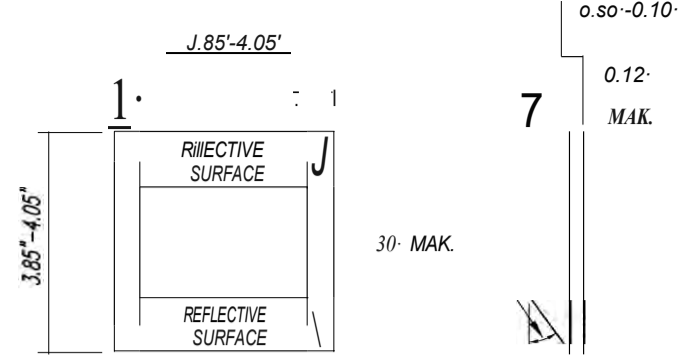
NOTE: WHEN THIS MARKING IS USED, IT SHALL BE PLACED IN EACH LANE OF TRAFFIC APPROACHING THE INTERSECTION.



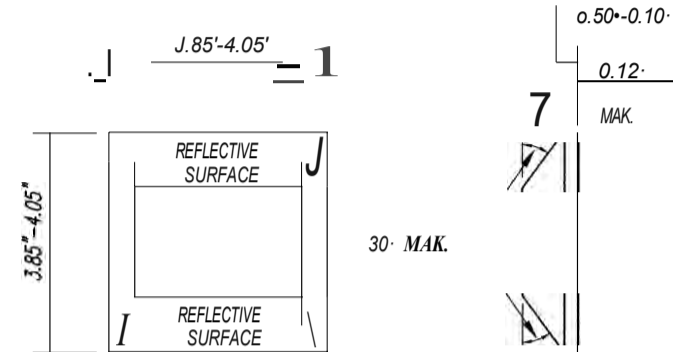
STANDARD DETAILS OF TIE WORD "STOP" AND "ON, V"
NOT TO SCALE



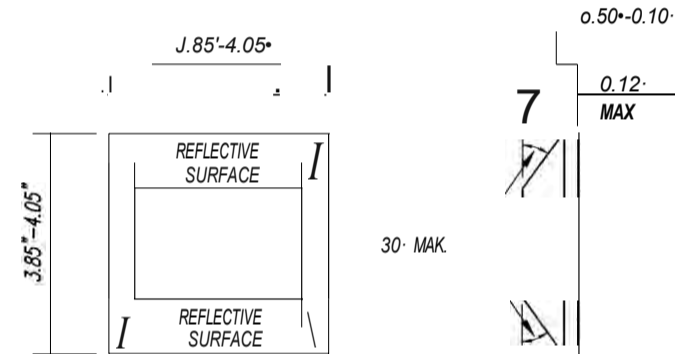
STANDARD PAVEMENT ARROWS
NOT TO SCALE



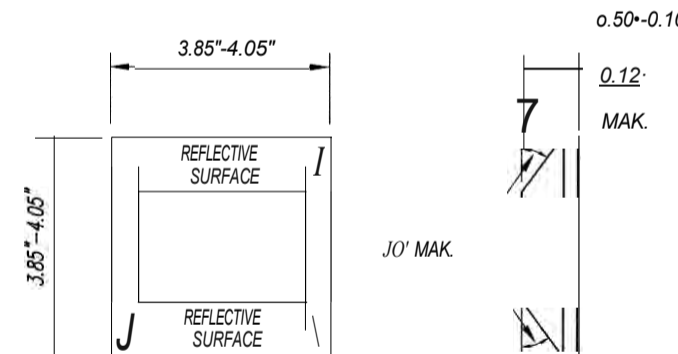
TYPE H WAY YELLOW REFLECTIVE MARKER
NOT TO SCALE



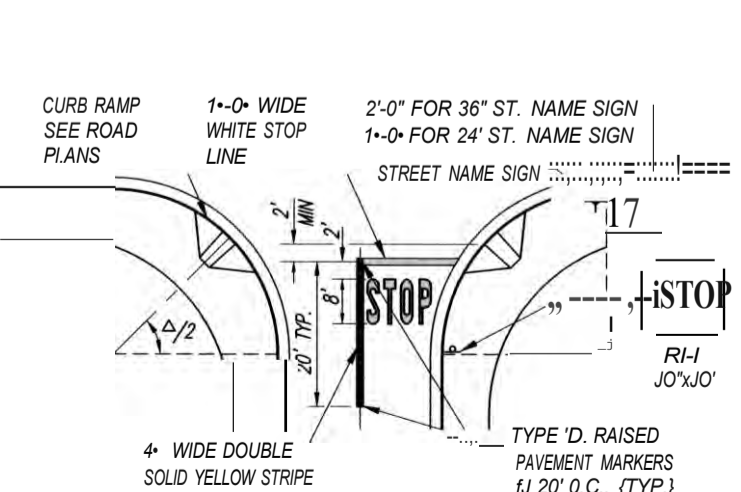
TYPE C RED-CLEAR REFLECTIVE MARKER
NOT TO SCALE



TYPE DB TWO-WAY BLUE REFLECTIVE MARKER
NOT TO SCALE

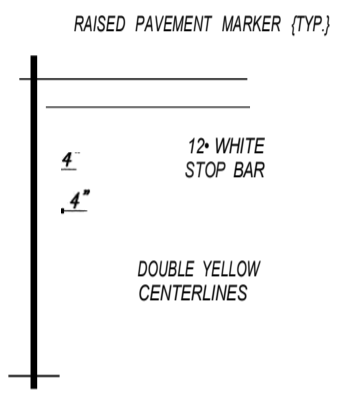


TYPED TWO-WAY YELLOW REFLECTIVE MARKER
NOT TO SCALE

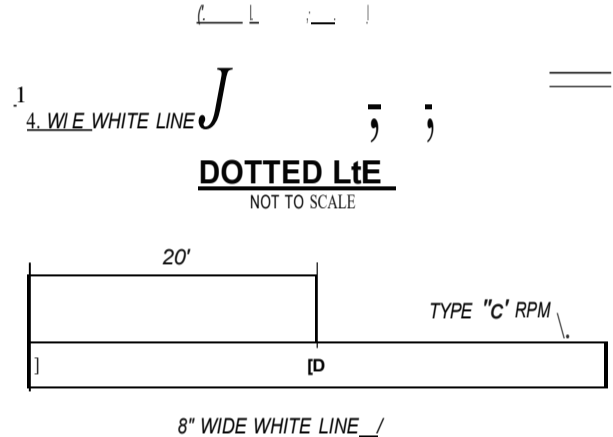


TYPICAL INTERSECTION RAMP SIGN & PAVEMENT MARKING
NOT TO SCALE

- SIGNS AND MARKINGS NOTES**
- ALL TRAFAC SIGN AND PAVEMENT MARKING INSTALLATIONS SHALL BE DONE IN ACCORDANCE WITH THE "MANUAL ON UNIFORM TRAFAC CONTROL DEVICES FOR STREETS AND HIGHWAYS: 2009 EDITION, AS AMENDED, THE LATEST SPECIFICATIONS FROM THE TRAFAC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, AND AS SHOWN ON THE PLANS.
 - CONTRACTOR SHALL NOTIFY AND COORDINATE WORK WITH THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, ONE (1) WEEK IN ADVANCE OF COMMENCING WORK AT 768-8084.
 - CONTRACTOR SHALL SUBMIT MATERIAL BROCHURES FOR ALL SIGNS AND PAINT MATERIALS TO THE TRAFAC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
 - THE SIGNING AND/OR STRIPING CONTRACTOR SHALL KEEP ONE (1) SET OF APPROVED PLANS AT THE PROJECT SITE AT ALL TIMES DURING CONSTRUCTION WORK.
 - CONTRACTOR SHALL PAINT TEMPORARY GUIDELINES AND OUTLINE OF ARROWS, LEGENDS, AND CROSSWALKS WITH A TWO INCH (2") WIDE BRUSHED LINE ON THE DAY THE ROADWAY IS OPENED TO TRAFAC. THESE MARKINGS MUST BE APPROVED BY THE INSPECTOR FROM THE TRAFAC REVIEW BRANCH, DEPARTMENT OF PLANNING AND PERMITTING.
 - CONTRACTOR SHALL NOTIFY THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 768-8084, THREE (3) DAYS IN ADVANCE OF ANAL INSPECTION.
 - CONTRACTOR SHALL MEET WITH THE INSPECTOR FROM THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING DURING THE ANAL INSPECTION.
 - WITHIN TEN (10) DAYS FOLLOWING NOTIFICATION OF AWARD OF CONTRACT, THE CONTRACTOR SHALL SUBMIT TO THE DEPARTMENT OF PLANNING AND PERMITTING (PHONE 768-8084) FOR APPROVAL, A LIST OF ANY SIGNING AND PAVEMENT MARKING MATERIAL WHICH HE PROPOSES TO INSTALL. THE LIST SHALL BE COMPLETE AS TO THE NAME OF MANUFACTURER, CATALOG NUMBER, AND SHALL BE SUPPLEMENTED WITH MATERIAL BROCHURES.
 - UPON ANAL INSPECTION OF THE PROJECT, THE CONTRACTOR SHALL SUBMIT A LETTER OF CERTIFICATION FOR ALL TRAFAC SIGNING AND PAVEMENT MARKING MATERIALS INSTALLED.
 - SIGNS SHALL BE ATTACHED TO BRACKETS WITH 5/16" ZINC PLATED STEEL BOLTS, NUTS AND WASHERS. SIGNS 48" WIDE OR LARGER THAN 10 SQ. FT. IN AREA SHALL BE MOUNTED ON TWO 2" GALV. PIPE POST. THE SIGN SHALL BE INSTALLED WITH AT LEAST ONE (1) FOOT CLEARANCE FROM THE SIGN EDGE TO THE CURB FACE.
 - ALL TRAFAC SIGNS SHALL BE REFLECTORIZED.
 - RAISED PAVEMENT MARKERS SHALL BE INSTALLED IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
 - LOCATION OF "STOP" SIGN:
 - INSTALL "STOP" SIGN AT CURB TANGENT POINT.
 - INSTALL "STOP" SIGN ON METAL STREET LIGHT STANDARD IF A STANDARD IS LOCATED WITHIN 10 FEET OF CURB RETURN.
 - INSTALL "STOP" SIGN IN FRONT OF UTILITY POLE IF A POLE IS LOCATED WITHIN 10 FEET OF CURB RETURN.
 - PAVEMENT WORD AND SYMBOL MARKINGS SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF PLANNING AND PERMITTING STANDARDS.
 - THE CONTRACTOR SHALL USE THERMOPLASTIC MATERIAL APPROVED BY THE CML ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING, FOR ALL CROSSWALKS, STOP BARS, PAVEMENT ARROWS, CENTER LINES, LANE LINES, ARC LINES, CHANNELIZED TRAFAC ISLANDS, AND LEGENDS.



CENTERLINE STOP BAR DETAIL
NOT TO SCALE



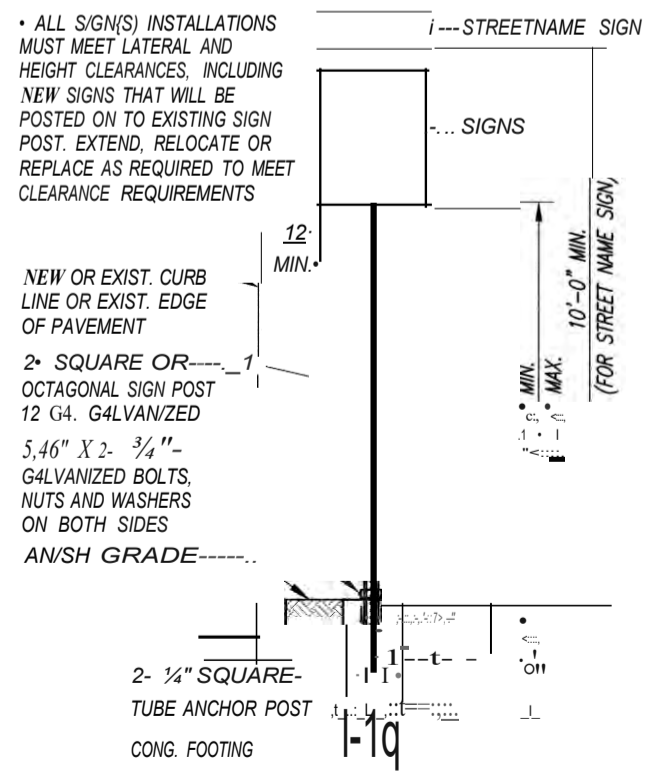
DOTTED LINE
NOT TO SCALE



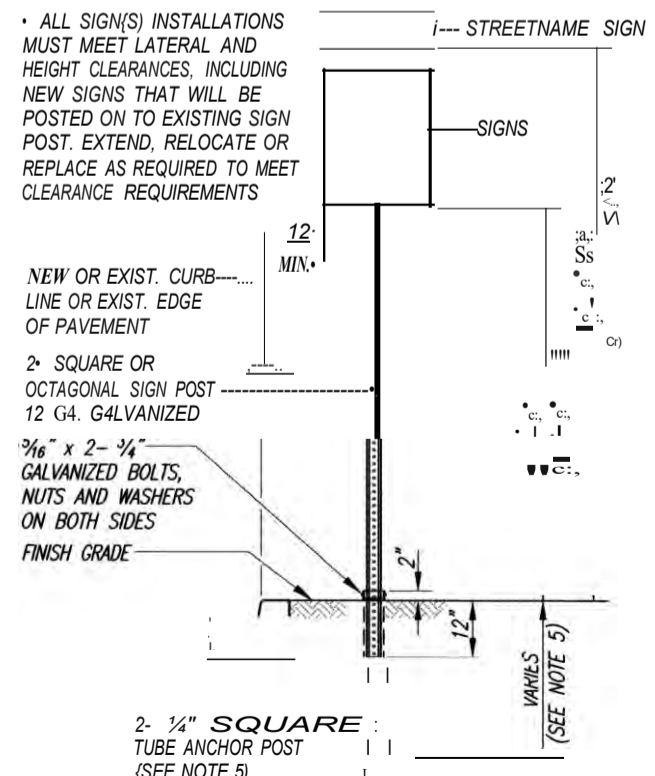
CHARLES
NOT TO SCALE

- ANCHOR POSTS NOTES:**
- KEEP INSIDE OF 2" ANCHOR POST FREE FROM IMPEDIMENTS THAT MAY PREVENT PROPER SEATING OF SIGN POST.
 - SQUARE TUBING SIGN POST SHALL BE TELESCOPING TYPE WITH 1/6" DIA. HOLES AT 1' O.C. ON FOUR SIDES.
 - OCTAGON SIGN POST SHALL BE TELESCOPING TYPE WITH 1/6" DIA. HOLES AT 1' O.C. ON TWO SIDES.
 - USE 5/16" x 2-3/4" BOLTS TO SECURE THE OCTAGONAL AND SQUARE TUBING POST ONTO THE 2" SQUARE TUBE ANCHOR POST.
 - MINIMUM BURY DEPTH FOR THE 2" ANCHOR POST SHALL BE AS FOLLOWS:
4'-0" MIN. AT POOR SOIL CONDITIONS
2'-6" MIN. AT ROCKY CONDITIONS

- ANCHOR POSTS NOTES:**
- KEEP INSIDE OF 2" ANCHOR POST FREE FROM IMPEDIMENTS THAT MAY PREVENT PROPER SEATING OF SIGN POST.
 - SQUARE TUBING SIGN POST SHALL BE TELESCOPING TYPE WITH 1/6" DIA. HOLES AT 1' O.C. ON FOUR SIDES.
 - OCTAGON SIGN POST SHALL BE TELESCOPING TYPE WITH 1/6" DIA. HOLES AT 1' O.C. ON TWO SIDES.
 - USE 5/16" x 2-3/4" BOLTS TO SECURE THE OCTAGONAL AND SQUARE TUBING POST ONTO THE 2" SQUARE TUBE ANCHOR POST.

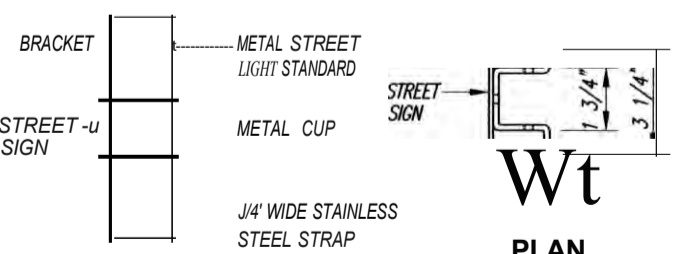


INSTALLATION OF NEW OR RELOCATED SIGN POST W/ CONCRETE FOOTING
NOT TO SCALE



INSTALLATION OF NEW OR RELOCATED SIGN POST W/ ANCHOR POST, WITHOUT CONCRETE FOOTING
NOT TO SCALE

- NOTES:**
- SIGNS SHALL BE ATTACHED TO POSTS WITH 5/16" ZINC PLATED STEEL BOLTS, NUTS AND WASHERS.
 - SIGNS 48" WIDE OR LARGER THAN 10 SQ. FEET IN AREA SHALL BE MOUNTED ON 2" - 2" GALV. POSTS. THE SIGN SHALL BE INSTALLED WITH AT LEAST 1 FT. CLEARANCE FROM THE SIGN EDGE TO THE CURB FACE.



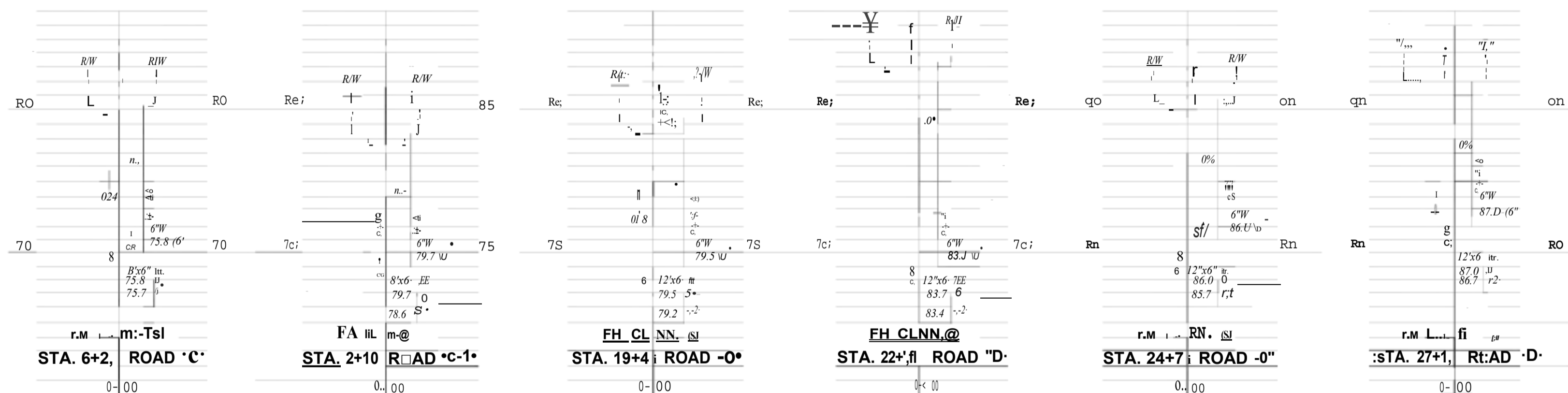
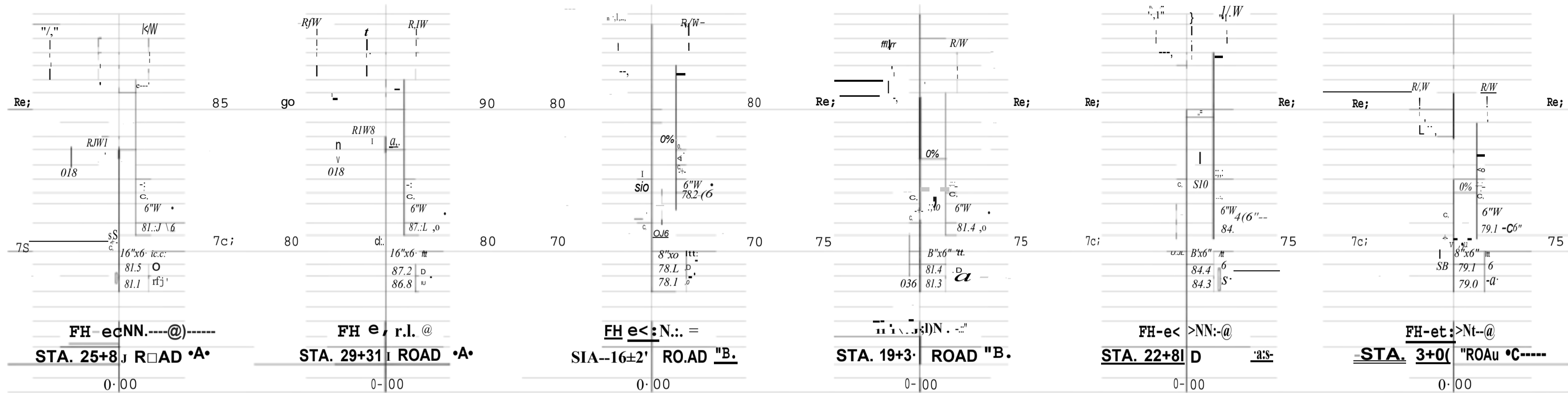
STRAP DETAIL
NOT TO SCALE



BRACKET DETAIL
NOT TO SCALE

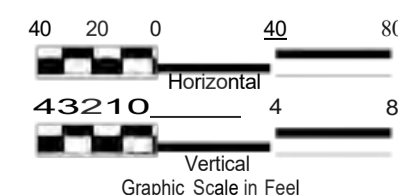
CP&E Consulting Planning and Engineering, Inc.
Professional Engineer License No. 6975-C
East Kapolei II Development Increment 2C
Honolulu, Ewa, Oahu, Hawaii
Traffic Signs and Pavement Marking Details

11-0-Construction Drawings (Government Review #752 C-5) - Marking Details.dwg, 1/14/2022 8:26:05 AM



FIRE HYDRANT PROFILES - 1

SCALE : HORIZ. : 1" = 40'
 VERT. : 1" = 4'



COMMUNITY PLANNING AND ENGINEERING, INC.
 LICENSED PROFESSIONAL ENGINEER
 No. 6975-C
 DATE: 1/19/22

ME OR UNDER MY SUPERVISION
 CONSTRUCTION OF THIS PROJECT
 WILL BE UNDER MY OBSERVATION
 LICENSE EXPIRATION DATE: 04/30/22

Community Planning and Engineering, Inc.
 Engineering Design | Construction Management | Infrastructure Planning

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
 H000000U, EWA, OAHU, HAWAII
 (OPP SUBO. FILE NO. 2019/SUB-171)
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: Portioo 161

FIRE HYDRANT PROFILES - 1

DRAWN BY: RV ENGINEER: SS CHECKED BY:

DATE: 1/19/22

PAGE 1 OF 109 SHEETS

P:\04\2022\Construction Drawings\Government Review #7\53-54 C-52 TO C-53 Fire Hydrant Profiles.dwg, 1/14/2022, 10:59:11 AM

DRAINAGE STRUCTURE NOTES

1. ALL WORK SHALL CONFO TO THE 'STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION' (LATEST).

2. CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH & A MAXIMUM WATER TO CEMENT RATIO AS FOLLOWS:

STRENGTH W/C RATIO

DM'S 4,000 PSI 12).48

3. ALL REINFORCING STEEL SHALL CONFO TO ASTM A615 GRADE (b).

4. MINIMUM COVER IN INCHES FOR REBAR\$ FOR CAST-IN-PLACE AND FRECAST CONCRETE EXCEPT AS NOTED,

CONCRETE CAST AGAINST EARTH (C.I.F.J) 3'
ED CONCRETE EXPOSED TO EARTH OR WEATHER 2'

5. UNLESS OTHERWISE NOTED, SPLICES, LAPS, DOWEL EXTENSIONS AND EMBEDMENTS SHALL BE 412) BAR DIAMETERS MINIMUM.

6. ALL REINFORCING BARS MARKED 'CONT.' OR 'TEMP.' SHALL BE LAPPED 412) BAR DIAMETERS MINIMUM.

1. STAGGER ALL SPLICES WHERE POSSIBLE.

8. REBARS SHALL BE SUPPORTED, BENT AND PLACED AS PER 'MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES' ACI 315 (LATEST).

9. AT TIME CONCRETE IS PLACED, REINFORCING SHALL BE FREE FROM MUD, OIL, LAITANCE OR OTHER SUBSTANCES ADVERSELY AFFECTING BOND CAPACITY.

10. FOR REINFORCING NOT SHOWN ON THE PLANS, FOLLOW LATEST APPROVED VERSION OF THE 'STANDARD DETAILS FOR PUBLIC WORK CONSTRUCTION' (STANDARD DETAILS).

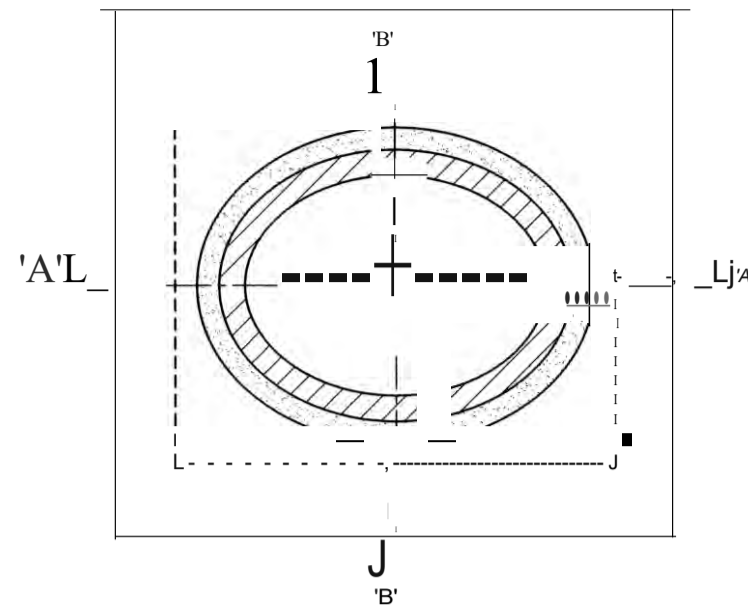
11. REINFORCEMENT, ANCHOR BOLTS, DOWELS AND ALL OTHER EMBEDDED ITEMS SHALL BE POSITIVELY SECURED BEFORE POURING.

DESIGN CITE=...

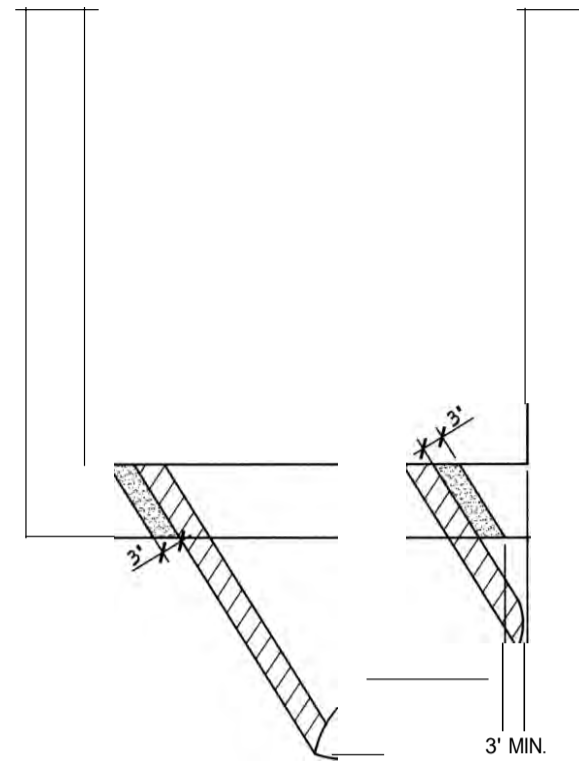
1. AA5HTO LRFD BRIDGE DESIGN SPECIFICATIONS BRIDGES FOURTH EDITION 2012

LIVE LOAD: 1-IL-3 (IN TRAFFIC AREAS)
2512) 5F (NON-TRAFFIC AREAS)

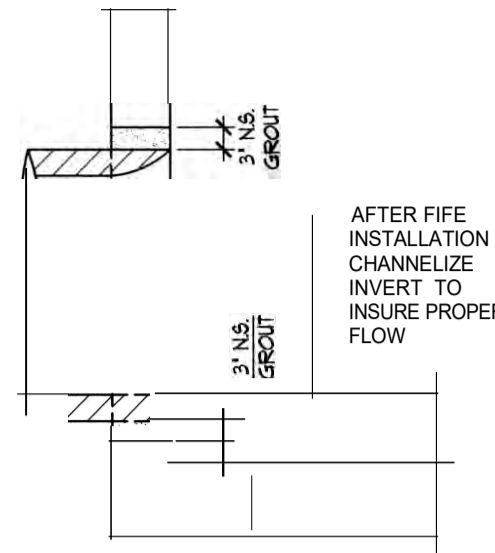
60 FCF AT-REST PRESSURE



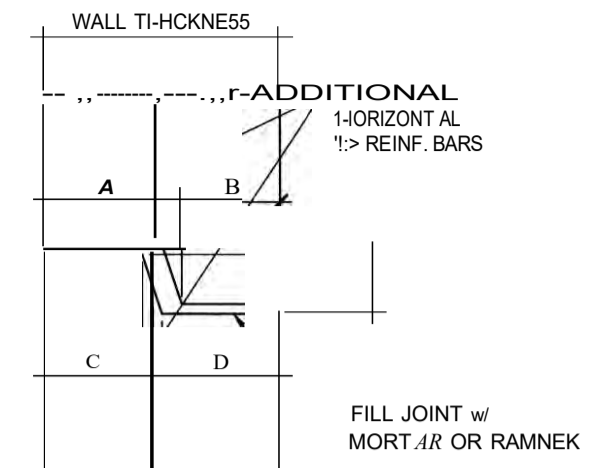
GENERAL ELEVATION



SECTION 'A-A'



SECTION '6-6'



WALL JOINT DETAIL

SCALE: N.T.S.

5-1

WALL THICKNESS	A	B	C	D
b'	3'	2 1/2'	2 1/2'	3'
8'	4'	3 1/2'	3 1/2'	4'

WALL JOINT NOTES:

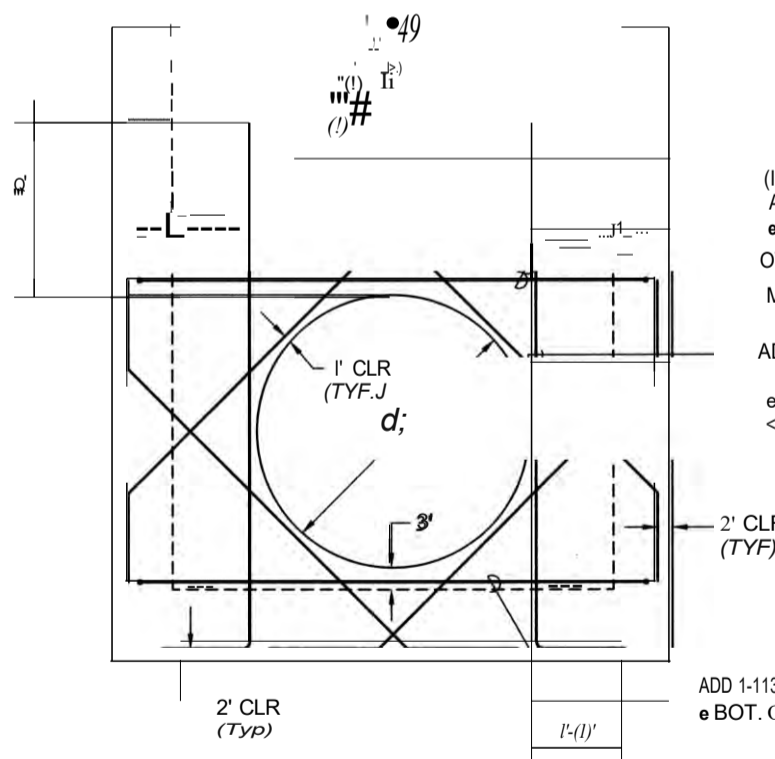
- ADDITIONAL 1-HORIZONTAL REINFORCING SHALL BE PLACED ON EACH SIDE OF JOINT. ADDED REINFORCING SHALL BE CONTINUOUS ALONG JOINT. SEE SEGMENTAL WALL JOINT DETAIL ABOVE.
- ADDITIONAL REINFORCING AROUND PIPE OPENINGS SHALL BE BENT AS REQUIRED WHEN NEAR FRECAST JOINT SIMILAR TO ADDED REINFORCING AT BASE OR WALL CONDITION. MAINTAIN MINIMUM OF 1-1/2' CLEARANCE BETWEEN REBAR AND JOINT.
- FRECAST JOINTS SHALL BE LOCATED 4 INCHES MINIMUM FROM RUNGS AND MINIMUM 24' ABOVE PIPE OPENINGS.
- CONTRACTOR AND FRECAST MANUFACTURER SHALL COORDINATE THE MAXIMUM WEIGHTS OF FRECAST COMPONENTS BASED ON THE LIFTING CAPACITY OF THE EQUIPMENT AVAILABLE TO THE CONTRACTOR.

GENERAL NOTES FOR RECAST BOXES

N.T.S.

A

5-1



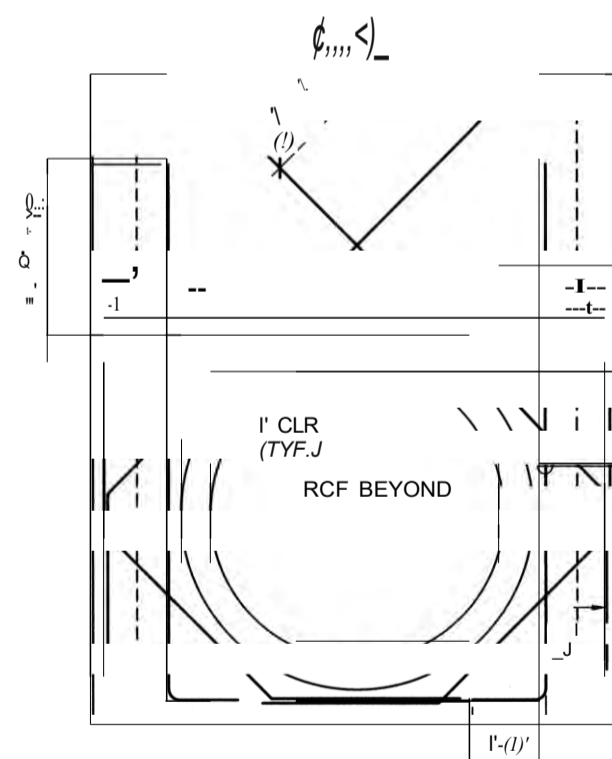
ELEVATION

REINFORCEMENT AROUND OPENING

REINFORCEMENT AROUND OPENING

N.T.S.

5-1



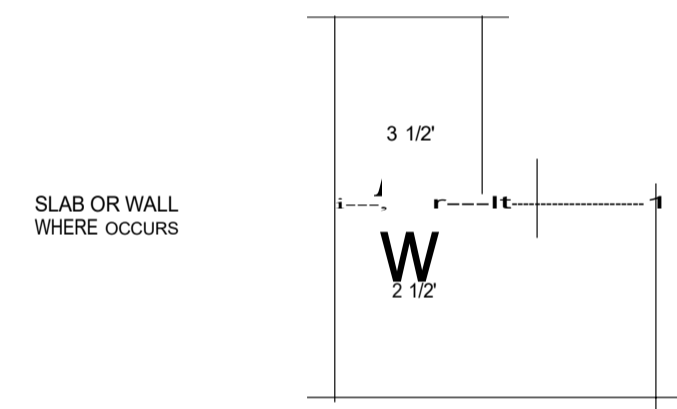
ELEVATION

REINFORCEMENT AROUND OPENING

REINFORCEMENT AROUND OPENING

N.T.S.

5-1

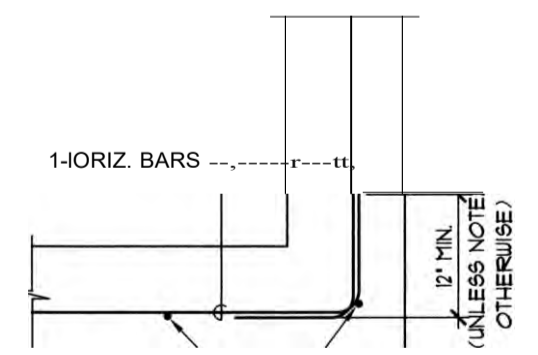


REINFORCEMENT DETAIL

SCALE: 1/2"=1'-0"

D

5-1



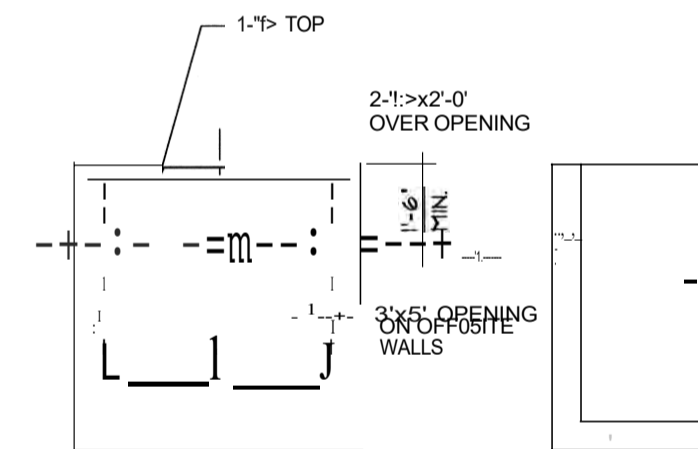
VERT. BARS

REINFORCEMENT CORNER

REINFORCEMENT CORNER

N.T.S.

5-1



REINFORCEMENT DETAIL

REINFORCEMENT DETAIL

N.T.S.

5-1

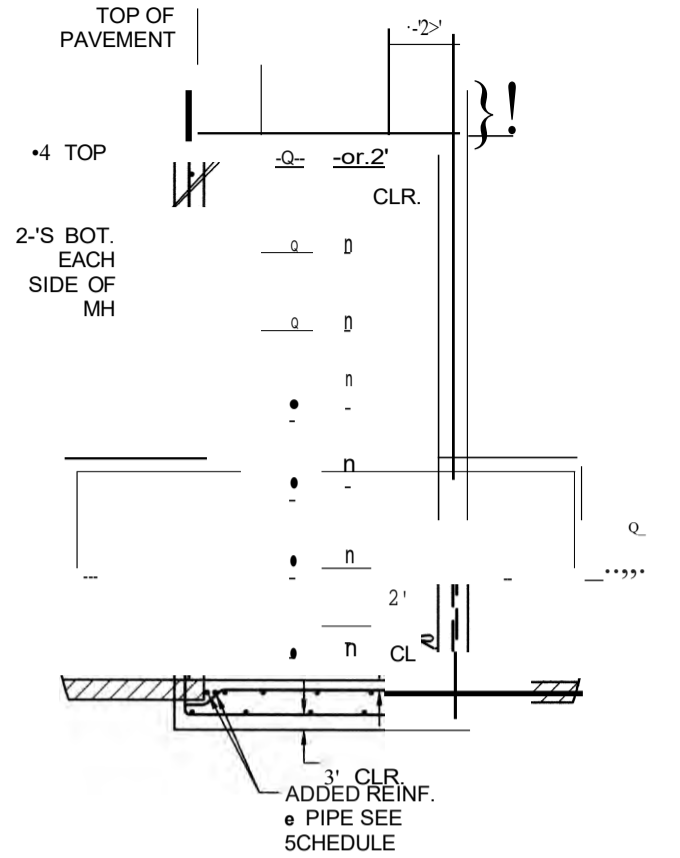
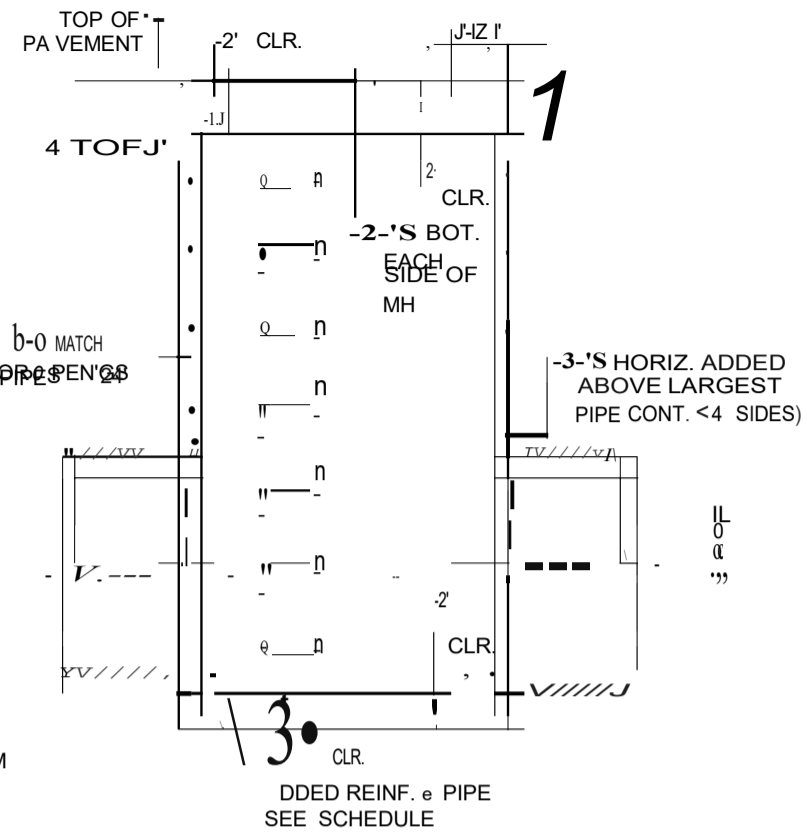
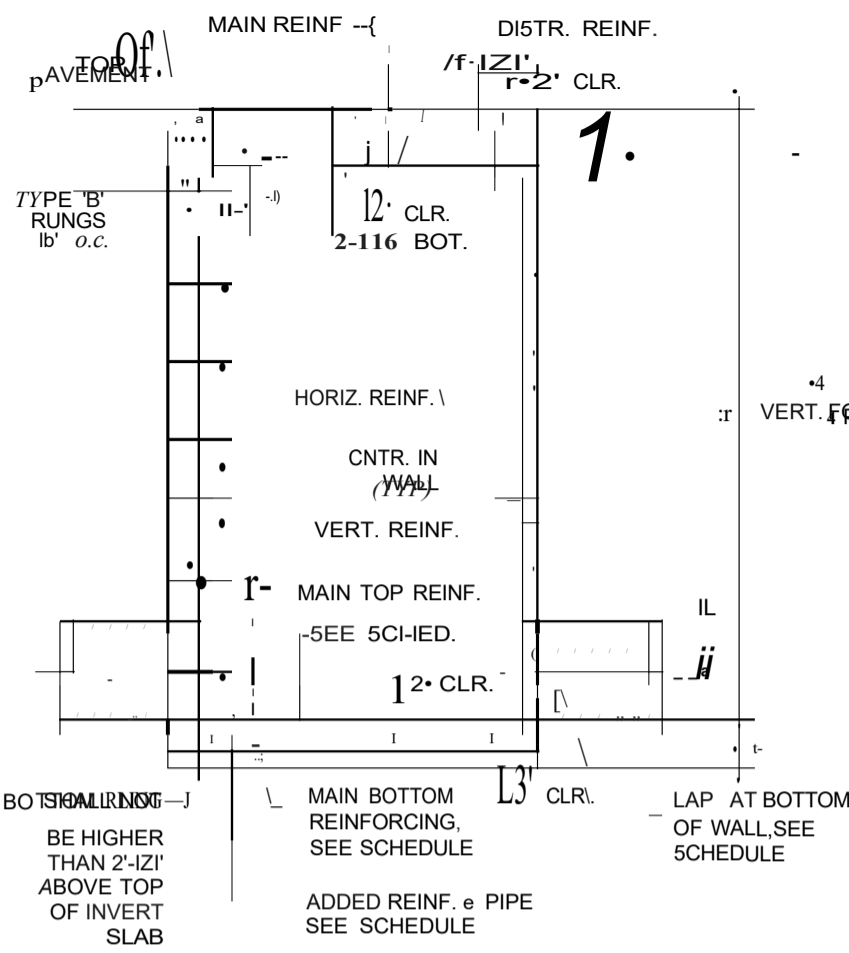
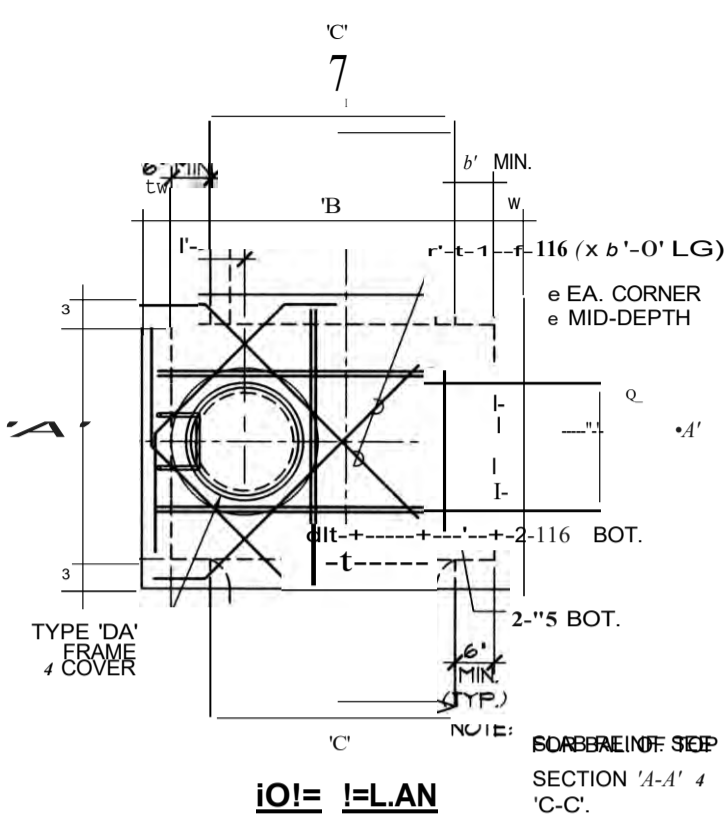
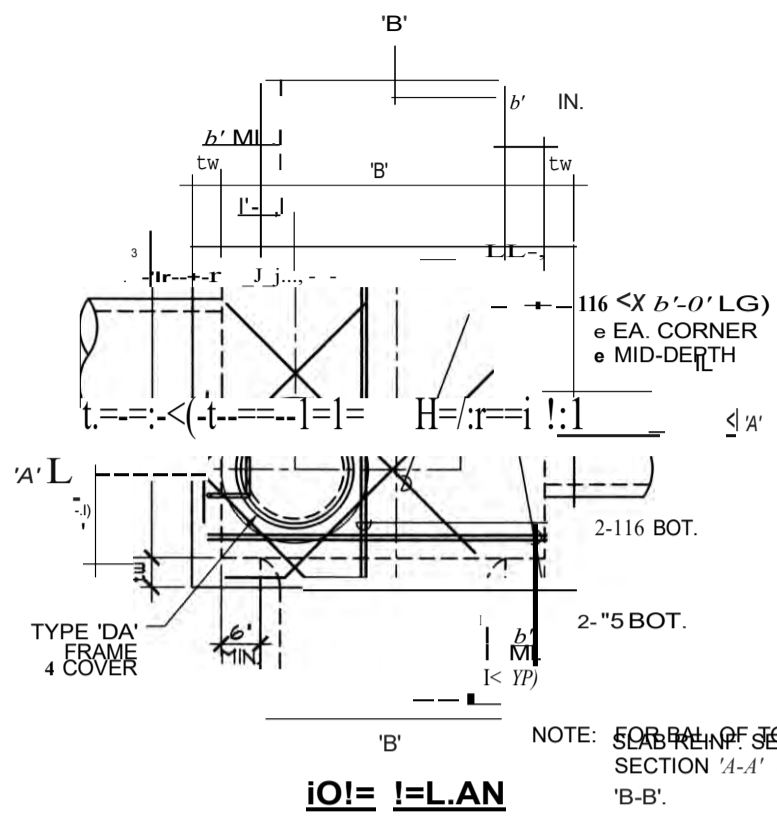
II C11
LICENSED PROFESSIONAL ENGINEER
No. 9164-S

"TAWAITI" TP22

Adrian Lu

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

REVISION DATE	DESCRIPTION	MADE BY	APPROVED
Community Planning and Engineering, Inc. Engineering, Design, Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii			
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, EWA, OAHU, HAWAII (OPP SUBO. A/E NO. 2017/SUB-ST) OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17: Portion 110			
GENERAL NOTES & TYPICAL DETAILS			
DRAWN BY: AL	ENGINEER: RR	CHECKED BY:	
APPROVED:			



&FIECIAL. DRAIN MAN OLE DETAIL.

SC: 1:12=1:12'

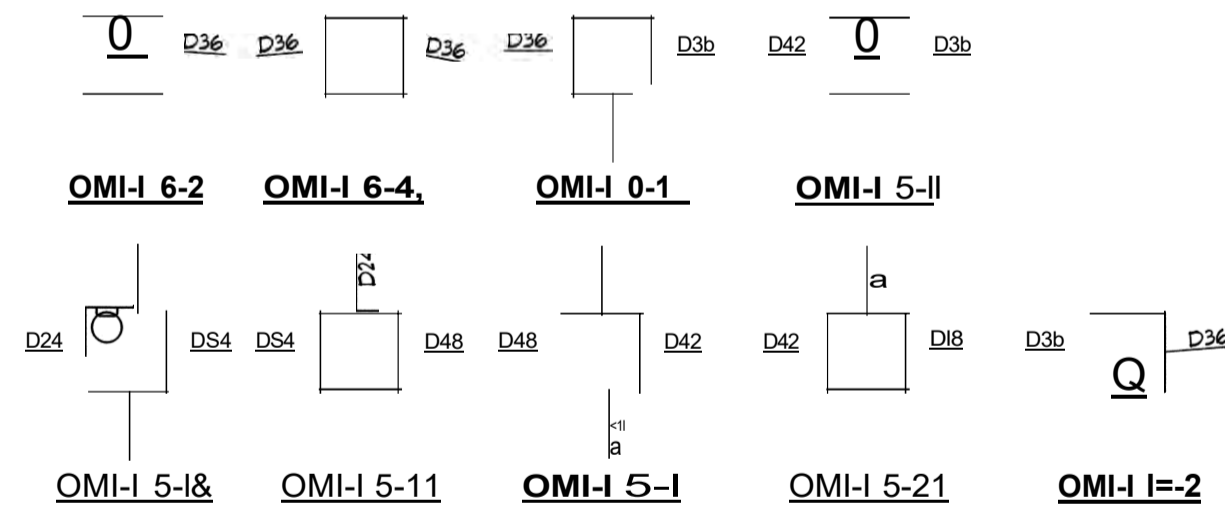
DRAIN MANHOLES SHALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.

A
5-2

&L.A6 1-25 INI=OI-C C INCi &C-I 50UL.5						&OMI-I IRAP! =IC					
MARK	IIHII MAX	uall	11eU	tw	THJc...	IOF' &L.Ae REINI! =.		INYERi &L.Ae REINI! =.			L.Ai= AT BOTTOM OF= UJALL.
						TOI= MAIN	REINI= Oie.TRIB.	THie...	MAIN TOI=	MAIN BOTTOM	
6-3, 6-4, 6-b, D-1 F-2	12.b9'	4'-0"	4'-10"	8'	10'	'S-8'o.c.	'S-8'o.c.	10'	14-9'o.c. EW	'S-b'o.c. EW	3'-4'
E-11	1.91'	4'-0"	S'-4'	8'	10'	'S-8'o.c.	'S-8'o.c.	10'	14-9'o.c. EW	'S-b'o.c. EW	3'-11'
E-IS	11.3'	b'-b'	1'-0"	8'	10'	'S-8'o.c.	IE.e8'o.c.	10'	14-9'o.c. EW	'E>4'o.c. EW	S'-b'
E-11, 19	8.W'	4'-2"	b'-b'	8'	10'	'S-8'o.c.	'S-8'o.c.	12'	'S-9'o.c. EW	'E>b'o.c. EW	S'-0'
E-21	1.91'	S'-4'	S'-4'	8'	10'	'S-8'o.c.	'S-8'o.c.	10'	14-9'o.c. EW	'S-b'o.c. EW	3'-11'

UJALL. I-251NI=OI-2CINCi &C1-150UL.5					
MARK	E-11	6-3, 6-4 6-b, D-1 F-2	E-15	E-11, E-19	E-21
tw	8'	8'	8'	8'	8'
VERT. REINI! =.	14612'0.c.	1412'0.c.	1412'0.c.	1412'0.c.	14612'0.c.
I-ORI% REINI! =. <CENTEREO IN UJALL.)					
0'-0' TO 2'-0'	14-9'o.c.	14-8'o.c.	1E.61'o.c.	14-1'o.c.	14-8'o.c.
2'-0' TO 4'-0'					14lb'o.c.
4'-0' TO S'-0'					
S'-0' TO 1'-0'					
1'-0' TO 9'-0'		14-b'o.c.			
9'-0' TO 10'-0'					
> 10'-0'					

AOOEO REINI! =. e i=li=E	
i=li=E eil%E	REINI! =.
18*	1-4
24*	1-4
30* and 35*	I-IS
42*	1-113
48*	2-113
54*	2-113
b0*	2-113



DRAIN MAN OLE &C EMATICS

N.T.S.

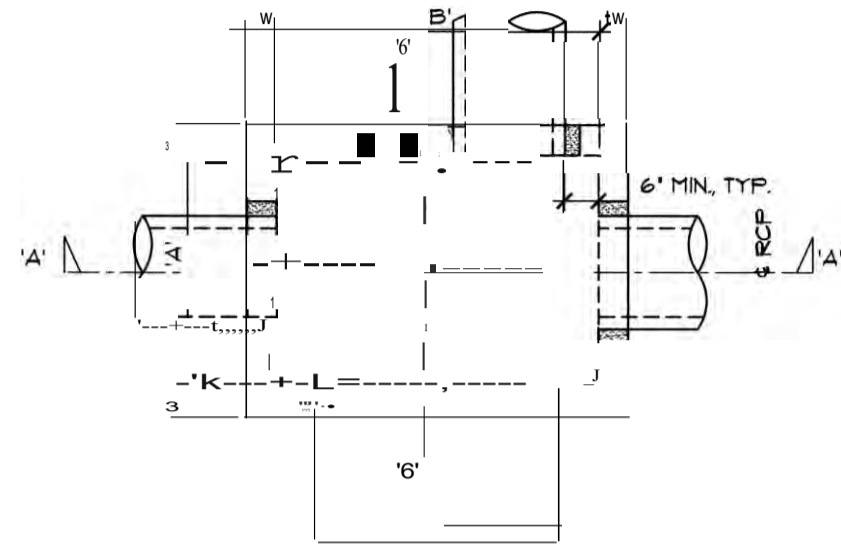
e
5-2



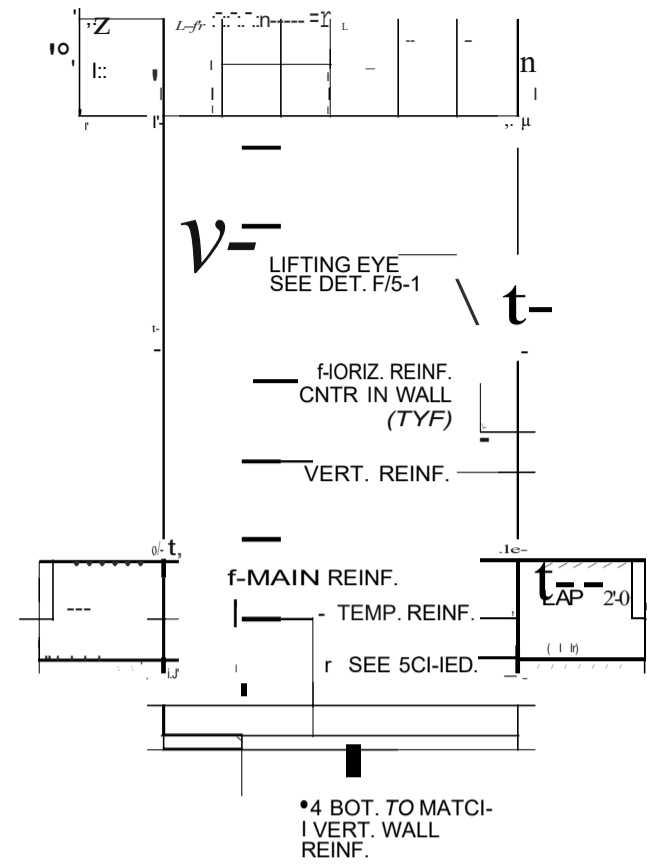
Adrian Lee 1/2/22

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

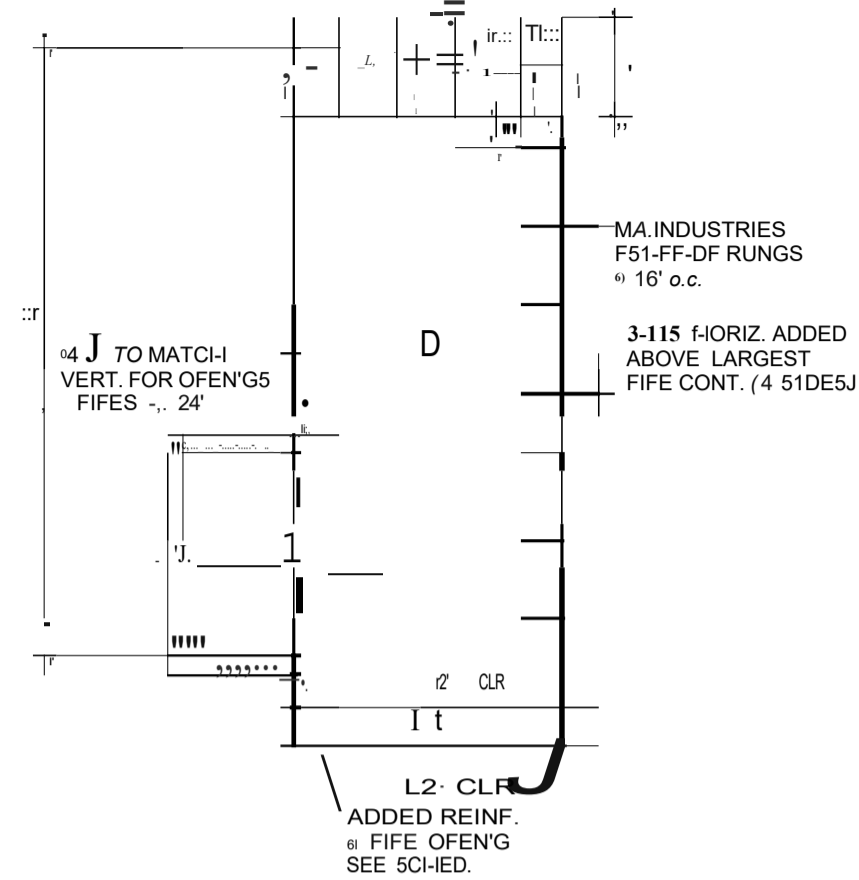
REVISION DATE	DESCRIPTION	
<p>Community Planning and Engineering, Inc. <small>Engineering Design Construction Management Infrastructure Planning</small> 11286 Queen Emma Street Honolulu, Hawaii</p> <p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C H OOUUU, EWA, OAHU, HAWAII (OPP SUBO. FU NO. 2017/SUB-37) OIHR I: HEWIR: DEPARTMENT OF HAWAIIAN IDIE LANOS TAX MAP KEY: 9-1-17: Portion 110</p> <p>DRAIN MANHOLE C.I.P. DETAILS</p>		
IRAHY DY: AL	EN+HR: RR	CHECKED DY:
APPROX		
<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22</p>		



TOP PLAN (RUNGS OFFSET)



SECTION 'A-A'



SECTION '6-6'

NOTE:

- 1) TOP SLAB TO BE CAST-IN-PLACE IN FIELD. FOLLOW REINF. DETAILS 51-10WN ON 51-1EET 5-2.
- 2) FOR DIMENSIONS, REINF. FOLLOW SCHEDULES 51-10WN ON 51-1EET 5-2.
- 3) SEE 51-1EET 5-1 FOR GENERAL NOTES & TYPICAL DETAILS.
- 4) DRAIN MANHOLES 51-1ALL KEEP CLEAR OF THE CONCRETE CURB AND GUTTER.

GENERAL NOTE: PRECAST CONSTRUCTION

1. PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 168-8084 TO ARRANGE FOR INSPECTION SERVICES. NON-COMPLIANCE OF THIS REQUIREMENT SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.

2. CONSTRUCTION OF PRECAST DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C1113.

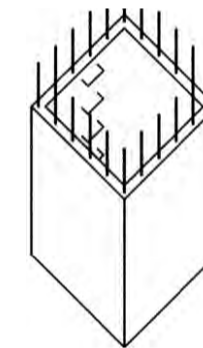
3. THE JOINTS SHALL BE CONSTRUCTED TRUE TO THE DIMENSIONS SHOWN ON THE DRAWINGS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS FOR CONFORMANCE TO THE PLANS & SPECIFICATIONS AND CORRECT DETAILS, FIT OF PARTS AFTER ASSEMBLY.

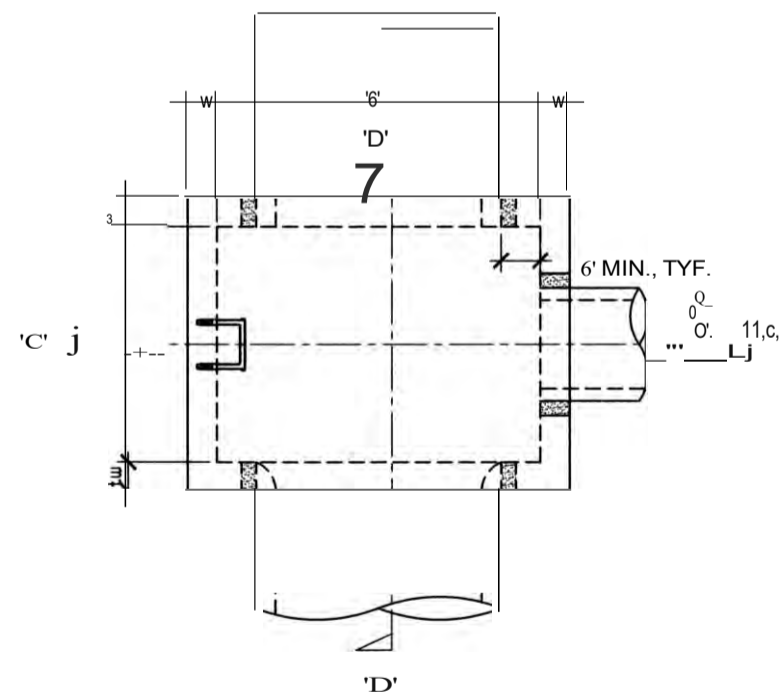
5. IF THE PERMISSIBLE VARIATION/TOLERANCES ARE EXCEEDED, THE PRECAST SECTIONS MAY BE ACCEPTABLE UPON RECEIPT OF A SIGNED AND STAMPED CERTIFICATION FROM THE DESIGN ENGINEER THAT:

- A. EXCEEDING THE TOLERANCES DOES NOT AFFECT THE STRUCTURAL INTEGRITY OF THE UNIT.
- B. THE UNIT CAN BE BROUGHT WITHIN TOLERANCE BY STRUCTURALLY SATISFACTORY MEANS, OR
- C. THE TOTAL ERECTED ASSEMBLY CAN BE MODIFIED TO MEET ALL STRUCTURAL REQUIREMENTS.

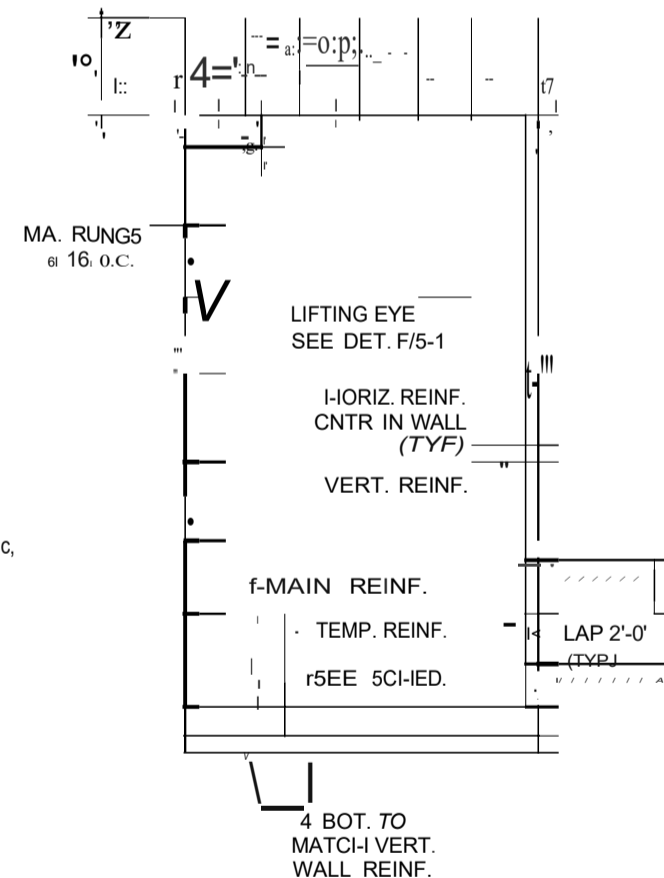
6. RUNGS SHALL BE 'MA' INDUSTRIES P51-FF-DF CO-POLYMER MANHOLE RUNGS. INSTALL RUNGS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.



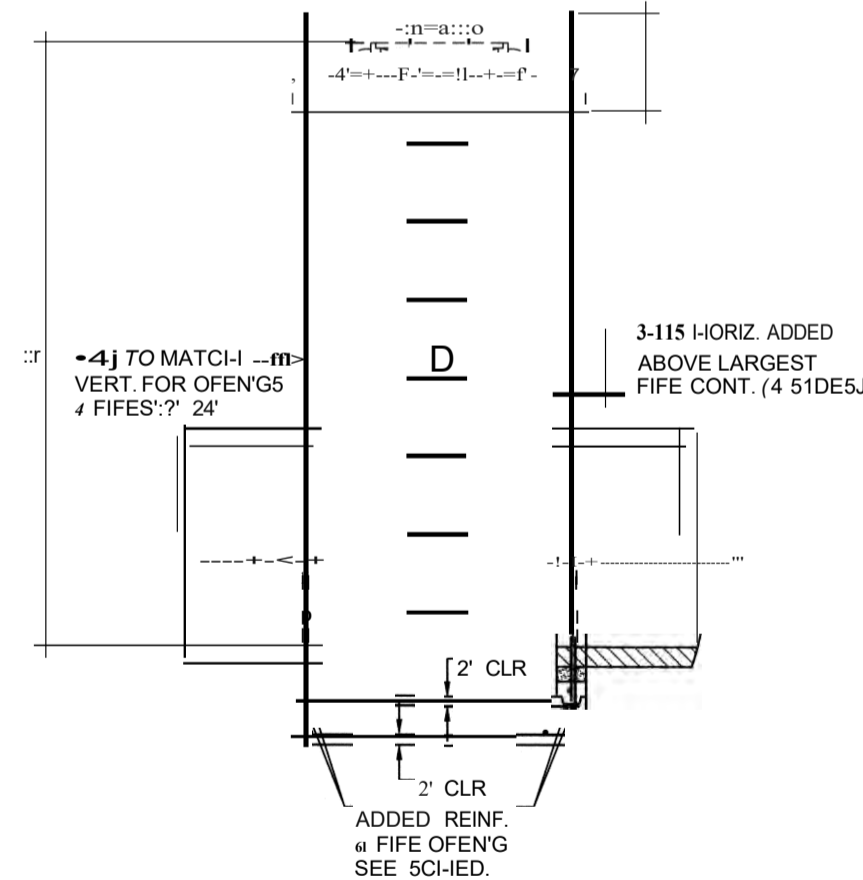
SECTION 'C-C'
N.T.S.



TOP PLAN (RUNGS CENTERED)



SECTION 'C-C'

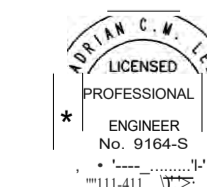


SECTION 'D-D'

RECAST SPECIAL DRAIN MANHOLE DETAIL

SCALE: 1/12"=1'-0"

A
S-3



Adrian Lee 1/24/22

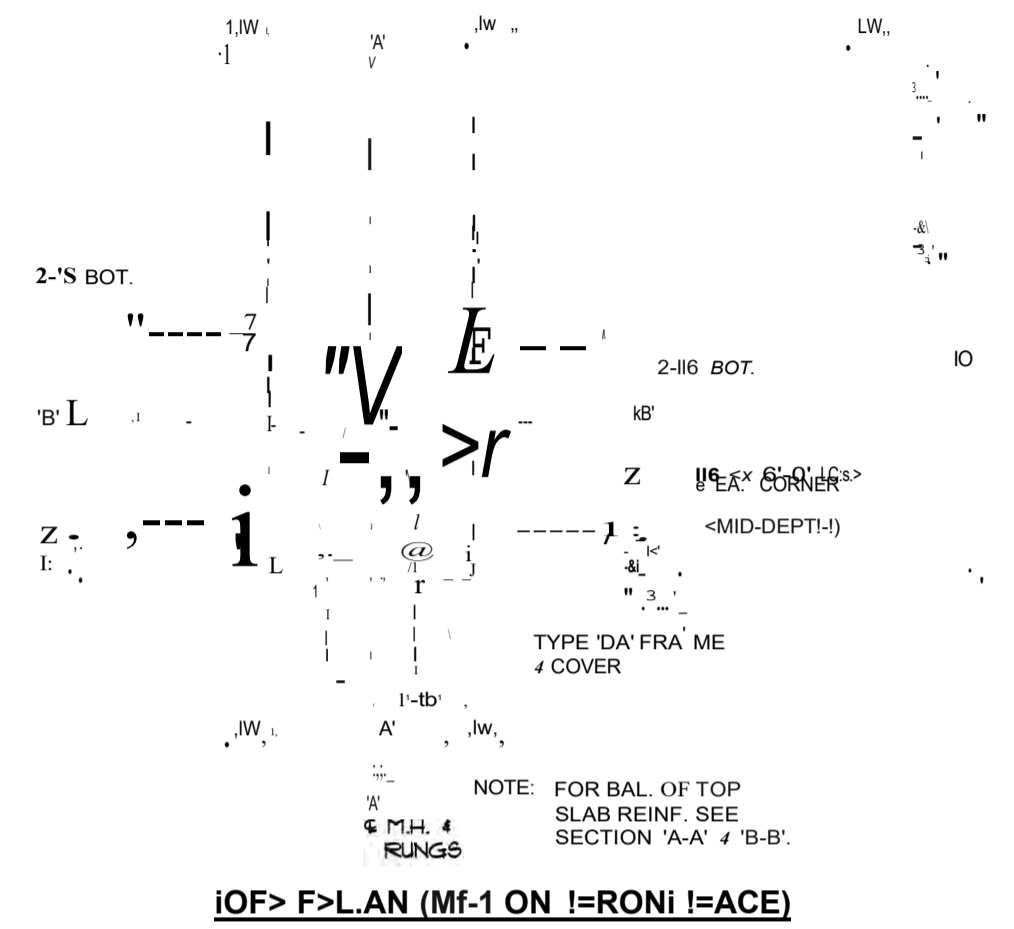
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

<p>Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1288 Queen Emma Street Honolulu, Hawaii</p>	
<p>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, EWA, OAHU, HAWAII (OPP. SITE: FR. NO. 2017SUB-37) OWNER & DESIGNER: DEPARTMENT OF HAWAIIAN LANDS TAX MAP KEY: 9-1-17-Portion 110</p>	
<p>DRAIN MANHOLE PRECAST DETAILS</p>	
<p>DRAIN BY: #</p>	<p>ENGINEER: RP</p>
<p>APPROVED:</p> <p><i>[Signature]</i></p>	

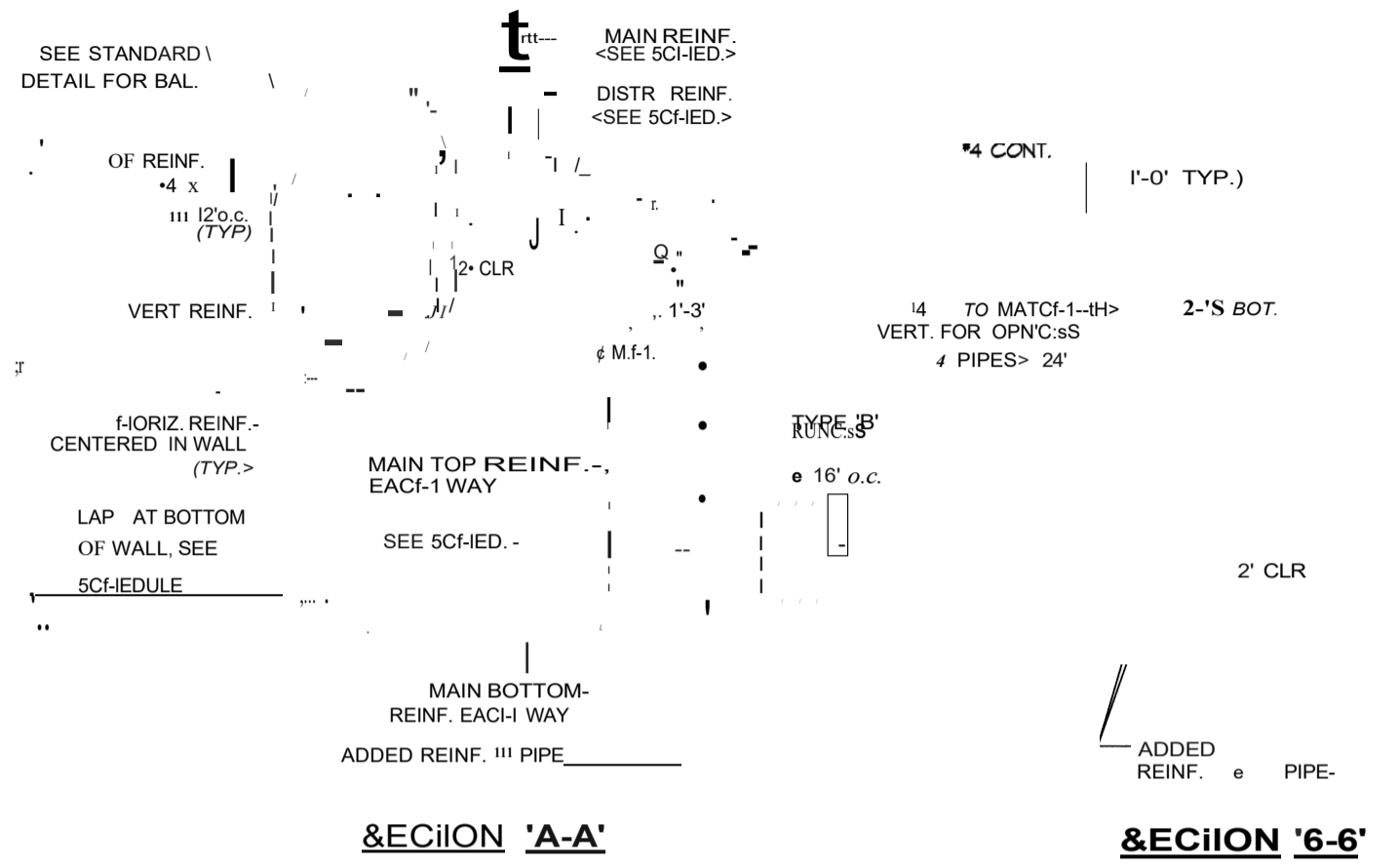
S>L.Ae REINI=ORCING S>CHEOULE					CE TRAFFIC						
MA K	MAX.	HALL	11e"	TW	TOI= e1.Ae EINF.		INVE T Ae EINF.				
					TMK	TOI= MAIN	EINF. OIeT le.	TMK	MAIN TOI=	MAIN eOTTOM	I.AF= AT eOTTOM OF WALL.
B-1, E-20	1234'	3'-6"	6'-1"	8'	10'	IS e S'o.c.	IS e 10'o.c.	10'	4 e *o.c. EW	6 e 6'o.c. EW	3'-11'
B-1, B-8, B-9 E-12, F-3	1321'	S'-4"	6'-1"	8'	10'	IS e S'o.c.	IS e 10'o.c.	10'	4 e *o.c. EW	IS e 6'o.c. EW	3'-4'
E-16, E-18	10.S'	3'-6"	8'-0"	8'	10'	IS e S'o.c.	IS e 10'o.c.	12'	14 e 8'o.c. EW	IS e S'o.c. EW	S'-0'

UJAL.L. REINI=ORCING S>CHEOULE				
MA	6-1, E-21Z	e-s, e-8, e- , a-12, F-3	E-le>, E-18	MA K
tw	8"	8"	8"	tw
VE T. EINF.	11,4s 12"o.c.	11,4 e 12"o.c.	11,4s 12"o.c.	VE T. EINF.
"Mu	MO I.Z. EINF. <CENTE EO IN WALL.>			"III
0'-0' to 2'-0'	'S e 8'o.c.	'S e 8'o.c.	'S e 1'o.c.	0'-0' to 2'-0'
2'-0' to 3'-0'				2'-0' to 3'-0'
3'-0' to 1'-0'				3'-0' to 1'-0'
1'-0' to 6'-0'		'S III 6'o.c.		1'-0' to 6'-0'
6'-0' to 8'-0'	'S e 6'o.c.			6'-0' to 8'-0'
8'-0' to 3'-0'				8'-0' to 3'-0'
3'-0' to 14'-0'				3'-0' to 14'-0'

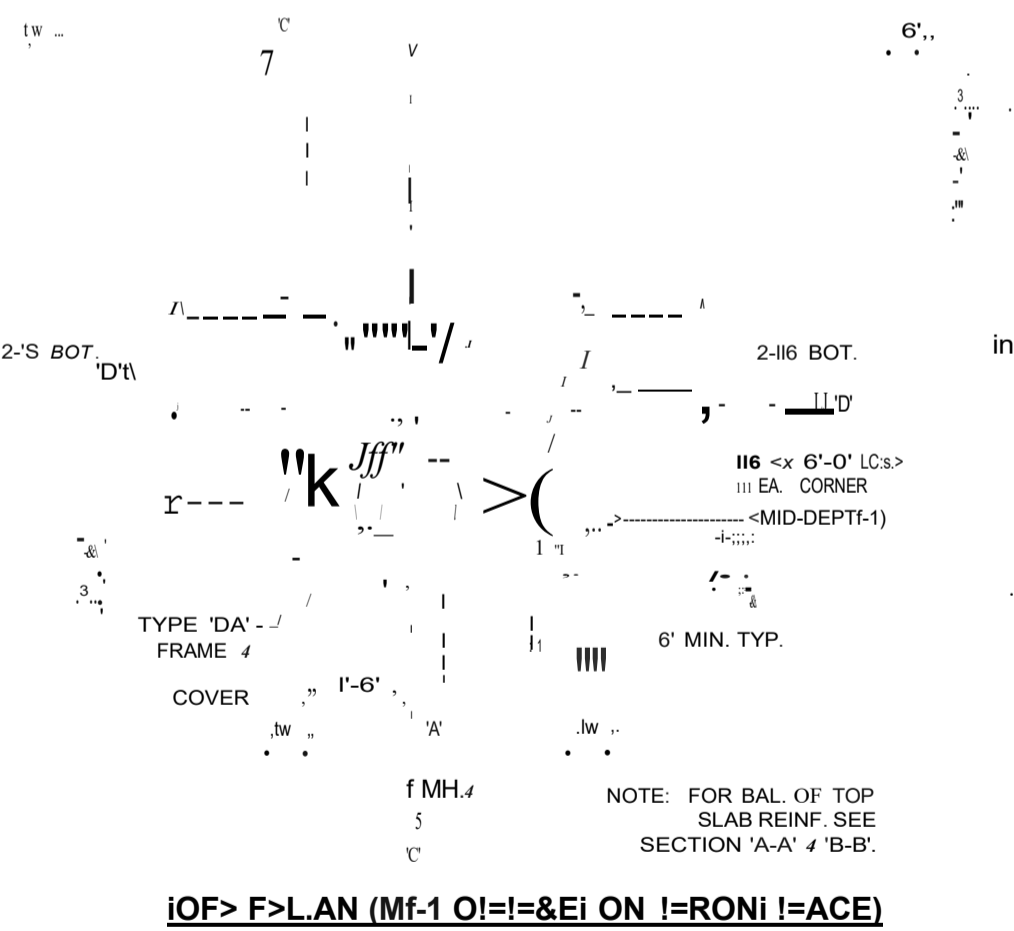
AOEOEINF. III !=II=E	
I=II=E eIZE	EINF.
18'f	1-14
24'>	1-14
30'4>, 36'4>	1-S
42't	2-IS
48'4>	2-IS
S4't	2-'S



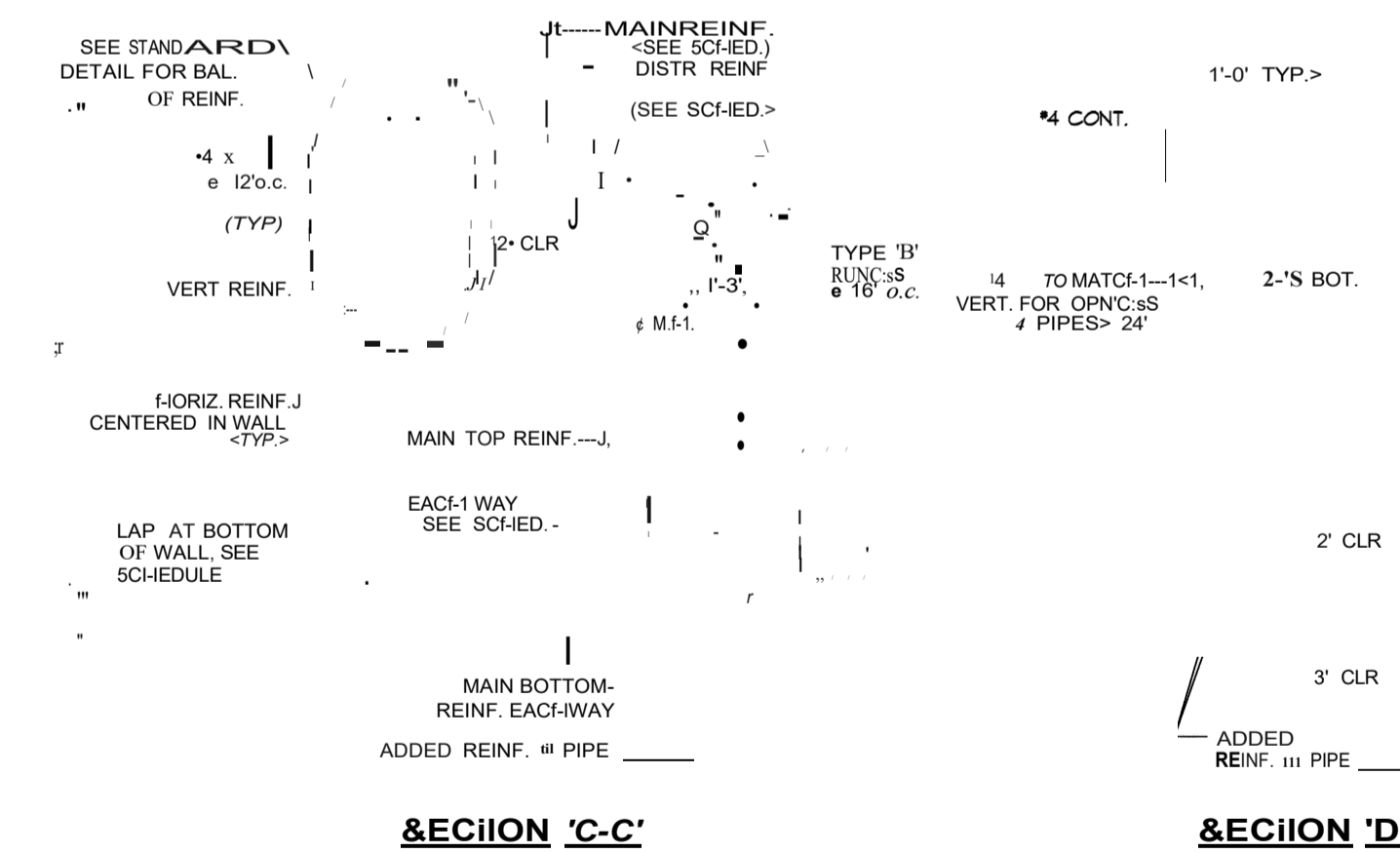
IOF> F>L.AN (Mf-1 ON I=RONI !=ACE)



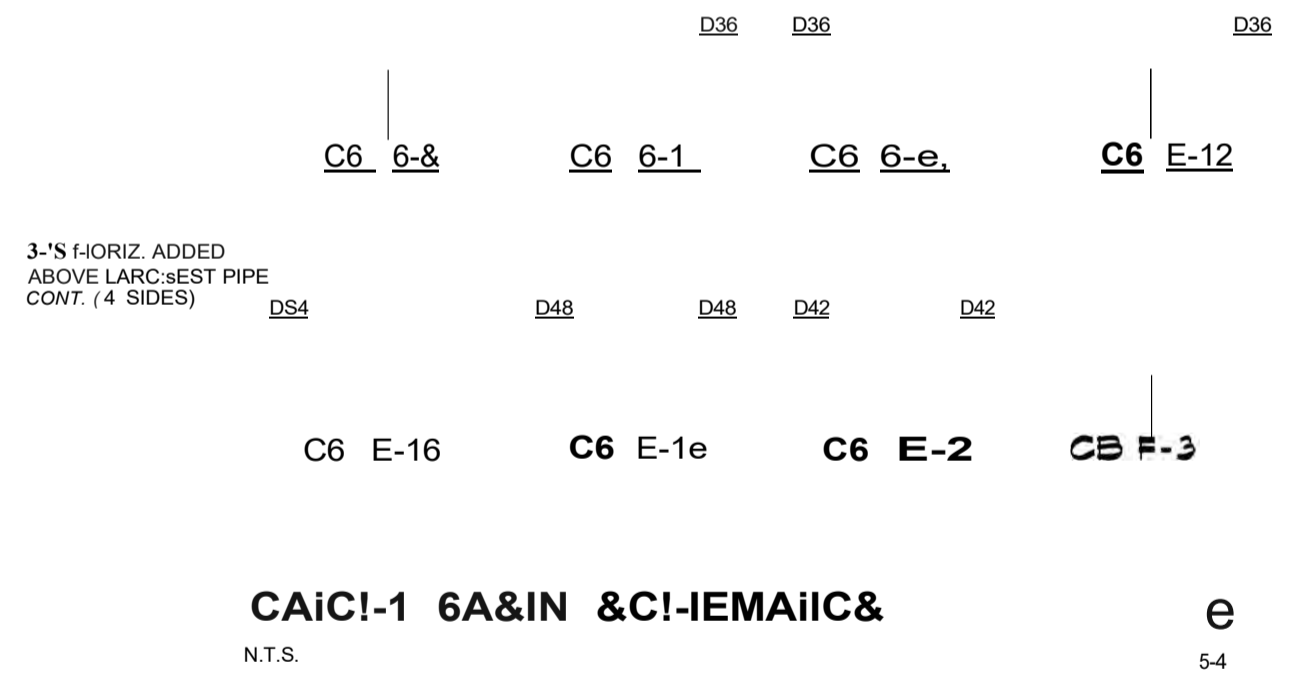
&ECiION 'A-A'



IOF> F>L.AN (Mf-1 OI!=&Ei ON I=RONI !=ACE)



&ECiION 'C-C'



CAiC!-1 6A&IN &C!-IEMaiiC&

SC: 1/2" = 1'-0"

A
5-4

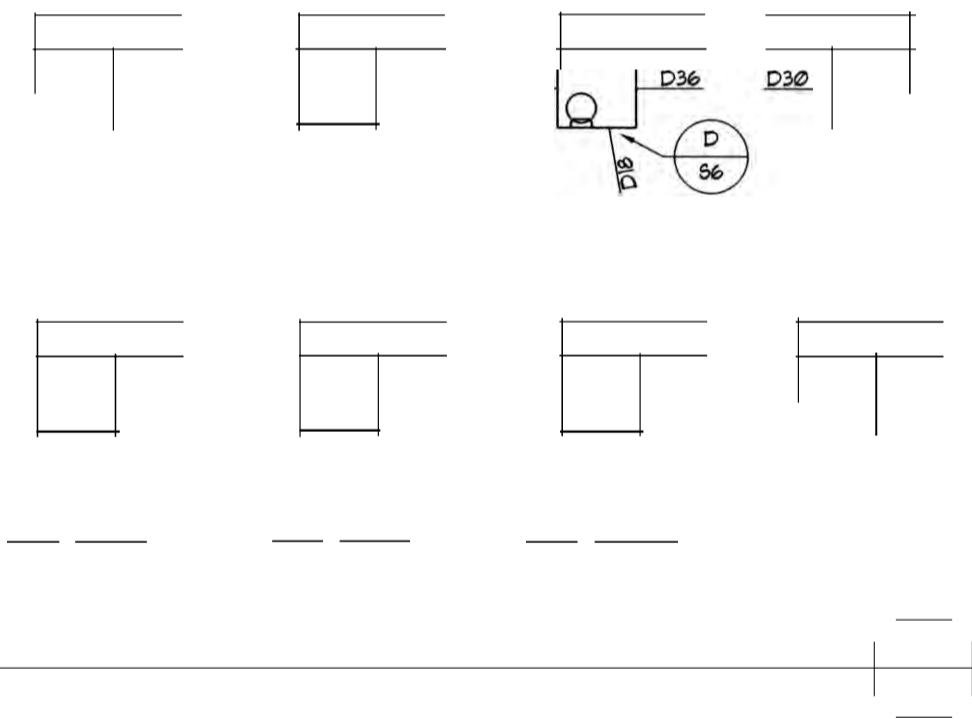
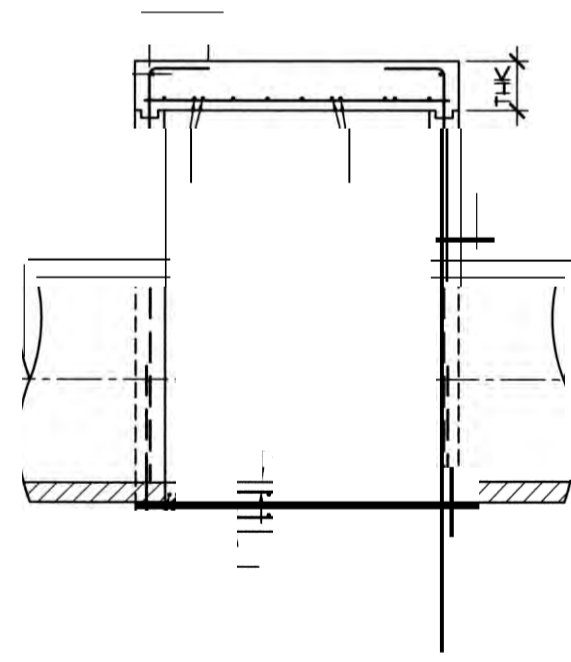
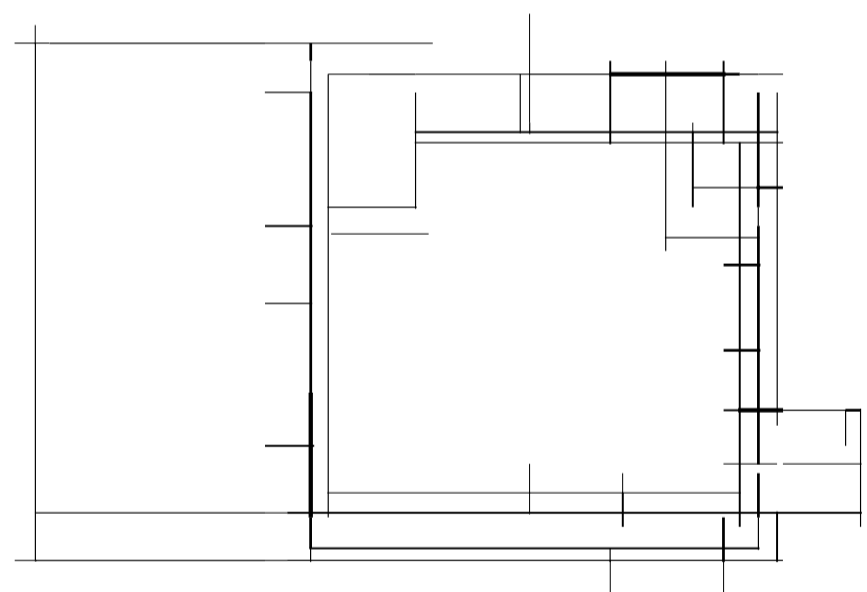
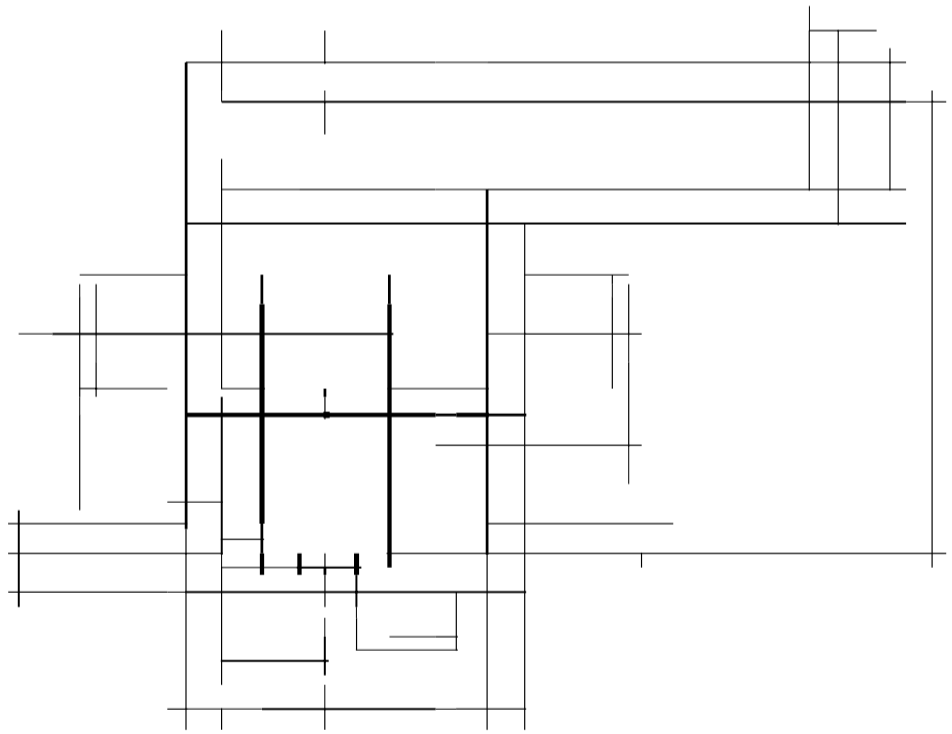
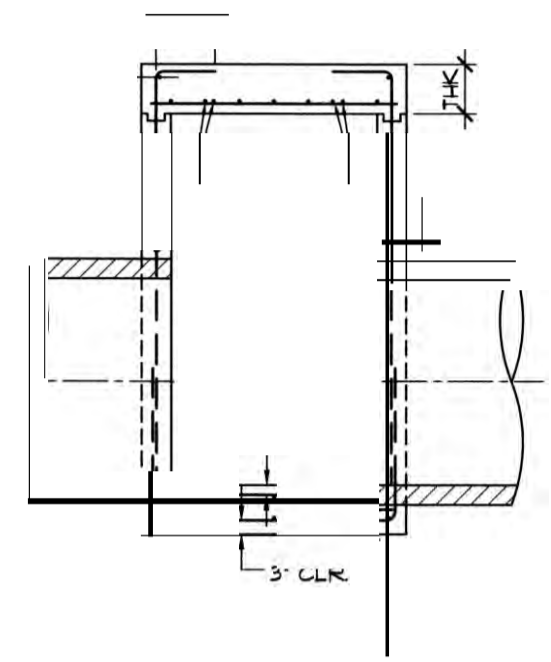
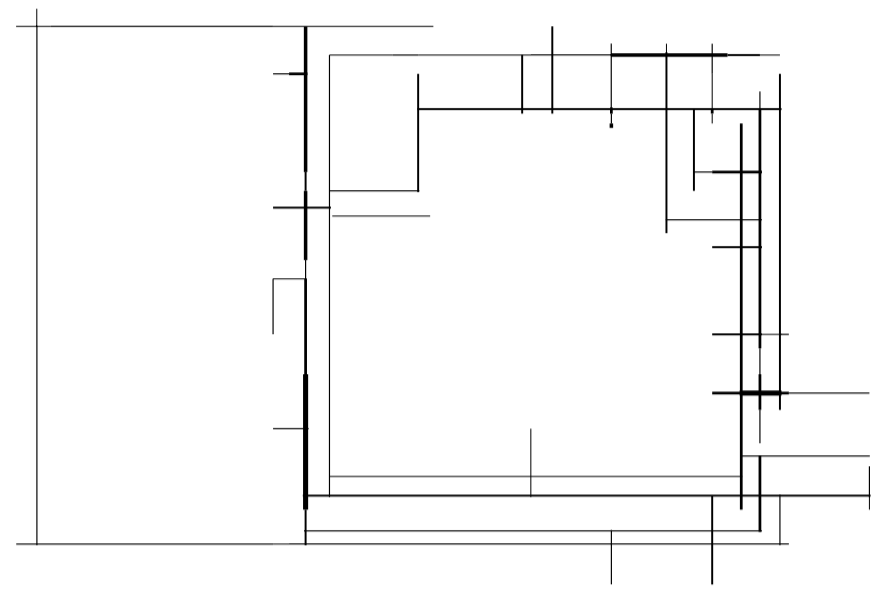
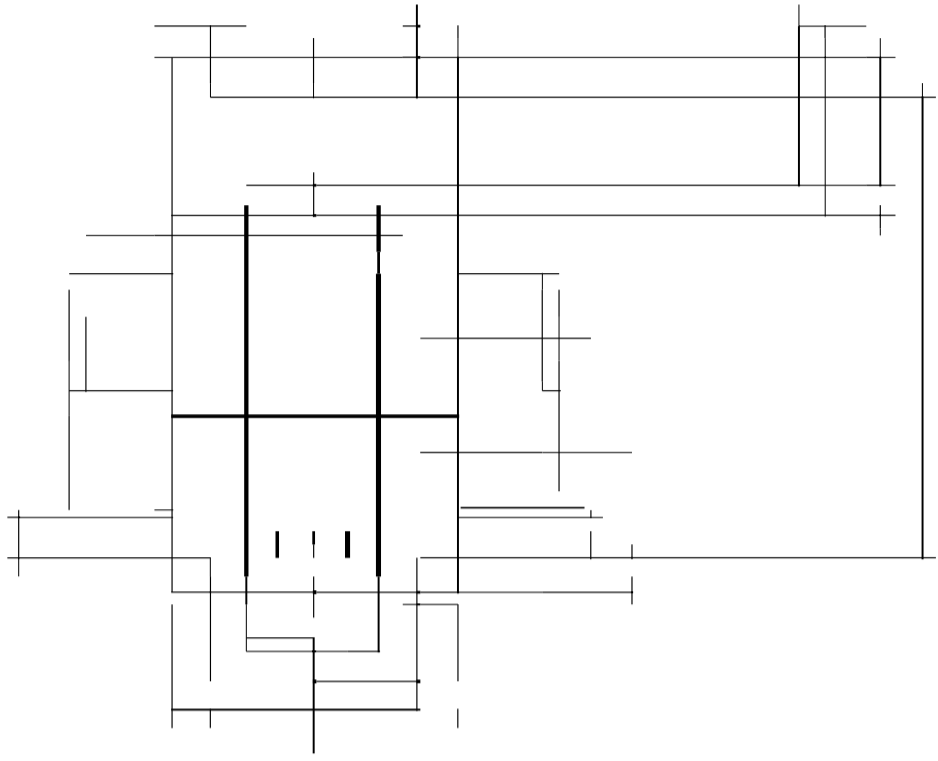
C.11
LICENSED
PROFESSIONAL ENGINEER
No. 9164-S
WALL, U.C.

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HO000UUU, EWA, OAHU, HAWAII
(OPP SU11. AE NO. 2017/SUB-37)
OHR a OEU/CPER: DEPARTMENT OF HAWAIIAN LANDS
TAX IAP KEY: 9-1-17: Portion 110

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

TYPE 'B' CATCH BASIN
C.I.P. DETAILS

OOA BY: AI ENGR: RR DE(EE) BY:

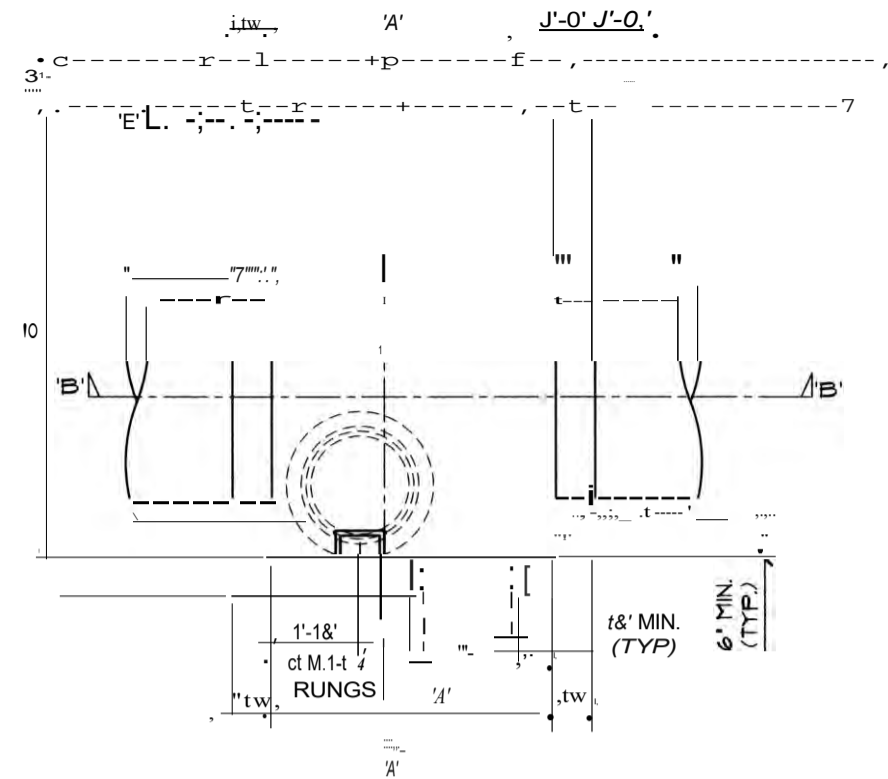


REVISION DATE	DESCRIPTION

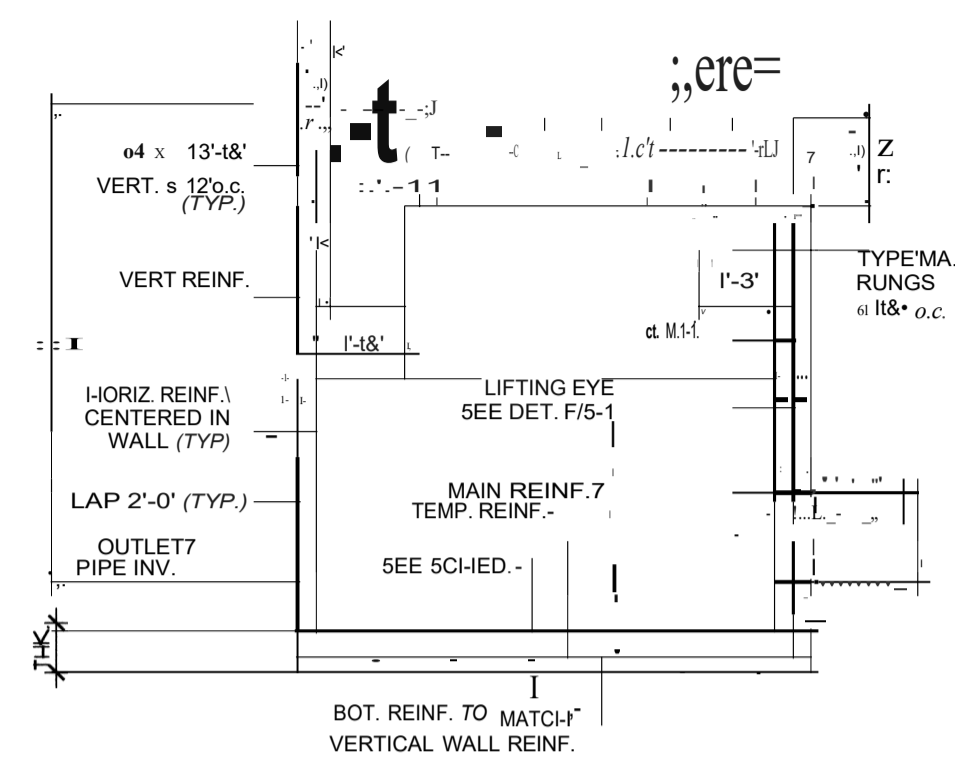
APPROVED:

William Lee

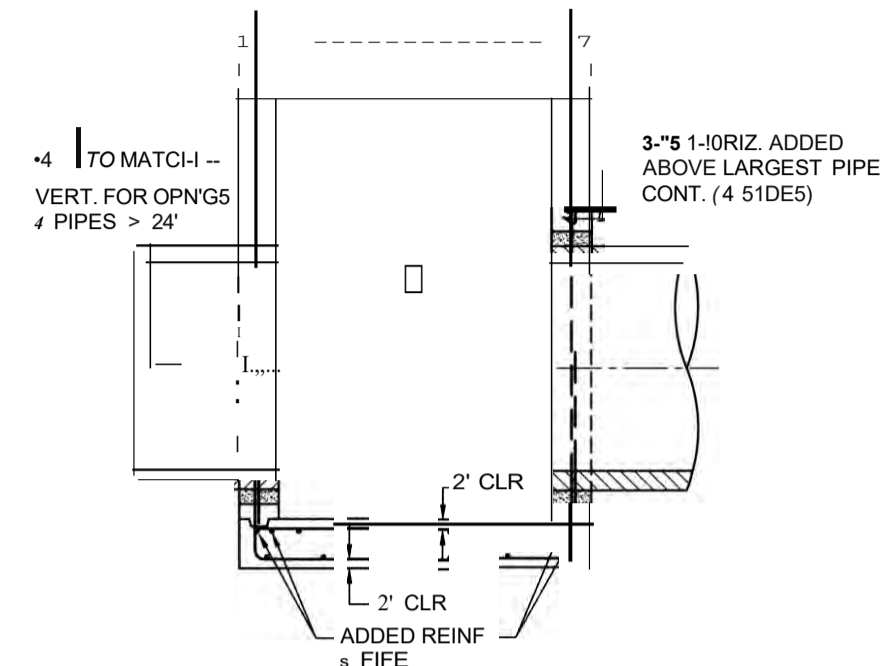
W. Lee *11/19/22*
CIVIL ENGINEERING BRANCH, D.P.P. #17 DATE



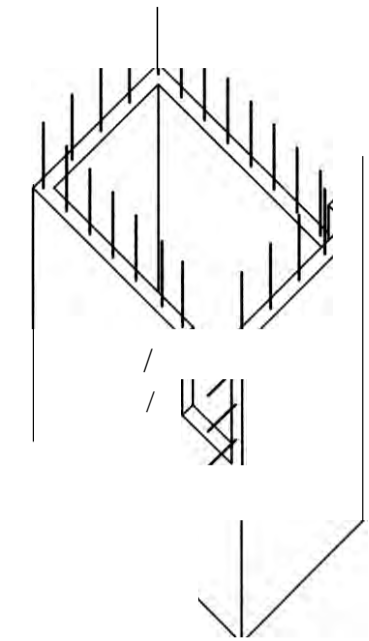
TOP PLAN (MH OFFSET ON FRONT FACE)



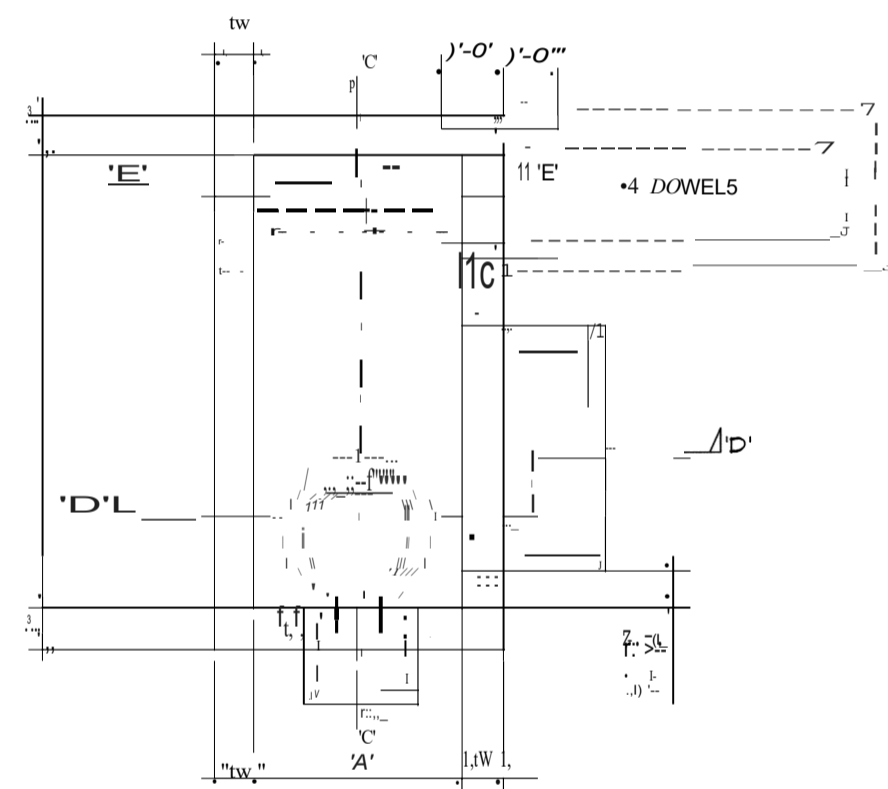
SECTION 'A-A'



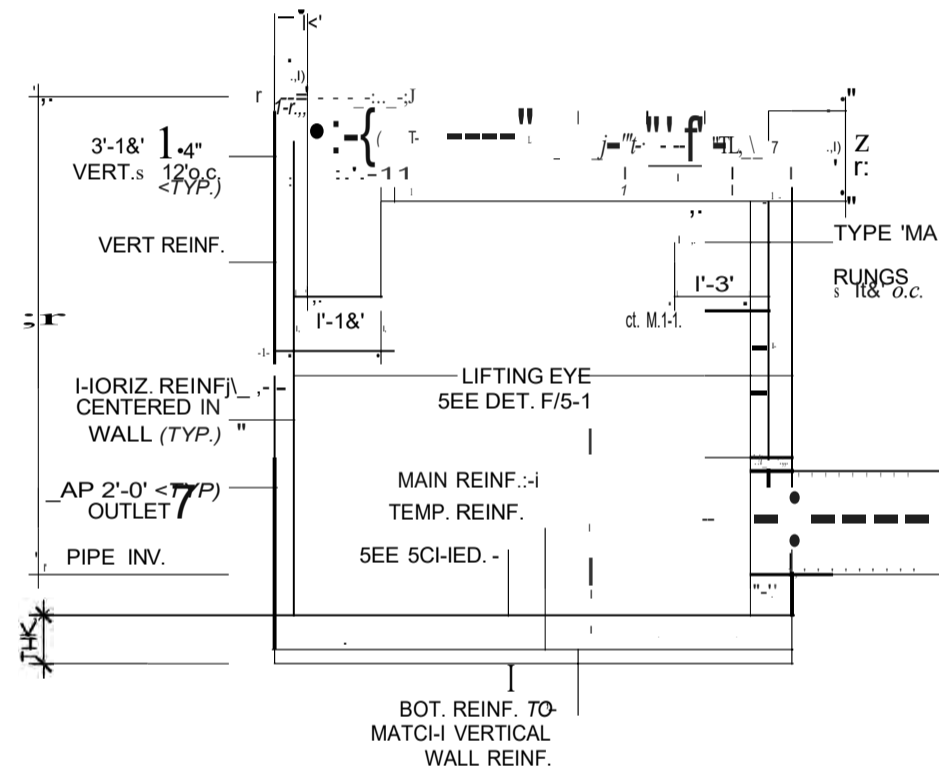
SECTION '6-6'



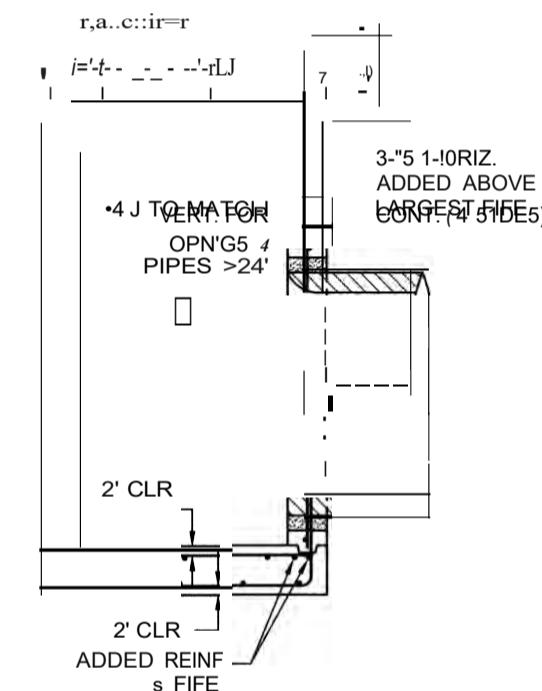
SECTION '10-10'



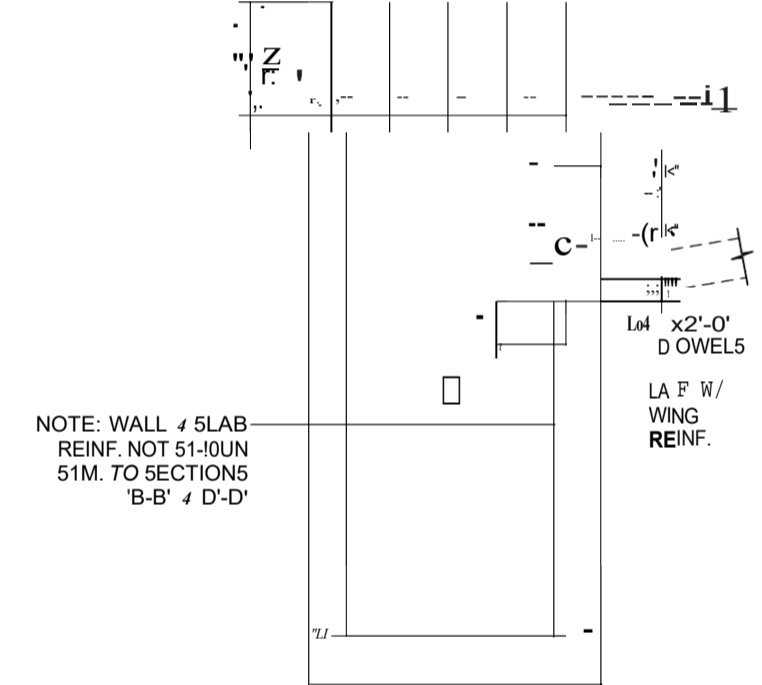
TOP PLAN (MH ON FACE)



SECTION 'C-C'



SECTION '0-0'



SECTION '5-5'

NOTE: WALL & SLAB REINF. NOT SHOWN TO SECTIONS 'B-B' & 'D-D'

SPECIAL NOTE: PRECAST CAST-IN-PLACE CONCRETE DETAILS

SCALE: 1/2" = 1'-0"

A
5-S

GENERAL NOTE: RECAST DETAILING

1. PRIOR TO CONSTRUCTION AND INSTALLATION OF ANY PRECAST

STRUCTURE, THE CONTRACTOR SHALL NOTIFY THE CIVIL ENGINEERING BRANCH, DEPARTMENT OF PLANNING AND PERMITTING AT 168-W84 TO ARRANGE FOR INSPECTIONAL SERVICES. NON-COMPLIANCE OF THIS REQUIREMENT SHALL MEAN IMMEDIATE SUSPENSION OF ALL PRECAST WORK AND REJECTION OF ALL PRECAST STRUCTURES ALREADY CONSTRUCTED.

2. CONSTRUCTION OF PRECAST DRAINAGE STRUCTURES SHALL CONFORM TO ASTM C1313.

3. THE JOINTS SHALL BE CONSTRUCTED TRUE TO THE DIMENSIONS SHOWN ON THE DRAWINGS.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL DIMENSIONS FOR CONFORMANCE TO THE PLANS & SPECIFICATIONS AND CORRECT DETAILS & FIT OF PARTS AFTER ASSEMBLY.

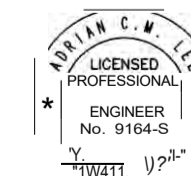
5. IF THE PERMISSIBLE VARIATION/TOLERANCES ARE EXCEEDED, THE PRECAST SECTIONS MAY BE ACCEPTABLE UPON RECEIPT OF A SIGNED AND STAMPED CERTIFICATION FROM THE DESIGN ENGINEER THAT:

- A. EXCEEDING THE TOLERANCE VARIATION DOES NOT AFFECT THE STRUCTURAL INTEGRITY OF THE UNIT,
- B. THE UNIT CAN BE BROUGHT WITHIN TOLERANCE BY STRUCTURALLY SATISFACTORY MEANS, OR
- C. THE TOTAL ERRECTED ASSEMBLY CAN BE MODIFIED TO MEET ALL STRUCTURAL REQUIREMENTS.

6. RUNGS SHALL BE 'MA' INDUSTRIES PSI-FDF CO-POLYMER MANHOLE RUNGS. INSTALL RUNGS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

NOTES

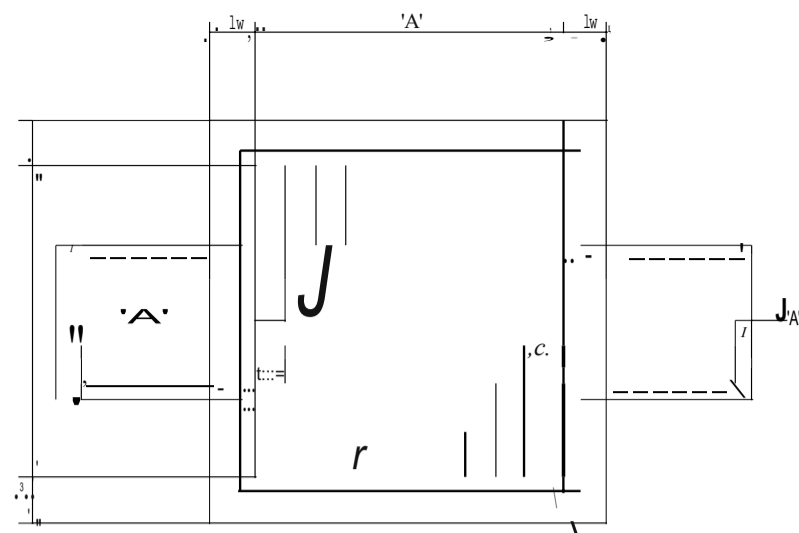
- 1) TOP SLAB TO BE CAST-IN-PLACE IN FIELD. FOLLOW REINF. & DETAILS SHOWN ON SHEET 5-4.
- 2) FOR DIMENSIONS & REINF. FOLLOW SCHEDULES 51-1011.N ON SHEET 5-4.
- 3) SEE SHEET 5-1 FOR GENERAL NOTES & TYPICAL DETAILS.



Adrian Lee 1/24/22

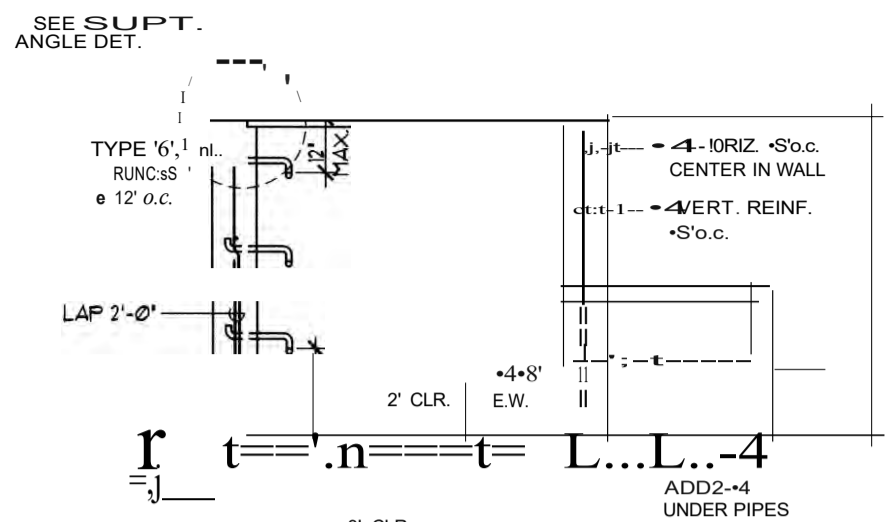
THIS DRAWING WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/02/22

REVISION DATE	DESCRIPTION
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii	
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HOUUUU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2017/SUB-37) OWNER: Dept. OFER DEPARTMENT OF HAWAIIAN HOMELANDS TAX ID# KEY: 9-1-17: Portion 110	
TYPE 'B' CATCH BASIN PRECAST DETAILS	
DRAWN BY: AL	CHECKED BY: AL
ENGINEER: RRR	DATE: 1/24/22
APPROVED: <i>Adrian Lee</i>	
THIS DRAWING WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/02/22	

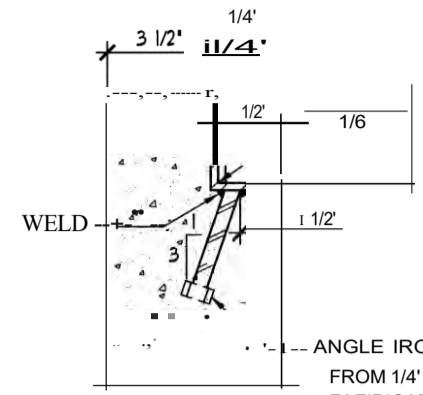


INTERSTATE GRATINGS IS-W-4
1-1/4"x3/16" e 1 3/16" o.c. 1-1/2" WELD STEEL GRATING OR
EQUAL SPAN IN SHORT
DIRECTION

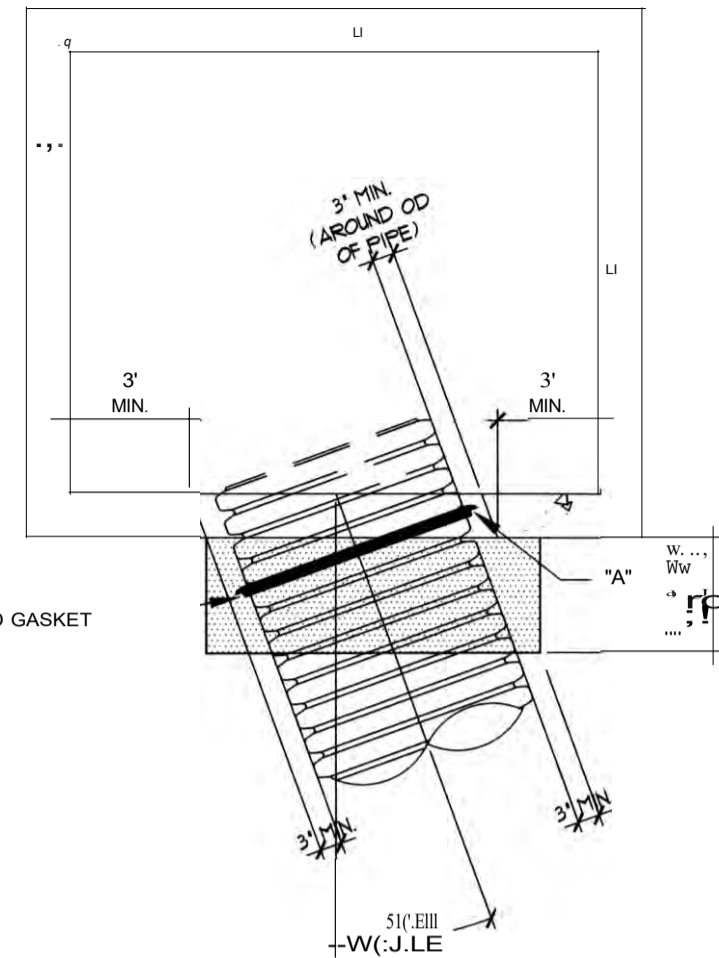
SECTION A-A
SC: 3/4"=1'-0"



SECTION A-A
SC: 3/4"=1'-0"



SUPPORT ANGLE
SC: 3/4"=1'-0"



HDPE PIPE COLLAR DETAIL
(NOT TO SCALE)

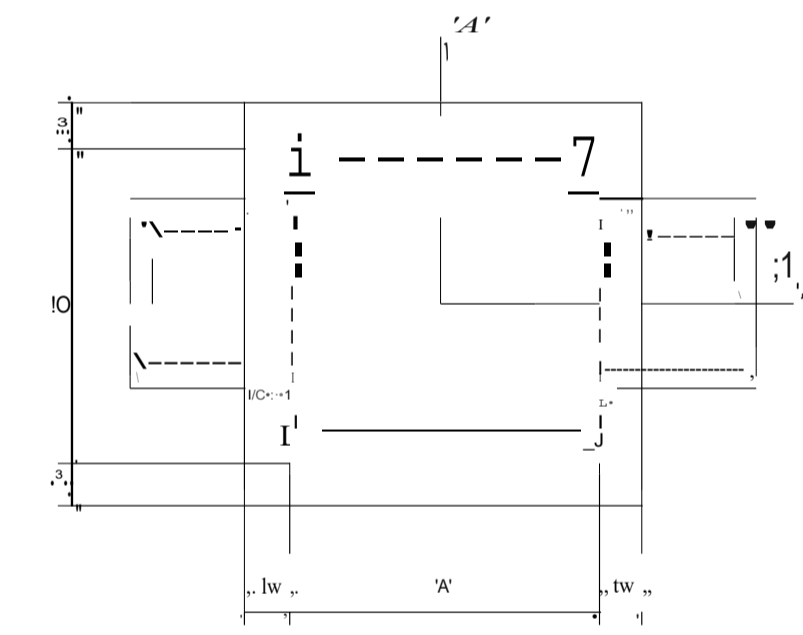
DETAIL FOR NON-SHRINK GROUT COLLAR FOR SKEWED HDPE PIPE TO STRUCTURE CONNECTIONS.

1. PRECAST OPENING SHOULD BE LARGE ENOUGH TO PROVIDE ACCESS TO GROUT GAP BETWEEN PIPE AND STRUCTURE WALL. 3" MINIMUM SPACE SHOULD BE PROVIDED AT LOCATIONS IDENTIFIED ON DIAGRAM.
2. ENSURE THE SURFACES TO BE IN CONTACT WITH GROUT ARE CLEAN AND FREE OF OILS, DUST & DIRT.
3. INSTALL WATER STOP GASKET IN CORRUGATION VALLEY SUCH THAT POINT "A" IS IN THE MIDDLE OF THE STRUCTURE CROSS SECTION.
4. GROUT IN PIPE-STRUCTURE GAP USING NON-SHRINK GROUT.
5. IF GASKET IS EXPOSED ON OUTSIDE OF STRUCTURE OVER POUR NON-SHRINK GROUT COLLAR PER THE DIMENSION DEFINED BY THE DRAWING AT LEFT AND THE TABLE BELOW AS APPLICABLE.
6. TRIM INSIDE PIPE FLAT WITH WALL AND FILL CORRUGATION HOLES WITH NON-SHRINK GROUT A MINIMUM OF 6" DEEP.
7. THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IF THE NON-SHRINK GROUT COLLAR CANNOT BE INSTALLED AS SPECIFIED IN THE DETAIL.

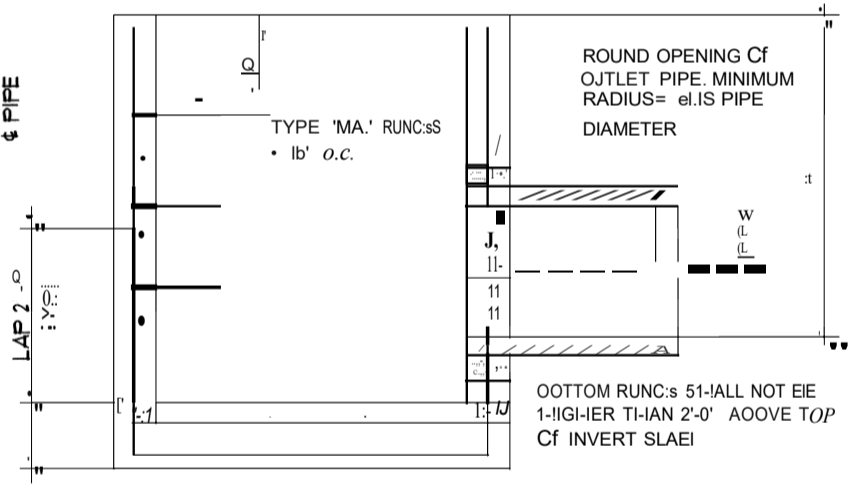
PIPE ID (OD)	MINIMUM JACKET THICKNESS (THK.)				
	SKEW ANGLE (DEGREES)				
	<15	15-20	>20-30	>30-40	>40-45
12" (15")	4"	5"	8"	10"	11"
18" (21")	6"	7"	11"	14"	15"
24" (28")	7"	10"	14"	18"	20"
30" (36")	10"	12"	18"	23"	26"
36" (42")	11"	15"	21"	27"	30"
42" (48")	13"	17"	24"	31"	34"
48" (55")	14"	19"	28"	36"	39"
54" (61")	16"	21"	31"	40"	43"
60" (67")	18"	23"	34"	43"	48"

CA&I-IN-1-ACE DEIAI1-S !=OR DRAIN IN1-Ei NOI IN AVEMENI

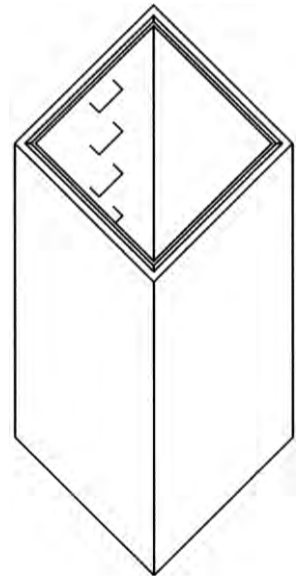
SC: 3/4"=1'-0"



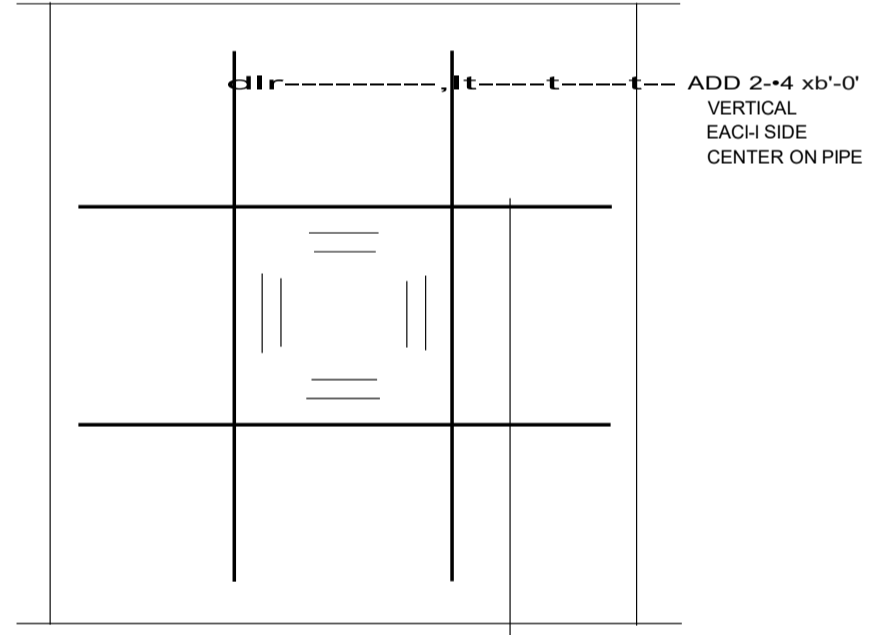
SECTION A-A



SECTION A-A



ISOMETRIC
N.T.S.



ADDED REBAR
AI IE ASOVE INVERI

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

RECA&I DRAIN IN1-Ei DEIAI1- <SiAiE)

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

- NOTES.**
- 1) FOR DIMENSIONS / REINF. SEE, DETAIL A/S-6.
 - 2) FOR GRATING SEE, DETAIL A/S-6.
 - 3) SEE SHEET 5-1 FOR GENERAL NOTES / T,FICAL DETAILS.



G:-1 <TEM!=ORARY)



SECTION A-A
N.T.S.

1-cEIN O!icCING SCI-4EDUL.E					
MAF-cC.	II+I MAX.	IIAII	IIeII	tw	INVE-cT TMIC..
G-1	S.S2'	3'-b'	1'-0'	b'	10'
FS-1	S.01'	3'-6'	3'-6'	b'	10'

THIS DRAWING WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
H0000UU, EWA, OAHU, HAWAII
(OPP SUBD. FILE NO. 2017/suB-37)
OWNER: THE HONOLULU DEPARTMENT OF HAWAIIAN HOME LANDS
TAX ID# KEY: 9-1-17: Portion 110

DRAIN INLET C.I.P. & PRECAST DETAILS

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

APPROVED: [Signature]

CMU BASTAINING WAI.1.S

1. THE UPPER 12 INCHES OF BACKFILL BEHIND WALLS 51-111 CONSIST OF AN IMPERVIOUS, NON-EXPANSIVE, COHESIVE SOIL TO REDUCE SEEPAGE OF SURFACE WATER BEHIND WALLS. THE SAME IMPERVIOUS MATERIAL 51-111 BE PLACED IN A CONTINUOUS SECTION BELOW THE BOTTOM OF THE WEEP HOLES.

2. A 12" THICK MINIMUM SECTION OF CONTINUOUS DRAIN ROCK 51-111 BE PLACED ALONG THE ENTIRE LENGTH OF WALLS

3. 4" PVC WEEP HOLES 5FACED AT 6'-0" o.c. AND SLOPED TO DAYLIGHT 51-111 BE PLACED AT THE BOTTOM OF THE DRAIN ROCK LAYER AND ABOVE THE FINISH GRADE ON THE LOW SIDE.

4. DRAIN ROCK 51-111 BE WRAPPED IN A GEOTEXTILE FILTER FABRIC SUCH AS SUFAC 4NF AND 51-111 CONFORM TO THE FOLLOWING GRADATION:

SIEVE SIZE	% PASSING BY DRY WEIGHT
1-1/2 INCH	100
3/4 INCH	100
NO.4	0 - 50
NO.200	0-5

STANDARD SIZE AGGREGATES NO. 6, S1 AND 61 AND 1-112 INCH FILTER MATERIALS 51-111 5FACED AT 115 GRADATION REQUIREMENT.

5. AS AN ALTERNATIVE TO THE DRAIN ROCK, A PREFABRICATED DRAINAGE PRODUCT SUCH AS MIRADRAIN OR ENKADRAIN, MAY BE USED.

6. SEE FOUNDATION SECTION NOTES 2 AND 3 FOR BACKFILL REQUIREMENTS.

1. APPLY DAMP PROOFING AT THE WALL/FOOTING CONSTRUCTION JOINT. FLASHING COMPOUND 51-111 EXTEND 6 INCHES BEYOND EITHER SIDE OF THE JOINT. USE EMULSIFIED ASPHALT BY EUCLID CHEMICAL COMPANY OR APPROVED EQUAL.

8. THE WALL FACE ON THE BACKFILL SIDE 51-111 BE COATED WITH DAMPROOFING. USE EMULSIFIED ASPHALT BY EUCLID CHEMICAL COMPANY OR APPROVED EQUAL.

9. BACKFILL 51-111 BE PLACED 21 DAYS AFTER GROUTING THE WALL OR AFTER THE GROUT HAS ATTAINED A MINIMUM COMPRESSIVE STRENGTH OF 1815 F51.

FOUNDATION

1. THE FOUNDATION DESIGN IS BASED ON THE RECOMMENDATIONS IN THE FOUNDATION INVESTIGATION FOR TI-15 PROJECT BY F5C CONSULTANTS, LLC, JOB NO. 216302.10 TITLED SUPPLEMENTAL GEOTECHNICAL EXPLORATION REPORT - DEPARTMENT OF HAWAIIAN HOMELANDS (DI-11-11) - PROPOSED EAST KAPOLEI PHASE II DEVELOPMENT - INCREMENT 2C AND ROAD EXTENSION - HONOLULU, EWA, OAHU, HAWAII AND DATED OCTOBER 2016. UNLESS OTHERWISE INDICATED FOUNDATION WORK 51-111 BE PERFORMED IN ACCORDANCE WITH THE REPORT. THE REPORT IS PART OF TI-15 FLAN AND 51-111 BE KEPT ON THE JOB SITE AT ALL TIMES.

2. ALL FOOTINGS 51-111 BEAR ON 24 INCHES SELECT BORROW OR GRANULAR MATERIAL COMPACTED TO 85 PERCENT OF MAXIMUM DRY DENSITY. SELECT BORROW 51-111 BE COMPOSED OF NON EXPANSIVE SELECT MATERIAL, LESS THAN 3 INCHES IN MAXIMUM DIMENSION WITH PLASTICITY INDEX NOT GREATER THAN 15, MAXIMUM 20% PASSING THE #200 SIEVE.

3. BACKFILL MATERIAL BEHIND WALLS 51-111 BE IMPORTED SELECT GRANULAR MATERIALS COMPACTED TO 85 PERCENT OF MAXIMUM DRY DENSITY. DO NOT OVERCOMPACT BACKFILL.

4. ALL WATER, MUD AND DEBRIS 51-111 BE REMOVED FROM THE BOTTOM OF FOOTING EXCAVATIONS PRIOR TO THE PLACEMENT OF CONCRETE.

5. CONTRACTOR 51-111 NOTIFY F5C CONSULTANTS LLC, 3 WORKING DAYS PRIOR TO BEGINNING ANY FOUNDATION WORK (BOTTOM OF FOOTING, STRUCTURAL FILL, ETC.).

REINFORCED CONCRETE

1. ALL CONCRETE WORK 51-111 CONFORM TO ACI 318-08.

2. ALL CONCRETE 51-111 BE NORMAL WEIGHT (ISO FCF) WITH 1 AGGREGATES CONFORMING TO ASTM C-33. UNLESS OTHERWISE NOTED, THE COMPRESSIVE STRENGTH OF CONCRETE AT 28 DAYS AND MAXIMUM AGGREGATE SIZE 51-111 BE AS FOLLOWS,

STRENGTH	AGGREGATE SIZE
2,00 F51	3/4"

3. MAXIMUM WATER-CEMENT RATIO 51-111 NOT EXCEED 0.55.

4. ALL REINFORCING STEEL 51-111 CONFORM TO ASTM A615 GRADE 60. EXCEPT WELDED REBAR 51-111 CONFORM TO ASTM A106.

5. UNLESS OTHERWISE NOTED, 5FLICES, LAF5, DOWEL EXTENSIONS AND EMBEDMENTS 51-111 BE 48 BAR DIAMETERS MINIMUM, BUT NOT LESS THAN 2'-0"

6. ALL REINFORCING BARS MARKED CONTINUOUS (CON'T) ON THE FLANS 51-111 BE LAPPED 48 BAR DIAMETERS MINIMUM, BUT NOT LESS THAN 2'-0"

1. STAGGER ALL 5FLICES WHERE POSSIBLE.

8. ALL WELDING OF REINFORCING 51-111 CONFORM TO STRUCTURAL WELDING CODE - REINFORCING STEEL (AWS DIA).

9. REBAR 51-111 BE SUPPORTED, BENT AND PLACED AS PER MANUAL OF STANDARD PRACTICE FOR DETAILING CONCRETE STRUCTURES' ACI 318 - LATEST J.

10. MINIMUM COVER IN INCHES FOR REBAR FOR CAST-IN-PLACE CONCRETE,

CONCRETE CAST AGAINST EARTH 3"

FORMED CONCRETE EXPOSED TO EARTH OR WEATHER, IS AND SMALLER 1-1/2"

11. AT TIME CONCRETE IS PLACED, REINFORCING 51-111 BE FREE FROM MUD, OIL, LANTAGE OR OTHER COATINGS ADVERSELY AFFECTING BOND CAPACITY.

12. REINFORCEMENT, ANCHOR BOLTS, DOWELS AND ALL OTHER EMBEDDED ITEMS 51-111 BE POSITIVELY SECURED BEFORE POURING.

CONCRETE MASONRY - CMU

1. CONCRETE BLOCK, GRADE N, NORMAL WEIGHT UNITS CONFORMING TO ASTM C90 WITH A MINIMUM COMPRESSIVE STRENGTH OF 1500 F51.

2. MORTAR 51-111 BE MORTAR CEMENT, TYPE M OR S CONFORMING TO ASTM C210. MORTAR 51-111 ATTAIN A MINIMUM COMPRESSIVE STRENGTH OF 1500 F51 AT 28 DAYS.

3. GROUT, CONFORMING TO ASTM C416, MINIMUM COMPRESSIVE STRENGTH OF 2500 F51 AT 28 DAYS. COARSE GROUT 51-111 BE A MIX OF 1 PART CEMENT, 3 PARTS SAND, 2 PARTS FEA GRAVEL, TO BE OF FLUID CONSISTENCY (5" MINIMUM SLUMP).

4. THE THICKNESS OF GROUT BETWEEN BLOCK UNITS AND REINFORCING STEEL 51-111 BE NOT LESS THAN 1/2", BETWEEN PARALLEL REINFORCING BARS, NOT LESS THAN 3/4".

5. IF WORK IS STOPPED ONE HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINTS BY STOPPING THE GROUT 1-1/2" BELOW THE TOP OF THE BLOCK.

6. ALL CELLS 51-111 BE GROUTED SOLID. GROUT IN LIFTS NOT TO EXCEED 6'-0".

1. GROUT 51-111 BE VIBRATED 3 TO 5 MINUTES AFTER POUR.

8. UNLESS NOTED OTHERWISE ALL WALLS 51-111 BE CONSTRUCTED IN CONVENTIONAL RUNNING BOND.

9. PROVIDE CONTROL JOINTS AT THE FOLLOWING: WALL HEIGHT CHANGES GREATER THAN 2'-0" WALL THICKNESS CHANGES (THOUGH NOT AT PILASTERS) AT CONTROL JOINTS IN FOUNDATION, SLAB OR ROOF AT 60'-0" O.C. MAXIMUM

REINFORCING FOR CONCRETE MASONRY

1. ALL REINFORCING STEEL BARS 51-111 CONFORM TO ASTM A615 GRADE 60.

2. UNLESS OTHERWISE NOTED, 5FLICES, LAF5, DOWEL

EXTENSIONS AND EMBEDMENTS 51-111 BE 40 BAR DIAMETERS.

3. WHEREVER POSSIBLE, BOND BEAMS OF INTERSECTING WALLS 51-111 BE CONSTRUCTED AT THE SAME ELEVATION. WHERE BOND BEAMS OF INTERSECTING WALLS DO NOT MATCH, BOND BEAM REINFORCING 51-111 BE EMBEDDED INTO THE INTERSECTING WALL A MINIMUM OF 40 BAR DIAMETERS AND GROUTED.

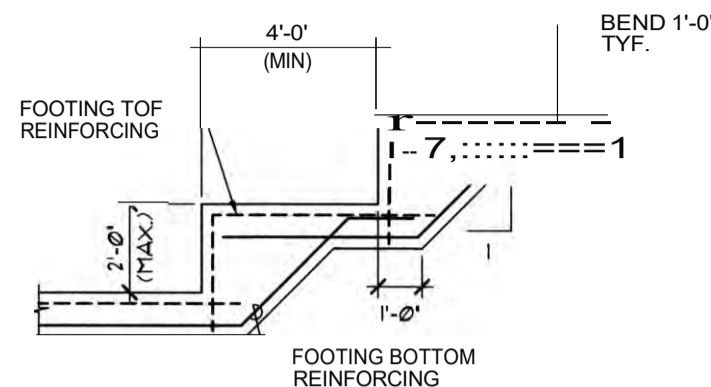
DESIGN CRITERIA

1. CODES: 2006 INTERNATIONAL BUILDING CODE
2005 ACI 318 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE
2002 ACI 318-02 BUILDING CODE REQUIREMENTS FOR MASONRY STRUCTURES

CONCRETE
f_c = 2,00 F51
F = 60 (100 F51)
CONCRETE MASONRY
f_m = 1,000 F51
F_s = 24 (100 F51)

2. FOUNDATION DESIGN CRITERIA

ALLOWABLE BEARING PRESSURE 2,00 F5F
LEVEL BACKFILL 3S FCF
ACTIVE PRESSURE
PASSIVE RESISTANCE PRESSURE 2.0 FCF (NEGLECT TOP 12")
COEFFICIENT OF FRICTION 0.25



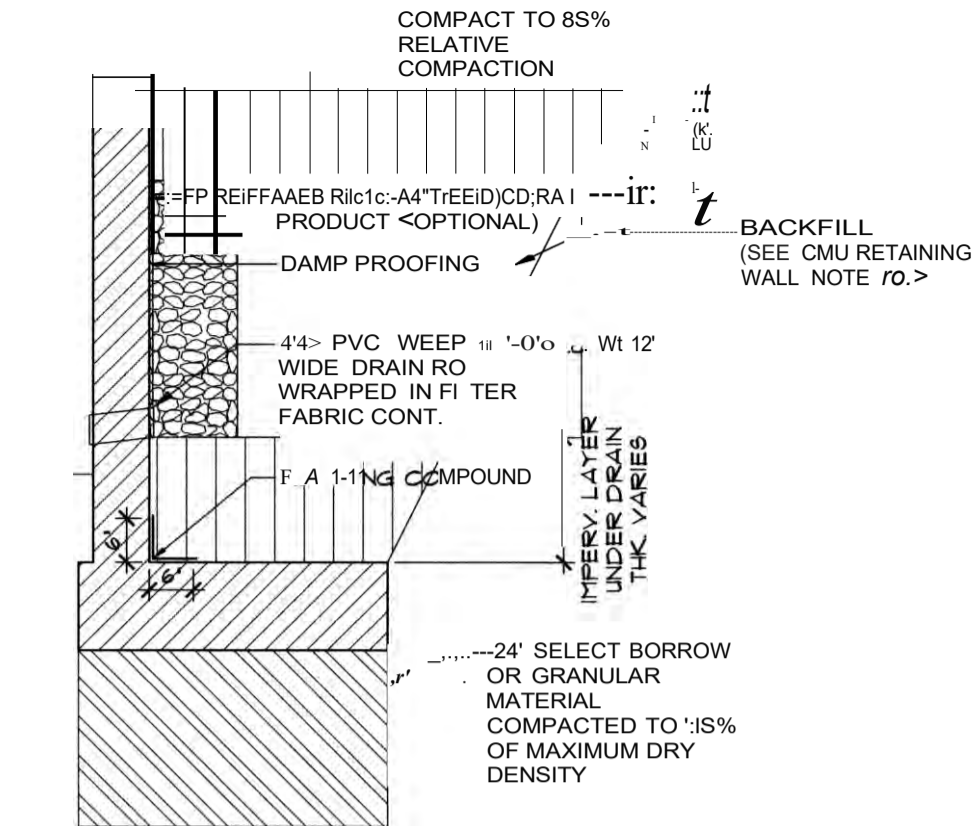
NOTE: STEEP NOT ALLOWED IN COLUMN FOOTINGS

STEPPED FTG.

NO SCALE

A

5-1

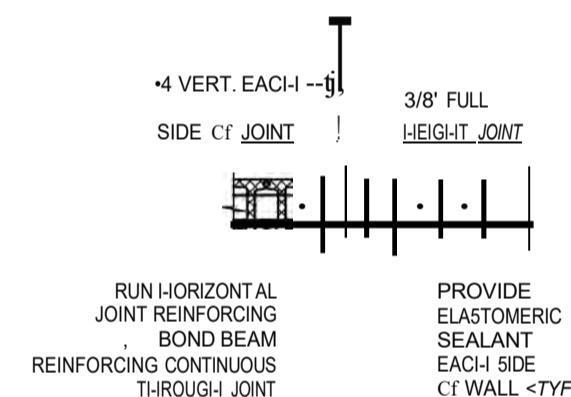


TY. RET. WALL DET.

NO SCALE

e

5-1

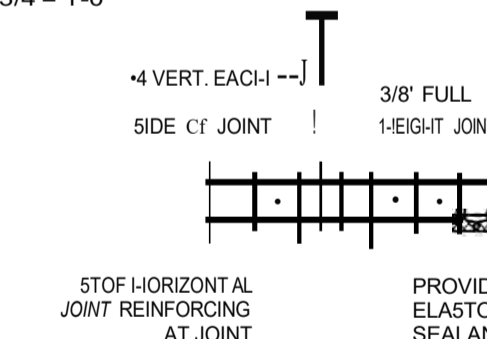


WALL CONTROL JOINT (W.J.)

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

C

5-1



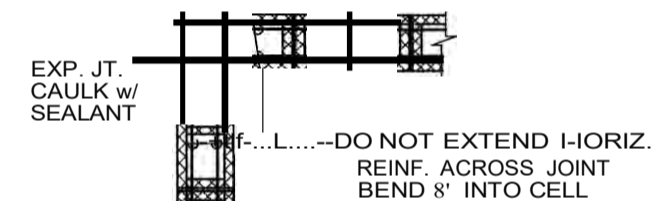
NOTE: 5FACE EXPANSION JOINTS NOT MORE THAN 5 FEET APART

WALL EXPANSION JOINT (E.J.)

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

E

5-1



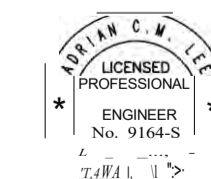
COND. AT CORNER

TY. CORNER JOINT

SC, 3/4" = 1'-0"

D

5-1



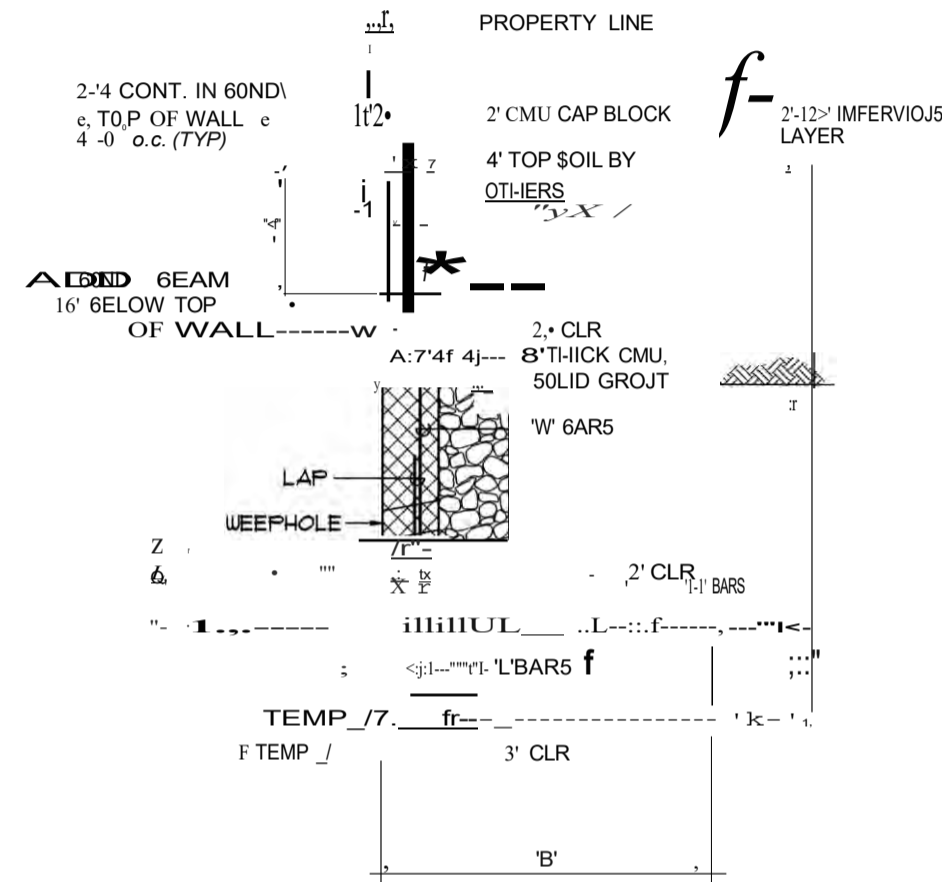
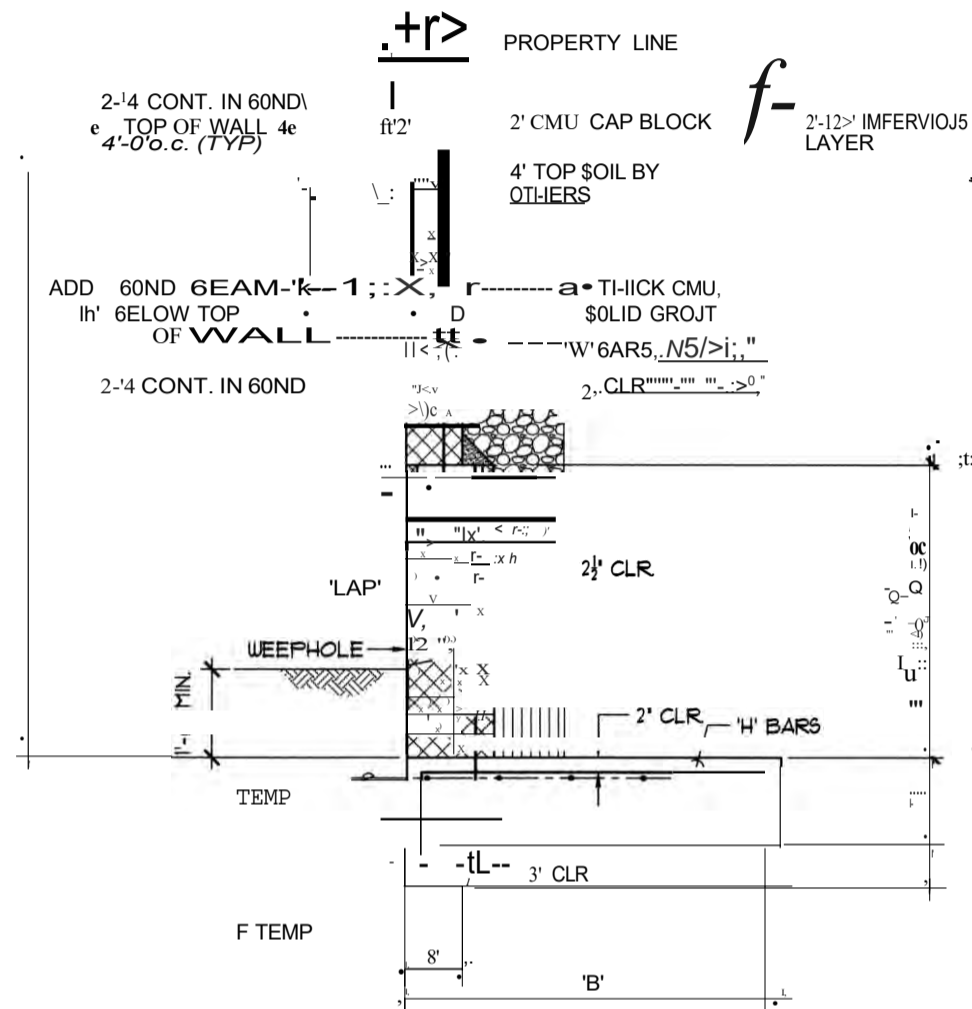
Adrian Lee 1/24/22

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

REVISION DATE	DISCIPLINE	BY
Community Planning and Engineering, Inc. Engineering Design Construction Management Infrastructure Planning 1286 Queen Emma Street Honolulu, Hawaii		
EAST KAPOLEI II DEVELOPMENT INCREMENT 2C HONOLULU, EWA, OAHU, HAWAII (OPP SUBD. FILE NO. 2017/SUB-37) OWNER: DEPARTMENT OF HAWAIIAN LANDS TAX MAP KEY: 9-1-17: Portion 110		
RETAINING WALL NOTES & DETAILS		
DESIGNED BY: NL	ENGINEER: RR	CHECKED BY: NL
APPROVED:		

RETAINING: WAI... oC!-1EDU...E

MARK	'1-1'	'19'	'K'	'T'	'U.J' SAR&	'L' bar	'H' bar	P: TEMP	TEMP	LAP
RW600	4'-8" < 1-1 § 6'-12"	4'-3'	12' > 6'	1-12'	14 B16' o.c.	14 616' o.c.	14 618' o.c.	14 CONT.	14 CONT. e 12'o.c.	2-12'
RW 4.61	< 4'-8"	4'-2'	-	1-12'	14 616' o.c.	14 616' o.c.	14 ea• o.c.	14 CONT.	14 CONT. e 12'o.c.	2-12'



RETAINING: WAI... SECTION RW6.00 **A**
5C: 3/4"=1'-0" 5-8

RETAINING: WAI... SECTION RW4. 1 **E**
5C: 3/4"=1'-0" 5-8



Adrian Lee 1/14/22
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Community Planning and Engineering, Inc.
Engineering Design | Construction Management | Infrastructure Planning
1286 Queen Emma Street Honolulu, Hawaii

EAST KAPOLEI II DEVELOPMENT INCREMENT 2C
HONOLULU, EWA, OAHU, HAWAII
(DPP SUBO. FILE NO. 2017/SUB-37)
OHR & IIEVUFR: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX IAP KEY: 9-1-17: Portion 110

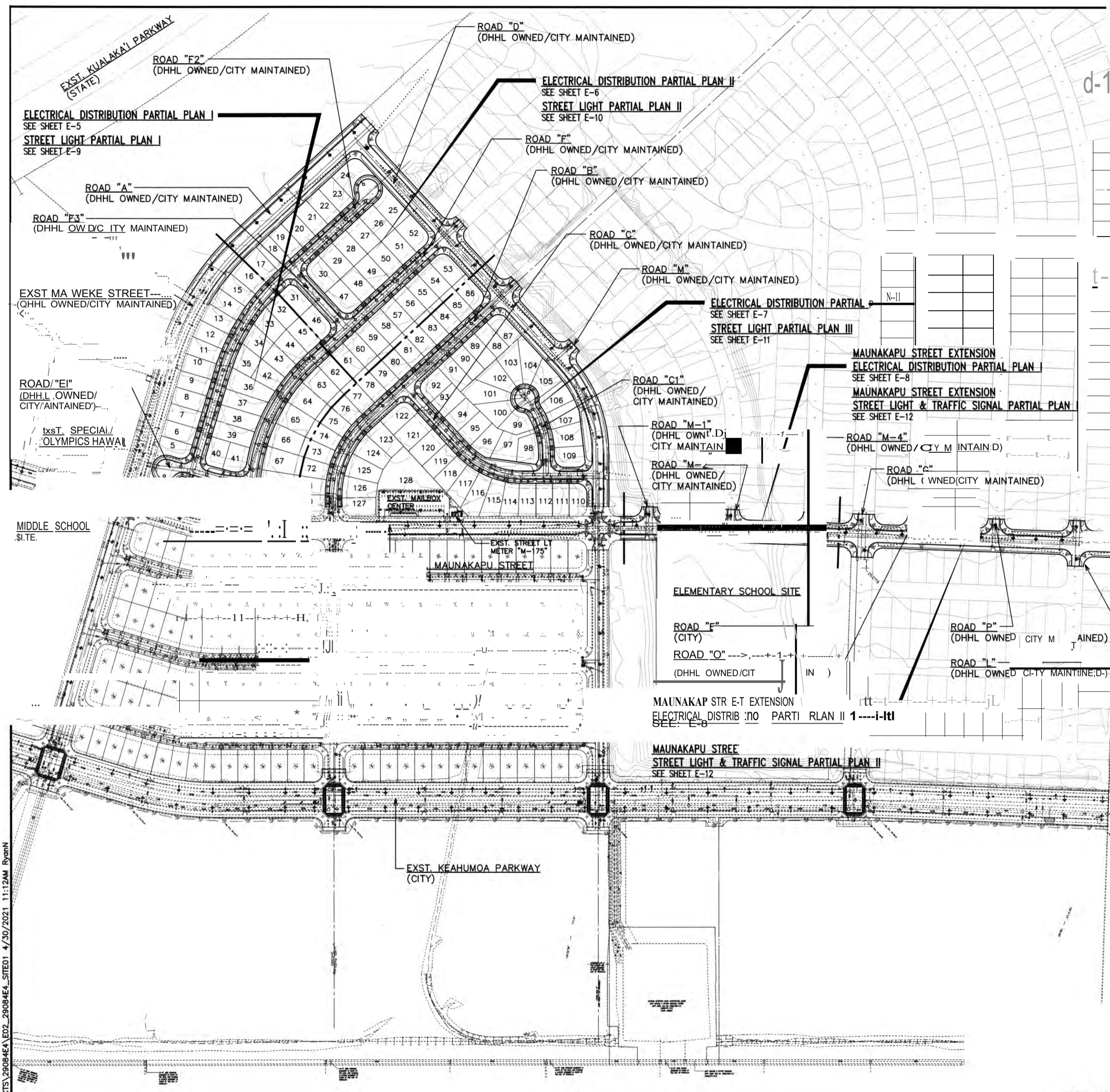
RETAINING WALL SECTIONS

ORAIN BY: AL ENGINEER: RR CHECKED BY: AL
APPROVED:

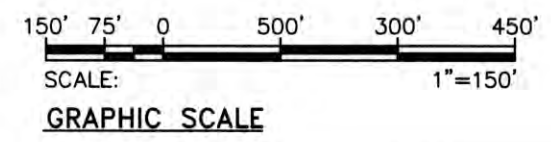
EQUIPMENT SCHEDULE

1 THE HAWAIIAN ELECTRIC CO. (HECO), SANDWICH ISLES COMMUNICATIONS, INC. (SIC), COMMUNITY ANTENNA TELEVISION, TRAFFIC SIGNAL & STREET LIGHTING PULLBOXES, HANDHOLE, TRANSFORMER PAD LOTS & SWITCHING EQUIPMENT PAD LOTS SHALL BE CONSTRUCTED BY THE CONTRACTOR AS SHOWN IN THESE DRAWINGS & IN ACCORDANCE WITH THE FOLLOWING STANDARD DRAWINGS:

QTY.	DESCRIPTION	QTY.	DESCRIPTION
1	13" X 24" HECO PULLBOX	3	3'-9" X 5'-9" X 3'-10 1/2" REINFORCED CONCRETE HANDHOLE WITH TWO PIECE HINGED NON-SI-ID TRAmc RATED FRAME AND COVERS, sic INSCRIBED ON COVERS, PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UH3x5.
1	17" X 30" HECO PULLBOX	4	4' X 6' COMMUNICATION HANDHOLE
2	2' X 4' HECO PULLBOX	TYPE "A"	TYPE "A" PRECAST CONCRETE PULLBOX WITH POLYMER CONCRETE COVER PROVIDED IN ACCORDANCE WITH C&C OF HONOLULU, DEPARTMENT OF TRANSPORTATION SERVICES.
1	3' X 5' HECO HANDHOLE	TYPE "B" TRAmc SIGNAL PULLBOX (CITY & COUNTY)	TYPE "B" PRECAST CONCRETE PULLBOX WITH POLYMER CONCRETE COVER PROVIDED IN ACCORDANCE WITH C&C OF HONOLULU, DEPARTMENT OF TRANSPORTATION SERVICES.
4	4' X 6' HECO HANDHOLE	TYPE "c" TRAmc SIGNAL PULLBOX (CITY & COUNTY)	TYPE "c" PRECAST CONCRETE PULLBOX WITH POLYMER CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH C & C OF HONOLULU DEPARTMENT OF TRANSPORTATION SERVICES STANDARD DRAWINGS.
5	5' X 8' HECO HANDHOLE	6' X 7' HECO TRANSFORMER PAD LOT	6' X 7' TRANSFORMER PAD LOT WITH REINFORCED CONCRETE TRANSFORMER PAD AND GROUND ROD PER HECO STANDARD DRAWING NOS. 30-5001 & 011249.
6	6' X 11' HECO MANHOLE	2' X 4' CATV PULLBOX	2'-0" X 4'-0" PRECAST CONCRETE PULLBOX WITH TWO-PIECE "NON-SUP" POLYMER "PARKWAY"-RATED COVERS, SIMILAR TO HECO 2' X 4' PULLBOX, HECO DRAWING NO. 34056, EXCEPT WITH "CATV" INSCRIBED ON COVER.
1	TYPE "B" ST. LT. PULLBOX (CITY & COUNTY)	3 X 5 CATV HANDHOLE	3'-0" X 5'-0" REINFORCED PLASTIC HANDHOLE WITH TWO-PIECE "NON-SUP" POLYMER "PARKWAY"-RATED COVERS, SIDE ENTRY KNOCKOUTS, GROUND ROD, SIMILAR TO HECO DRAWING NO. 34110 FOR AREAS NOT SUBJECT TO TRAmc, EXCEPT WITH "CATV" INSCRIBED ON COVER.
1	"30" X 48" COMMUNICATION HANDHOLE		
	2'-6" X 4'-0" X 2'-9" POLYMER CONCRETE HANDHOLE WITH NON-SI-ID SURFACE POLYMER CONCRETE 20K TRAmc RATED COVERS, sic INSCRIBED ON COVERS, PROVIDED IN ACCORDANCE WITH SANDWICH ISLES COMMUNICATIONS REQUIREMENTS, TYPE UHC 30x48x33.		



ELECTRICAL SITE PLAN
SCALE: 1"=150'



DRAWING REVIEW
Reviewed for Hawaiian Electric Company Facilities Only
Req# 6068454 By *[Signature]*, U.C. Date 4/29/21
Customer **In ons** Department
Hawaiian Electric



30 APRIL 2021
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

REVISION DATE	DESCRIPTION
CP&E	
EAST KAPOLEI I DEVELOPMENT INCFBENT 2C	
HONOLULULI, EWA, OAHU, HAWAII (DP SUBD. FILE NO. 2D19/SUB-171) OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17-PORTION 161	
ELECTRICAL SITE PLAN & SaEDIE	
DRAWN BY: CAD	ENGINEER: GF
APPROVED:	CHECKED BY: GF
 DATE: 4/29/21 DATE: 2/10/22 DATE: 5/24/21	
PROGRAM MANAGER: MEDHICAL/ELECTRICAL DIVISION, D.D.C.	

Z:\ACAD\PROJECTS\29084E4 ED2-29084E4-SITE01 4/30/2021 11:12AM RyanM

1 LOCAIDI <S> WAINI aa:TIIEFAaJIBI

THE LOCATION OF HAWAIIAN ELECTRIC'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN.

2. CXU'U.Wa:E MTH HAWAI CXXI'AI'DW.. SAFETY AIIJIEAL.IH 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.

a EXCAVA'ON a.El.wa:E

THE CONTRACTOR SHALL OBTAIN AN EXCAVATION CLEARANCE FROM HAWAIIAN ELECTRIC'S PLANNING AND DESIGN SECTION OF THE TRANSMISSION & DISTRIBUTION ENGINEERING DEPARTMENT (543-5654) LOCATED AT 820 WARD AVENUE, 4TH FLOOR, A MINIMUM OF TEN (10) WORKING DAYS PRIOR TO STARTING CONSTRUCTION.

4. CNJIDI B.ECTICAL HAZAIDI

EXISTING HAWAIIAN ELECTRIC OVERHEAD AND UNDERGROUND LINES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION UNLESS PRIOR SPECIAL ARRANGEMENTS HAVE BEEN MADE WITH HAWAIIAN ELECTRIC.

5. O'SIEAD I.NB

STATE LAW (OSHA) REQUIRES THAT A WORKER AND THE LONGEST OBJECT HE OR SHE MAY CONTACT CANNOT COME CLOSER THAN A SPECIFIED MINIMUM RADIAL CLEARANCE WHEN WORKING CLOSE TO OR UNDER ANY OVERHEAD LINES.

AT ANY TIME SHOULD THE CONTRACTOR ANTICIPATE THAT HIS WORK WILL RESULT IN THE NEED TO ENCR OACH WITHIN THE MINIMUM REQUIRED CLEARANCE AS STATED IN THE LAW, THE CONTRACTOR SHALL NOTIFY HAWAIIAN ELECTRIC AT LEAST THREE (3) MONTHS PRIOR TO THE PLANNED ENCR OACHMENT SO THAT, IF FEASIBLE, THE NECESSARY PROTECTIONS (E.G. RELOCATE OR DE-ENERGIZE HAWAIIAN ELECTRIC LINES) CAN BE INVESTIGATED.

CONTACT HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS AT 543-7070 FOR ASSISTANCE IN IDENTIFYING AND SAFEGUARDING OVERHEAD POWER LINES.

6. PW:IRACId

a) CONTRACTOR SHALL NOT EXCAVATE WITHIN 10 FEET OF HAWAIIAN ELECTRIC'S UTILITY POLES OR ANY ANCHOR SYSTEM SUPPORTING THE UTILITY POLE. IF CONTRACTOR MUST EXCAVATE AN AREA MORE THAN 12 INCHES DEEP BY 12 INCHES WIDE, AND CLOSER THAN 10 FEET FROM A UTILITY POLE OR ITS ANCHOR SYSTEM, CONTRACTOR WILL BE RESPONSIBLE FOR PROTECTING, SUPPORTING, SECURING AND TAKING ALL PRECAUTIONS TO PREVENT DAMAGE TO OR LEANING OF EXISTING POLES.

b) HAWAIIAN ELECTRIC MAY PROVIDE TO THE CUSTOMER INFORMATION RELATED TO POLE BRACING, INCLUDING CALCULATIONS AND OTHER BASIC ENGINEERING. HOWEVER, HAWAIIAN ELECTRIC PROVIDES THIS INFORMATION FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT WARRANT ANY OF THE INFORMATION PROVIDED TO CUSTOMER.

7. IK>ERCR(IK) I.H:8

THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES. HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL CABLES ARE ENERGIZED AND WILL REMAIN ENERGIZED DURING CONSTRUCTION.

SPECIAL PRECAUTIONS ARE REQUIRED WHEN EXCAVATING NEAR HAWAIIAN ELECTRIC'S 138KV OR 46KV UNDERGROUND LINES (SEE HAWAIIAN ELECTRIC INSTRUCTIONS TO CONSULTANTS/CONTRACTORS ON "EXCAVATION NEAR HAWAIIAN ELECTRIC'S UNDERGROUND 138KV AND/OR 46KV 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.

8. IIE>ERGROIK) RB. PFELJES

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

9. EXCAVATIONS

WHEN TRENCH EXCAVATION IS ADJACENT TO OR BENEATH HAWAIIAN ELECTRIC'S EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR:

- a) ARRANGING FOR HAWAIIAN ELECTRIC STANDBY PERSONNEL TO OBSERVE WORK AT CONTRACTOR'S COST.
b) SHEETING, BRACING, OR OTHERWISE SUPPORTING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE AND TO PREVENT POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENTS.
c) PROPERLY SUPPORTING EXISTING STRUCTURES OR FACILITIES WITH BEAMS, STRUTS, UNDER-PINNINGS, OR OTHER NECESSARY METHODS TO FULLY PROTECT IT FROM DAMAGE.
d) BACKFILLING WITH PROPER BACKFILL MATERIAL INCLUDING SPECIAL THERMAL BACKFILL WHERE EXISTING (REFER TO ENGINEERING DIVISION FOR THERMAL BACKFILL SPECIFICATIONS).

10. FELOCATION OF HAWAIIAN B...ECTRIC FACUTE8

ANY WORK REQUIRED TO RELOCATE OR MODIFY HAWAIIAN ELECTRIC FACILITIES SHALL BE DONE BY HAWAIIAN ELECTRIC, OR BY THE CONTRACTOR UNDER HAWAIIAN ELECTRIC'S SUPERVISION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COORDINATION, AND SHALL PROVIDE NECESSARY SUPPORT FOR HAWAIIAN ELECTRIC'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, AND 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 HIS WORK IN A SAFE AND EXPEDITIOUS MANNER IN FULFILLING HIS CONTRACT OBLIGATIONS SHALL BE BORNE BY THE CONTRACTOR.

ii CON9.JCTS

ANY REDESIGN OR RELOCATION OF HAWAIIAN ELECTRIC'S FACILITIES NOT SHOWN ON THE PLANS MAY BE CAUSE FOR LENGTHY DELAYS. THE CONTRACTOR ACKNOWLEDGES THAT HAWAIIAN ELECTRIC 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 HAWAIIAN ELECTRIC'S ELECTRICAL FACILITIES IN THE FIELD, REGARDLESS OF WHETHER THE CONTRACTOR HAS MET THE REQUESTED MINIMUM ADVANCE NOTICES.

12. DAMAGE TO HAWAIIAN B...ECTRIC FACUTE8

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL HAWAIIAN ELECTRIC SURFACE AND SUBSURFACE UTILITIES AND SHALL BE RESPONSIBLE FOR ANY DAMAGES TO HAWAIIAN ELECTRIC'S FACILITIES AS A RESULT OF HIS OPERATIONS. THE CONTRACTOR SHALL IMMEDIATELY REPORT SUCH DAMAGES OR ANY HAZARDOUS CONDITIONS RELATED TO HAWAIIAN ELECTRIC'S LINES TO HAWAIIAN ELECTRIC'S TROUBLE DISPATCHER AT 548-7961.

IN CASE OF DAMAGE OR SUSPECTED DAMAGE TO HAWAIIAN ELECTRIC'S FUEL PIPELINE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY HAWAIIAN ELECTRIC'S SECURITY COMMAND CENTER AT 543-7685 (A 24-HOUR NUMBER) SO HAWAIIAN ELECTRIC PERSONNEL CAN SECURE THE DAMAGED SECTION AND REPORT ANY OIL SPILLS TO THE PROPER AUTHORITIES. ALL COSTS ASSOCIATED WITH THE DAMAGE, REPAIR, AND OIL SPILL CLEANUP SHALL BE BORNE BY THE CONTRACTOR.

13. HAWAIIAN B...ECTRIC STAN>-BY PEIBOH3...

THE CONTRACTOR MAY REQUEST HAWAIIAN ELECTRIC TO PROVIDE AN INSPECTOR TO STAND-BY DURING CONSTRUCTION NEAR HAWAIIAN ELECTRIC'S FACILITIES. THE COST OF SUCH INSPECTION WILL BE CHARGED TO THE CONTRACTOR.

THE CONTRACTOR SHALL CALL HAWAIIAN ELECTRIC'S CUSTOMER RELATIONS AT 543-7070 A MINIMUM OF THREE (3) MONTHS IN ADVANCE TO ARRANGE FOR HAWAIIAN ELECTRIC STAND-BY PERSONNEL.

14. Cl.EARANCE8

THE FOLLOWING CLEARANCES SHALL BE MAINTAINED BETWEEN HAWAIIAN ELECTRIC'S OUCTLINE AND ALL ADJACENT STRUCTURES (CHARTED AND UNCHARTED) IN THE TRENCH:

Table with 5 columns: UNDERGROUND UTILITY, HAWAIIAN ELECTRIC DIRECT BURIED CABLE, HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT), HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT, APPLICABLE NOTES. Rows include HAWAIIAN ELECTRIC DB CONDUITS, HAWAIIAN ELECTRIC 3" ENCASEMENT, TELEPHONE/CATV DB, TELEPHONE/CATV DB DUCTS, TELEPHONE/CATV 3" ENCASEMENT, TRAFFIC SIGNAL, WATER DB (BWS OWNED), CUSTOMER OWNED WATER SERVICE LATERALS, WATER (CONCRETE JACKETED) (BWS OWNED), GAS DB, GAS (CONCRETE JACKETED), SEWER DB, SEWER (CONCRETE JACKETED), DRAIN, FUEL PIPELINES.

Table with 5 columns: UNDERGROUND UTILITY, HAWAIIAN ELECTRIC DIRECT BURIED CABLE, HAWAIIAN ELECTRIC DIRECT BURIED IN CONDUIT (NO CONCRETE ENCASEMENT), HAWAIIAN ELECTRIC 3" (MINIMUM) CONCRETE ENCASEMENT, APPLICABLE NOTES. Rows include HAWAIIAN ELECTRIC DB CONDUITS, HAWAIIAN ELECTRIC 3" ENCASEMENT, TELEPHONE/CATV DB, TELEPHONE/CATV DB DUCTS, TELEPHONE/CATV 3" ENCASEMENT, TRAFFIC SIGNAL, WATER DB (BWS OWNED), CUSTOMER OWNED WATER SERVICE LATERALS, WATER (CONCRETE JACKETED) (BWS OWNED), GAS DB, GAS (CONCRETE JACKETED), SEWER DB, SEWER (CONCRETE JACKETED), DRAIN, FUEL PIPELINES.

DRAWING REVIEW section containing review information for Hawaiian Electric Company Facilities, including reviewer name C. uc., date 4/29/21, and project details.

THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER & HAWAIIAN ELECTRIC OF ANY HEAT SOURCES (POWER CABLE DUCT BANK, STEAMLINE, ETC.) ENCOUNTERED THAT ARE NOT PROPERLY IDENTIFIED ON THE DRAWING.

15. NIEM-ITY

THE CONTRACTOR SHALL INDEMNIFY, DEFEND AND HOLD HARMLESS HAWAIIAN ELECTRIC 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.

ACC110NAL NOIES WIEN WORK INVOLVES CONSTRJCTION OF HAWAIIAN B...ECTRIC FACUTE8

16. SCI-EDU...E

CONTRACTOR SHALL FURNISH HIS CONSTRUCTION SCHEDULE SIX (6) MONTHS PRIOR TO STARTING WORK ON HAWAIIAN ELECTRIC FACILITIES. CONTRACTOR SHALL GIVE HAWAIIAN ELECTRIC, IN WRITING, THREE (3) MONTHS NOTICE TO PROCEED WITH HAWAIIAN ELECTRIC'S PORTION OF WORK.

17. AUTHOITY

ALL CONSTRUCTION, RESTORATION WORK, AND INSPECTION SHALL BE SUBJECT TO WHICHEVER GOVERNMENTAL AGENCY HAS AUTHORITY OVER THE WORK.

18. & ECAC..ATIONS

CONSTRUCTION OF HAWAIIAN ELECTRIC'S UNDERGROUND FACILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST REVISIONS OF HAWAIIAN ELECTRIC SPECIFICATIONS CS7001, CS7003, CS7202, CS9301, AND CS9401 AND APPLICABLE HAWAIIAN ELECTRIC STANDARDS.

19. CONSTRJCTION

CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT, AND SERVICES TO PROPERLY PERFORM AND FULLY COMPLETE ALL WORK SHOWN ON THE CONTRACT, DRAWINGS, AND SPECIFICATIONS. ALL MATERIALS SHALL BE NEW AND MANUFACTURED IN THE UNITED STATES OF AMERICA.

CONTRACTOR TO COORDINATE WORK TO BREAK INTO HAWAIIAN ELECTRIC'S EXISTING ELECTRICAL FACILITIES WITH HAWAIIAN ELECTRIC'S INSPECTION GROUP AT 543-2567 AT LEAST TEN (10) WORKING DAYS IN ADVANCE.

20. STAKEOUT

THE CONTRACTOR SHALL ARRANGE FOR TONEOUTS OF ALL UNDERGROUND FACILITIES AND SHALL STAKEOUT ALL PROPOSED HAWAIIAN ELECTRIC FACILITIES WITHIN THE PROJECT AREA SO AS TO NOT CONFLICT WITH ANY UTILITY (EXISTING OR PROPOSED) AND ANY PROPOSED CONSTRUCTION OR IMPROVEMENT WORK FOR VERIFICATION BY HAWAIIAN ELECTRIC BEFORE PROCEEDING WITH HAWAIIAN ELECTRIC WORK.

21. DUC11.N:S

ALL OUCTLINE INSTALLATIONS SHALL BE PVC SCHEDULE 40 ENCASED IN CONCRETE, UNLESS OTHERWISE NOTED. ALL COMPLETED OUCTLINES SHALL BE MANDREL TESTED BY THE CONTRACTOR IN THE PRESENCE OF HAWAIIAN ELECTRIC'S INSPECTOR USING HAWAIIAN ELECTRIC'S STANDARD PRACTICE.

22. JONT POLE FEMOVAL

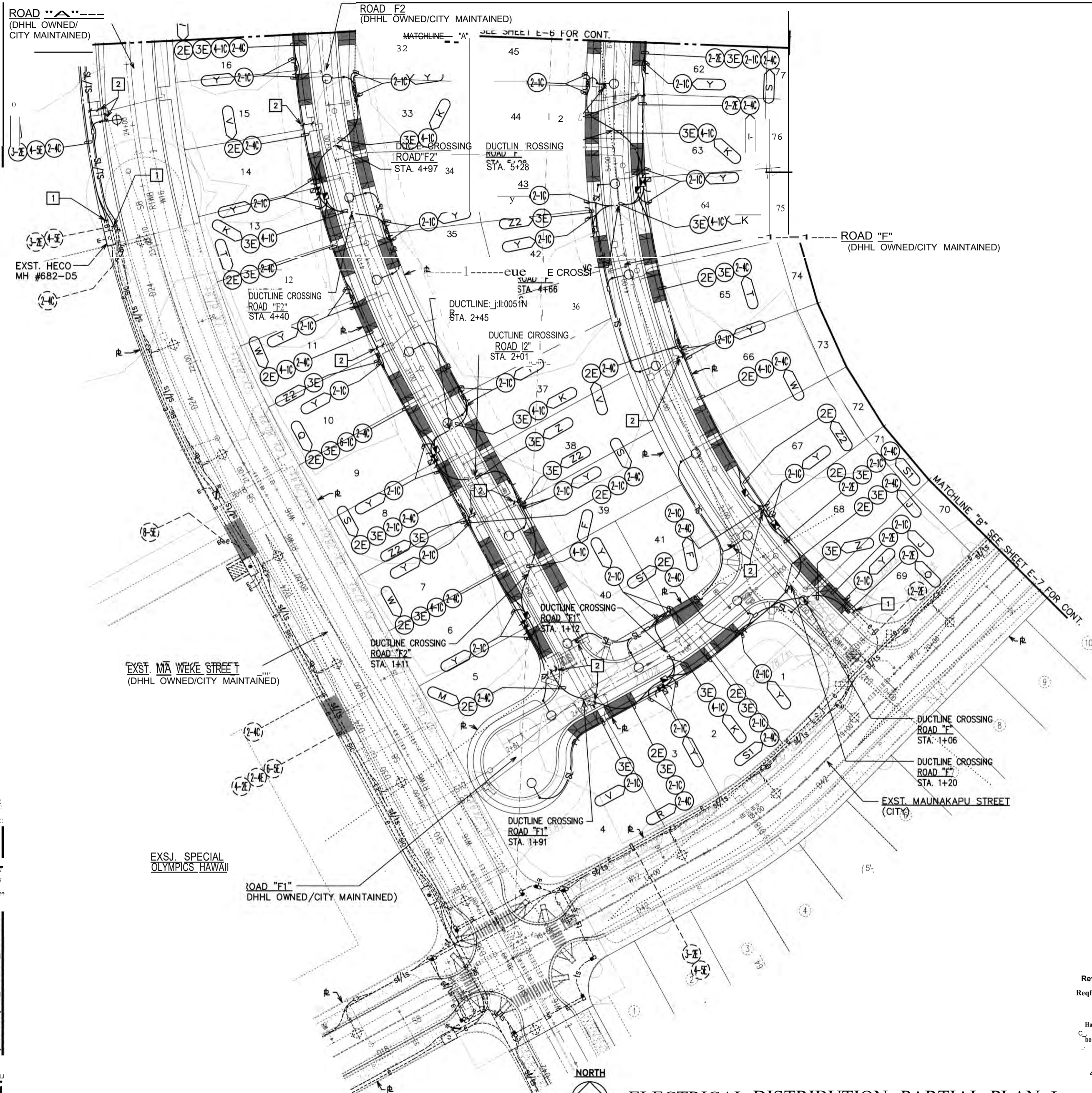
THE LAST JOINT POLE OCCUPANT OFF THE POLES SHALL REMOVE THE POLES.

23. A8-BILT PLANS

THE CONTRACTOR SHALL PROVIDE HAWAIIAN ELECTRIC WITH A SET OF ELECTRONIC AND HARD COPY PLANS OF EACH SHEET SHOWING THE OFFSETS, STATIONING, AND VERTICAL ELEVATION OF THE DUCT LINE(S) CONSTRUCTED.

Professional Engineer stamp for Community Planning and Development, Inc. (No. 4195-E) and EAST KAPOLEI I DEVELOPMENT INCRE NT 2C project information, including owner details and drawing notes.

Vertical text on the left margin: 4/29/2021 9:24AM RyanM



- NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:
1. BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
 2. BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
 3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

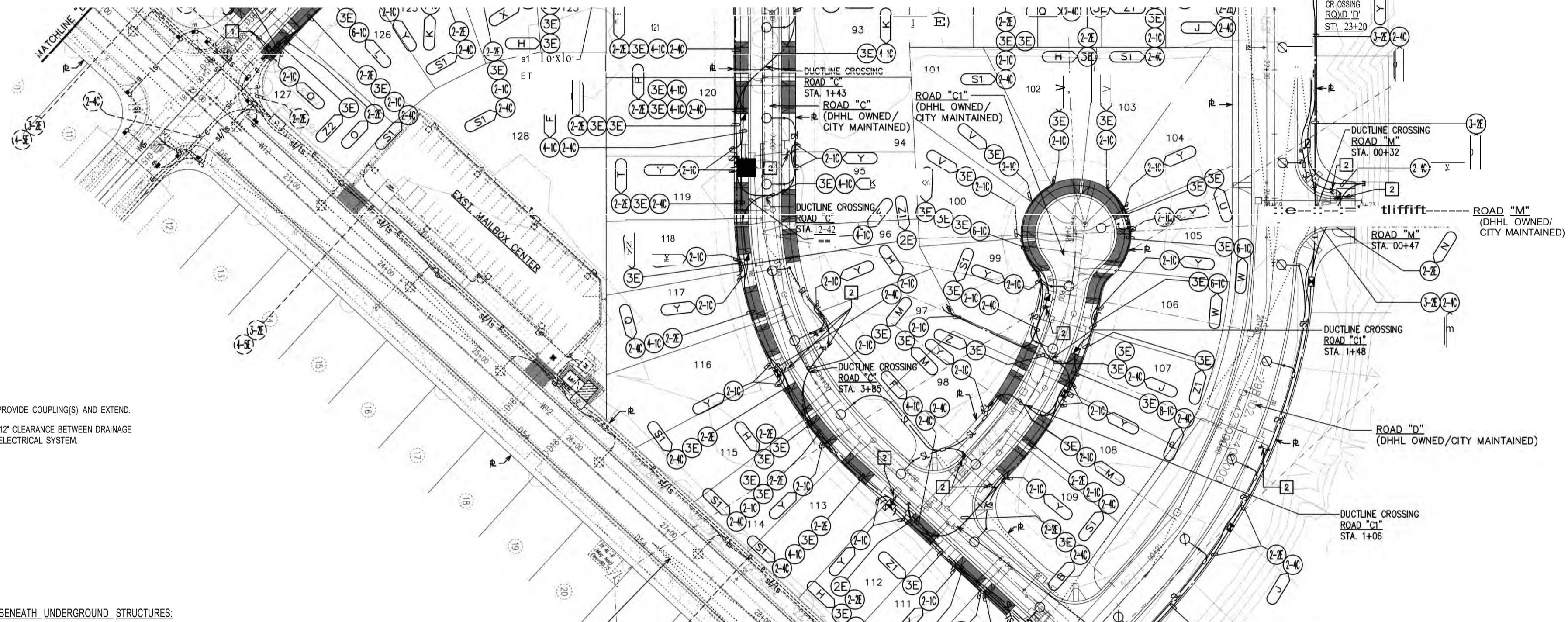
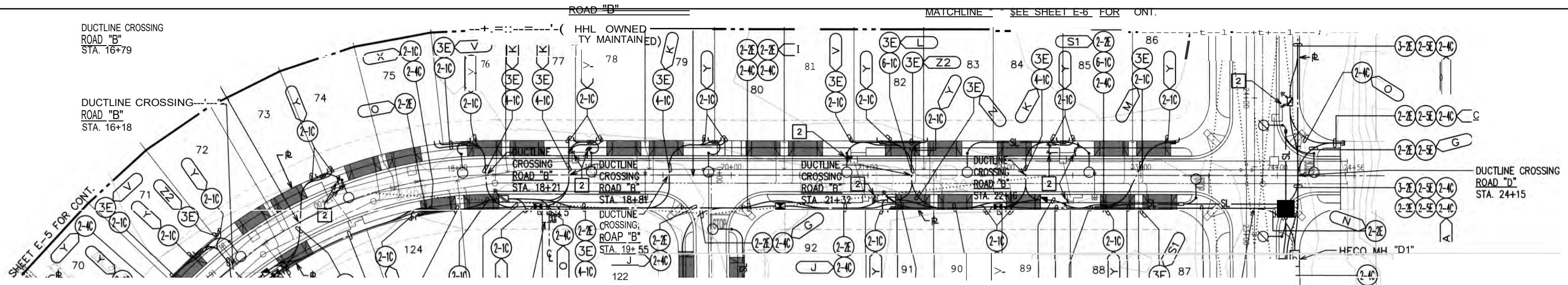
- NOTES:
- OJ EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
 - ITJ PROVIDE MINIMUM 12" CLEARANCE SEMEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

DRAWING REVIEW
 Reviewed for Hawaiian Electric Company Facilities Only
 Reqr 8068454 By CUC SA.tht4>U Date 4/29/21
 Customer In ons Department
 Hawaiian Electric
 In no - - the
 Contractor or anyone actin9 on the C.U.fo - -
 liability - - data, material and any - -
 the C.U. data.



DESIGN DATE	DATE	SCALE	PROJECT
(Comrully Plarwq and E.I.Q.I. Inc. DP SUBD. FILE NO. 2019SUB-171 EAST KAPOLEI I DEVELOPMENT IJC RBENT 2C HONOLULU, EWA, OAHU, HAWAII OWNER DIVISION: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9 1-17:PORTION161			
B.ECTHCAL DISTRBJTION PARTIAL PLAN I			
DRAWN BY: CAI	ENGINEER: GF	CHECKED BY: GF	
APPROVED:	DATE: 4/19/21		
THIS DRAWING IS THE PROPERTY OF COMRULLY PLARWQ AND E.I.Q.I. INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF COMRULLY PLARWQ AND E.I.Q.I. INC.			

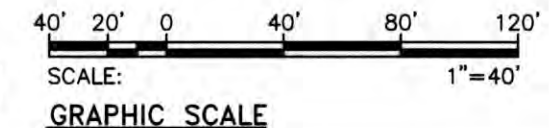
ELECTRICAL DISTRIBUTION PARTIAL PLAN I
 SCALE: 1"=40'



- NOTES:**
- [T] EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
 - [T] PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

- NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:**
1. BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
 2. BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
 3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

DRAWING REVIEW
 Reviewed for Hawaiian Electric Company Facilities Only
 Req# 6088454 By *Cec Shimano* Date 4/29/21
 Customer Instructions Department
 Hawaiian Electric
 Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made during the reviewed date.



ELECTRICAL DISTRIBUTION PARTIAL PLAN III
 SCALE: 1"=40'

community Planning and Engineering, Inc.
EAST KAPOLEI DEVELOPMENT
NCRBENT 2C
 HONOLULU, EWA, OAHU, HAWAII
 (DP SUBD. FILE NO. 2019/SUB-171)
 OWNER: DEMPOR, DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17-PORION 161

8-ELECTRICAL DISTFEUTION PARTIAL PLAN I

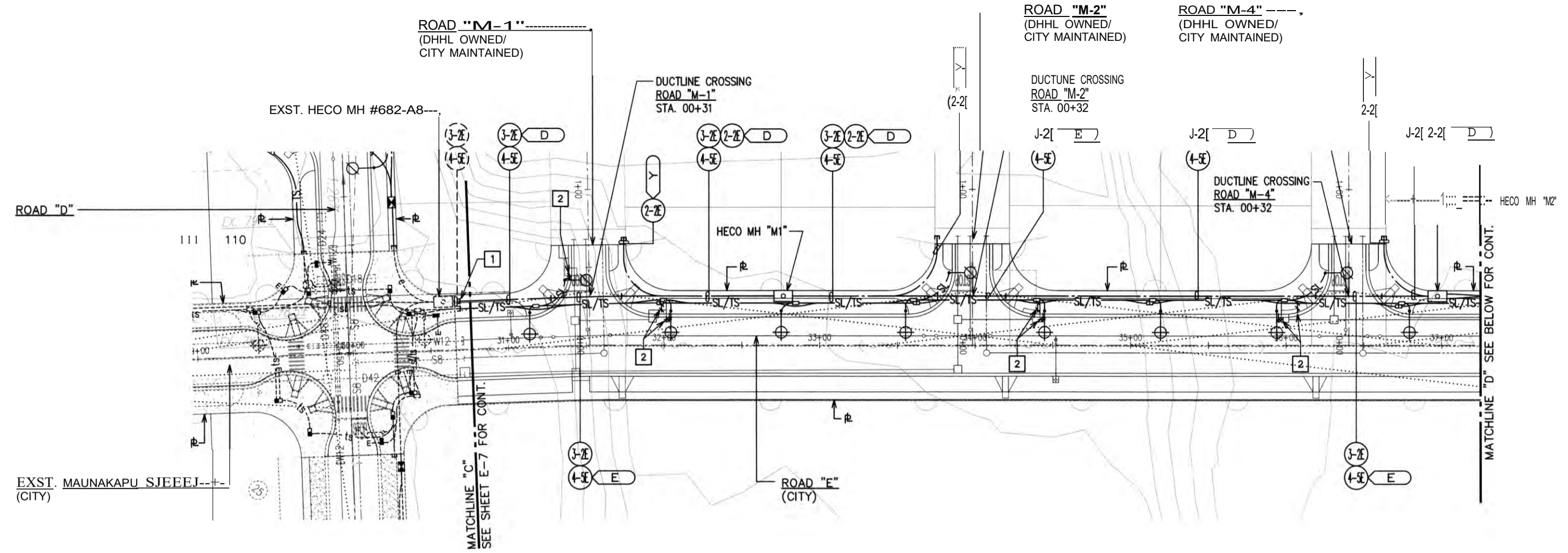
DRAWN BY: CAD ENGINEER: GF CHECKED BY: GF

APPROVED: *[Signature]* DATE: 30 APRIL 2021

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

DEPARTMENT OF HAWAIIAN HOME LANDS DATE:

Z:\ACAD\PROJECTS\2808454\E07_2808454_DIST-PLAN03 4/30/2021 11:16AM

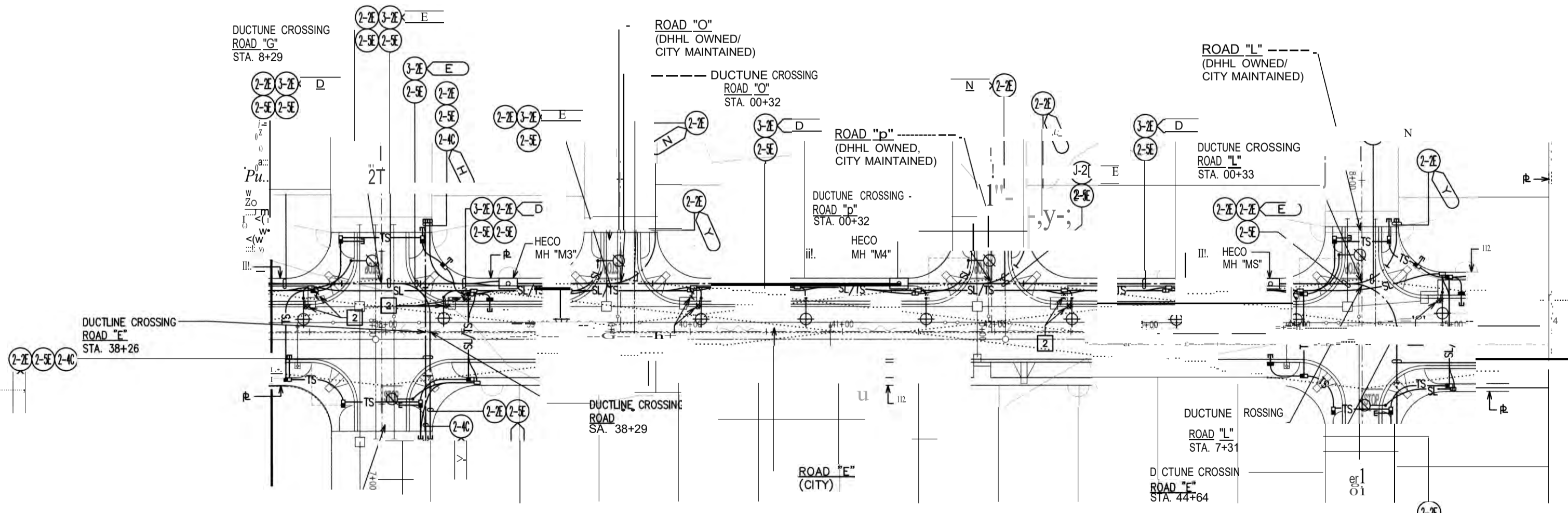


NOTES:
 OJ EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
 IT) PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #>7.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, #1 1/2-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

@ ROAD "E" (CITY)
 PARTIAL PLAN I



@ ROAD "E" (CITY)
 PARTIAL PLAN II

DRAWING BELIEVED
 Reviewed for Hawaiian Electric Company Facilities Only
 Req# 6068454 By **CU&S** - Date 4/29/22
 Customer **In-ones** Department
 Hawaiian Electric

Hawaiian Electric is not responsible for the design, materials and workmanship of any work shown on this drawing unless it is specifically noted otherwise.

GRAPHIC SCALE
 1"=40'

30 APRIL 2022
 GARY I. EHRLICH
 LICENSED PROFESSIONAL ENGINEER
 No. 4195-E
 HAWAII, U.S.A.

Community Planning and Engineering, Inc.
 EAST KAPOLEI I DEVELOPMENT
NH: 2C
 HONOLULU, EWA, OAHU, HAWAII
 (DP SUBD. FILE NO. 2019/SUB-171)
 OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17: PORTION 161

ROAD "E" (CITY)
ELECTRICAL DISTRIBUTION PARTIAL PLAN I & II

DRAWN BY: CAD	ENGINEER: GI	CHECKED BY: GI
APPROVED: <i>[Signature]</i>	DATE: 30 APRIL 2022	

THIS DRAWING WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I AM NOT PROVIDING ANY SERVICE OR OPINION IN CONNECTION WITH THIS PROJECT UNLESS I AM SPECIFICALLY REQUESTED TO DO SO AND I AM NOT PROVIDING ANY SERVICE OR OPINION IN CONNECTION WITH THIS PROJECT UNLESS I AM SPECIFICALLY REQUESTED TO DO SO.

ROAD "A"
DHHL OWNED/
CITY MAINTAINED)

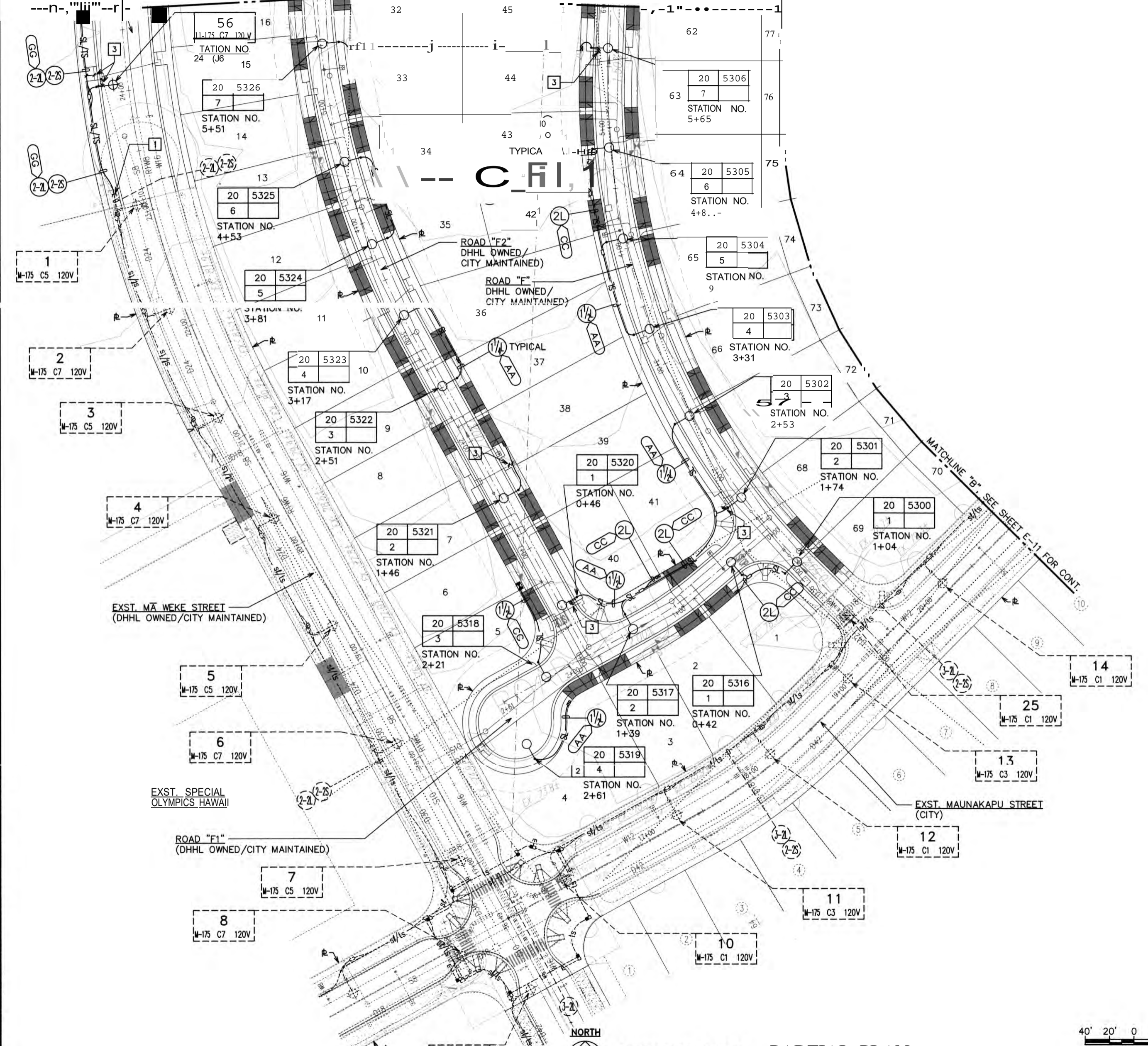
MAT. C.H.L. IN E. "A" SHEET E-10 FOR CONT.

NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE):
4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, /167.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE):
4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

NOTES:

- EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
- 32W LED LUMINAIRE (GE ERL1 040130)
- PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.



PROJECTS\29084EA\EG9_29084EA_STII-PLAN01.dwg 9:27AM

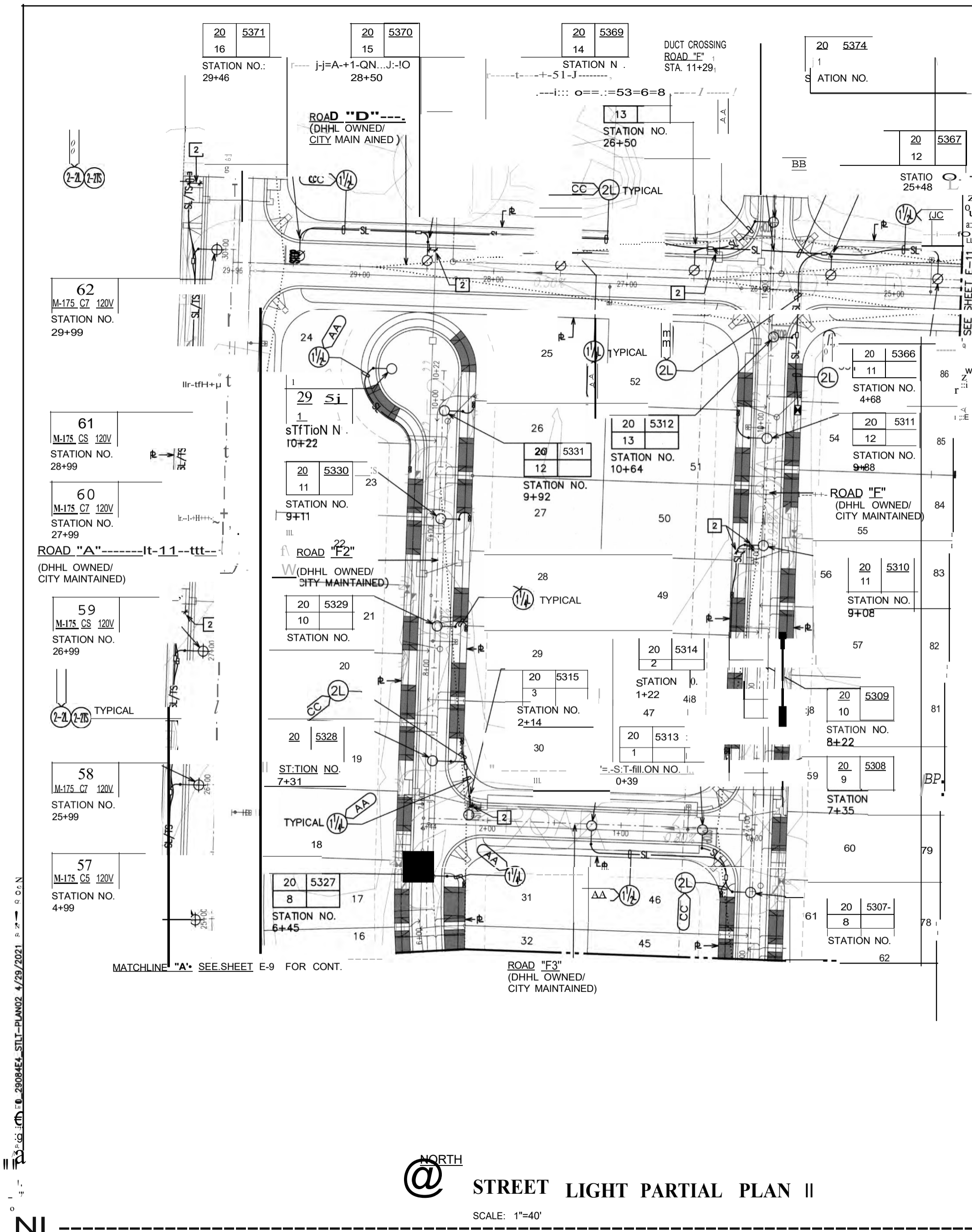
STREET LIGHT PARTIAL PLAN I



40' 20' 0 40' 80' 120'
SCALE: 1"=40'
GRAPHIC SCALE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Community Planning and Engineering, Inc.	
EAST KAPOLEI I DEVELOPMENT (DBJENT 2C)	
HONOLULU, EWA, OAHU, HAWAII (OP SUBO. FILE NO. 2019/SUB-171) OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17-PORION 161	
SI REE I LIGHT PARTIAL PLAN I	
ORA BY: CID	ENGINEER: GF
APPROVED:	CHECKED BY: GF
<p>THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22</p>	



NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:

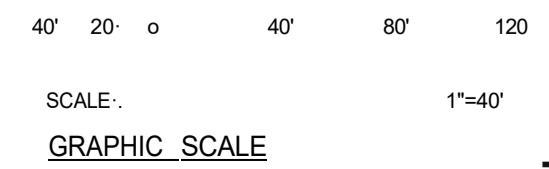
- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE):
4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #67.
- BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE):
4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
- PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND BULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

NOTES:

- [JJ] 32W LED LUMINAIRE (GE ERL1 040130).
- [I] PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

2021/04/29/2021 PLAN 02 4/29/2021 P. 2 OF 2

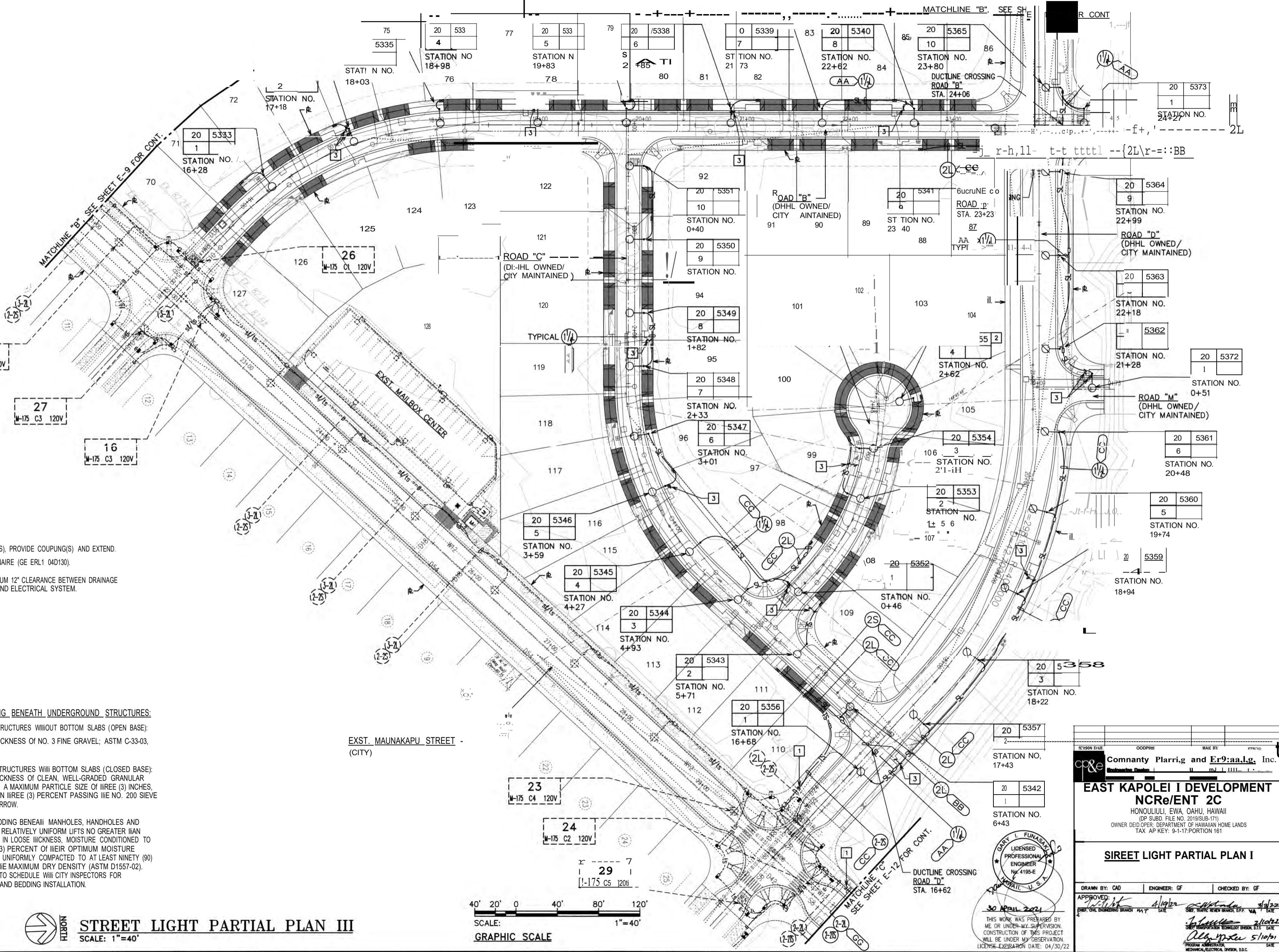
NORTH
 @ STREET LIGHT PARTIAL PLAN II
 SCALE: 1"=40'



COMMUNITY PLANNING AND ENGINEERING, INC.
EAST KAPOLEI DEVELOPMENT
TICRBENT 2C
 HONOLULU, EWA, OAHU, HAWAII
(DP SUBD. FILE NO. 2019/SUB-171)
OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
TAX MAP KEY: 9 1-17/PORION161

SI FEEI LIGHT PARTIAL PLAN I

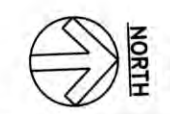
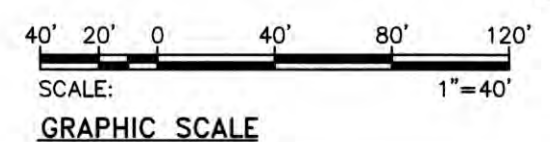
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII.
 DATE: 04/30/22
 DRAWN BY: J.J. J.J. CHECKED BY: J.J. J.J.
 SCALE: 1"=40'



- NOTES:**
- M** EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND. 32W LED LUMINAIRE (GE ERL1 04D130).
 - QJ** PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

- NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:**
1. BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, #E7.
 2. BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
 3. PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

EXST. MAUNAKAPU STREET - (CITY)

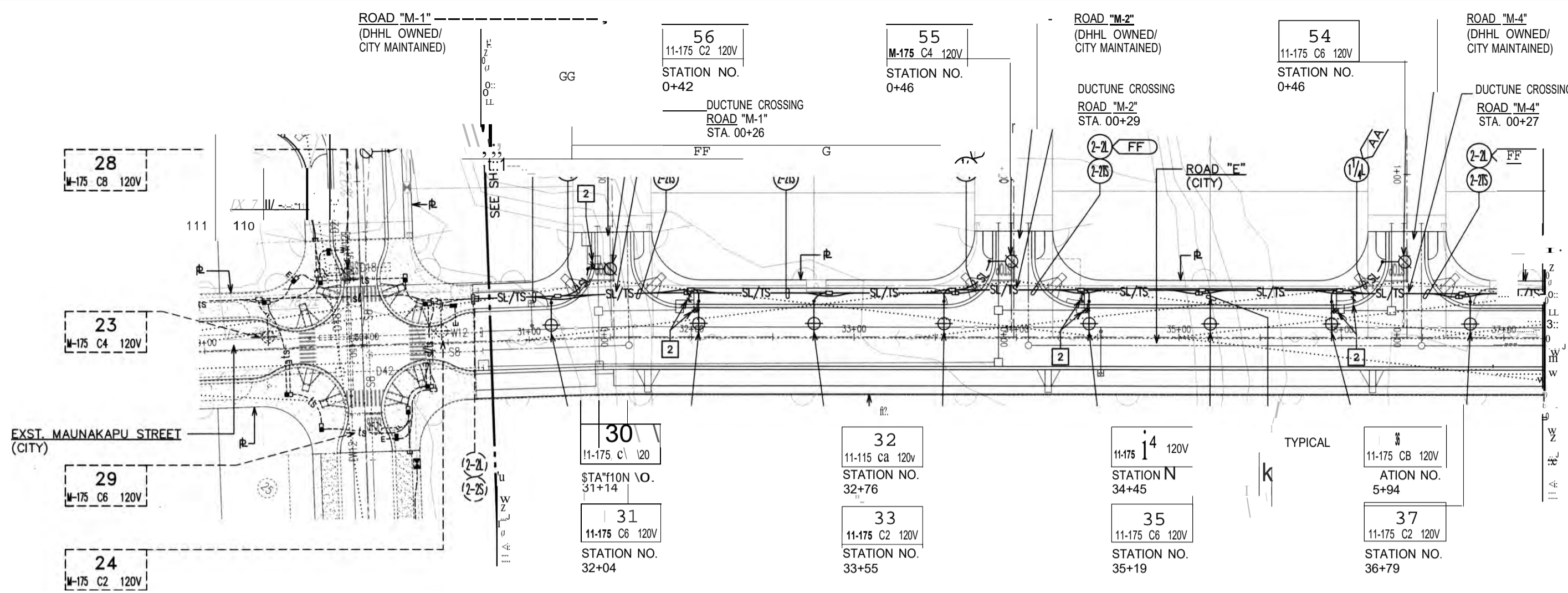


STREET LIGHT PARTIAL PLAN III
SCALE: 1"=40'



30 APRIL 2021
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

DESIGN DATE: OODPHI	MADE BY: 099470
Comnanty Parrrig and Er9:aa.l.g., Inc.	
EAST KAPOLEI I DEVELOPMENT NCR/ENT 2C	
HONOLULU, EWA, OAHU, HAWAII (DP SUBD. FILE NO. 2019/SUB-171) OWNER DEID OPER. DEPARTMENT OF HAWAIIAN HOME LANDS TAX AP KEY: 9-1-17:PORTION 161	
SIREET LIGHT PARTIAL PLAN I	
DRAWN BY: CAD	ENGINEER: GF
CHECKED BY: GF	
APPROVED: <i>[Signature]</i> DATE: 04/30/21	
PROGRAM ADMINISTRATOR: <i>[Signature]</i> DATE: 5/10/21	

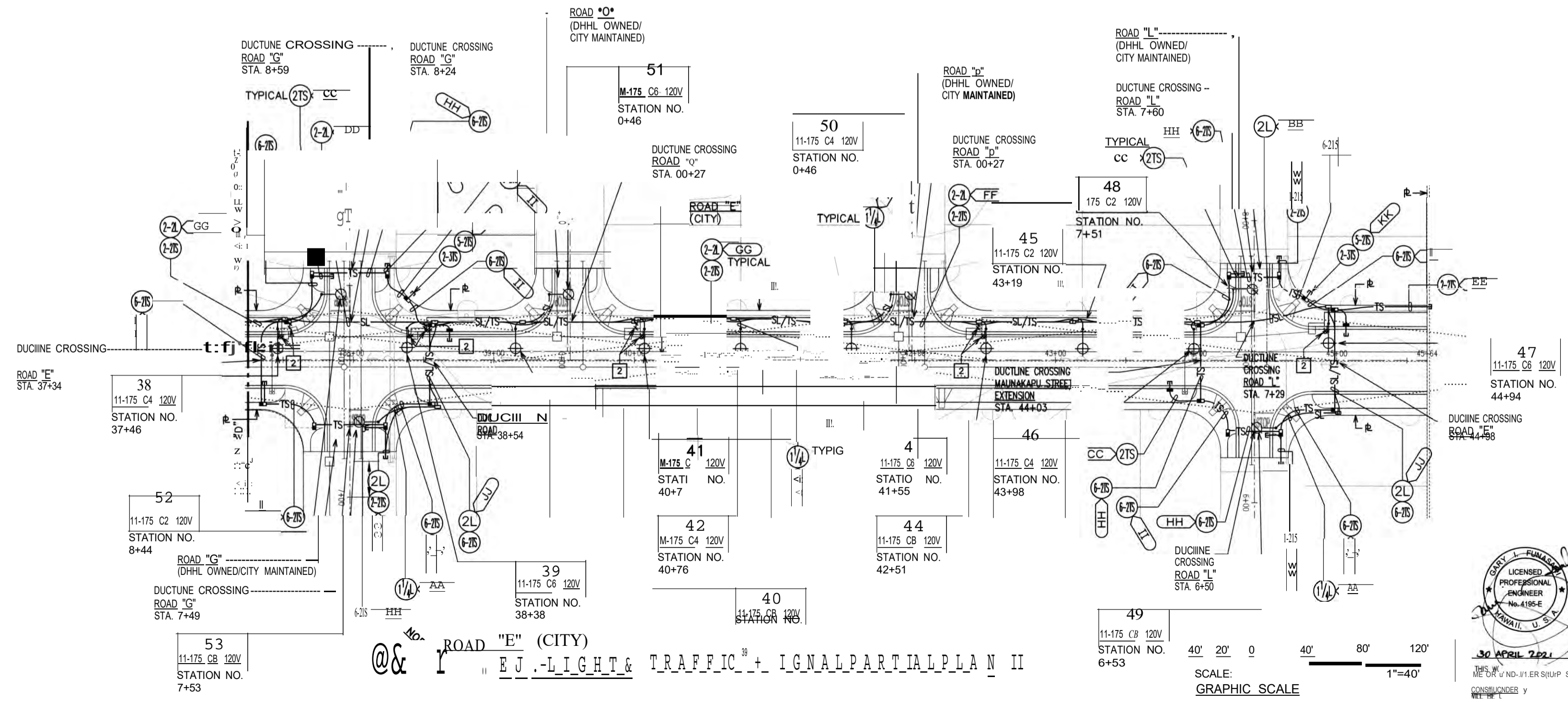


- NOTES FOR BEDDING BENEATH UNDERGROUND STRUCTURES:
- BOXES AND STRUCTURES WITHOUT BOTTOM SLABS (OPEN BASE): 4" MINIMUM THICKNESS OF NO. 3 FINE GRAVEL; ASTM C-33-03, 1/67.
 - BOXES AND STRUCTURES WITH BOTTOM SLABS (CLOSED BASE): 4" MINIMUM THICKNESS OF CLEAN, WELL-GRADED GRANULAR MATERIAL WITH A MAXIMUM PARTICLE SIZE OF THREE (3) INCHES, AND LESS THAN THREE (3) PERCENT PASSING THE NO. 200 SIEVE OR SELECT BORROW.
 - PROVIDED BEDDING BENEATH MANHOLES, HANDHOLES AND PULLBOXES IN RELATIVELY UNIFORM LIFTS NO GREATER THAN SIX (6) INCHES IN LOOSE THICKNESS, MOISTURE CONDITIONED TO WITHIN THREE (3) PERCENT OF THEIR OPTIMUM MOISTURE CONTENT, AND UNIFORMLY COMPACTED TO AT LEAST NINETY (90) PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D1557-02). CONTRACTOR TO SCHEDULE WITH CITY INSPECTORS FOR COMPACTION AND BEDDING INSTALLATION.

NOTES:

DJ EXPOSE DUCT(S), PROVIDE COUPLING(S) AND EXTEND.
 [I] PROVIDE MINIMUM 12" CLEARANCE BETWEEN DRAINAGE STRUCTURE AND ELECTRICAL SYSTEM.

TRAFFIC SIGNAL PARTIAL PLAN I
 SCALE: 1"=40'



TRAFFIC SIGNAL PARTIAL PLAN II
 SCALE: 1"=40'

Community Planning and Engineering, Inc. (cpe)

EAST KAPOLEI DEVELOPMENT

HONOLULU, EWA, OAHU, HAWAII
 (DP SUBD. FILE NO. 2019SUB-171)
 OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS
 TAX MAP KEY: 9-1-17-PORION 161

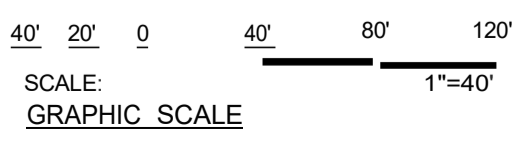
ROAD "E" (CITY)
 SIFEEI LDT & TRAFFIC BAL PARTIAL PLANS I & II

DRAWN BY: CAI ENGINEER: GF CHECKED BY: GF

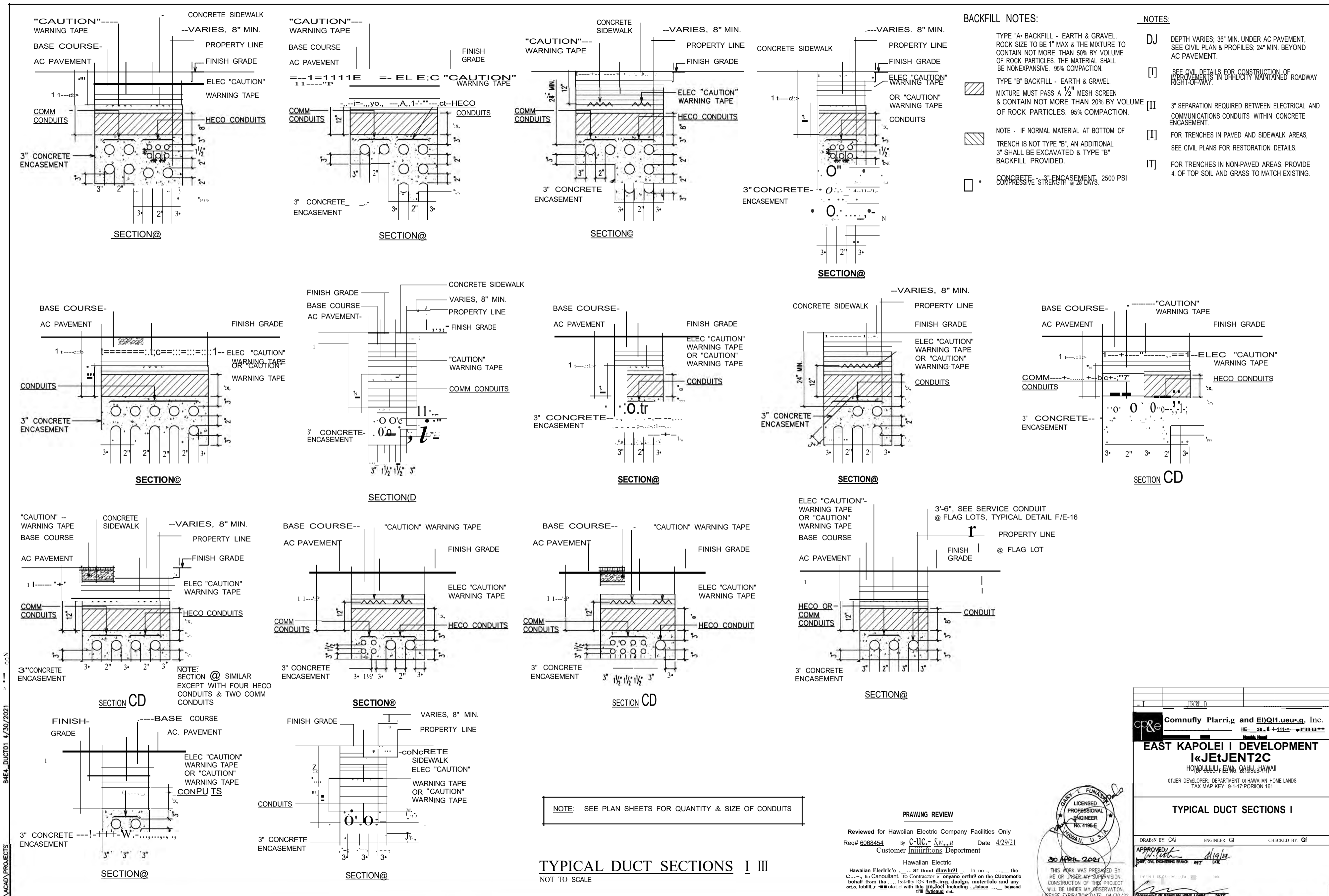
APPROVED: [Signature]

DATE: 30 APRIL 2021

CONSULTANT: [Signature]



ROAD PROJECTS



BACKFILL NOTES:

- TYPE "A" BACKFILL - EARTH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
- TYPE "B" BACKFILL - EARTH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
- NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
- CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.

NOTES:

- DJ DEPTH VARIES: 36" MIN. UNDER AC PAVEMENT, SEE CIVIL PLAN & PROFILES; 24" MIN. BEYOND AC PAVEMENT.
- [I] SEE CIVIL DETAILS FOR CONSTRUCTION OF IMPROVEMENTS IN DRAINAGE MAINTAINED ROADWAY RIGHT-OF-WAY.
- [II] 3" SEPARATION REQUIRED BETWEEN ELECTRICAL AND COMMUNICATIONS CONDUITS WITHIN CONCRETE ENCASEMENT.
- [I] FOR TRENCHES IN PAVED AND SIDEWALK AREAS, SEE CIVIL PLANS FOR RESTORATION DETAILS.
- [IT] FOR TRENCHES IN NON-PAVED AREAS, PROVIDE 4" OF TOP SOIL AND GRASS TO MATCH EXISTING.

84EA-DUCT01 4/29/2021
 2: ACADA PROJECTS

DRAWING REVIEW

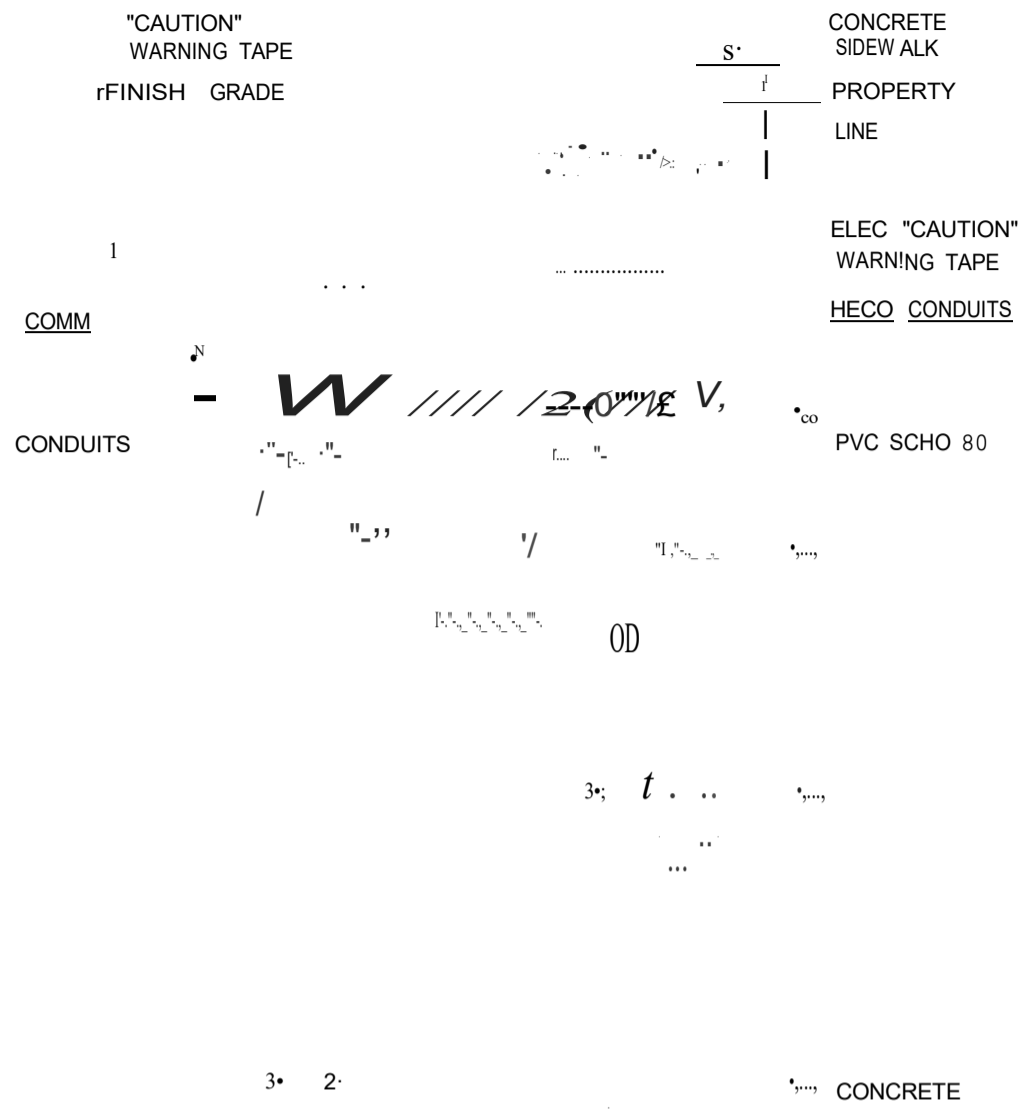
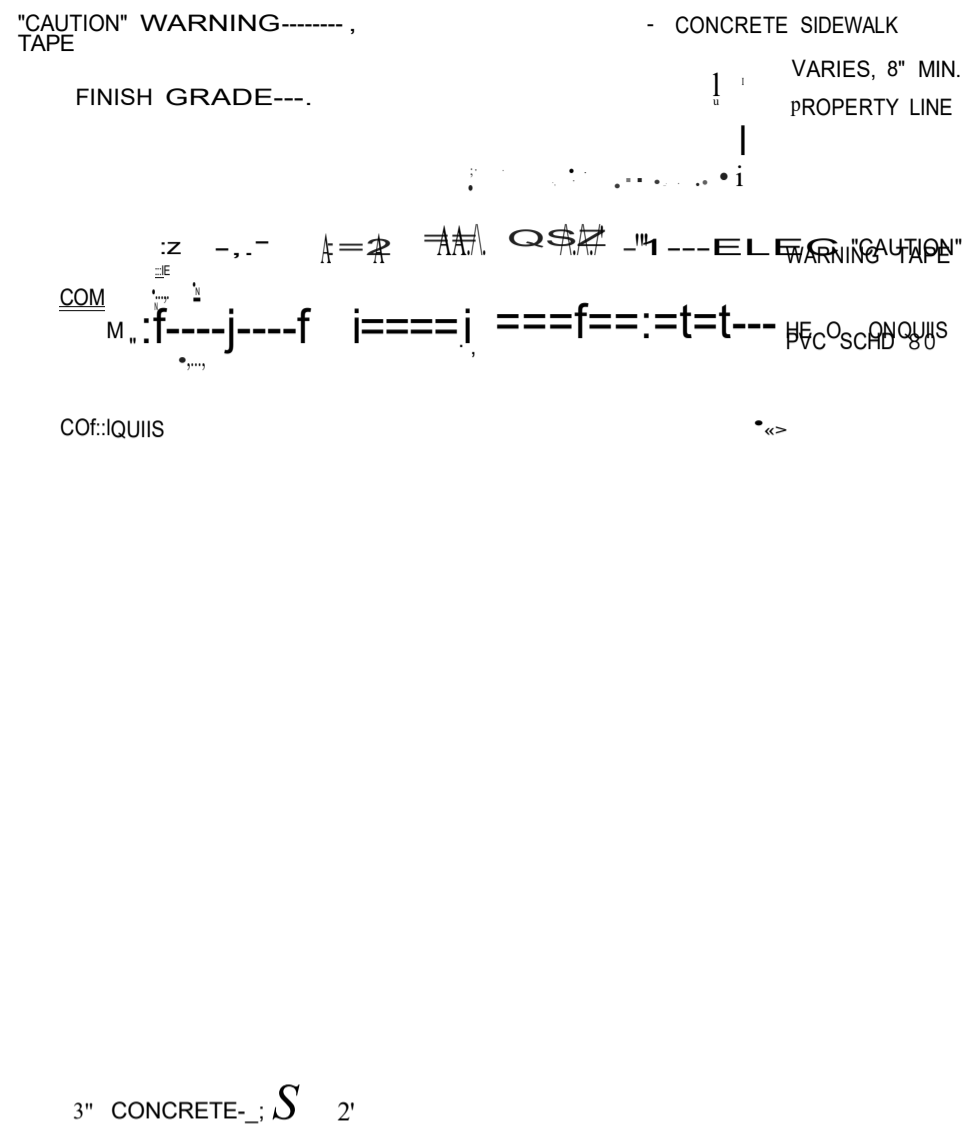
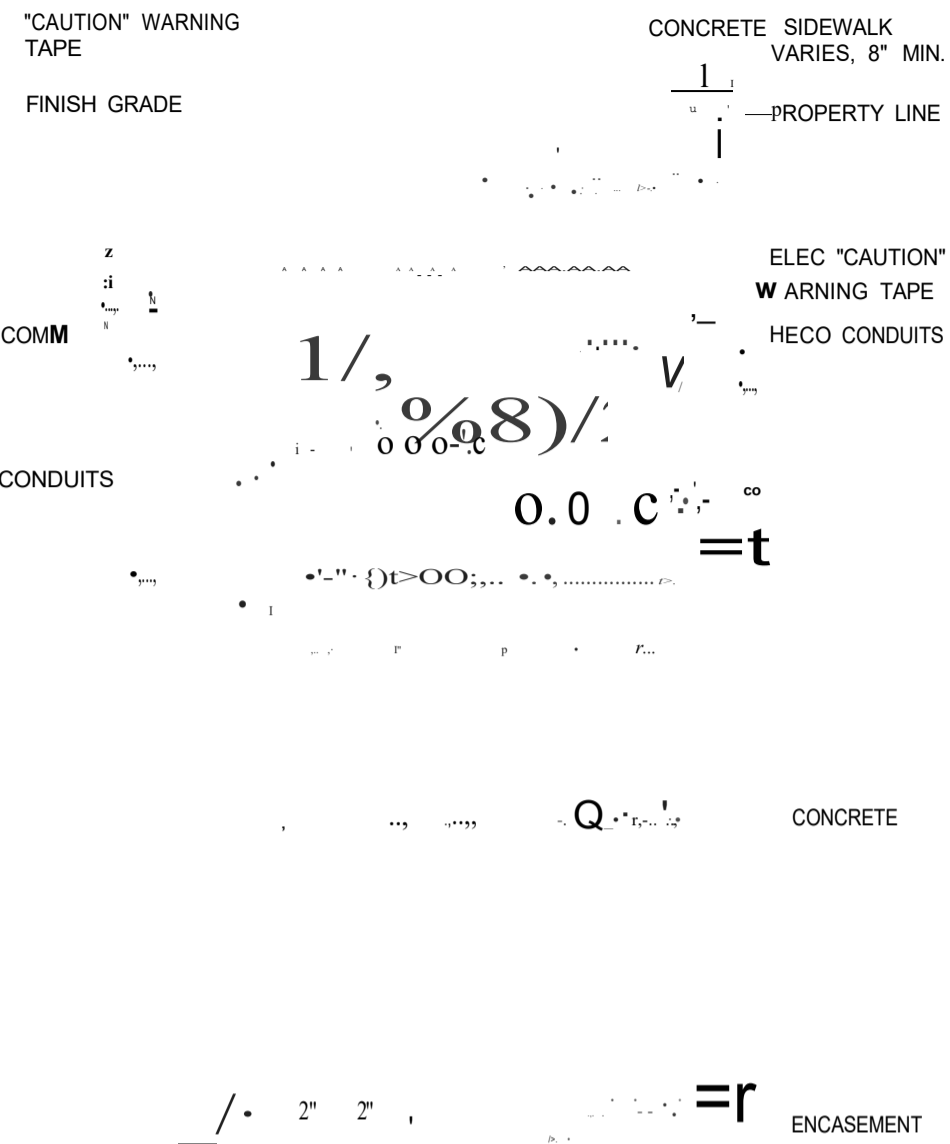
Reviewed for Hawaiian Electric Company Facilities Only
 Req# 6068454 By C-UC-SW Date 4/29/21
 Customer Interactions Department







Hawaiian Electric
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Commully Parri, g and Engi, ueu, g, Inc. EAST KAPOLEI I DEVELOPMENT «JETJENT2C HONOLULU, HAWAII OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS TAX MAP KEY: 9-1-17-PORION 161		
TYPICAL DUCT SECTIONS I		
DRAWN BY: CAJ	ENGINEER: Gf	CHECKED BY: Gf
APPROVED: <i>[Signature]</i> DATE: 04/29/21		
DEPARTMENT OF HAWAIIAN HOME LANDS		

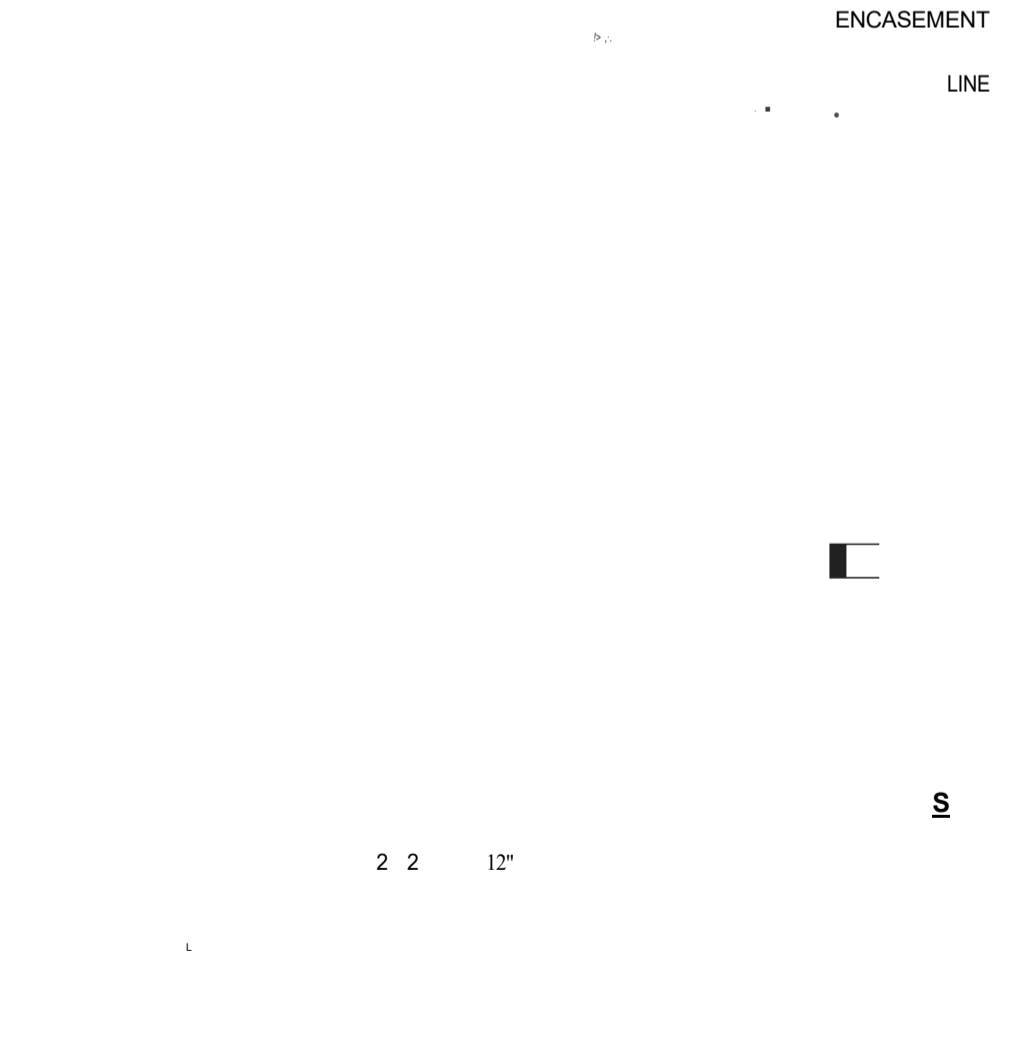
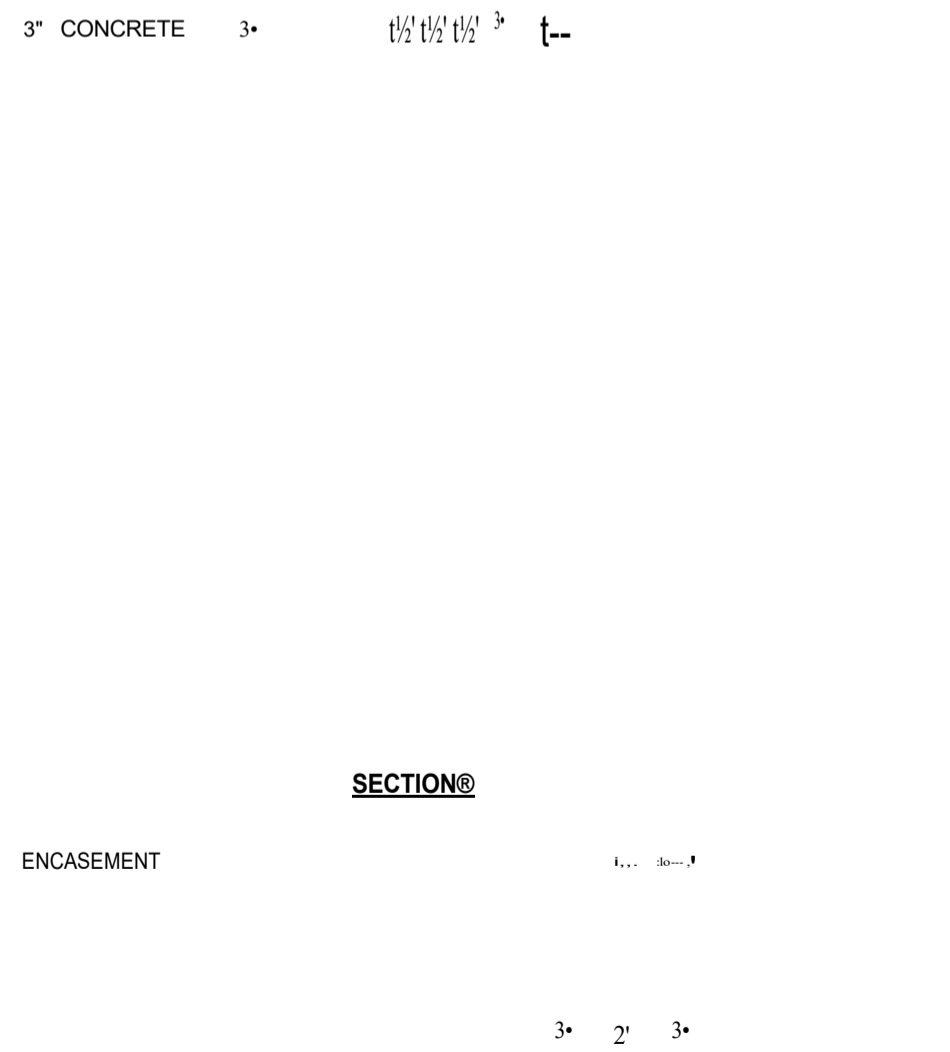
TYPICAL DUCT SECTIONS I III
 NOT TO SCALE



BACKFILL NOTES:

-  TYPE "A" BACKFILL - EARTH & GRAVEL ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
-  TYPE "B" BACKFILL - EARTH & GRAVEL MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
- TRENCH IS NOT TYPE "B", AN ADDITIONAL
-  NOTE - IF NORMAL MATERIAL AT BOTTOM OF 3" SHALL BE EXCAVATED & TYPE "B"
-  BACKFILL PROVIDED.

CONCRETE - 3" ENCASEMENT, 2500 PSI
 COMPRESSIVE STRENGTH @ 28 DAYS.



SECTION@

N

S:

DEPTH VARIES; 36" MIN. UNDER AC PAVEMENT,

Q

OJ

SEE CIVIL PLAN & PROFILES; 24' MIN. BEYOND

TE

AC PAVEMENT.

-



3" (HECO CONDUITS)

3" 3" 3" 3"

7

"CAUTION"----

WARNING TAPE

- CONCRETE SIDEWALK

"CAUTION"---

-

1/2" x 1/2" x 1/2"

1/2"

PVC SCHED 80

WARNING TAPE

1

FINISH GRADE-1

- CONCRETE SIDEWALK

- A A.2SA;A;A ;A AA A AA2

- CONCRETE SIDEWALK

12

SEE CIVIL DETAILS FOR CONSTRUCTION OF

1000

ROADWAY RIGHT-OF-WAY.

3" SEPARATION REQUIRED BETWEEN ELECTRICAL

1-----+-----1 z....

.,----ELEC "CAUTION"

z

.,----ELEC "CAUTION"

....

EN

C A

S

E

M

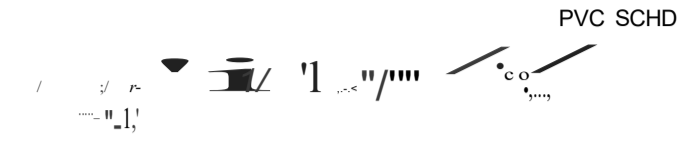
ENT.

COMM

!!ECO CONDUITS

FOR TRENCHES IN NON-PAVED AREAS, PROVIDE

CONDUITS



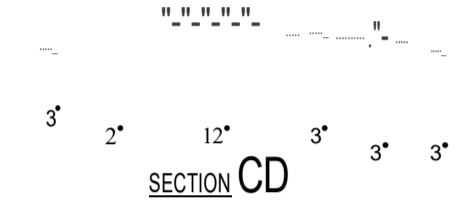
4" OF TOP SOIL AND GRASS TO MATCH EXISTING.

SECTION@

SECTION@

CONCRETE SIDEWALK

8"



"CAUTION"

-CONCRETE SIDEWALK

CONCRETE SIDEWALK TAPE

CONCRETE SIDEWALK TAPE

VARIES, 8" MIN.

CONCRETE

VARIES, 8" MIN.

VARIES, 8" MIN. "CAUTION" WARNING

WARNING TAPE

8"

"CAUTION" WARNING

SIDEWALK

FINISH GRADE-

|

FINISH GRADE-

|

P

PROPERTY

LINE

|

FINISH GRADE ———

i

FINISH

GRADE

PROPERTY

L

INE

z

WARNING TAPE

z

ii

..

^^^

WARNING TAPE

~~~~~

WARNING TAPE

RE

W<sub>N</sub> y

ii

C O MM

CONDUITS

CUTION  
WARNING  
TAPE

PVC SCHED 80

C QMM

CONDUITS

1

5 = = 5 / / / / / - / /

C Q MM

CONDUITS

v "

" , - - /

C

Q

N

D U

I

I

S

( H E C

O CONDUIT

• P

V C  
CONDUITS.  
PVC SCHED 80)

SECTION@

S C H  
HECO CONDVIT  
3" 12" 3"

SECTION (J)

1/2" 2" 2" 2" 12" 3" 3"  
E D  
1/2" 1/2"

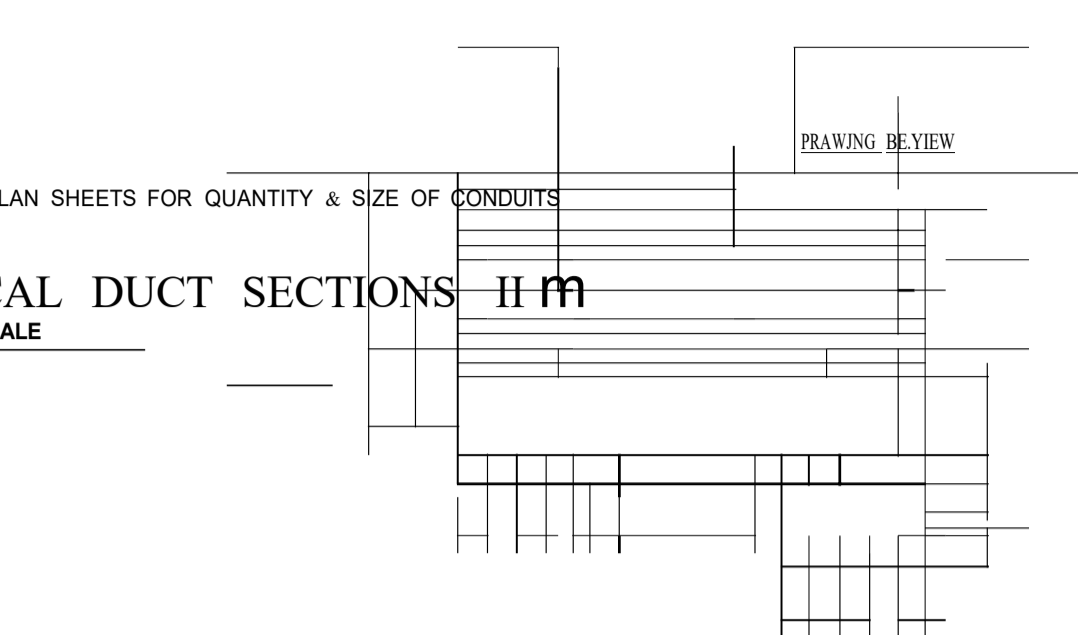
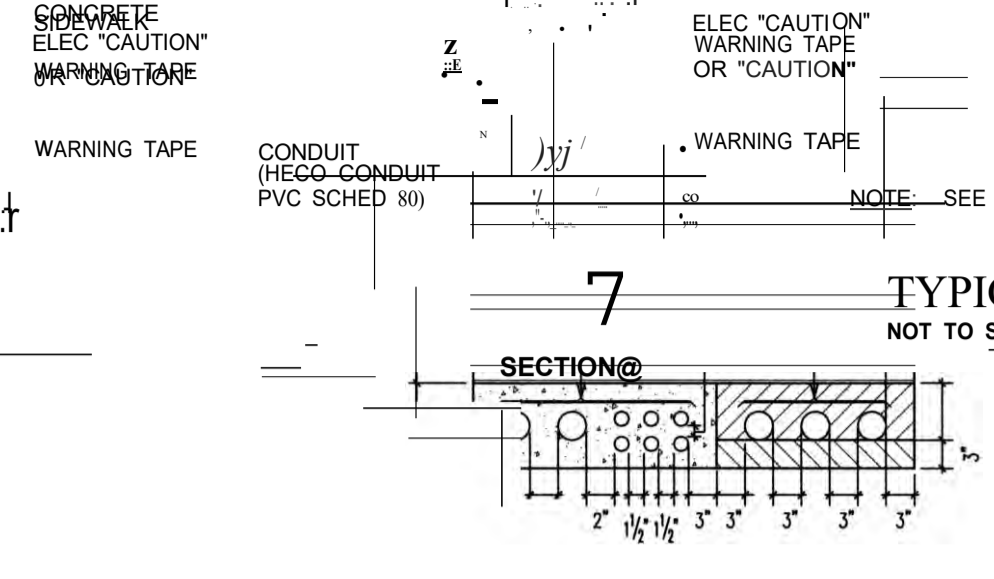
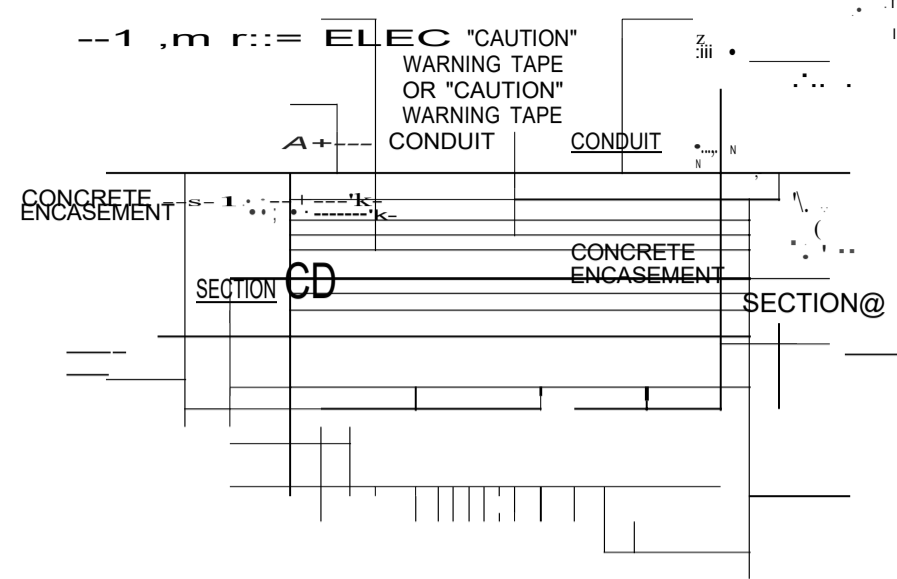
SECTION@

1/2" 2" 2" 2" 3"  
1/4"

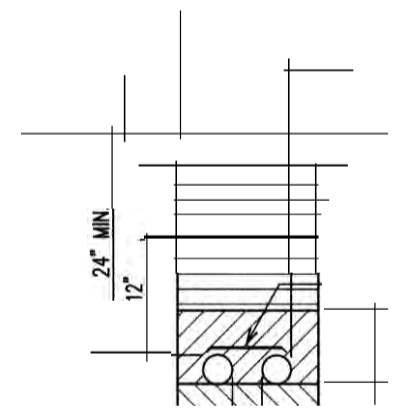
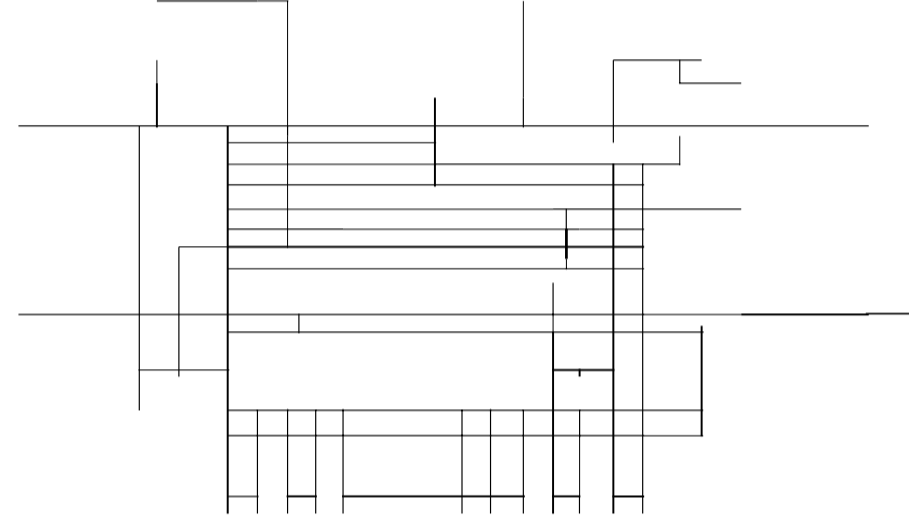
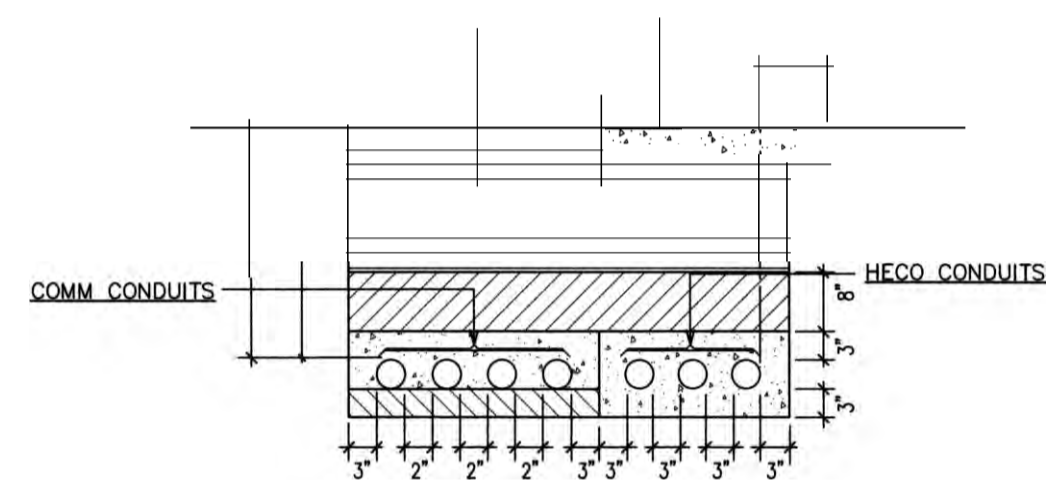
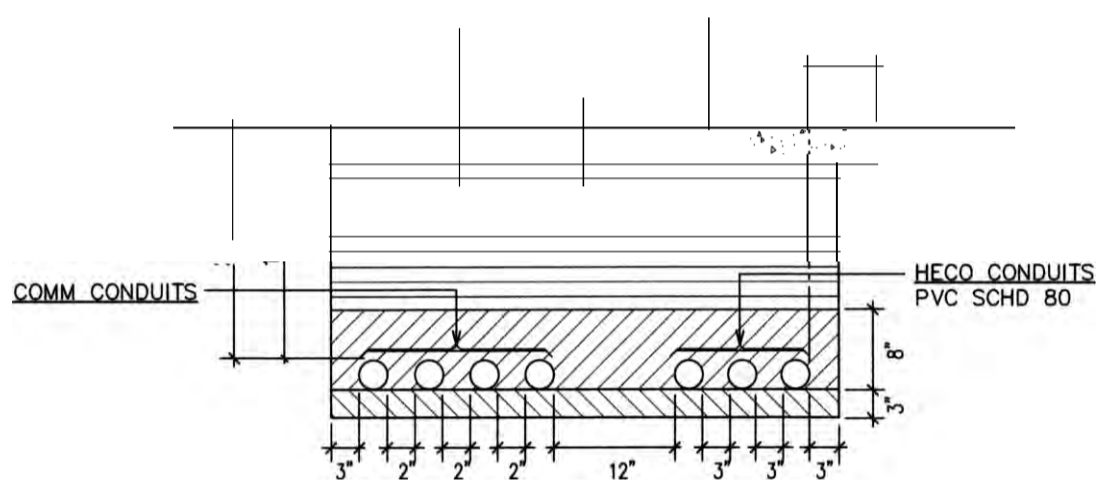
SECTION@

3" 2" 3"  
SECTION CD





**7 TYPICAL DUCT SECTIONS II m**  
 NOT TO SCALE  
 NOTE: SEE PLAN SHEETS FOR QUANTITY & SIZE OF CONDUITS



84E4\_DUCT02 4/30/2021 11:23AM

Z:\ACAD

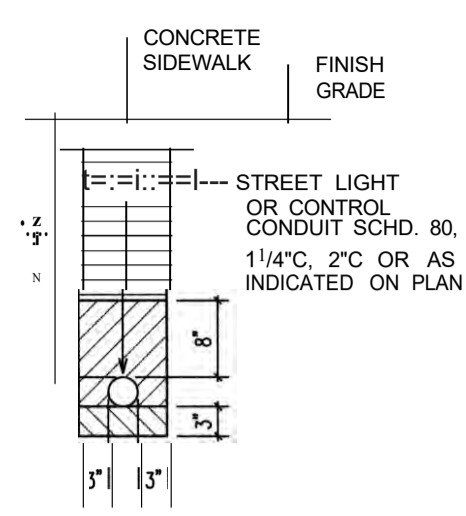
Reviewed for Hawaiian Electric Company Facilities Only  
 Req# 6068454 By *Cric Shimono* Date 4/29/21  
 Customer Installations Department  
 Hawaiian Electric

Hawaiian Electric's review of these drawings shall in no way relieve the Customer, its Consultant, its Contractor or anyone acting on the Customer's behalf from the responsibility for engineering, design, materials and any other liability associated with this project including revisions made beyond the reviewed date.

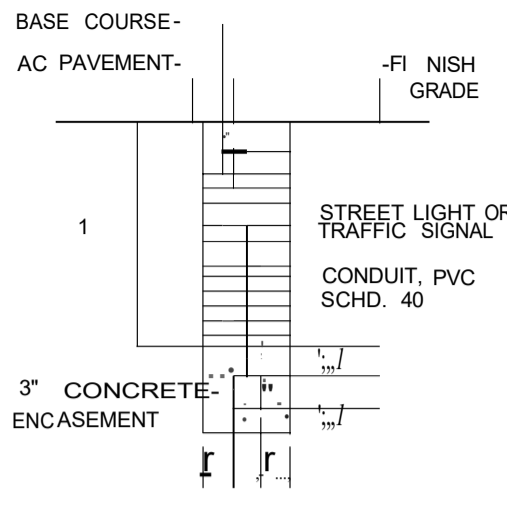


APPROVED: *[Signature]* 4/29/21  
 30 APR 2021  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.  
 LICENSE EXPIRATION DATE: 04/30/22

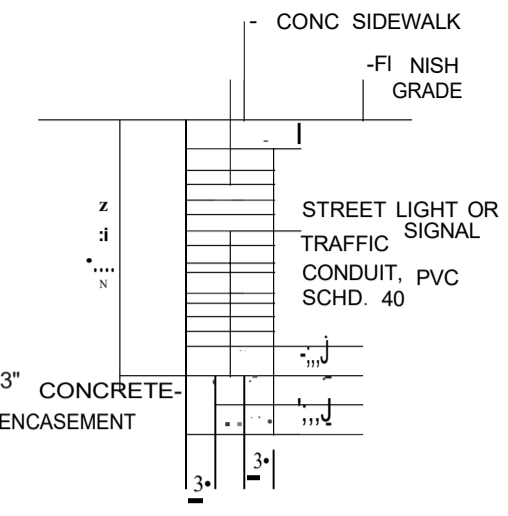
|                                                                                                                                                       |      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|------|
|                                                                                                                                                       |      |
| APPROVED: <i>[Signature]</i> 4/29/21                                                                                                                  | DATE |
| THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.<br>LICENSE EXPIRATION DATE: 04/30/22 | DATE |
| DEPARTMENT OF HAWAIIAN HOME LANDS                                                                                                                     | DATE |



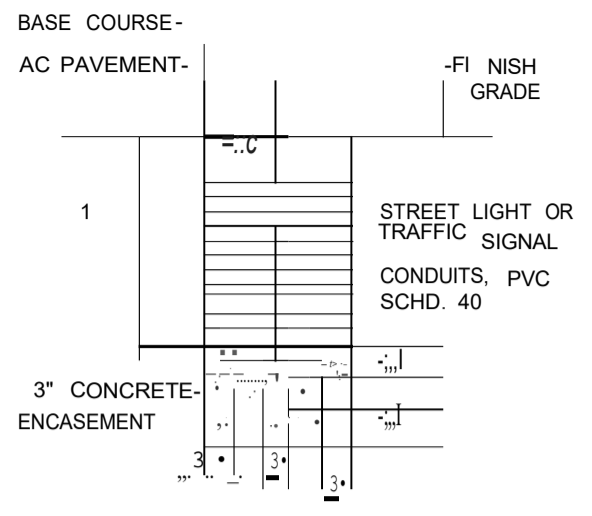
SECTION @



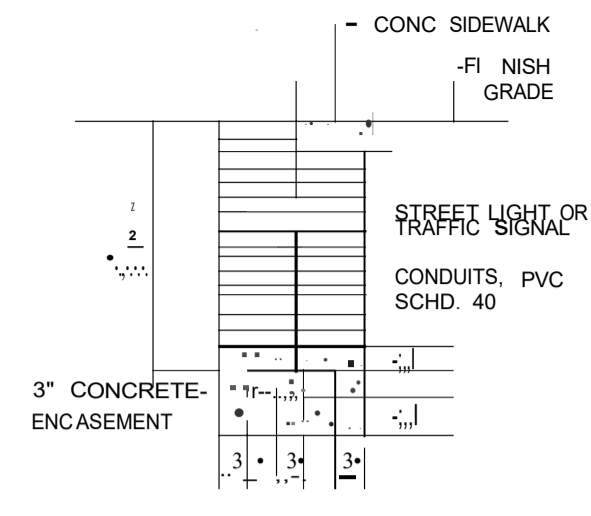
SECTION @



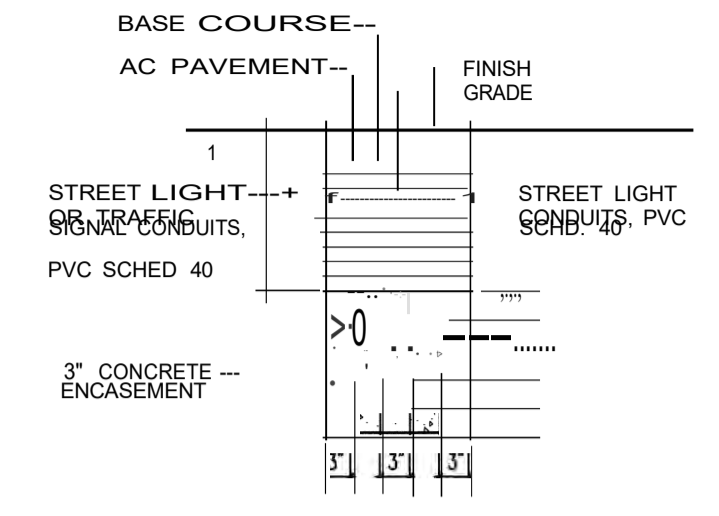
SECTION @



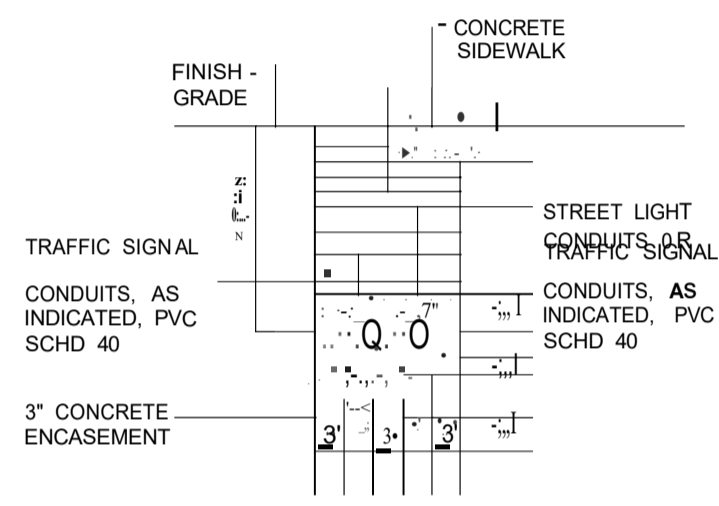
SECTION @



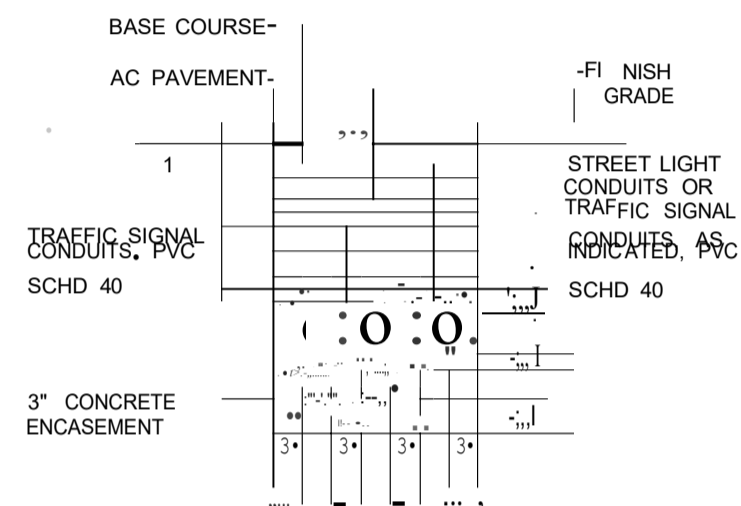
SECTION @



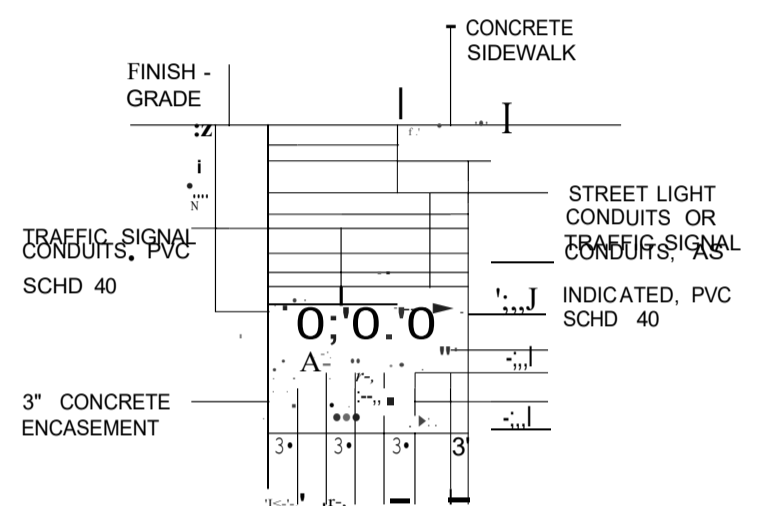
SECTION @



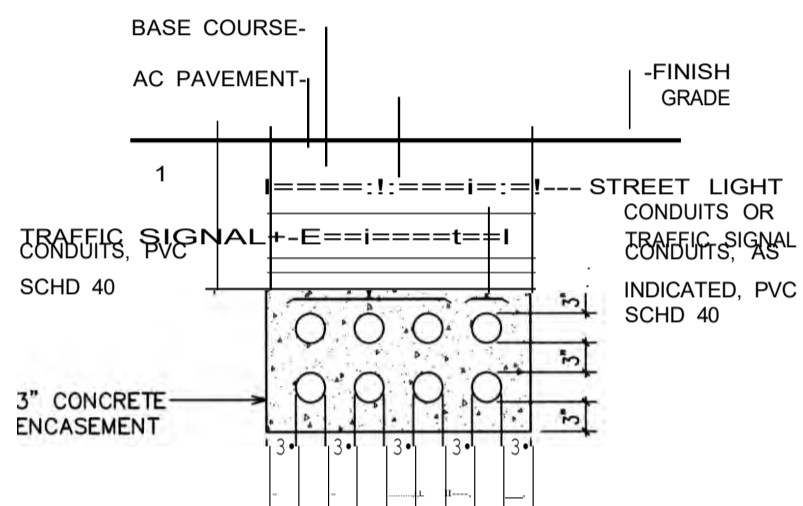
SECTION @



SECTION @

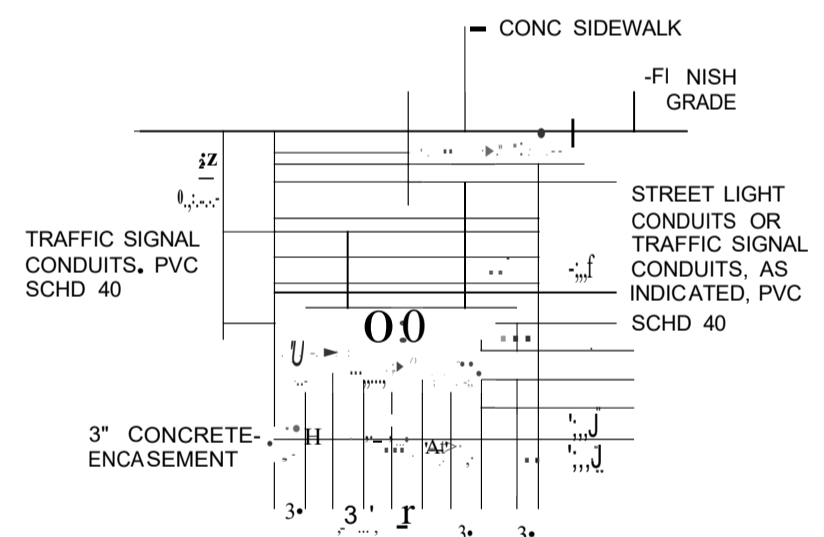


SECTION @

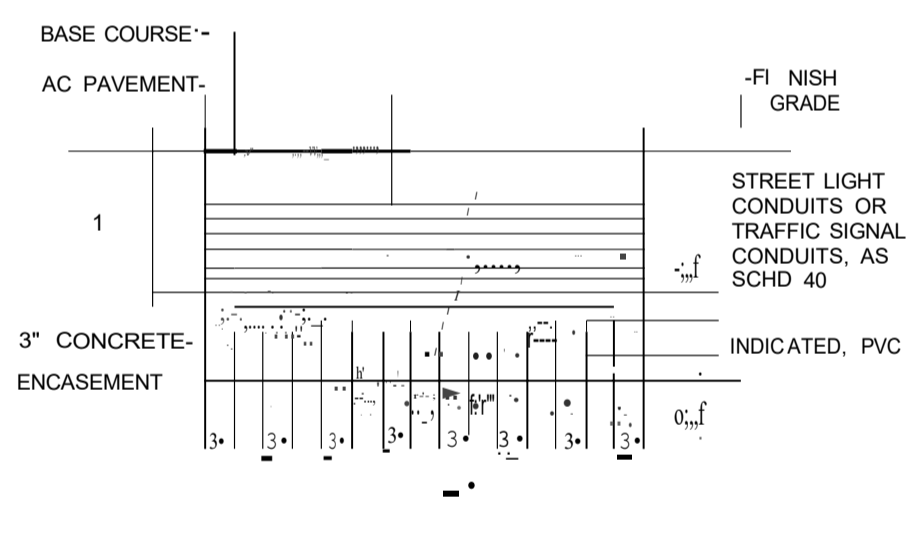


SECTION @

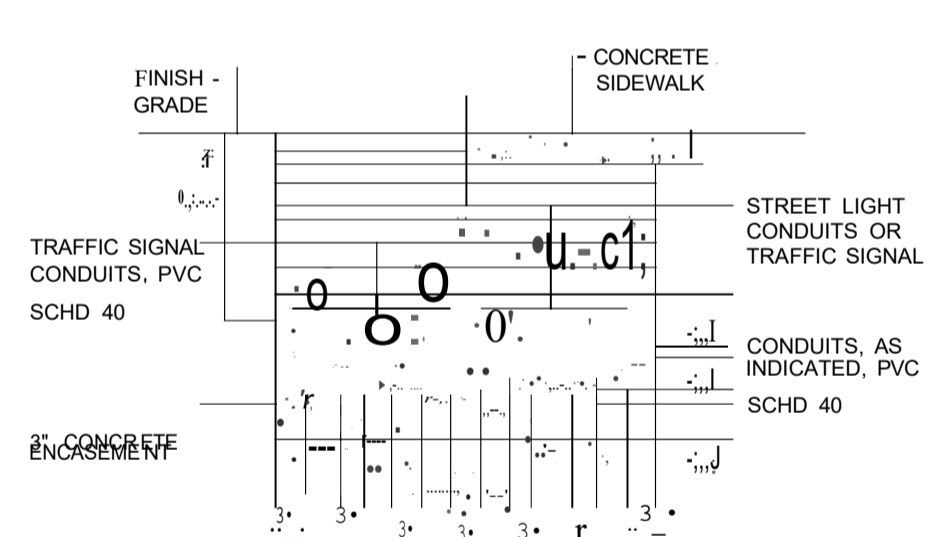
- BACKFILL NOTES:**
- TYPE "A" BACKFILL - EARIH & GRAVEL. ROCK SIZE TO BE 1" MAX & THE MIXTURE TO CONTAIN NOT MORE THAN 50% BY VOLUME OF ROCK PARTICLES. THE MATERIAL SHALL BE NONEXPANSIVE. 95% COMPACTION.
  - TYPE "B" BACKFILL - EARIH & GRAVEL. MIXTURE MUST PASS A 1/2" MESH SCREEN & CONTAIN NOT MORE THAN 20% BY VOLUME OF ROCK PARTICLES. 95% COMPACTION.
  - NOTE - IF NORMAL MATERIAL AT BOTTOM OF TRENCH IS NOT TYPE "B", AN ADDITIONAL 3" SHALL BE EXCAVATED & TYPE "B" BACKFILL PROVIDED.
  - CONCRETE - 3" ENCASEMENT, 2500 PSI COMPRESSIVE STRENGTH @ 28 DAYS.



SECTION @



SECTION @



SECTION @

- NOTE(S):**
- DJ** DEPTH VARIES, 36" MIN UNDER AC PAVEMENT, SEE CIVIL PLAN & PROFILES; 24" MIN. BEYOND AC PAVEMENT.
  - FOR TRENCHES IN PAVED AND SIDEWALK AREAS, SEE CIVIL PLANS FOR PAVEMENT/SIDEWALK RESTORATION DETAILS.
  - [T]** FOR TRENCHES IN NON-PAVED AREAS, PROVIDE 4" OF TOP SOIL AND GRASS TO MATCH EXISTING.

**TYPICAL DUCT SECTIONS III**  
NOT TO SCALE

NOTE: SEE PLAN SHEETS FOR QUANTITY & SIZE OF CONDUITS  
SEE CIVIL SHEETS FOR SIDEWALK & AC PAVEMENT DESIGN DETAILS



Community Planning and Engineering, Inc.  
30 APRIL 2022

**EAST KAPOLEI I DEVELOPMENT  
NCFBENT 2C**  
HONOLULU, EWA, OAHU, HAWAII  
(DP SUBD. FILE NO. 2019/SUB-171)  
OVERSEER, DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17-POOTION161

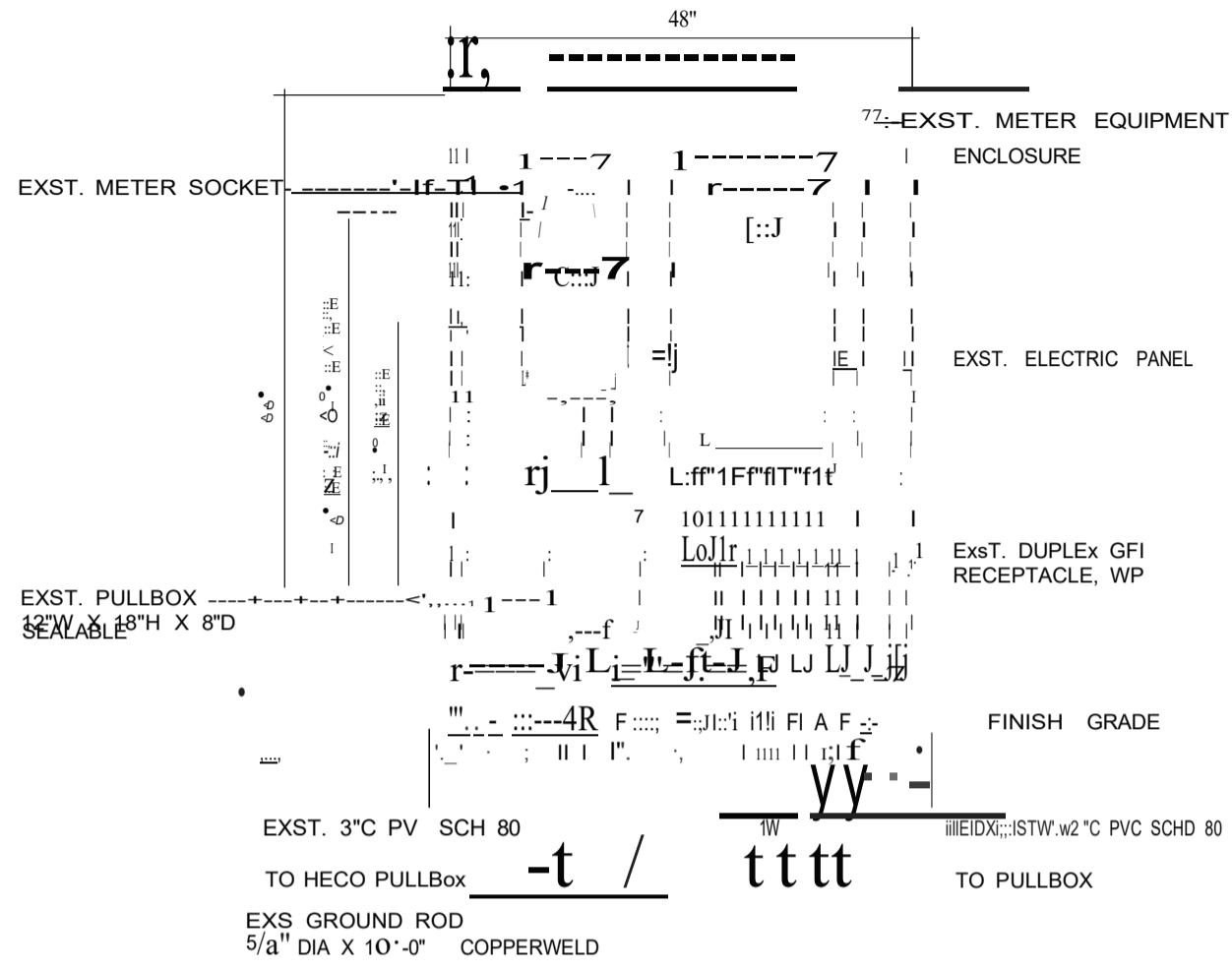
**TYPICAL DUCT SECTIONS I**

APPROVED: [Signature] ENGINEER, G.F. CHECKED BY: G.F.  
DATE: 30 APRIL 2022

THIS WORK WAS PREPARED BY ME OR UNDER SUPERVISION OF THIS PROJECT. I AM NOT PROVIDING MY OBSERVATION.

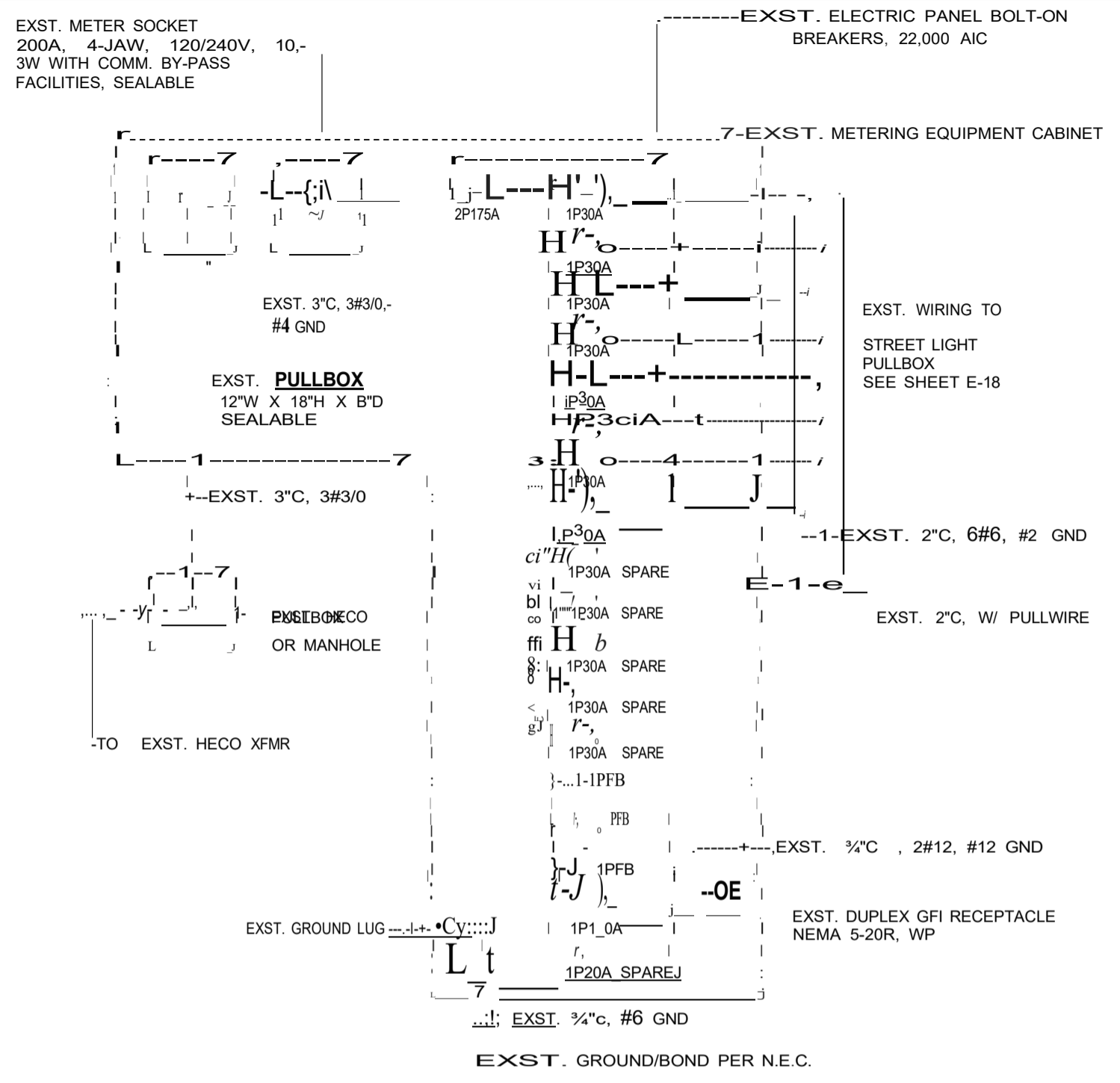
N





SEE THIS SHEET FOR ONE-LINE DIAGRAM  
 NOTE: "\*" DENOTES PROVISIONS FOR HECO SEALS.

**@EXST. SYSTEM "M-175"**  
 =ff ELECTRICAL METERING EQUIPMENT ELEVATION  
 NOT TO SCALE



(B) EXST. SYSTEM "M-175" ONE-LINE DIAGRAM

| LIGHTING LOAD |                              |                             |            |
|---------------|------------------------------|-----------------------------|------------|
| CIRCUIT       | EXISTING LOAD                | NEW LOAD                    | TOTAL LOAD |
| C1            | 5 X 202W + 2 X 143W = 1,296W |                             | 1,296W     |
| C3            | 5 X 202W + 1 X 143W = 1,153W |                             | 1,153W     |
| C5            | 5 X 202W = 1010W             | 3 X 88W = 264W              | 1,274W     |
| C7            | 4 X 202W = 808W              | 4 X 88W = 352W              | 1,160W     |
| C2            | 3 X 202W = 606W              | 4 X 88W + 3 X 53W = 511W    | 1,117W     |
| C4            | 2 X 202W = 404W              | 5 X 88W + 2 X 53W = 546W    | 950W       |
| C6            | 1 X 143W = 143W              | 5 X 88W + 2 X 53W = 546W    | 689W       |
| CB            | 1 X 143W = 143W              | 4 X 88W + 2 X 53W = 458W    | 601W       |
| TOTAL         | 5,563W                       | 25 X 88W + 9 X 53W = 2,677W | 8,240W     |

Community Planning and Engineering, Inc.

**EAST KAPOLEI I DEVELOPMENT  
 INCREMENT 2C**  
 HONOLULU, EWA, OAHU, HAWAII  
 (DP SUBD. FILE NO. 2019/SUB-11)  
 OWNER: DNOOPER, DEPARTMENT OF HAWAIIAN HOMELANDS  
 TAX MAP KEY: 9-1-17-PORTION 161

**Eat.FM:NT  
 CABINET & DETAILS**

DRAWN BY: CAO | ENGINEER: GF | CHECKED BY: GF

APPROVED: \_\_\_\_\_

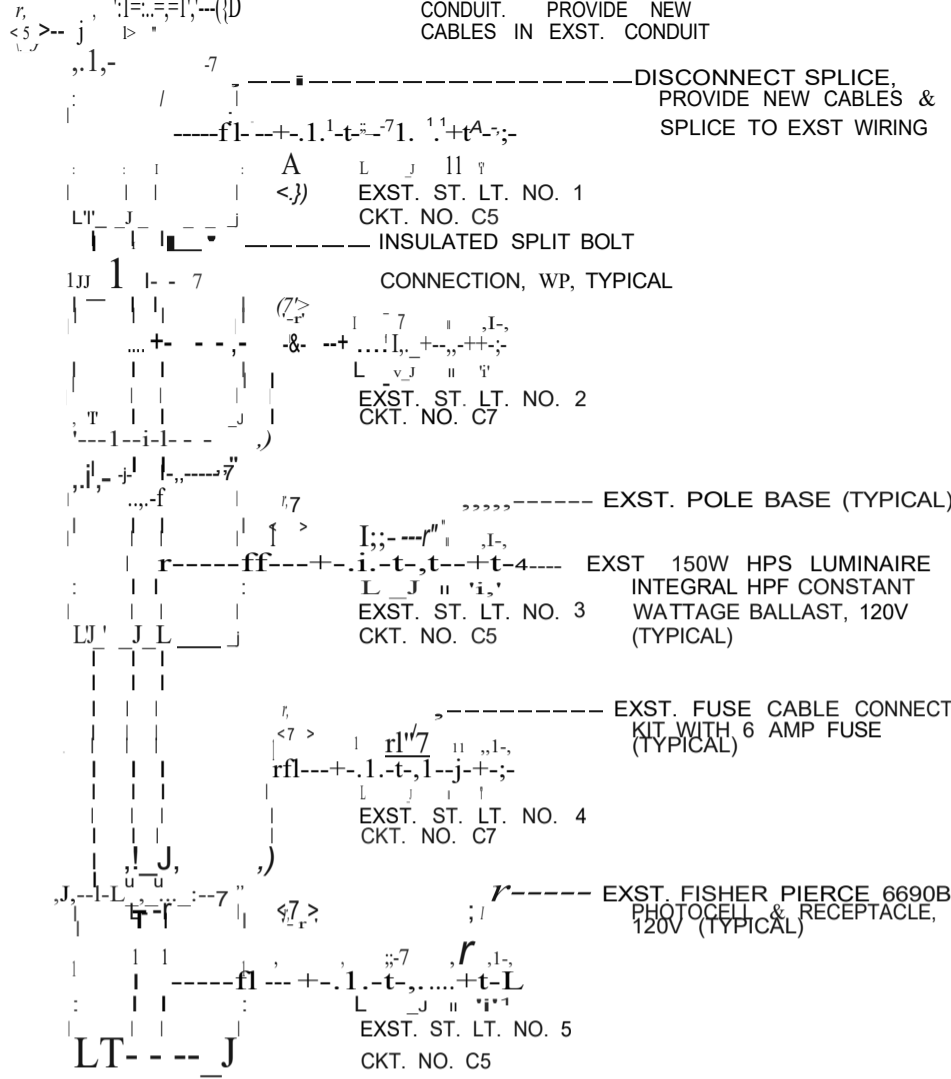
DATE: 2/10/22



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A duly Licensed Professional Engineer in the State of Hawaii. I AM NOT PROVIDING ANY GUARANTEE OR WARRANTY FOR THE DESIGN OR CONSTRUCTION OF THIS PROJECT. U.S. DEPARTMENT OF HAWAIIAN HOMELANDS. LICENSE EXPIRATION DATE: 04/30/22

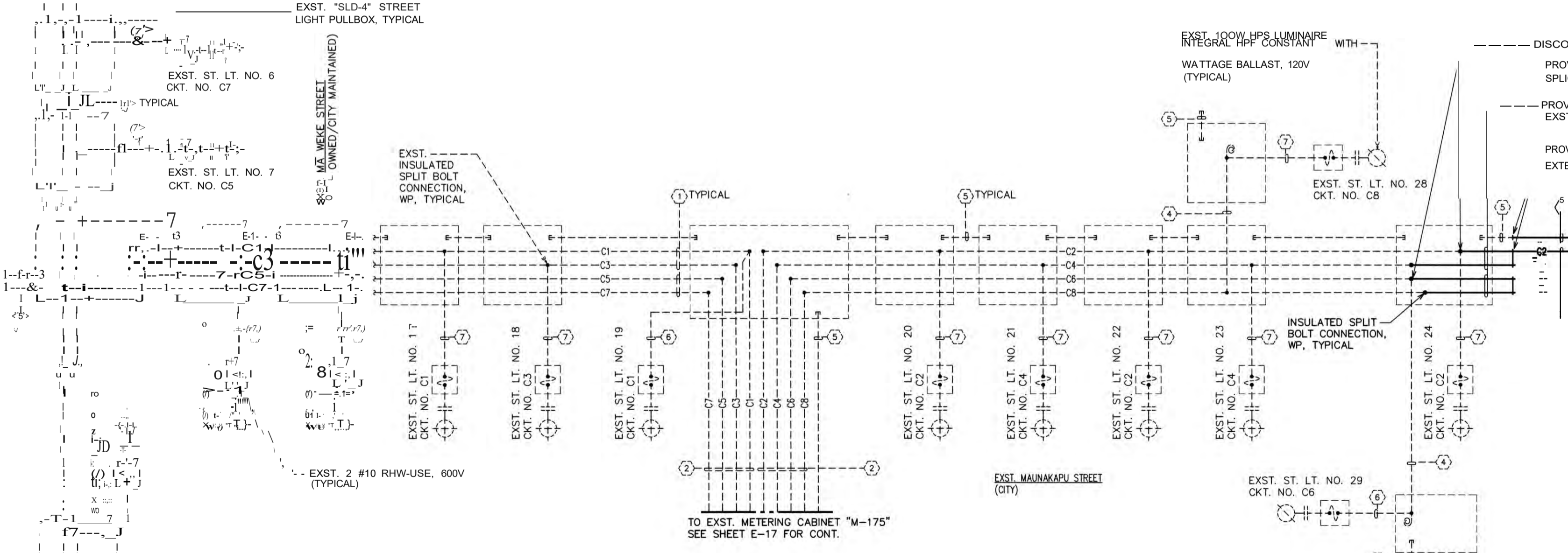
Z C C  
 0  
 1  
 2  
 3  
 4  
 5  
 6  
 7  
 8  
 9  
 10  
 11  
 12  
 13  
 14  
 15  
 16  
 17  
 18  
 19  
 20  
 21  
 22  
 23  
 24  
 25  
 26  
 27  
 28  
 29  
 30  
 31  
 32  
 33  
 34  
 35  
 36  
 37  
 38  
 39  
 40  
 41  
 42  
 43  
 44  
 45  
 46  
 47  
 48  
 49  
 50

S.E.E.S.H.E.E.T...E-0=FO\_R\_C\_ON\_T... PROVIDE COUPLING & EXTEND



- STREET LIGHT NOTES:**
1. WIRE TO BE RHW-USE, 600V WITH OUTER COVERING.
  2. CONDUIT-PVC SCHD. 80 DIRECT BURIED @ SIDEWALK.  
PVC SCHD. 40 WITH 3" CONC. JACKET @ ROAD CROSSINGS.
  3. CONTRACTOR SHALL IDENTIFY ALL CIRCUIT CABLES WITH LEAD TAG IN EACH PULLBOX AS SHOWN.  
ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH WHITE INSULATION. OTHER MEANS OF IDENTIFICATION ARE NOT ACCEPTABLE.
  5. INSTALL PULLBOXES ON 6" OF #3 CRUSHED ROCK BASE.
  6. SEAL ALL CONDUIT ENDS WITH DUCT SEAL.

| ITEM | DESCRIPTION                     |
|------|---------------------------------|
| (D)  | 2"C, 3 #2 RHW-USE, #2 GND       |
| @    | 2"C, 6 #6 RHW-USE, #2 GND       |
| @    | 2"C, 3 #6 RHW-USE, #6 GND       |
| (C)  | 2"C, 2 #6 RHW-USE, #6 GND       |
| @    | 2"C (SPARE), PULLWIRE           |
| (R)  | 1 1/2"C, 2 #8 RHW-USE, #8 GND   |
| (J)  | 1 1/4"C, 2 #8 RHW-USE, #8 GND   |
| (R)  | 1 1/4"C, (SPARE), PULLWIRE      |
| (R)  | 2"C, 3 #2, 2 #6 RHW-USE, #2 GND |
| @    | 2"C, 4 #6 RHW-USE, #6 GND       |



**SYSTEM "M-175" MODIFIED STREET LIGHT CONNECTION DIAGRAM I**

CREJENT 2C  
HONOLULU, EWA, OAHU, HAWAII  
(DP SUBD. FILE NO. 2019/SUB-171)  
OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17:PORTION 161

**SYSTEM "M-175" MODIFIED STREET LIGHT CONNECTION DIAGRAM I**

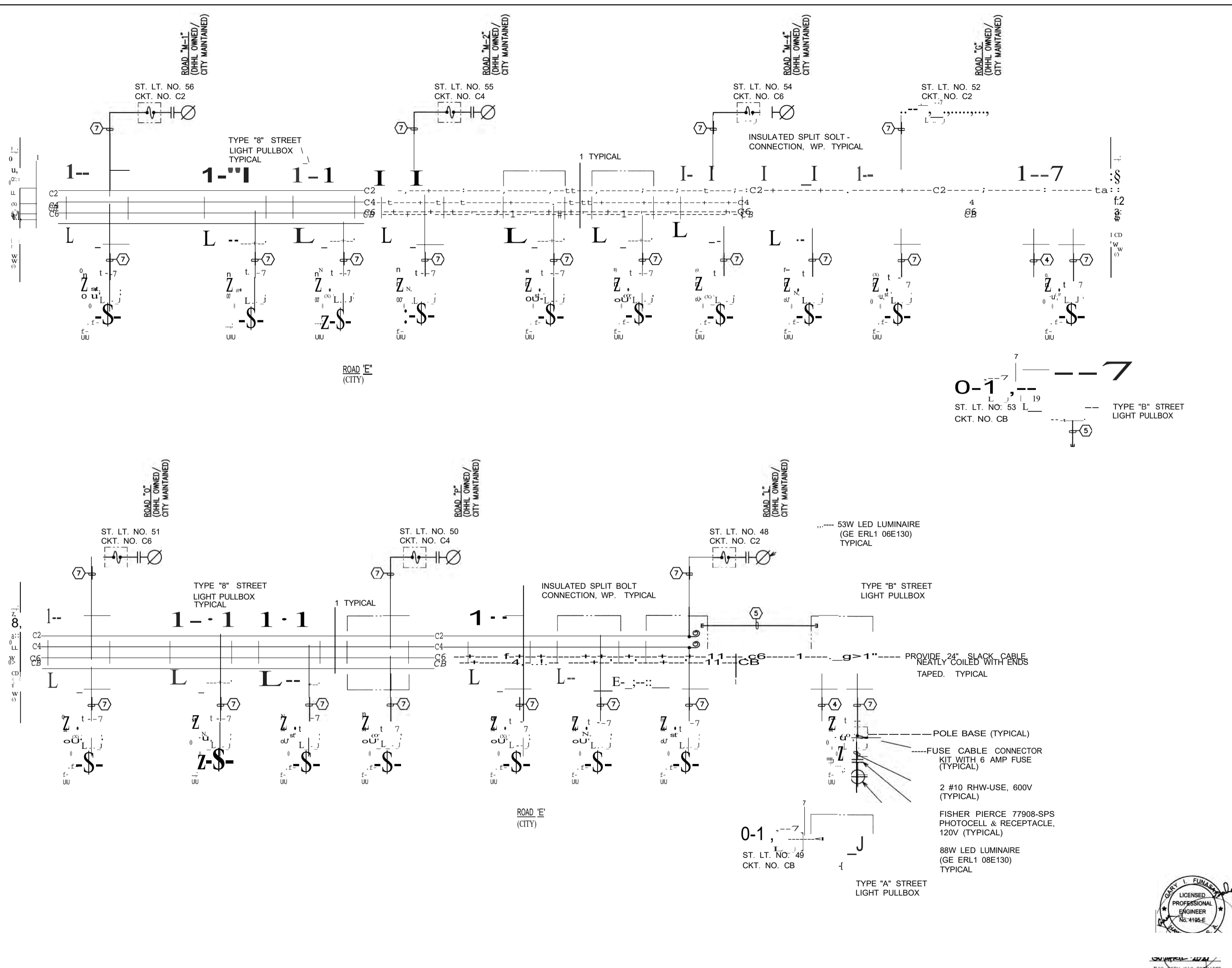
APPROVED: [Signature] ENGINEER: [Signature] CHECKED BY: [Signature]

01/ucENSE [Signature]  
PROFESSOR  
ENRINEER  
[Signature]

WO AS REP BY  
ME OR UN MY DESIGN  
CONSTRUCTION PROJECT

LICENSE EXPIRATION DATE: 04 30 22

4/28/2021 9:30AM RyanN



### CONDUIT & WIRE SCHEDULE

| ITEM | DESCRIPTION                     |
|------|---------------------------------|
| <I>  | 2"C, 3 #2 RHW-USE, #2 GND       |
| Ⓡ    | 2"C, 6 #6 RHW-USE, #2 GND       |
| @    | 2"C, 3 #6 RHW-USE, #6 GND       |
| Ⓢ    | 2"C, 2 #6 RHW-USE, #6 GND       |
| Ⓡ    | 2"C (SPARE), PULLWIRE           |
| Ⓡ    | 1 1/2"C, 2 #8 RHW-USE, #8 GND   |
| (J)  | 1 1/4"C, 2 #8 RHW-USE, #8 GND   |
| Ⓡ    | 1 1/4"C, (SPARE), PULLWIRE      |
| Ⓡ    | 2"C, 3 #2, 2 #6 RHW-USE, #2 GND |
| (@)  | 2"C, 4 #6 RHW-USE, #6 GND       |

- ### STREET LIGHT NOTES:
- WIRE TO BE RHW-USE, 600V WITH OUTER COVERING.
  - CONDUIT-PVC SCHD. 80 DIRECT BURIED @ SIDEWALK. PROVIDE PROPER SLOPE.
  - CONTRACTOR SHALL IDENTIFY ALL CIRCUIT CABLES WITH LEAD TAG IN EACH PULLBOX AS SHOWN. ALL NEUTRAL CONDUCTORS SHALL BE IDENTIFIED WITH WHITE INSULATION. OTHER MEANS OF IDENTIFICATION ARE NOT ACCEPTABLE.
  - INSTALL PULLBOXES ON 6" OF #3 CRUSHED ROCK BASE.
  - SEAL ALL CONDUIT ENDS WITH DUCT SEAL.



Community Planning and Engineering, Inc.

**EAST KAPOLEI I DEVELOPMENT INCRBIENT2C**

HONOLULU, EWA, OAHU, HAWAII  
 (DP SUBD. FILE NO. 2019/SUB-171)  
 010ER DEVELOPER, DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17:PORTION 161

**SYSTEM "M-175" MODFED STREET LIGHT CONNECTION DIAGRAM I**

ORA BY: CAD      ENGINEER: GF      CHECKED BY: GF

APPROVED: \_\_\_\_\_

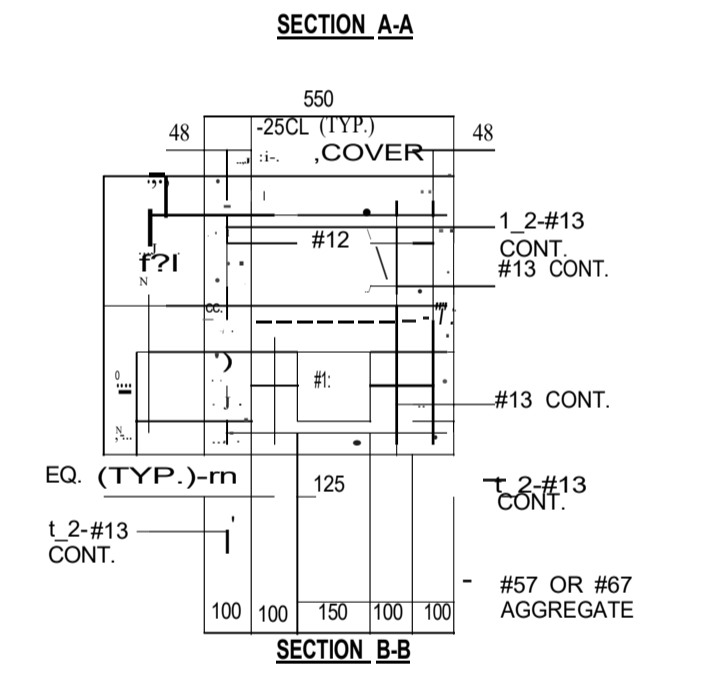
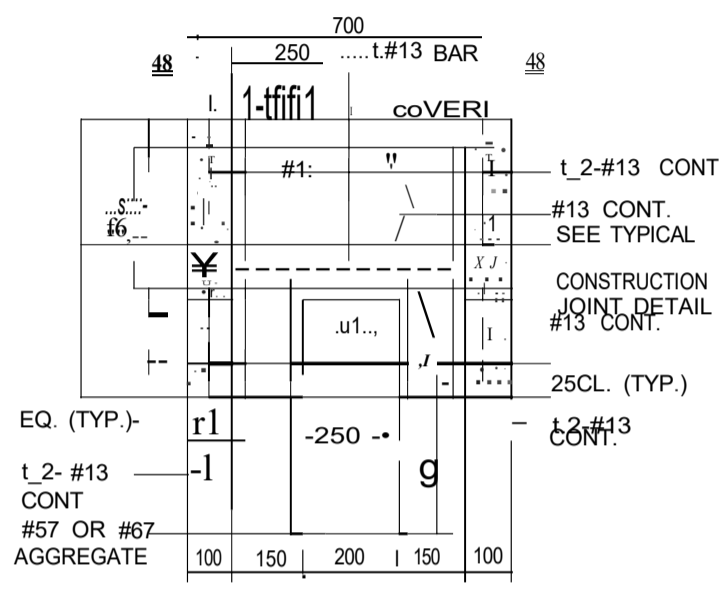
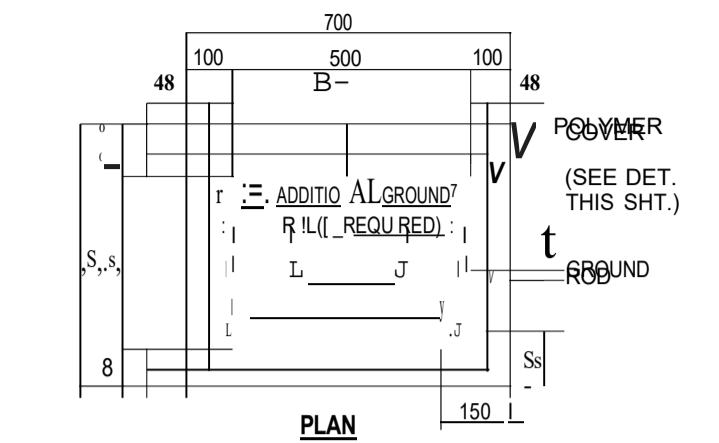
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. MY LICENSE NO. IS 4195-E. MY LICENSE EXPIRES ON 04/30/22.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100



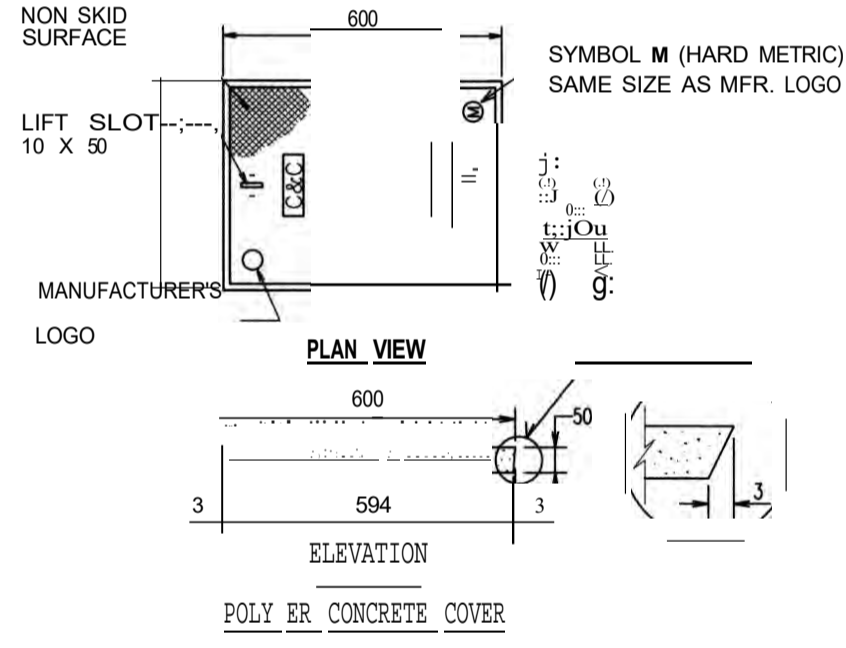




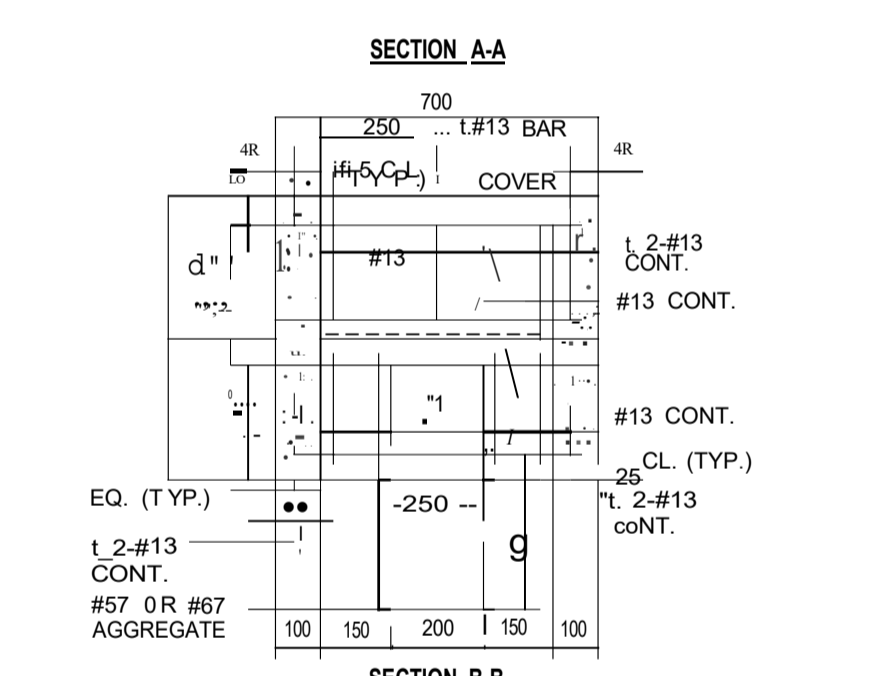
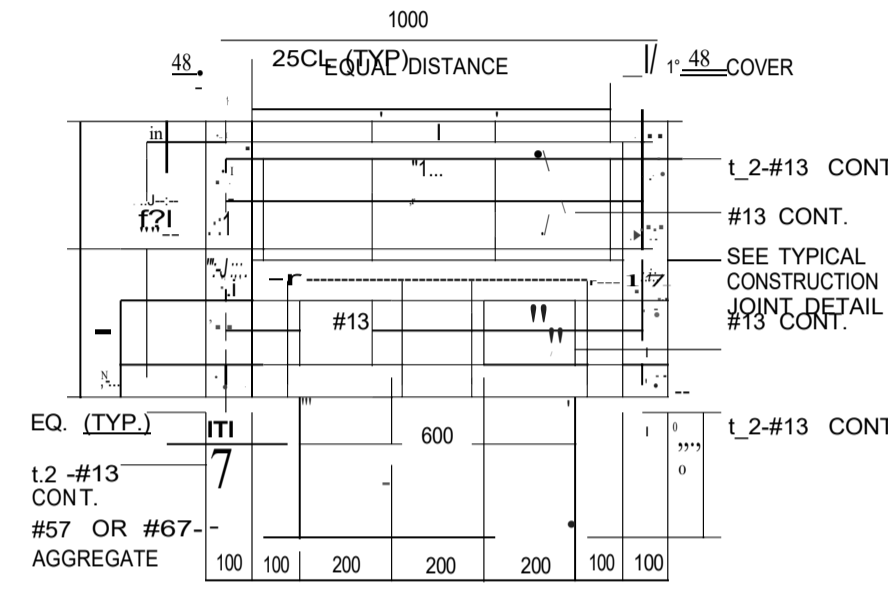
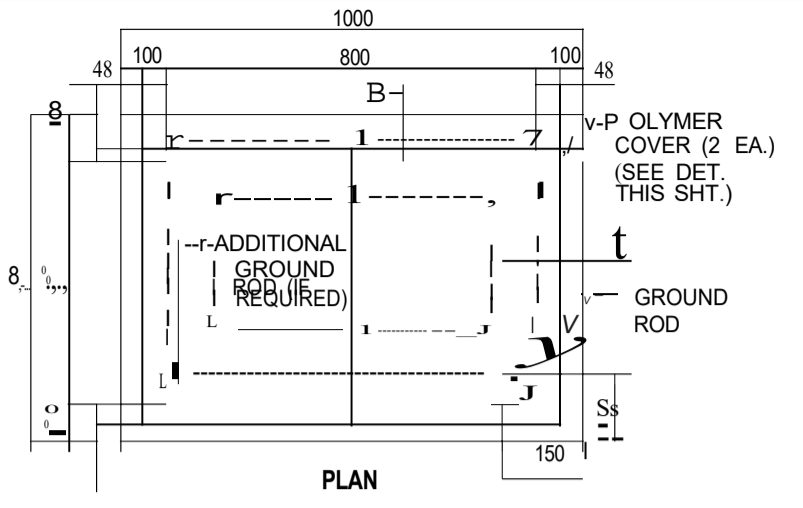


**TYPE "A" PULLBOX (OLD TYPE "B")**  
NOT TO SCALE

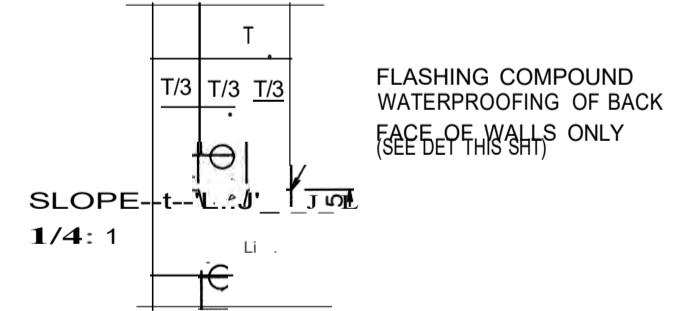
- GENERAL NOTES**
1. PROVIDE A MINIMUM OF ONE 16 2X 2.5M COPPER/STEL GROUND ROD IN EACH PULLBOX. WHEN DIRECTED BY THE TRAFFIC SIGNAL INSPECTOR/ENGINEER, INSTALL ADDITIONAL GROUND RODS. COST OF GROUND RODS SHALL BE INCIDENTAL TO THE PULLBOXES.
  2. ALL PRE-CAST CONCRETE PULLBOXES SHALL BE MANUFACTURED IN TWO PIECES.
  3. THE PULLBOX WITH COVER SHALL BE CAPABLE OF SUPPORTING AN MS 18 LOADING.
  4. THE MAXIMUM WEIGHT OF THE PULLBOX COVER SHALL NOT EXCEED 27 KILOGRAMS.
  5. THE OPENINGS FOR THE CONDUITS ON ALL PULLBOXES SHALL BE PRE-CAST CONCRETE KNOCKOUTS.
  6. AFTER INSTAWING THE CONDUITS IN THE OPENINGS OF THE PULLBOXES, THE CONTRACTOR SHALL FILL THE EXCESS OPENING IN THE PRE-CAST KNOCKOUTS WITH CONCRETE MORTAR.
  7. PRIOR TO INSTAWING THE PULLBOXES, THE CONTRACTOR SHALL LEVEL THE BOTTOM OF THE TRENCH AND ACHIEVE A MINIMUM OF 95% RELATIVE COMPACTION OF THE BOTTOM OF THE TRENCH.
  8. ALL CONCRETE SHALL BE CLASS A (25MPA, MIN.)
  9. REBARS SHALL BE GRADE 300 AND ALL LAPPED SPLICES SHALL BE 360MM MINIMUM.
  10. THE #57 OR #67 SIZE AGGREGATE SHALL CONFORM TO LATEST VERSION OF AASHTO M43 (ASTM D 448).
  11. TYPE "C" PULLBOX SHALL BE INSTALLED IN A LOCATION PROTECTED FROM VEHICULAR TRAFFIC (I.E. RAISED SIDEWALK, BEHIND A.C. CURBS, TRAFFIC SIGNAL STANDARD OR PIPE GUARDS).



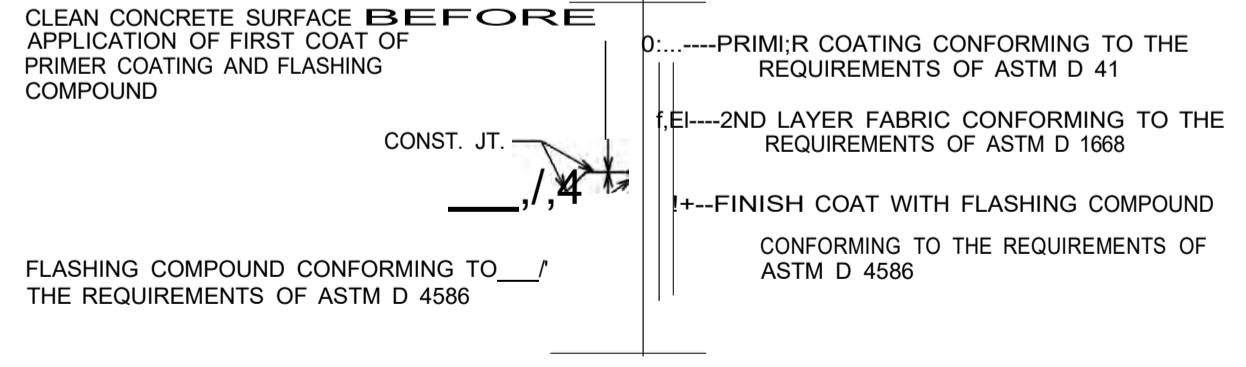
ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED



**TYPE "B" PULLBOX OLD TYPE "C"**  
NOT TO SCALE



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED



ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE INDICATED



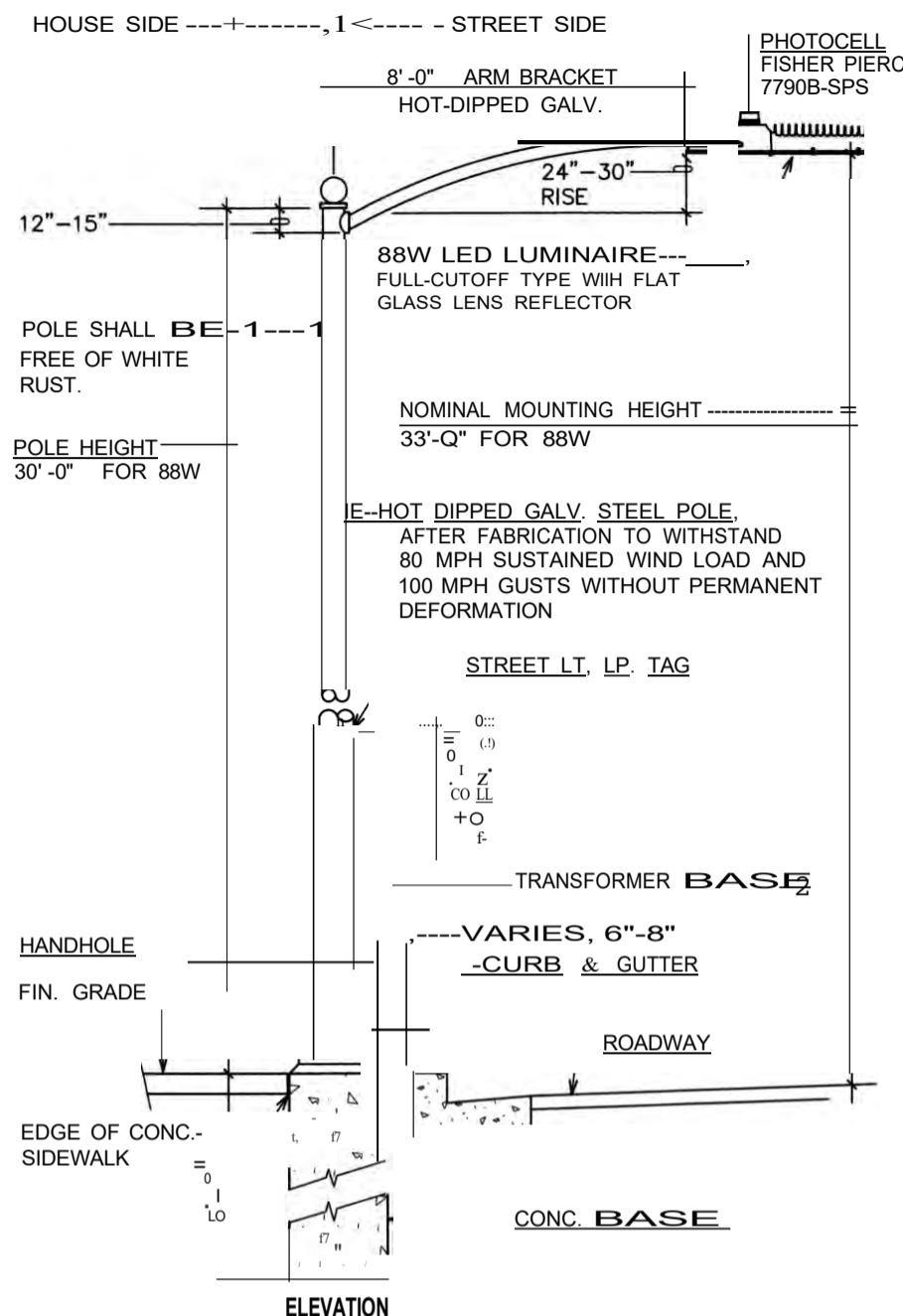
**EAST KAPOLEI DEVELOPMENT**  
**NCREM:NT 2C**  
 HONOLULU, EWA, OAHU, HAWAII  
 (DP SUBD. FILE NO. 2019/SUB-171)  
 OWNER/DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX AP KEY: 9-1-17/PORTION 161

---

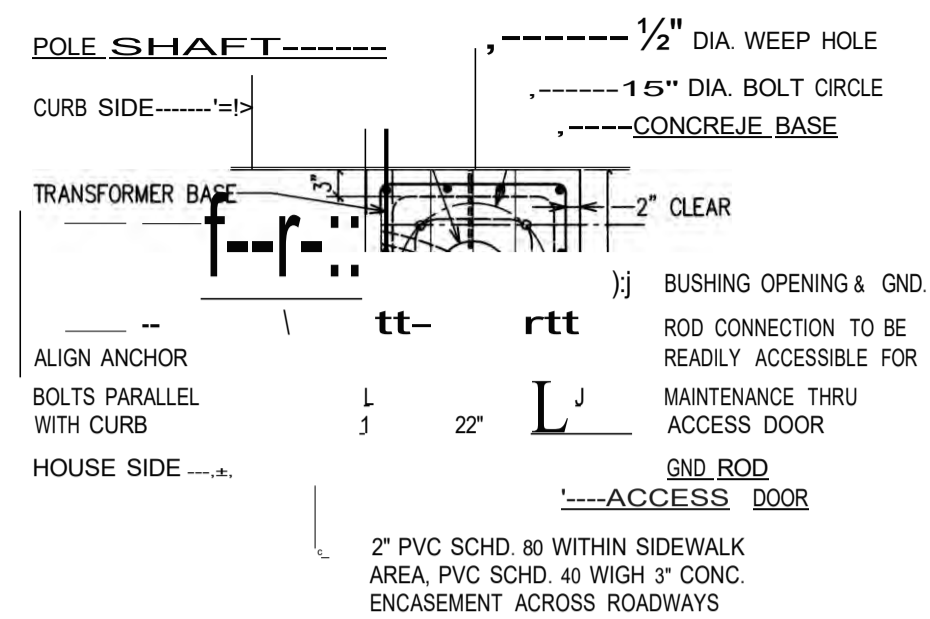
**SEE LIGHT & TRAFFIC SIGNAL**  
**PULLBOX DETAILS**

DRAWN BY: CD    ENGINEER: GF    CHECKED BY: GF  
 DATE: 04/30/22

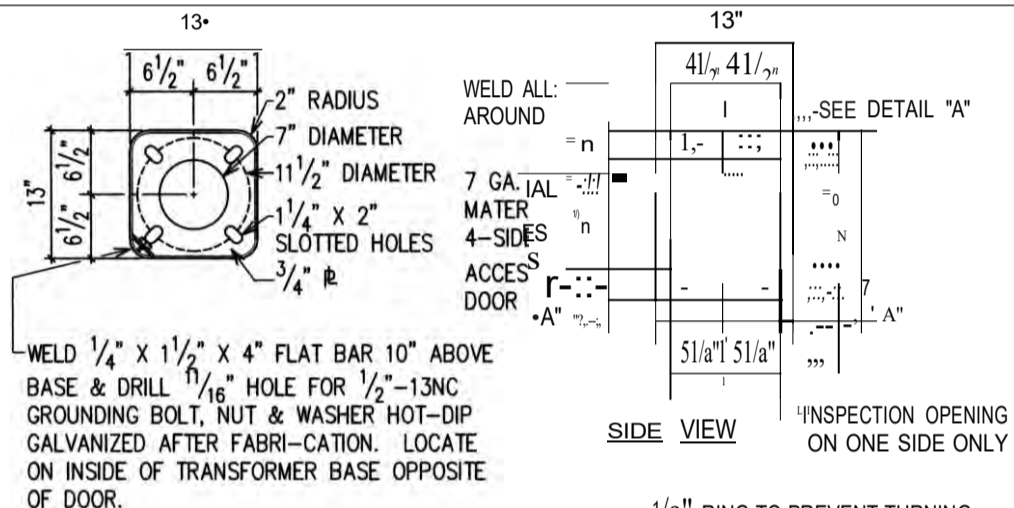
BY: SION  
PROJECT: OBSERVATION  
DATE: 04/30/22



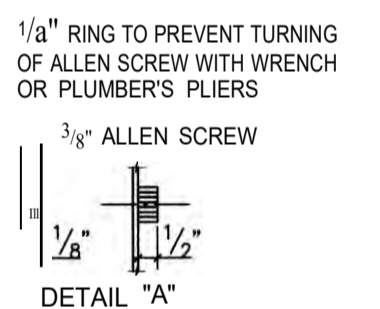
**A STREET LIGHT STANDARD**  
E-22 N.T.S. METERED SYSTEM



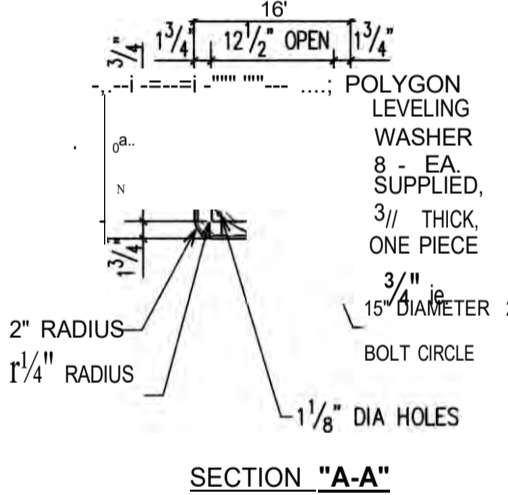
**C CONCRETE BASE PLAN**  
E-22 N.T.S.



**TOP VIEW**

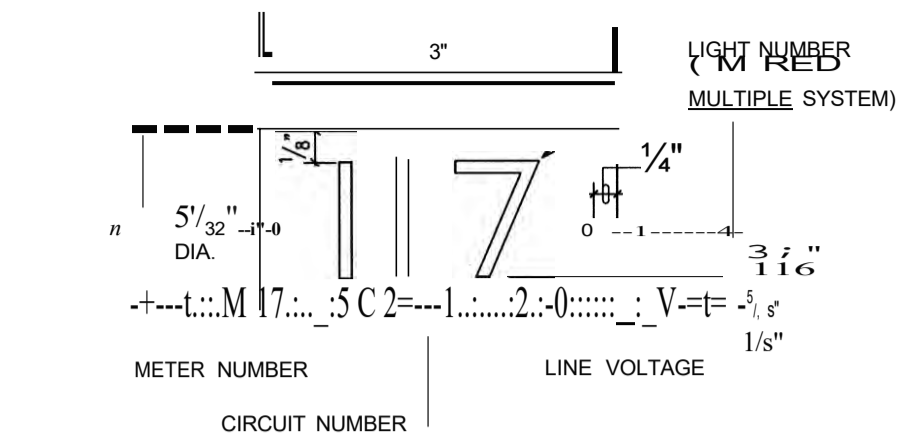


**DETAIL "A"**



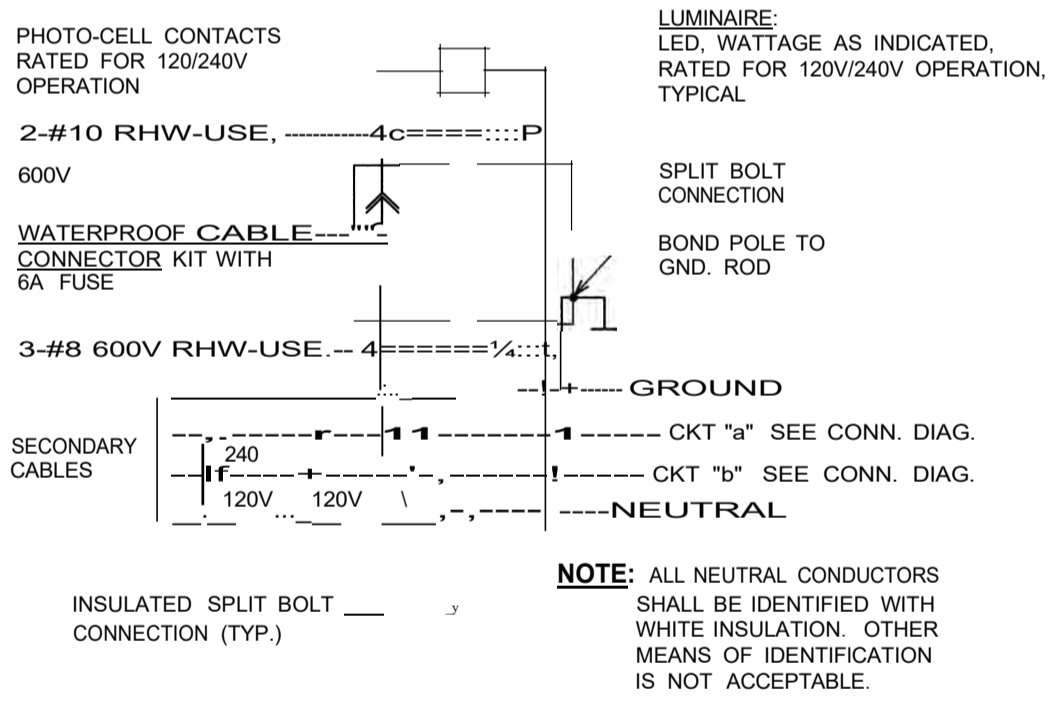
**SECTION "A-A"**

**@Jr ANSFORMER BASE DETAIL**

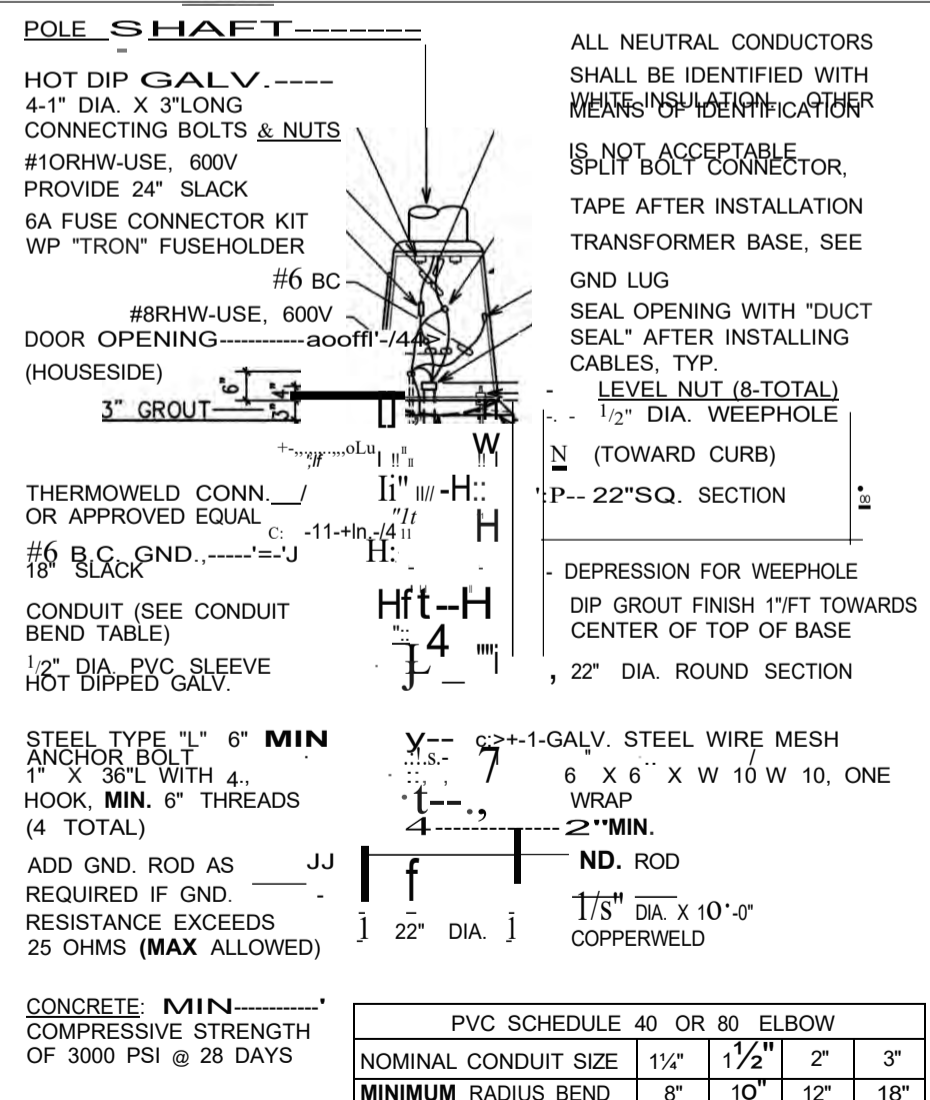


- NOTES:**
- USE 2 PLY LAMINATED FLEXIBLE PLASTIC BLACK-WHITE. THICKNESS: BLACK CAP SHEET-0.010", WHITE BASE SHEET-0.052".
  - NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NUMBER AS REQUIRED).
  - NOMENCLATURE SIZE SHALL BE 5/16" HIGH AND ENGRAVED 1/32" WIDE, WHITE IN COLOR (METER NUMBER, CIRCUIT NUMBER AND VOLTAGE AS REQUIRED).
  - ATTACH TO ALUMINUM AND STEEL POLES WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE. ATTACH TO WOOD POLES WITH 4D ALUMINUM NAILS.
  - NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE LETTERS".
  - ASSIGN CIRCUIT NUMBER FOR SYSTEMS WITH TWO OR MORE CIRCUITS (LETTER INDICATES PANEL BOARD, NUMBER INDICATES CIRCUIT).

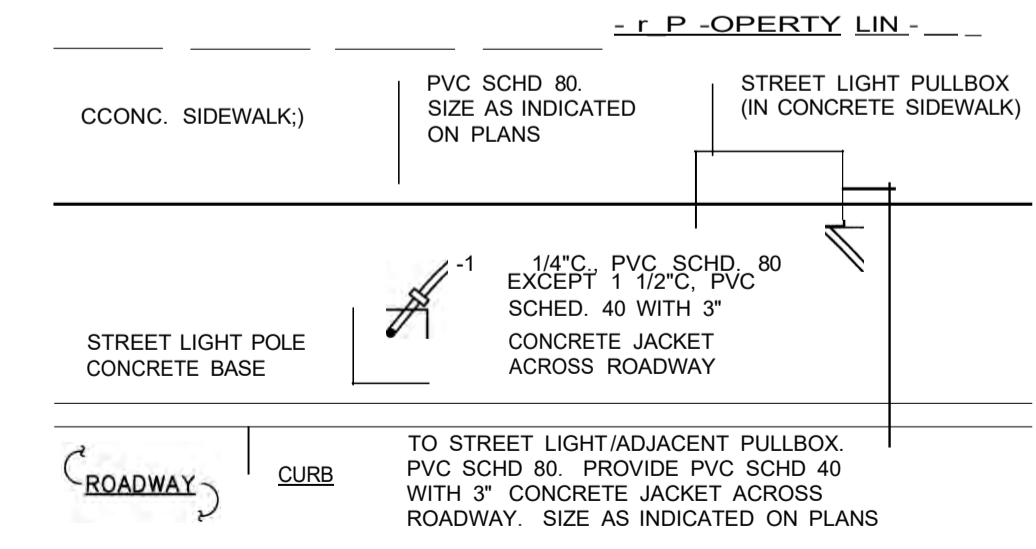
**F STREET LIGHT I.D. TAG DETAIL**  
E-22 NOT TO SCALE (METERED SYSTEM)



**G STREET LIGHT CONNECTION DIAGRAM**  
E-22 (120/240V METERED SYSTEM)



**B2 CONCRETE BASE ELEVATION**  
E-22 N.T.S.



**TYPICAL STREET LIGHT/PULLBOX PLAN**  
NOT TO SCALE

REVISION DATE: \_\_\_\_\_

IS/RFICION: \_\_\_\_\_

**Corumity Plarrig and Ealc:1001.u. Inc.**

Engineering Design

**EAST KAPOLEI DEVELOPMENT**

**NCRET.ENT 2C**

HONOUULI, EWA, OAHU, HAWAII

(DP SUBD. FILE NO. 2019SUB171)

OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS

TAX MAP KEY: 9-1-17 PORTION 161

**SIREI LJGIT DETAILS I**

DRAWN BY: CAII ENGINEER: GF CHECKED BY: GF

APPROVED: \_\_\_\_\_

THI y

ME O y

CONS PROJECT

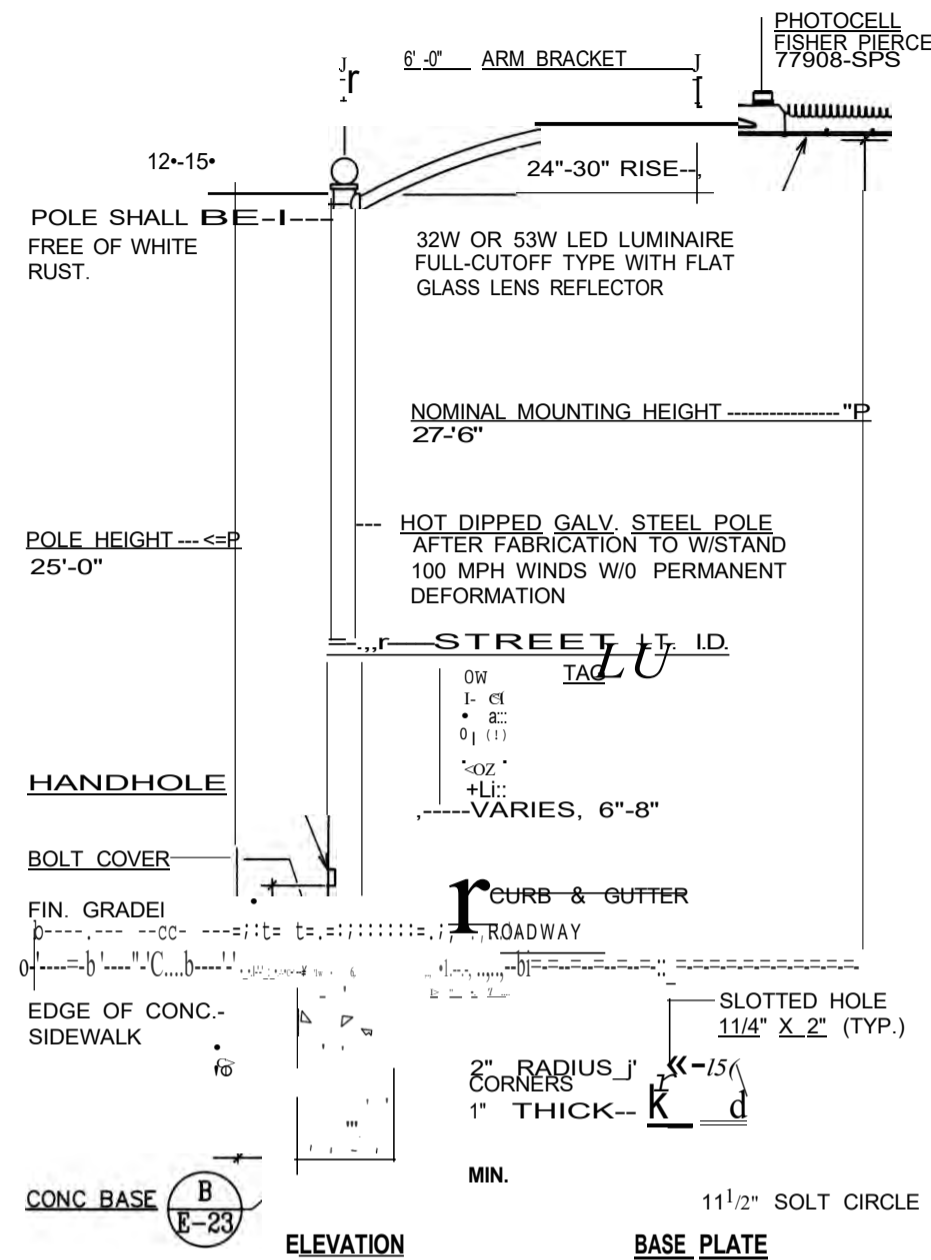
LL BEU VATION

DATE: 04/03/2021

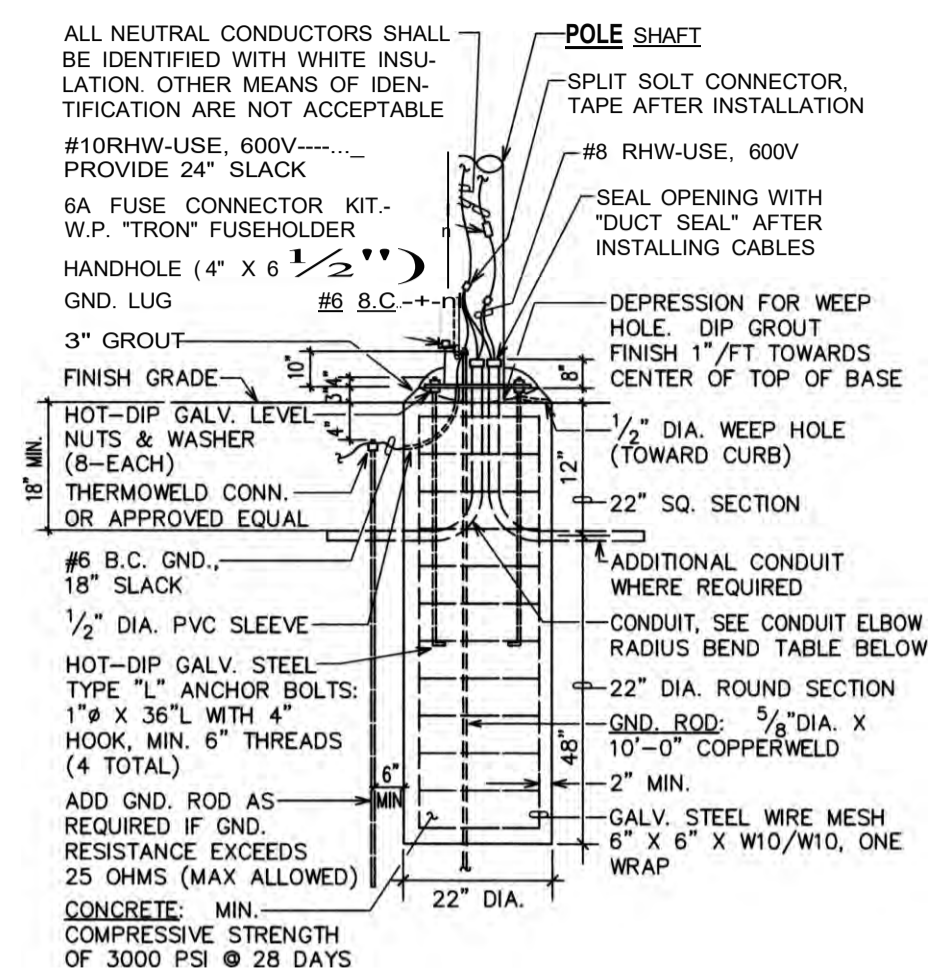
DATE: 04/03/2021



14/29/2021 9:31AM



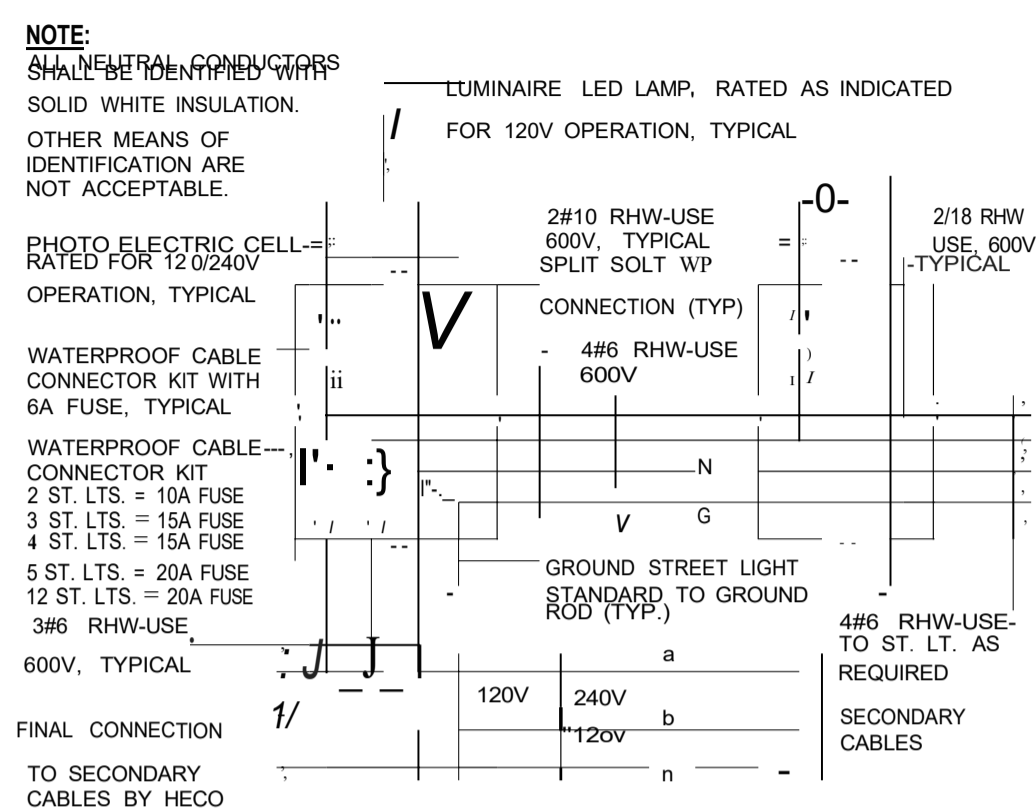
**A STREET LIGHT STANDARD**  
E-23 NOT TO SCALE



NOTE: SEE PLAN C/E-23

| CONDUIT ELBOW RADIUS BEND TABLE |        |     |
|---------------------------------|--------|-----|
| PVC SCHEDULE 40 OR 80 ELBOW     |        |     |
| NOMINAL CONDUIT SIZE            | 1 1/4" | 2"  |
| MINIMUM RADIUS BEND             | 8"     | 12" |

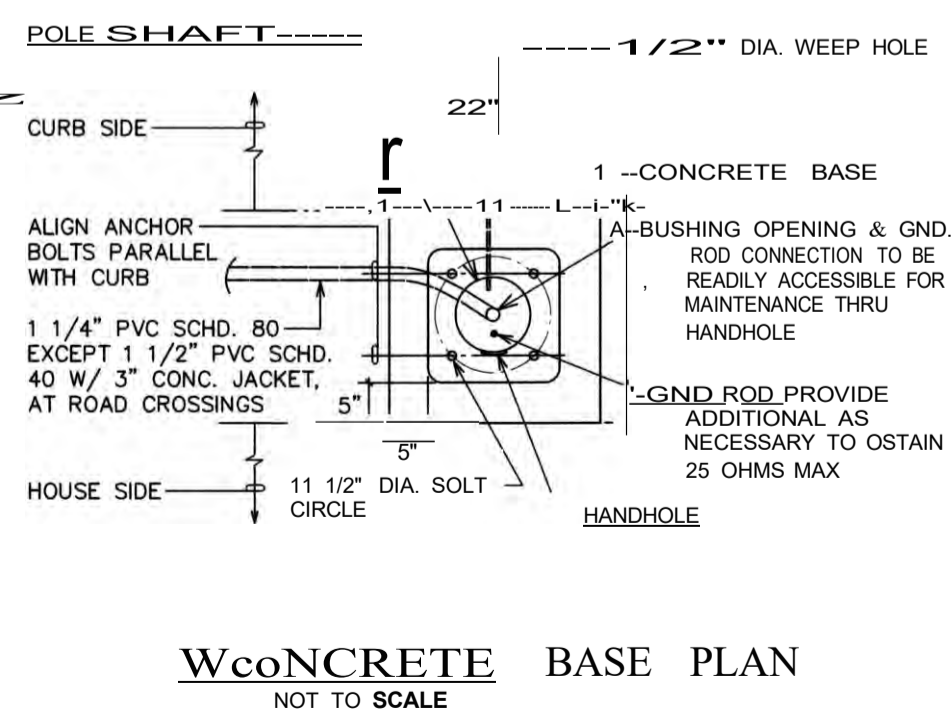
**B CONCRETE BASE ELEVATION**  
E-23 NOT TO SCALE



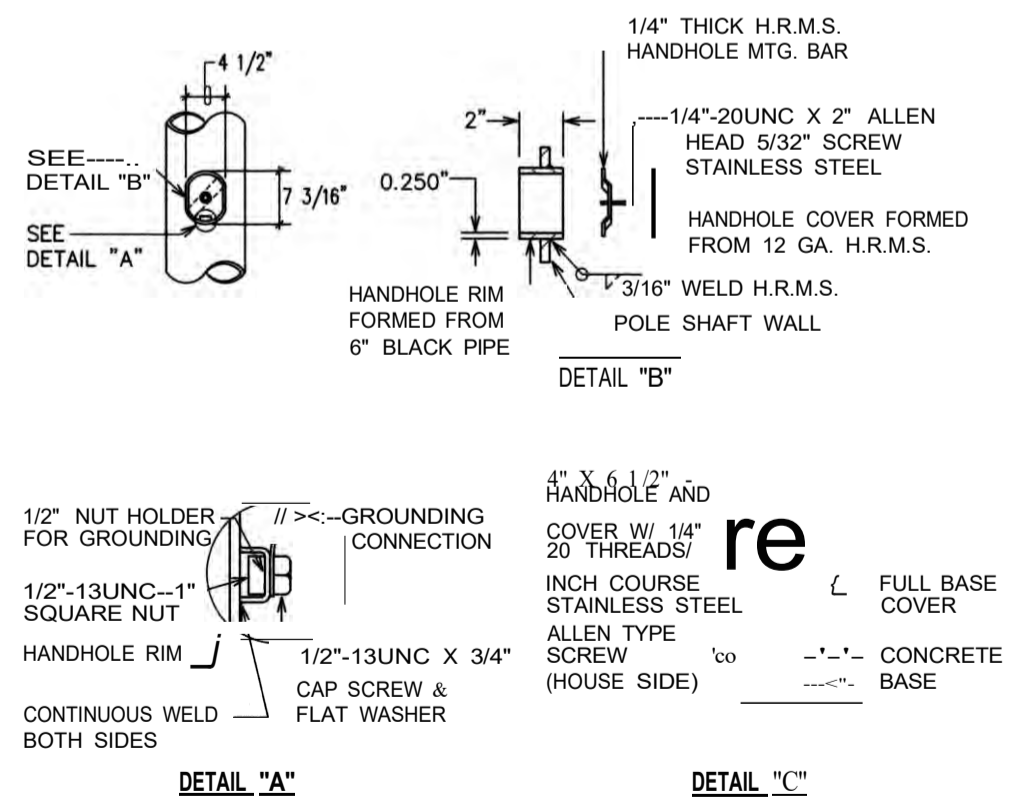
**F STREET LIGHT I.D. TAG DETAIL**  
E-23 NOT TO SCALE (MULTIPLE SYSTEM)

- NOTES:
- USE 3 PLY LAMINATED FLEXIBLE PLASTIC, BLACK-WHITE-BLACK THICKNESS: BLACK CAP SHEET-0.010", WHITE SHEET-0.052", BLACK BASE SHEET-0.010".
  - AREA CODE AND LIGHT NUMBER SHALL BE 5/8" HIGH, 1/8" STROKE, WHITE IN COLOR (NUMBER AS REQUIRED).
  - POLE NUMBER SHALL BE 1/4" HIGH, 1/16" STROKE, WHITE IN COLOR (NUMBER AS REQUIRED).
  - ATTACH TO STEEL POLES WITH NO. 8 STAINLESS STEEL, 1/2" LONG DRIVE SCREWS IN 1/8" DRILL HOLE.
  - NUMBERS ARE INSCRIBED BY CUTTING THROUGH "BLACK CAP SHEET" TO EXPOSE "WHITE" LETTERS.

**F STREET LIGHT I.D. TAG DETAIL**  
E-23 NOT TO SCALE (MULTIPLE SYSTEM)



**W CONCRETE BASE PLAN**  
NOT TO SCALE



**re STREET LIGHT STANDARD HANDHOLE DETAILS**  
NOT TO SCALE

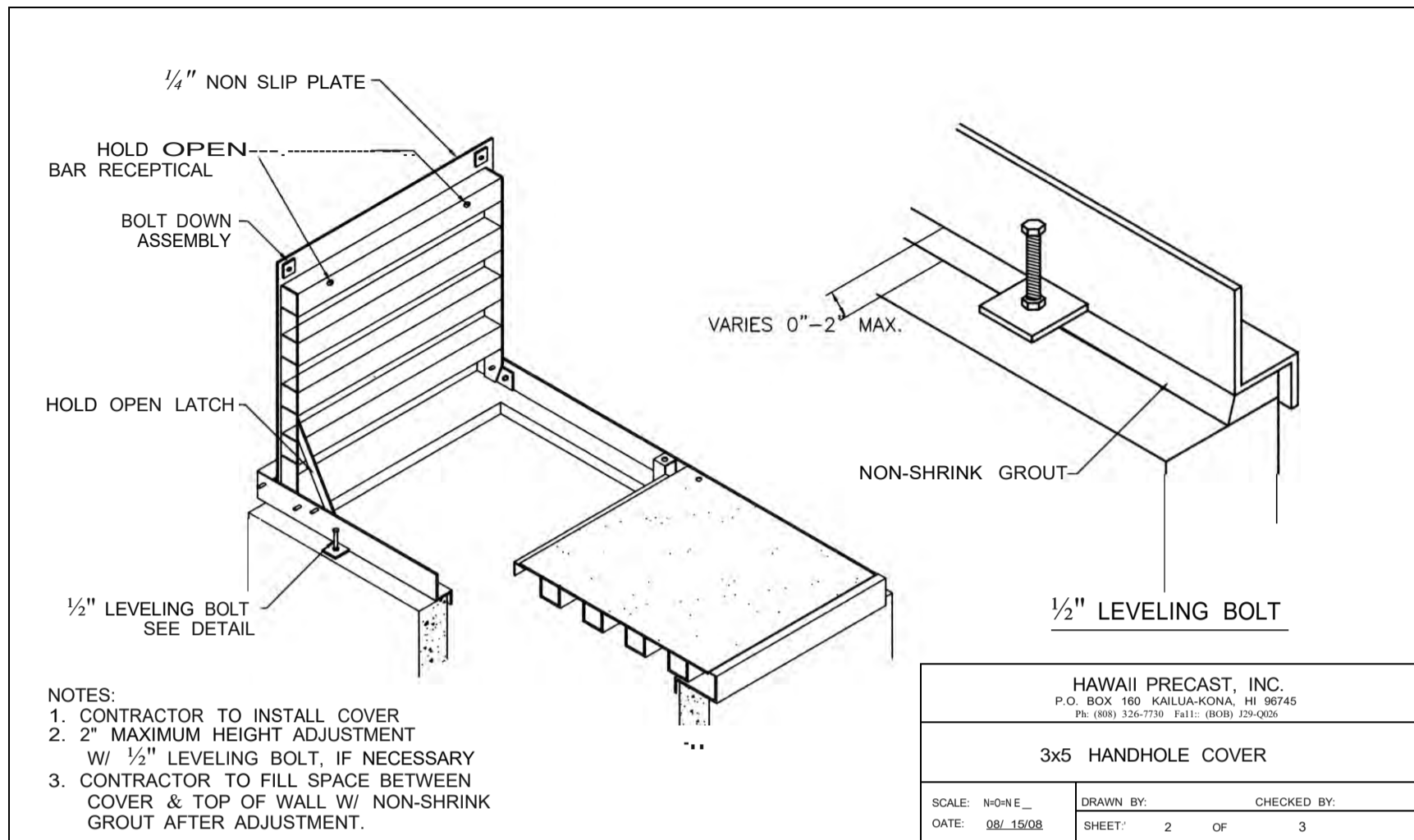
CP&E Community Planning and Engineering, Inc.  
1001 Kalia Road, Suite 111, Honolulu, HI 96813  
EAST KAPOLEI DEVELOPMENT  
TDB.ENT 2C  
HONOLULU, EWA, OAHU, HAWAII  
(DP SUBD. FILE NO. 2019SUB-171)  
OWNER DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17-PORIION161



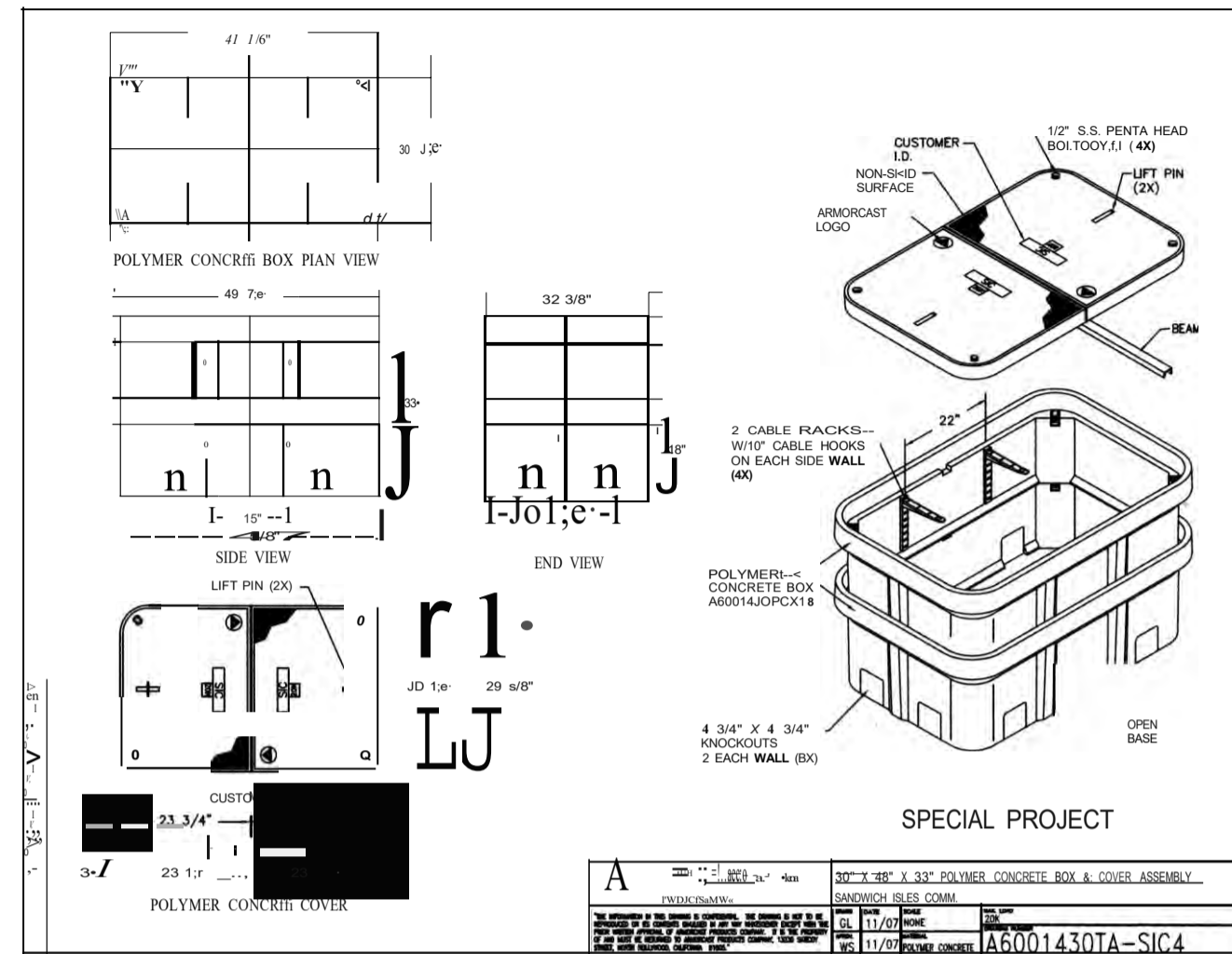
**S11-d:EL LIGHT DETAILS I**  
DRAWN BY: CAD ENGINEER: GF CHECKED BY: GF  
APPROVED:

THIS WORK WAS PROVIDED BY ME OR UNDER SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER OBSERVATION. DATE: 04/3/22

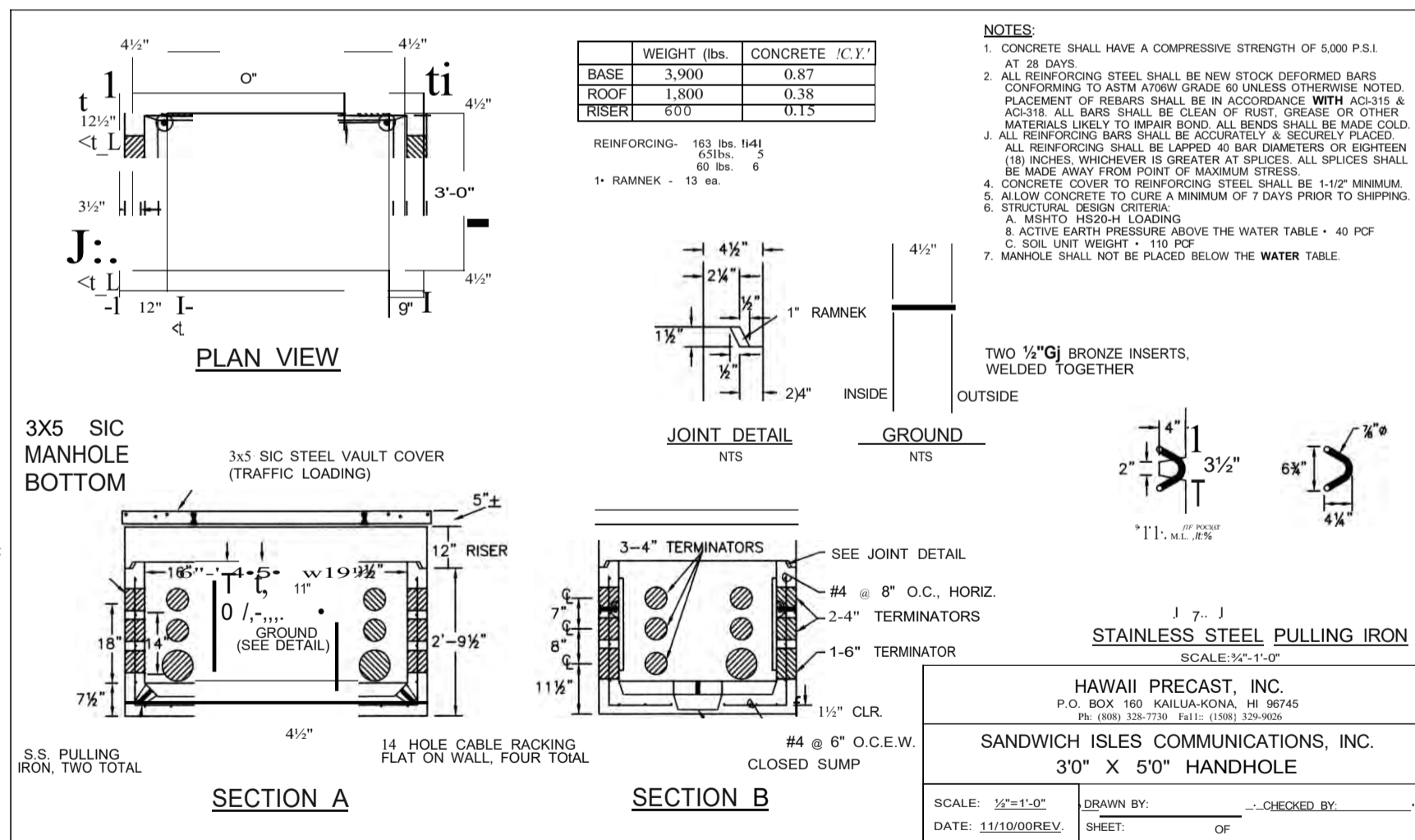




UH 3x5 COVER



UHC 30x48x33

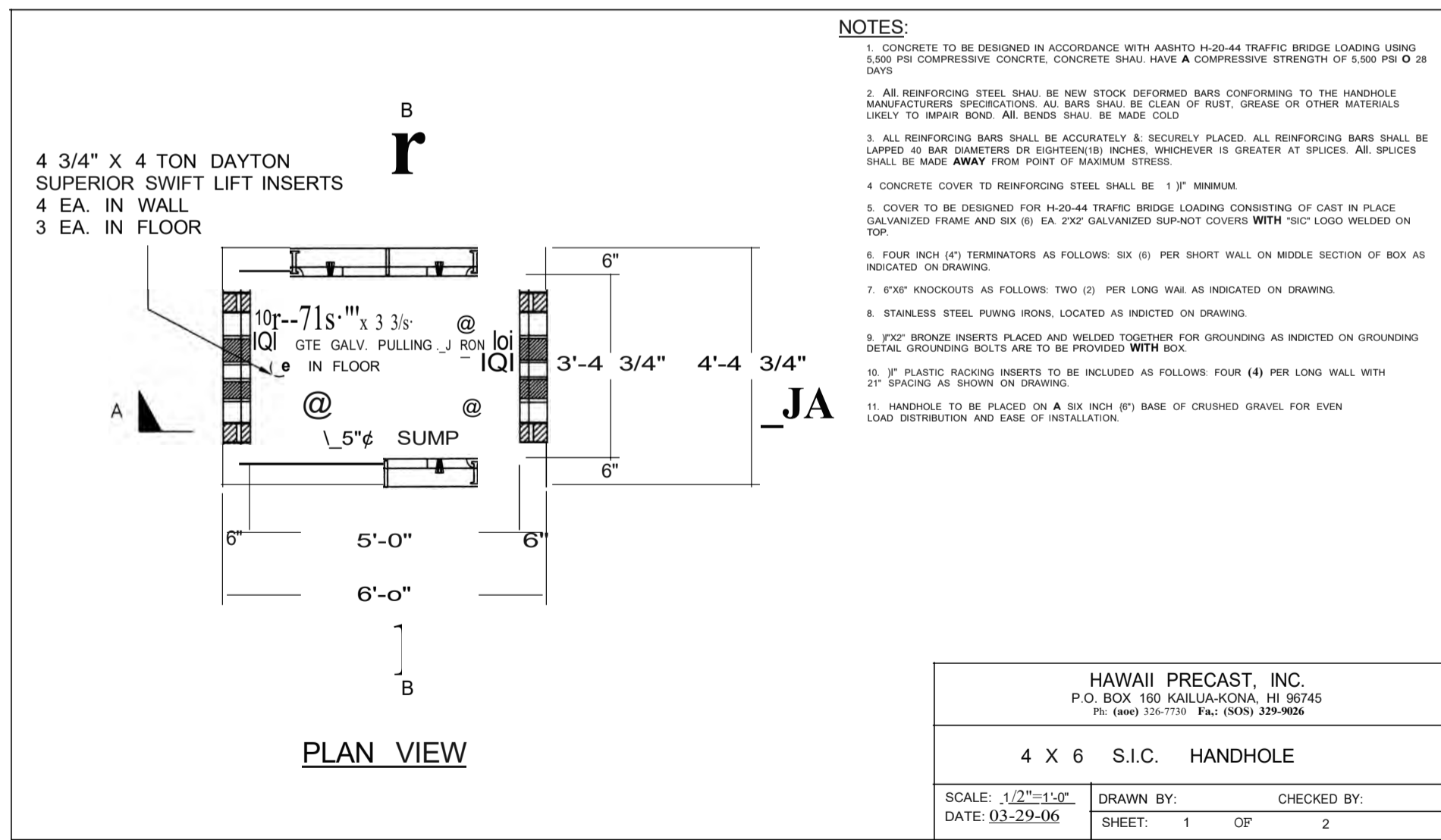
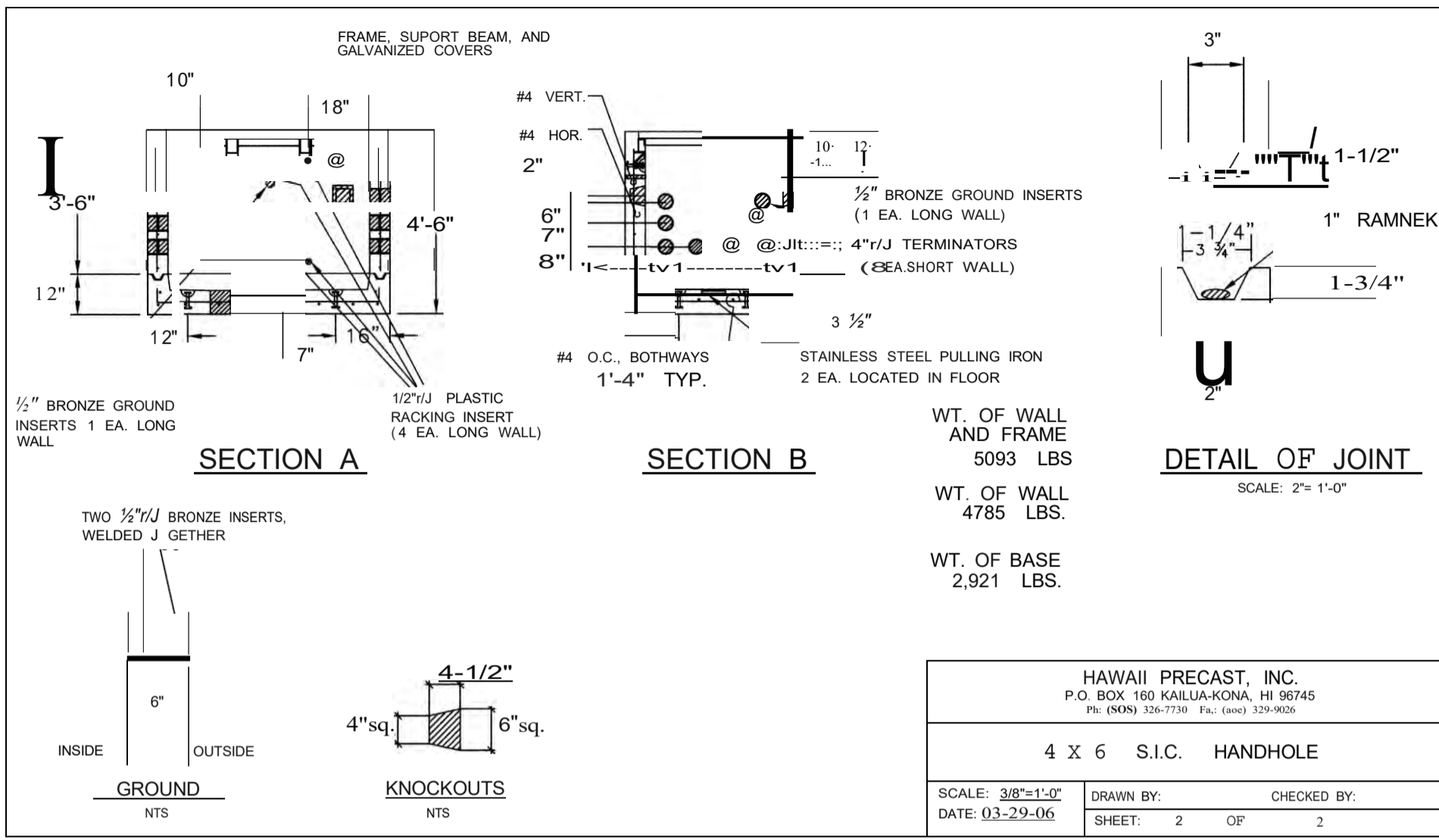


UH 3x5

FOR REFERENCE ONLY

|                                                                                                                                                                                                                                                                                                                                                     |                                          |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|
| DATE:                                                                                                                                                                                                                                                                                                                                               | DESCRIPTION:                             |
|                                                                                                                                                                                                                                                                                                                                                     | Conwnunty Parri'tg and Ellgllial'u. Inc. |
| EAST KAPOLEI I DEVaO<br>NCREtIENT 2C<br>(DP SUBD. FILE NO. 2019/SUB-171)<br>OWNER DEID.OPER. DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17:PORTION 161                                                                                                                                                                                   |                                          |
| SIC REFERENCE DRAWNGS                                                                                                                                                                                                                                                                                                                               |                                          |
| DRAWN BY: CAD                                                                                                                                                                                                                                                                                                                                       | ENGINEER: Gf                             |
| APPROVED:                                                                                                                                                                                                                                                                                                                                           | CHECKED BY: Gf                           |
| THIS WORK WAS PREPARED BY OR UNDER MY SUPERVISION AND I AM A LICENSED PROFESSIONAL ENGINEER IN THE STATE OF HAWAII. I HAVE OBSERVED THE CONSTRUCTION OF THIS PROJECT AND I AM SURE THAT IT CONFORMS TO THE REQUIREMENTS OF THE HAWAIIAN HOME LANDS ACT AND THE HAWAIIAN HOME LANDS DEPARTMENT'S DESIGN STANDARDS. LICENSE EXPIRATION DATE: 04/30/22 |                                          |

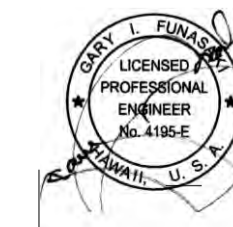
ZACAD PROJECTS 1/25/2024 9:32AM



UH 4x6

FOR REFERENCE ONLY

2008/4/1/26 29084E1 REFDETO2 4/29/2021 9:32AM



THIS WORK PREPARED BY ME OR UNDER MY SUPERVISION IN FULL COMPLIANCE WITH THE HAWAIIAN ENGINEERING ACT. LICENSE EXPIRATION DATE: 04/30/2021

DATE: 03-29-06

Comnnty Plarrig and Eiotue, Inc.

EAST KAPOLEI DEVELOPMENT  
NCRBENT 2C

HONOLULULI, EWA, OAHU, HAWAII  
(DP SUBD. FILE NO. 2019/SUB-171)  
OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17-POOTION 161

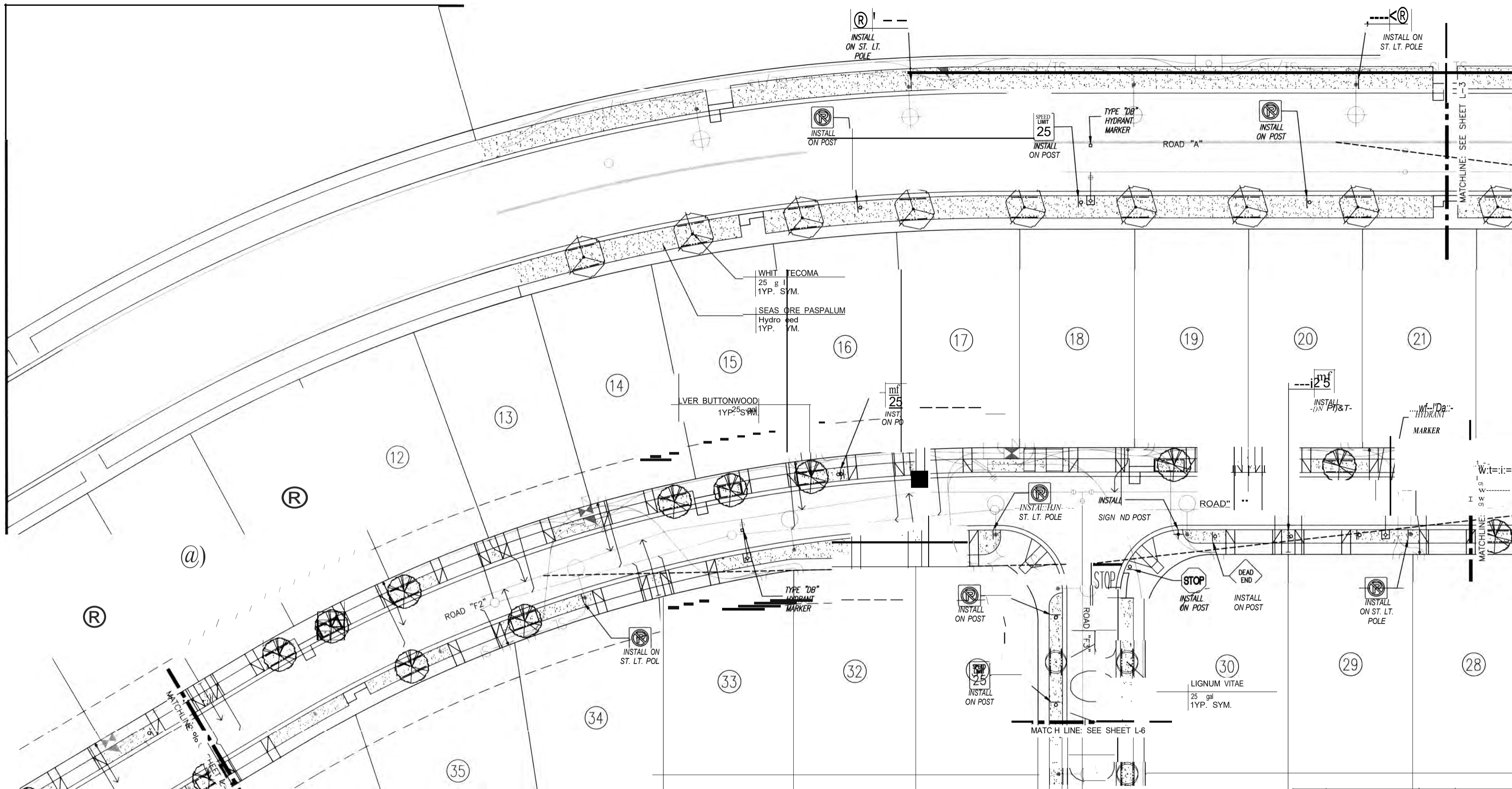
SIC REFERENCE DRAWN38

ORA BY: CAO ENGINEER: GP CHECKED BY: GP  
APPROVED:

NO. ...







|                                                                                                                                                                                                                |              |                |          |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|----------|
| REVISION DATE                                                                                                                                                                                                  | *****        | BY             | APPROVED |
|                                                                                                                                                                                                                |              |                |          |
| <b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(DPP SUBD. FILE NO. 2017/SUB-37)<br>OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17; Portion 110 |              |                |          |
| <b>PLANTING PLAN 1</b>                                                                                                                                                                                         |              |                |          |
| DRAWN BY: CS                                                                                                                                                                                                   | ENGINEER: SD | CHECKED BY: BH |          |
| APPROVED:  2/10/22<br><small>Stanley Dunham, Licensed Professional Landscape Architect No. 5815, State of Hawaii</small>                                                                                       |              |                |          |

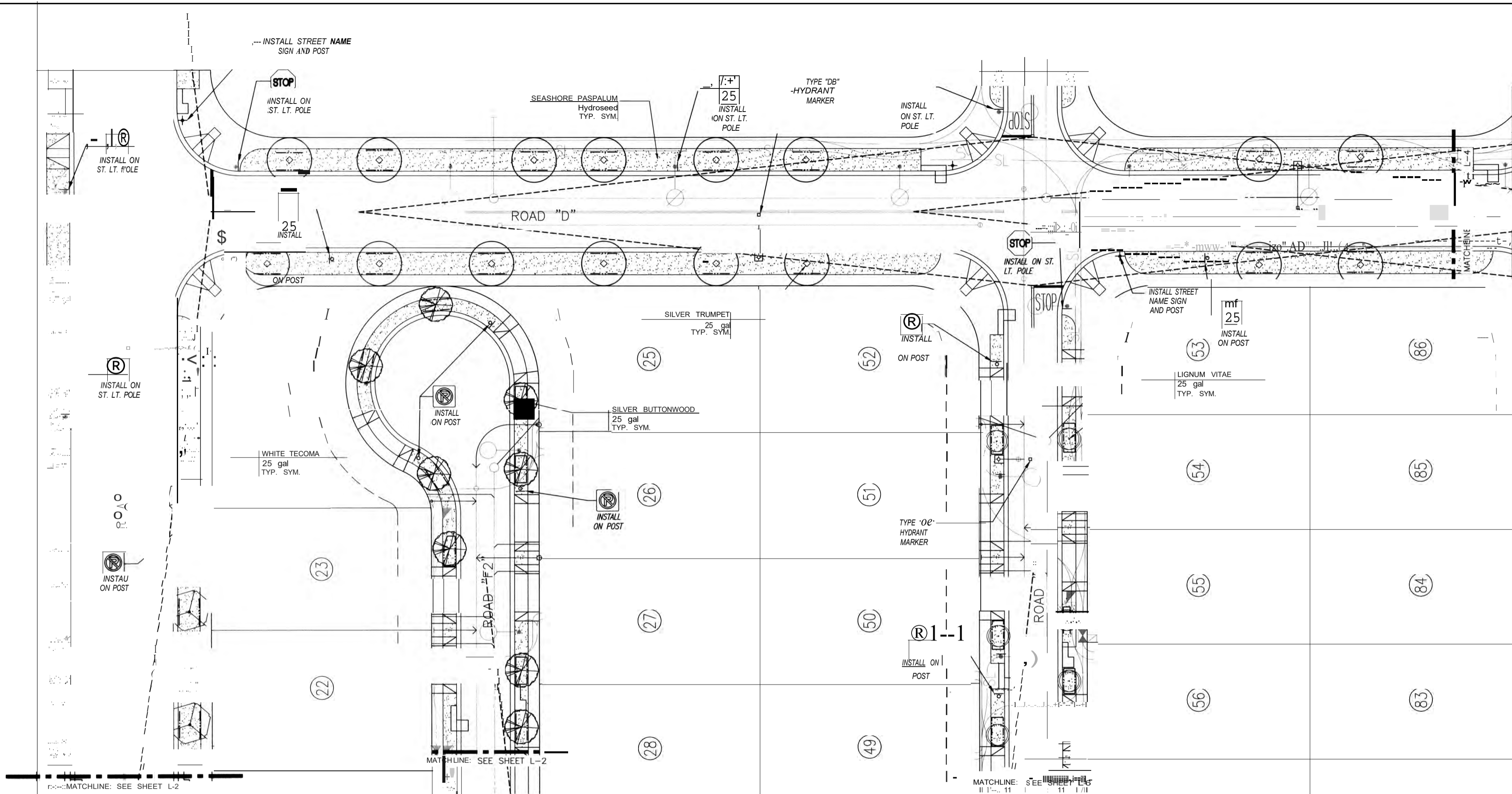


**ifa**  
 THIS WAS PREPARED BY ME OR UNDER MY SUPERVISORIAL CONTROL OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/01/22

TRUE NORTH







MATCHLINE: SEE SHEET L-2

MATCHLINE: SEE SHEET L-2

MATCHLINE: SEE SHEET L-4

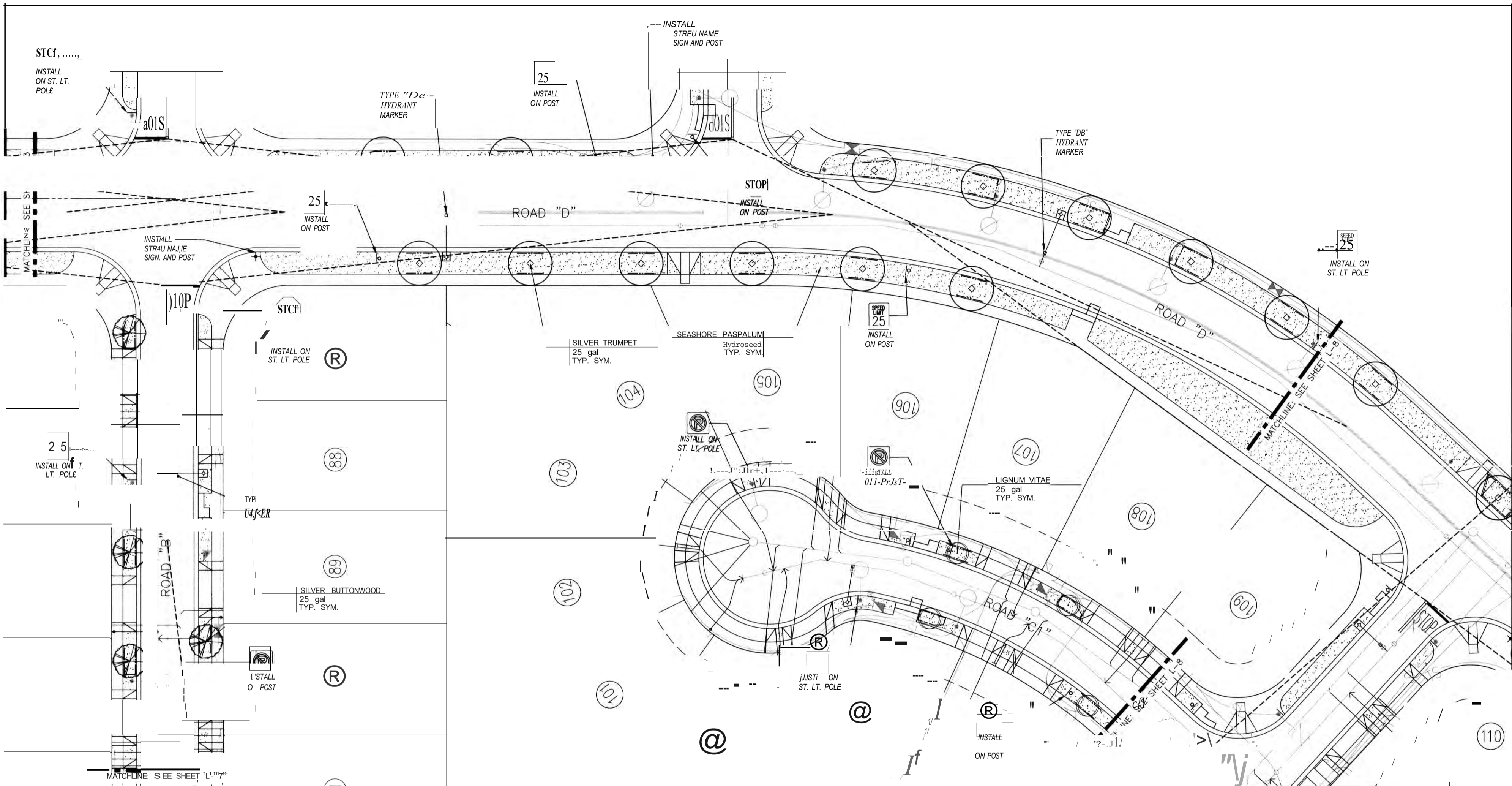
|                                                                                                                                                                                                                                                               |                        |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| <p><b>Community Planning and Engineering, Inc.</b><br/> <small>Engineering Design   Construction Management   Infrastructure Planning</small><br/>       1286 Quince, Emma Street, Honolulu, Hawaii</p>                                                       |                        |
| <p><b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br/>       HONOLULU, EWA, OAHU, HAWAII<br/> <small>(OPP SUBD. FILE NO. 2017/suB-37)</small><br/>       OWNER &amp; DEVELOPER: DEPARTMENT OF HAWAIIAN LANDS<br/>       TAX MAP KEY: 9-1-17: Portion 110</p> |                        |
| <p><b>PLANTING PLAN - 2</b></p>                                                                                                                                                                                                                               |                        |
| <p>DRAWN BY: CS</p>                                                                                                                                                                                                                                           | <p>ENGINEER: SD</p>    |
| <p>APPROVED:</p>                                                                                                                                                                                                                                              | <p>DESIGNED BY: RH</p> |

**Stanley Dunckley**  
 LICENSED PROFESSIONAL LANDSCAPE ARCHITECT  
 No. 5815  
 HAWAII, U.S.A.

**tJJ.b**  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

TRUE NORTH





REVISION DATE: 11/27/2017 MAKE BY:   
**cp&e** Community Planning and Engineering, Inc.   
 Engineering Design | Construction Management | Infrastructure Planning   
 1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**   
 HONOLULU, EWA, OAHU, HAWAII   
 (DPP SUBD. FILE NO. 2017/SUB-37)   
 OWNER: DEVELOPER, DEPARTMENT OF HAWAIIAN HOME LANDS   
 TAX MAP KEY: 9-1-17, Portion 110

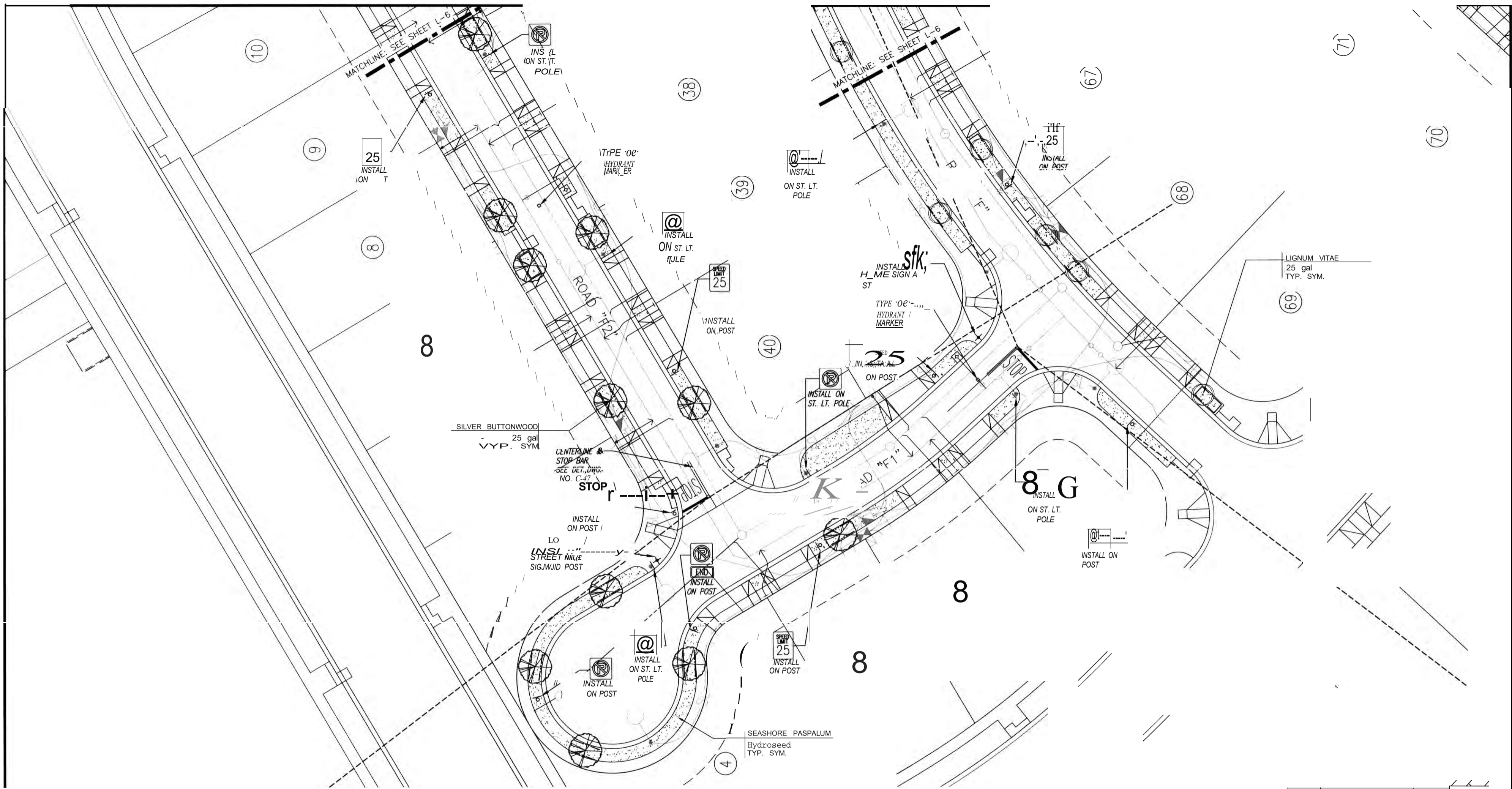
**PLANTING PLAN - 3**

DRAWN BY: ad ENGINEER: SO CHECKED BY: III   
 APPROVED:



THIS WAS PREPARED BY ME OR UNDER MY SUPERVISION, CONSIDERATION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/3/22





|               |             |         |          |
|---------------|-------------|---------|----------|
| REVISION DATE | DESCRIPTION | DATE BY | APPROVED |
|               |             |         |          |

**Community Planning and Engineering, Inc.**  
 Engineering Design | Construction Management | Infrastructure Planning  
 1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
 HONOLULU, EWA, OAHU, HAWAII  
 (DPP SUBO. FILE NO. 2017/SUB-37)  
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17: Portion 110

**PLANTING PLAN - 4**

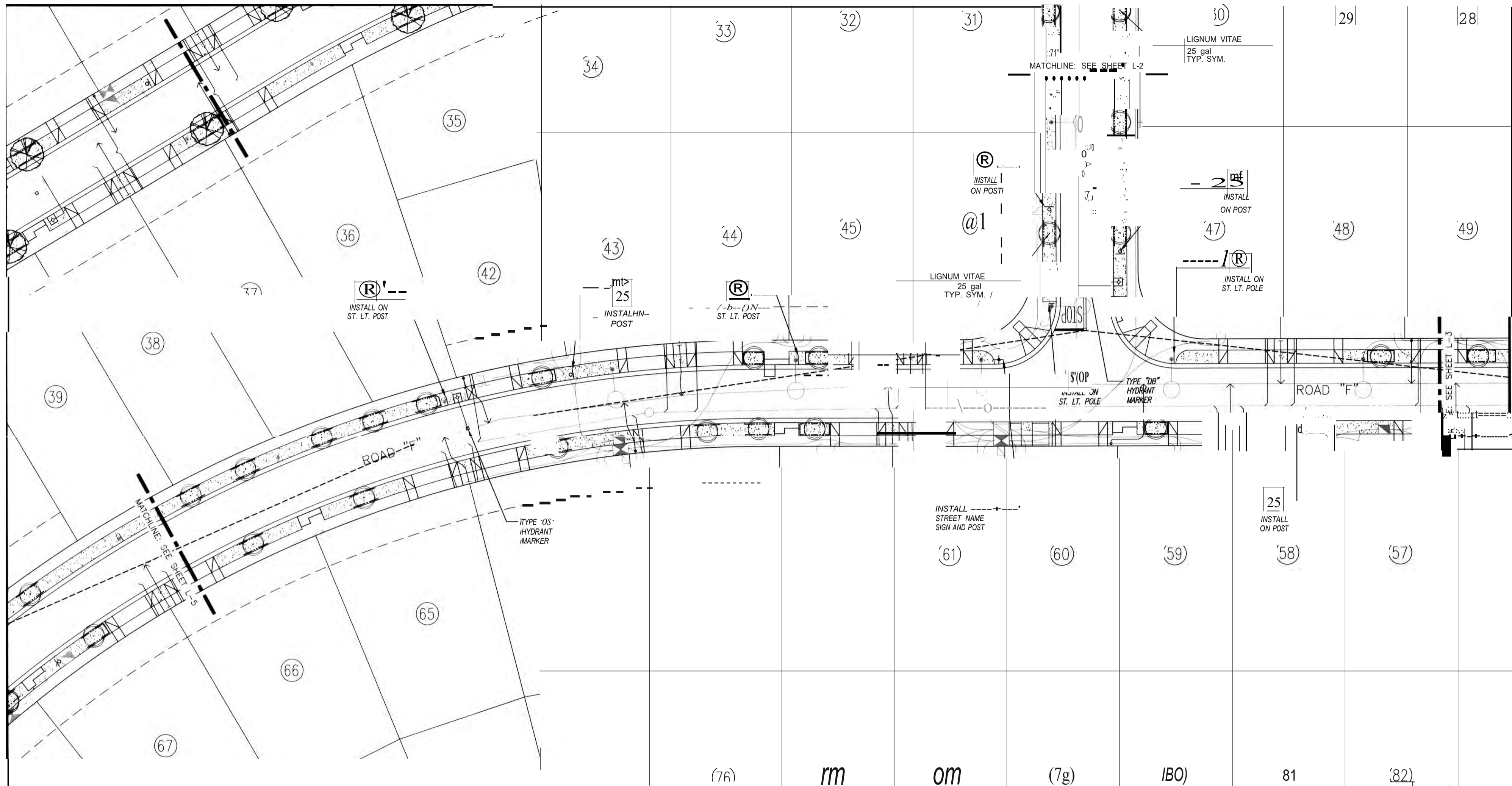
DRAWN BY: CB    ENGINEER: SO    CHECKED BY: III  
 APPROVED:



TRUE NORTH

**TEIJ7**

ME-41 UNDER MY SUPERVISION  
 CONSTRUCTION THIS PROJECT  
 (III) BY UNDER MY OBSERVATION  
 LICENSE EXPIRATION DATE: 04/30/22



LIGNUM VITAE  
25 gal  
TYP. SYM.

MATCHLINE: SEE SHEET L-2

Ⓜ  
INSTALL  
ON POST

@1

LIGNUM VITAE  
25 gal  
TYP. SYM.

25  
INSTALL  
ON POST

47

1 Ⓜ  
INSTALL ON  
ST. LT. POLE

Ⓜ  
INSTALL ON  
ST. LT. POST

25  
INSTALL ON  
POST

Ⓜ  
INSTALL ON  
ST. LT. POST

1 Ⓜ  
INSTALL ON  
ST. LT. POLE

TYPE "DB"  
HYDRANT  
MARKER

ROAD "F"

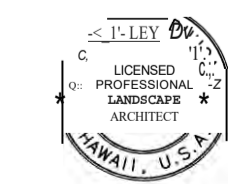
INSTALL  
STREET NAME  
SIGN AND POST

25  
INSTALL  
ON POST

TYPE "OS"  
HYDRANT  
MARKER

MATCHLINE: SEE SHEET L-5

TRUE NORTH  
S



**R**  
THIS MARK WAS PREPARED BY  
ME UNDER MY SUPERVISION.  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION.  
LICENSE EXPIRATION DATE: 07/31/22

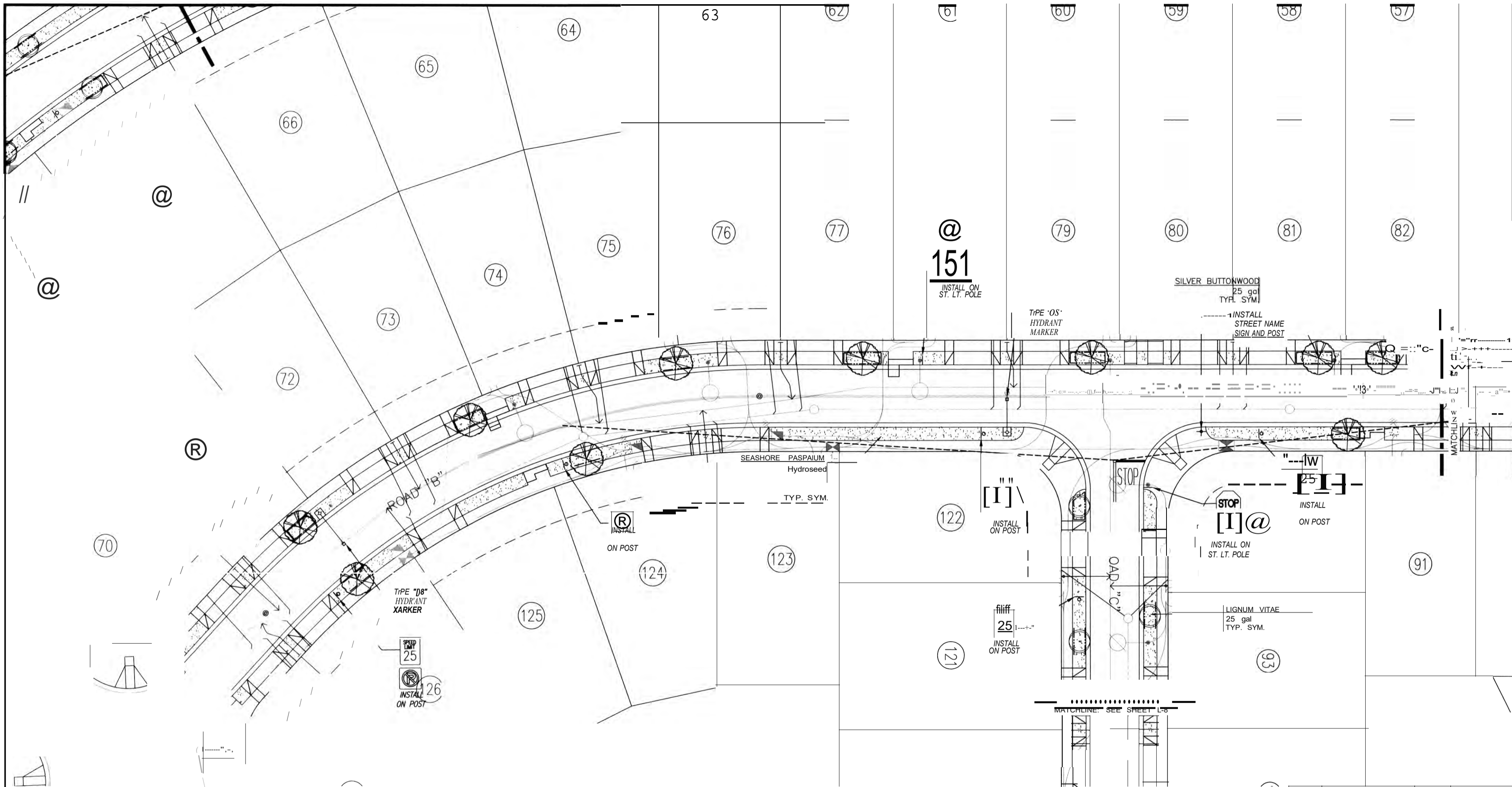
**cp&e** Community Planning and Engineering, Inc.  
Engineering Design | Construction Management | Infrastructure Planning  
1286 Queen Emma Street Honolulu, Hawaii


**EAST KAPOLEI II DEVELOPMENT  
INCREMENT 2C**  
HONOLULU, EWA, OAHU, HAWAII  
(OPP SUBD. FILE NO. 2017/SUB-37)  
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17: Portion 110

**PLANTING PLAN - 5**

DRAWN BY: CS ENGINEER: SD CHECKED BY: RH  
APPROVED:



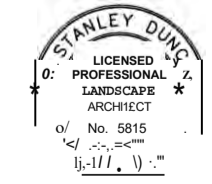



**Community Planning and Engineering Inc.**  
 Engineering Design | Construction Management | Infrastructure Planning  
 1288 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
 HONOLULU, EWA, OAHU, HAWAII  
 (DPP SUBD. FILE NO. 2017/SUB-37)  
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17: Portion

PLANTING PLAN - 6

DRAWN BY: CS      ENGINEER: SD      CHECKED BY: RH  
 APPROVED:



THIS PLAN WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT SHALL BE UNDER MY OBSERVATION.  
 LICENSE EXPIRATION DATE: 04/3/22

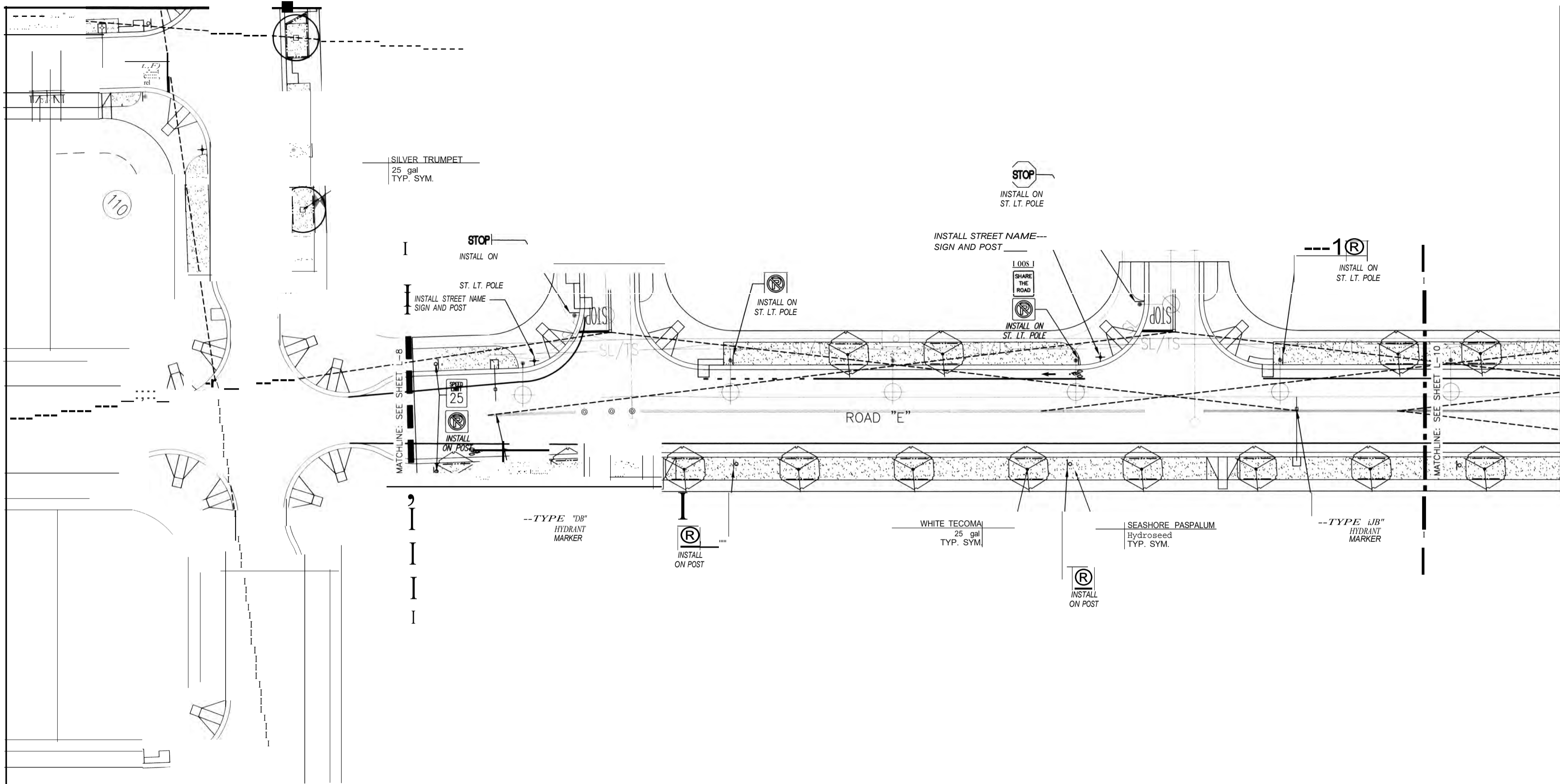
TRUE NORTH



SCALE: HORIZONTAL FEET

.....1...ii.o=..





SILVER TRUMPET  
25 gal  
TYP. SYM.

STOP  
INSTALL ON  
ST. LT. POLE

STOP  
INSTALL ON  
ST. LT. POLE

INSTALL STREET NAME  
SIGN AND POST

---1Ⓡ  
INSTALL ON  
ST. LT. POLE

ST. LT. POLE  
INSTALL STREET NAME  
SIGN AND POST

INSTALL ON  
ST. LT. POLE

LOOKS I  
SHARE  
THE  
ROAD  
INSTALL ON  
ST. LT. POLE

MATCHLINE: SEE SHEET L-8

SPEED  
25  
INSTALL  
ON POST

ROAD "E"

MATCHLINE: SEE SHEET L-10

--TYPE "DB"  
HYDRANT  
MARKER


Ⓡ  
INSTALL  
ON POST

WHITE TECOMA  
25 gal  
TYP. SYM.

SEASHORE PASPALUM  
Hydroseed  
TYP. SYM.

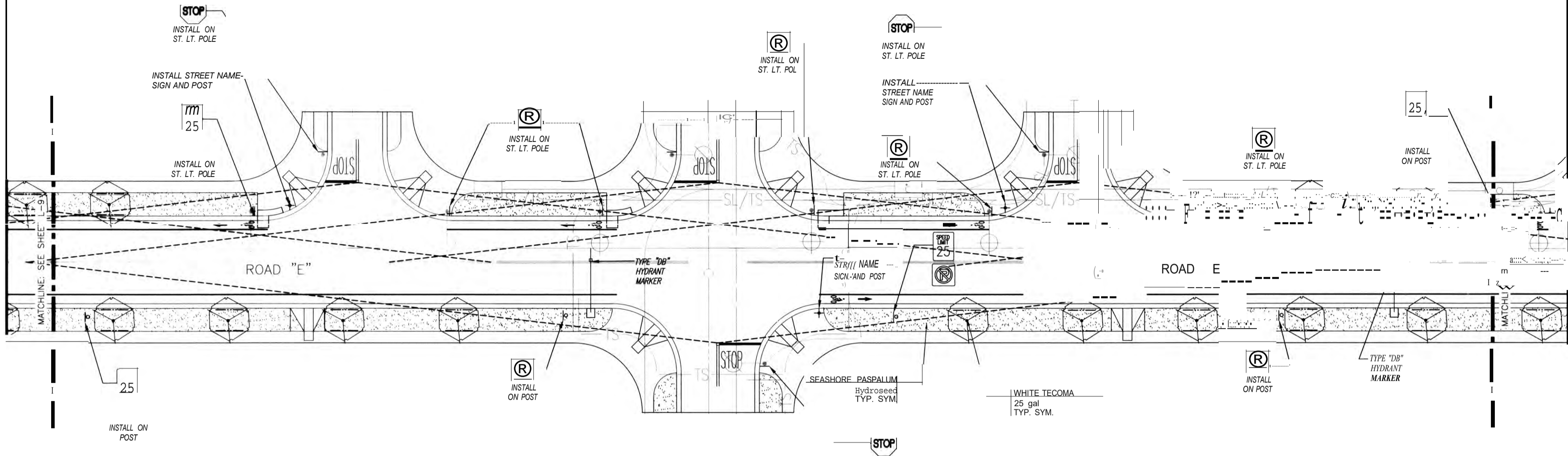
--TYPE iJB"  
HYDRANT  
MARKER

Ⓡ  
INSTALL  
ON POST

|                                                                                                                                                                                                                    |                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|
| REVISION DATE                                                                                                                                                                                                      | .....                |
| Community Planning and Engineering, Inc.                                                                                                                                                                           |                      |
|  Engineering Design   Construction Management   Infrastructure Planning<br>1286 Queen Emma Street Honolulu, Hawaii            |                      |
| <b>EAST KAPOLEI II DEVELOPMENT<br/>INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(DPP SUBD. FILE NO. 2017/SUB-37)<br>OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17: Portion 110 |                      |
| PLANTING PLAN - 8                                                                                                                                                                                                  |                      |
| DRAWN BY: CS                                                                                                                                                                                                       | EH SD CHECKED BY: RH |
| APPROVED:                                                                                                                                                                                                          |                      |



**Rsnrft:2**  
 ME-41 UNDER MY SUPERVISION  
 CONSTRUCTION OF THIS PROJECT  
 WILL BE UNDER MY OBSERVATION  
 LICENSE EXPIRATION DATE: 04/30/22



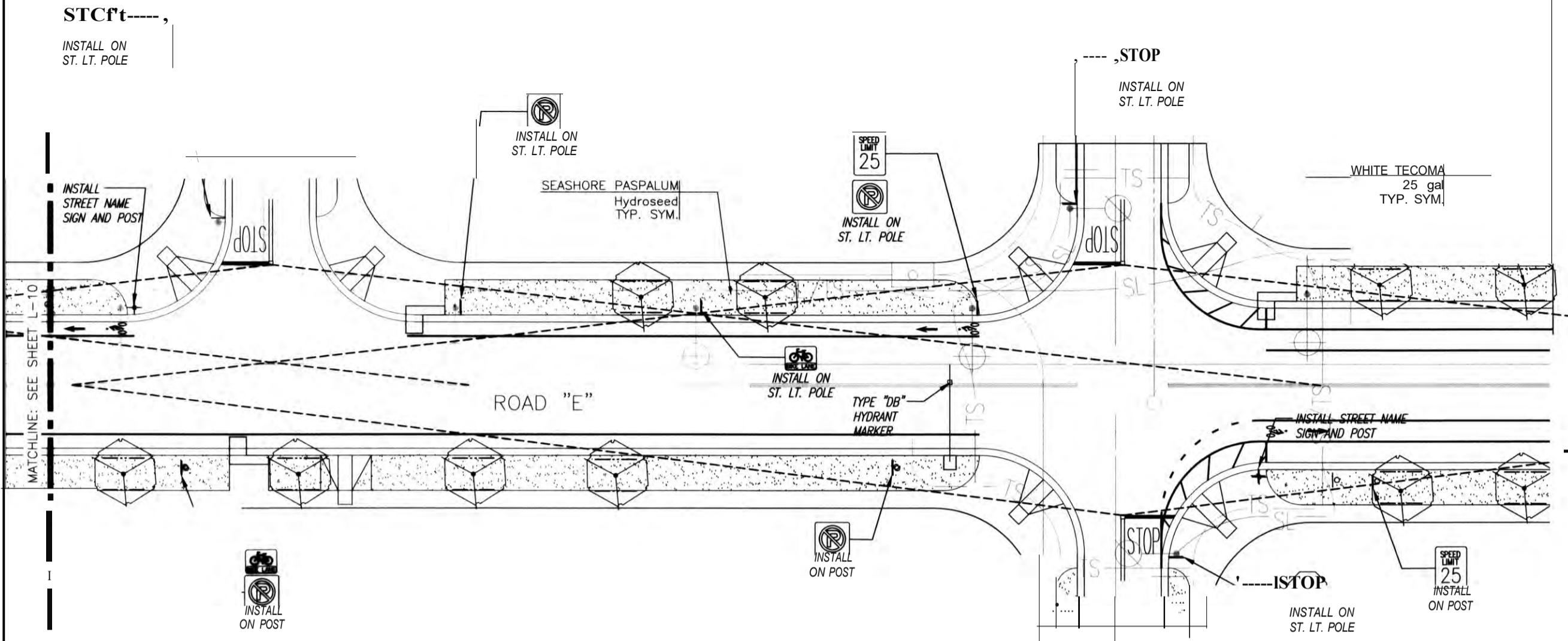
**Stanley Duncan**  
 LICENSED PROFESSIONAL LANDSCAPE ARCHITECT  
 No. 5815  
 HAWAII, U.S.A.  
 THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION OR CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/2024

|                                                                                                                                                                                                              |             |              |               |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------|---------------|
| REVISION DATE                                                                                                                                                                                                | DESCRIPTION | DATE         | BY            |
|                                                                                                                                                                                                              |             |              |               |
| <b>Community Planning and Engineering, Inc.</b><br>Engineering Design   Construction Management   Infrastructure Planning<br>1286 Queen Emma Street Honolulu, Hawaii                                         |             |              |               |
| <b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(OPP SUBO. FILE NO. 2017/SUB-37)<br>OER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17, Portion 110 |             |              |               |
| <b>PLANTING PLAN - 9</b>                                                                                                                                                                                     |             |              |               |
| DRAIN BY:                                                                                                                                                                                                    | CS          | ENGINEER, SD | OR(CM) BY: RH |
| APPROVED:                                                                                                                                                                                                    |             |              |               |



## TEMPORARY IRRIGATION NOTES

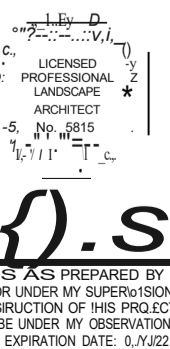
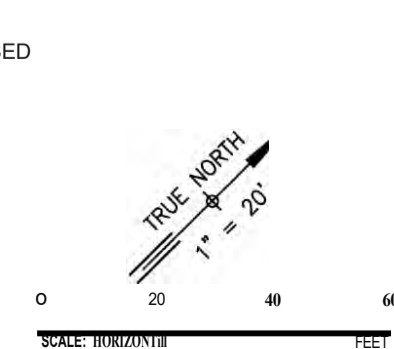
- THIS PLAN IS DIAGRAMMATIC. IRRIGATION SYSTEM IS SUBJECT TO FIELD ADJUSTMENTS DUE TO UNANTICIPATED SITE CONDITIONS. AVOID ANY CONFLICT BETWEEN UNDERGROUND UTILITIES, STRUCTURES AND PLANTINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING ALL EXISTING UTILITIES.
- UNLESS DIRECTED OTHERWISE, POTABLE WATER WILL BE READILY AVAILABLE TO THE CONTRACTOR AT NO EXPENSE TO THE CONTRACTOR.
- CONTRACTOR SHALL PROVIDE A TEMPORARY ABOVE-GRADE AUTOMATIC SYSTEM (TO BE APPROVED BY OWNER) FOR THE DURATION OF THE MAINTENANCE PERIOD AND NOT TO EXCEED ONE YEAR FROM ACCEPTANCE. THE TEMPORARY AUTOMATIC IRRIGATION SYSTEM SHALL CONSIST OF, BUT IS NOT LIMITED TO, THE FOLLOWING:
  - AUTOMATIC IRRIGATION CONTROLLER INCLUDING A MINIMUM OF 3 INDEPENDENT PROGRAMS, 7 DAY PROGRAM CYCLE, AND 8 START TIMES PER PROGRAM PER DAY.
  - SHUT OFF AND ISOLATION VALVES.
  - PVC OF HOPE MAINLINE AND DISTRIBUTION LINES, INCLUSIVE OF JOINT RESTRAINT SYSTEMS IF NECESSARY TO PREVENT PIPE MOVEMENT DURING SYSTEM OPERATION.
  - SLOW CLOSING REMOTE CONTROL VALVES CONSTRUCTED OF GLASS FILLED NYLON AND INCLUDES: FABRIC-REINFORCED DIAPHRAGM, INTERNAL SCREEN SCRUBBER MECHANISM TO PREVENT DEBRIS CLOGGING, AND PRESSURE REGULATION.
  - GEAR DRIVEN ROTOR HEADS WITH ADJUSTABLE ARC, PRESSURE REGULATION, AND CHECK VALVES FOR LARGE RADIUS AREAS.
  - POP-UP SPRAY HEADS OR POP-UP STREAM ROTARY HEADS WITH PRESSURE REGULATION, CHECK VALVES, AND NOZZLES WITH MATCHED PRECIPITATION RATES FOR SMALL RADIUS AREAS.
  - ALL LABOR, MATERIALS AND APPURTENANCES REQUIRED TO INSTALL AND MAINTAIN THE TEMPORARY IRRIGATION SYSTEM.
- CONTRACTOR SHALL PROVIDE WATERING SCHEDULE.
- PIPE SLEEVE SHALL ALLOW FOR IRRIGATION PIPING AND THEIR RELATED COUPLINGS TO EASILY SLIDE THROUGH SLEEVE MATERIAL.
- EXTEND SLEEVE 18" BEYOND EDGES OF PAVING OR CONSTRUCTED HARDSCAPE
- MARK SLEEVE LOCATIONS ON SIDES OF PAVING OR WITH IRRIGATION FLAGS IN PLANTING AREA.
- VERIFY ALL SLEEVE LOCATIONS WITH OWNER PRIOR TO CONSTRUCTION OF PAVING.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF ALL SLEEVES AND CONDUITS UNDER PAVEMENT AND THROUGH WALLS. CONTRACTOR SHALL ASSURE THAT THESE ITEMS ARE LAID PRIOR TO PLACEMENT OF PAVEMENT OR WALL STRUCTURES.
- THE LANDSCAPE CONTRACTOR SHALL REMOVE THE TEMPORARY IRRIGATION SYSTEM IN ITS ENTIRETY UPON COMPLETION OF THE MAINTENANCE PERIOD AND SHALL REPAIR ANY AREAS DAMAGED DURING THE REMOVAL OF THE TEMPORARY IRRIGATION SYSTEM AT NO ADDITIONAL COST TO THE CLIENT.



## DPP STREET TREE NOTES

- NEW TREES SHALL BE PRE-APPROVED AT THE NURSERY BY THE LANDSCAPE DESIGN CONSULTANT AND CONCURRED BY THE DEPARTMENT OF PARKS AND RECREATION (DPR), DIVISION OF URBAN FORESTRY (DUF) TWO (2) WEEKS PRIOR TO THEIR DELIVERY TO THE PROJECT SITE. PLEASE CONTACT THE NURSERY AND LANDSCAPE SECTION OF DUF AT 971-7151, TO SCHEDULE AN INSPECTION. TREES THAT DO NOT HAVE A WELL ESTABLISHED ROOT SYSTEM OR THAT ARE DAMAGED WILL BE REJECTED.
- UPON INSTALLATION OF THE STREET TREES, THE INSTALLER/CONTRACTOR SHALL CONTACT DPR, DUF AT 970-7151 TO SCHEDULE AN INSPECTION OF THE TREE(S) INSTALLATION. NOTIFICATION MUST BE GIVEN AT LEAST SEVEN (7) DAYS PRIOR TO PRE-MAINTENANCE AND FINAL INSPECTIONS. A NOTICE OF ACCEPTANCE WILL BE ISSUED BY THE DPR WHEN THEY HAVE DETERMINED THE TREES HAVE BEEN PROPERLY INSTALLED AND MAINTAINED.
- THE STREET TREE MAINTENANCE PERIOD SHALL BE FOR NINETY (90) CALENDAR DAYS OR UNTIL PROJECT MAINTENANCE HAS BEEN ASSUMED BY ABUTTING PROPERTY OWNER.
- THE STANDARD CITY AND COUNTY OF HONOLULU, DEPARTMENT OF PARKS AND RECREATION SPECIFICATIONS FOR STREET TREE PLANTING AND LANDSCAPING SHALL BE MADE PART OF THE CONSTRUCTION DOCUMENTS.
- STREET TREE PLANS THAT HAVE BEEN REVISED OR PROJECTS THAT HAVEN'T STARTED CONSTRUCTION WITHIN TWO (2) YEARS OF THE DATE OF THE DEPARTMENT OF PLANNING AND PERMITTING'S (OPP) APPROVAL WILL BE SUBJECT TO RE-APPROVAL. WHEN SUBSTITUTIONS OF TREE TYPES ARE REQUESTED BY THE DEVELOPER OR CONTRACTOR DUE TO UNAVAILABILITY, THE PLANS SHALL BE REVISED (AFTER NOTIFICATION OF TREE SELECTION) AND (THE PLANS) SUBMITTED FOR RE-APPROVAL.
- PRIOR TO ACCEPTANCE OF THE TREE INSTALLATION, THE STREET TREE INSTALLER IS REQUIRED TO SUBMIT REPRODUCIBLE AS-BUILT PLANS TO THE DEPARTMENT OF PARKS AND RECREATION, DIVISION OF URBAN FORESTRY.
- APPROVAL IS FOR STREET TREE PLANNING WITHIN THE ROAD RIGHT-OF-WAY ONLY. IT IS NOT AN APPROVAL OF THE PLANTING AND IRRIGATION PLAN OUTSIDE OF THE ROAD RIGHT-OF-WAY.
- THE CITY SHALL BE RESPONSIBLE TO TRIM THE TREE(S). THE COMMUNITY ASSOCIATION, HOMEOWNER OR LOT OWNER IS RESPONSIBLE TO MAINTAIN THE TREE(S) AND ANY IRRIGATION SYSTEM AND TO PAY FOR WATER AND ELECTRICITY AS REQUIRED FOR MAINTENANCE OF THE STREET TREES AND PLANTING STRIPS WITHIN THE ROAD RIGHTS-OF-WAY ABUTTING THEIR PROPERTIES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A PERMIT TO EXCAVATE PUBLIC RIGHT-OF-WAY (TRENCHING PERMIT), PRIOR TO COMMENCING WORK.
- THE STREET LIGHTING SYSTEM SHALL BE KEPT OPERATIONAL DURING CONSTRUCTION. ANY RELOCATION REQUIRED SHALL BE APPROVED BY THE MECHANICAL/ELECTRICAL DESIGN AND ENGINEERING DIVISION, DEPARTMENT OF DESIGN AND CONSTRUCTION, AND PAID FOR BY THE CONTRACTOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGES TO THE CITY'S EXISTING STREET LIGHTING FACILITIES, TRAFFIC SIGNAL FACILITIES (INCLUDING THE TRAFFIC SIGNAL INTERCONNECT SYSTEM, COMMUNICATIONS FIBER OPTIC CABLE SYSTEM AND TRAFFIC SIGNAL FIBER OPTIC CABLE SYSTEM). ANY AND ALL DAMAGES TO THESE FACILITIES SHALL BE REPAIRED BY THE CONTRACTOR AT HIS COST IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY AND COUNTY OF HONOLULU.
- CONTACT THE NURSERY AND LANDSCAPE SECTION, DIVISION OF URBAN FORESTRY (DUF), DEPARTMENT OF PARKS AND RECREATION, AT 971-7151, TO SCHEDULE A PRE-CONSTRUCTION MEETING (A MINIMUM NOTIFICATION OF SEVEN DAYS PRIOR TO THE ANTICIPATED INSPECTION DATE IS REQUIRED) TO BE ATTENDED BY THE LANDSCAPE ARCHITECT, CONSULTANT ENGINEER, GENERAL CONTRACTOR, AND LANDSCAPE CONTRACTOR. DISCUSSION SHALL INCLUDE, BUT NOT LIMITED TO, THE CONSTRUCTION TIMELINE, TREE PROTECTION MITIGATION METHODS; IF APPLICABLE, TREE PROTECTION ZONE, FENCING ALIGNMENT TO PROTECT THE EXISTING STREET TREE AND FRONT YARD TREE PLANTINGS, INCLUDING STREET TREES IN NEIGHBORING LOTS, TREE BRANCH PRUNING, FOR VEHICLE CLEARANCE, ROOT PRUNING WORK, TREE AND GRASS WATERING, IDENTIFYING PARKING AREAS FOR WORKERS (PARKING IS NOT PERMITTED UNDER TREES AND GRASSED PLANTING STRIPS), STAGING AND STOCKPILING AREAS, DETERMINING VEHICULAR, MATERIAL AND EQUIPMENT INGRESS/EGRESS ACCESS ROUTES AND TURNING RADIUSES TO THE CONSTRUCTION SITE, PREVENT DAMAGE TO TREE TRUNK, SURFACE ROOTS, AND TO PROTECT THE GROUNDS AND GRASS AREAS FROM COMPACTION/EROSION, AND IRRIGATION RESTORATION WORK.
- THE GENERAL CONTRACTOR SHALL CONTACT THE HAWAII ONE CALL CENTER (HOCC) - UTILITY NOTIFICATION CENTER, AT 1-808-7287 (OR 811), FOR INFORMATION AND LOCATIONS OF UNDERGROUND SERVICE LINES PRIOR TO THE START OF DIGGING AND EXCAVATION WORK, AND FIELD VERIFY THEIR LOCATION AND DEPTH WITHIN THE PROPOSED PLANTING AREAS PRIOR TO THE STREET TREE PLANTING. ADJUSTMENTS TO THE INSTALLATION LOCATION OF THE TREE OF MODIFICATIONS TO THE SERVICE LINES WILL BE DETERMINED AFTER EVALUATION OF THE EXISTING CONDITIONS. DUF SHALL BE MADE AWARE OF THE SITUATION AND CONCUR WITH THE TREE'S NEW LOCATION PRIOR TO PLANTING.
- NO MATERIALS, EQUIPMENT, DUMPING OF CONSTRUCTION WASTE PRODUCTS AND HAZARDOUS DEBRIS, OR VEHICLES SHALL BE STOCKPILED, STORED, PARKED, OR PERMITTED TO OPERATE WITHIN THE DRIP LINE OF TREES AND GRASSED PLANTING STRIPS. DRIVING VEHICLES AND EQUIPMENT OVER THE TREE SURFACE ROOTS, WHICH MAY CAUSE SOIL COMPACTION, EROSION, AND DAMAGE TO THE TREE TRUNKS, ROOTS AND GRASSED AREAS, IS NOT PERMITTED.
- VEHICLE PARKING FOR WORKERS IS NOT PERMITTED ON THE PLANTING STRIPS AND ROADWAY SHOULDERS, UNLESS OTHERWISE APPROVED BY DUF.
- DUF WILL REJECT TREES AND PALMS THAT HAVE UNDER DEVELOPED ROOT SYSTEM, ARE ROOT-BOUND, OR DAMAGED DUE TO THE REMOVAL, TRANSPORT, OR INSTALLATION WORK BY THE GENERAL CONTRACTOR OR SUBCONTRACTORS.
- RE-GRASS THE EXPOSED SOIL AREAS WITHIN THE PLANTING STRIP.
- FOR TREE WELL PLANTINGS, ENSURE THAT THE TREE TRUNKS ARE CENTERED IN THE TREE WELL. TRUNKS AND ROOT FLARES THAT RUB AGAINST THE TREE WELL GRATES WILL BE REJECTED BY DUF.
- ALL DEPRESSIONS AND LOW SPOTS CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE FILLED TO PROPER GRADE AND SUCH AREAS SHALL BE RE-GRASSED, AS REQUIRED.

|                                                                                                                                                                                                                         |              |                |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|
| DATE:                                                                                                                                                                                                                   | DESCRIPTION: | CODE BY:       |
| <b>Community Planning and Engineering, Inc.</b><br>Engineering Design   Construction Management   Infrastructure Planning<br>1286 Queen Emma Street Honolulu, Hawaii                                                    |              |                |
| <b>EAST KAPOLEI II DEVELOPMENT<br/>                 INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(DPP SUBO. FILE NO. 2017/SUB-37)<br>OWNER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17: Portion 110 |              |                |
| <b>PLANTING PLAN - 10</b>                                                                                                                                                                                               |              |                |
| DESIGN BY: CE                                                                                                                                                                                                           | ENGINEER: SU | CHECKED BY: RT |
| APPROVED:                                                                                                                                                                                                               |              |                |
| THIS WAS PREPARED BY<br>ME OR UNDER MY SUPERVISION.<br>CONSTRUCTION OF THIS PROJECT<br>WILL BE UNDER MY OBSERVATION.<br>LICENSE EXPIRATION DATE: 01/01/22                                                               |              |                |



**PLANT SCHEDULE**

| TREES         | QTY.      | BOTANICAL NAME                | COMMON NAME       | CONTAINER | HEIGHT  | REMARKS   |
|---------------|-----------|-------------------------------|-------------------|-----------|---------|-----------|
|               | 43        | CONOCARPUS ERECTUS 'SERICEUS' | SILVER BUTTONWOOD | 25 GAL    | 2' CAL. | 6'-8' HT. |
|               | 47        | LIGNUM VITAE                  | LIGNUM VITAE      | 25 GAL    | 2' CAL. | 6'-8' HT. |
|               | 33        | TABEBUIA ARGENTEA             | SILVER TRUMPET    | 25 GAL    | 2' CAL. | 6'-8' HT. |
|               | 46        | TABEBUIA BETEROI              | WHITE TECOMA      | 25 GAL    | 2' CAL. | 6'-8' HT. |
| GROUND COVERS | QTY.      | BOTANICAL NAME                | COMMON NAME       | CONTAINER | SPACING |           |
|               | 82,942 SF | PASPALUM VAGINATUM            | SEASHORE PASPALUM | HYDROSEED |         |           |



**REFERENCE NOTES SCHEDULE**

| SYMBOL | DESCRIPTION               | QTY       |
|--------|---------------------------|-----------|
|        | 2" LAYER SOIL AMMENDMENT  | 82,943 SF |
|        | 4" LAYER IMPORTED TOPSOIL | 1,024 CY  |
|        | ROOT BARRIER              | 4,624 LF  |

**PLANTING NOTES**

- LANDSCAPE CONTRACTOR SHALL FIELD VERIFY ALL PLANT QUANTITIES AND DIMENSIONS PRIOR TO INSTALLATION. QUANTITIES SHOWN ON PLANT LIST AND MATERIAL SCHEDULES ARE FOR REFERENCE ONLY, VERIFY ACTUAL QUANTITIES AS SHOWN ON PLAN. IF THERE IS A DISCREPANCY, THE PLANTING PLAN SHALL TAKE PRECEDENCE.
- LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND PROTECTING EXISTING UTILITIES.
- PRIOR TO TREE AND SHRUB HOLE EXCAVATION, ALL PLANTING LOCATIONS SHALL BE STAKED OUT BY CONTRACTOR FOR APPROVAL BY LANDSCAPE ARCHITECT. DO NOT PLANT UNTIL GROUND HAS BEEN PREPARED AND FREE OF STONES GREATER THAN 1/2", DIA., SITE IS NEAT, ORDERLY, AND THE LANDSCAPE ARCHITECT ACCEPTS SITE FOR PLANTING.
- NOTIFY LANDSCAPE ARCHITECT OF ANY DISCREPANCIES IN PLANT LOCATIONS OR INSUFFICIENT PLANT QUANTITIES DUE TO DIFFERENCE IN PLANS AND ACTUAL FIELD CONDITIONS.
- NOTIFY LANDSCAPE ARCHITECT 30 DAYS PRIOR TO PLANTING OPERATIONS FOR APPROVAL OF ALL PLANT MATERIAL AT PLACE OF GROWTH. ALL PLANT MATERIAL NOT APPROVED BY THE LANDSCAPE ARCHITECT WILL BE SUBJECT TO REJECTION. THE LANDSCAPE ARCHITECT WILL INSPECT PLANTS AT THE PLACE OF GROWTH AND AFTER THE DELIVERY TO THE PROJECT. EACH TREE SHALL BE TAGGED BY THE LANDSCAPE ARCHITECT. TREES DELIVERED TO THE PROJECT WITHOUT LANDSCAPE ARCHITECT'S TAG WILL BE REJECTED.
- PLANTS SHALL MEET SIZE INDICATED BY MINIMUM HEIGHT AND SPREAD. PLANTS SHALL BE STRAIGHT AND UNIFORMLY SHAPED, UNLESS UNIQUE OR SPECIAL CHARACTERISTICS ARE SPECIFIED, AND SHALL BE UNDAMAGED, SOUND, HEALTHY, VIGOROUS AND FREE OF DISEASE AND INSECT INFESTATION. PLANTS NOT CONFORMING TO THESE REQUIREMENTS ON DELIVERY TO THE PROJECT AND AT THE END OF THE PLANT ESTABLISHMENT PERIOD WILL BE REJECTED.
- CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE COMPLETE REMOVAL AND DAMAGES RESULTING FROM PLANTING ANY PLANT SPECIES LISTED ON THE HAWAII DEPARTMENT OF AGRICULTURE 'NOXIOUS WEED RULES' AS DEFINED IN THE STATUTE, HAWAII ADMINISTRATIVE RULES 4:88:1 OR THE 'FEDERAL NOXIOUS WEED LIST' AS DEFINED IN TITLE 7 OF THE CODE OF FEDERAL REGULATIONS (CFR), PARTS 360 AND 361.
- ALL TREE WORK MUST ADHERE TO AMERICAN NATIONAL STANDARD INSTITUTE (OR ANSI) - A300 TREE CARE STANDARDS AND ANSI-Z133 SAFETY STANDARDS FOR TREE WORK. WORK SHALL BE CONTRACTED TO ARBORISTS THAT HAS BEEN CERTIFIED IN GOOD STANDINGS AS AN ISA CERTIFIED ARBORIST FOR AT LEAST 5 YEARS TO ASSURE THAT TREE WORK IS PERFORMED PROPERLY AND TREES ARE NOT DAMAGED BY PRACTICES SUCH AS TOPPING, FLUSH CUTS, OVER-THINNING, OR CLIMBING WITH SPIKES. CONTRACTOR SHALL SUBMIT A COPY OF THE ISA ARBORIST CERTIFICATION OF GOOD STANDING OF 5 YEARS TO THE LANDSCAPE ARCHITECT A MINIMUM OF 7 DAYS PRIOR TO TREE PRUNING.
- FOR THE DURATION OF CONSTRUCTION WITHIN THE DRIP LINE OF TREES TO REMAIN THERE MUST BE: NO CHANGES, ALTERATIONS OR DISTURBANCE TO THE GRADE BY ADDING FILL, EXCAVATING OR SCRAPING EXCEPT AS NOTED ON PLANS; NO STORAGE OF CONSTRUCTION MATERIAL OR EQUIPMENT; NO STOCKPILING OF ANY CONSTRUCTION MATERIAL OR ANY EXCAVATED MATERIAL NO DISPOSAL OF ANY LIQUIDS (E.G. CONCRETE SLEUTH, GAS, OIL, PAINT); NO VEHICULAR TRAFFIC, EQUIPMENT OR EXCESSIVE PEDESTRIAN TRAFFIC NO ATTACHMENT OF ANY WIRES, ROPES, LIGHTS, OR ANY OTHER SUCH ATTACHMENT OTHER THAN THOSE OF PROTECTIVE NATURE TO ANY TREE TO BE PRESERVED; AND NO CLEANING OF EQUIPMENT OR MATERIAL UNDER THE CANOPY OF ANY TREE OR GROUP OF TREES TO REMAIN.
- PROTECTIVE FENCE SHALL BE ERECTED AROUND TREES IDENTIFIED ON PLAN OR TREES WITH TRUNK DIAMETER GREATER THAN 24 INCHES AS MEASURED AT HEIGHT OF 4 1/2 FEET. PROTECTIVE FENCE SHALL BE 4 FEET HIGH ORANGE PLASTIC MESH OR APPROVED EQUIVALENT SUPPORTED ON STEEL T-POST A MINIMUM OF 6 FEET LONG. PROTECTIVE FENCE SHALL SURROUND TREE AT MINIMUM OF 20 FEET FROM OUTSIDE EDGE OF TREE TRUNK WITH STEEL T-POST AT A MINIMUM OF 5 FEET ON CENTER.
- IF TREES OTHER THAN THOSE SPECIFICALLY DESIGNATED FOR REMOVAL ARE DAMAGED BEYOND SURVIVAL CONDITIONS AS DETERMINED BY THE LANDSCAPE ARCHITECT, THE CONTRACTOR SHALL REMOVE SUCH TREES AND REPLACE THE TREE WITH A SAME SPECIES AND SIZE AND MAINTAIN FOR THE DURATION OF CONSTRUCTION OR 12 MONTHS WHICHEVER IS GREATER AT NO COST TO THE OWNER.
- PROVIDE AN EVEN LAYER OF PLANTING SOIL OVER ALL PLANTING AREAS. REFER TO THE SPECIFICATIONS FOR TOPSOIL MIXTURE DEPTH. REPRESENTATIVE SAMPLES OF SOIL FROM PROJECT SITE SHALL BE SUBMITTED TO A LABORATORY ACCEPTABLE TO THE LANDSCAPE ARCHITECT FOR ANALYSIS OF REQUIRED SOIL AMENDMENTS. TEST RESULTS AND FERTILIZATION SCHEDULE SHALL BE PRESENTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND ACCEPTANCE BEFORE PLACING PLANTING SOIL. UNIFORMLY DISTRIBUTE FERTILIZER AND AMENDMENTS OVER PLANTING AREAS AS RECOMMENDED BY THE SOIL ANALYSIS REPORT. ROTOTILL TOP LAYER OF SOIL TO EVENLY INCORPORATE FERTILIZER AND AMENDMENTS.
- GUY WIRES, FLAGGING, STAKES, WINDBREAKERS, ETC. SHALL BE MAINTAINED AND REPLACED IF NECESSARY BY THE CONTRACTOR UNTIL THE TREE OR SHRUB IS ABLE TO STAND BY ITSELF. THE CONTRACTOR SHALL REMOVE AND DISPOSE AT THE END OF PLANT ESTABLISHMENT PERIOD.
- AFTER INSTALLATION OF PLANTING & IRRIGATION, LANDSCAPE CONTRACTOR TO PROVIDE MARK-UP INFORMATION OF ANY CHANGES MADE IN THE FIELD TO THE FINAL AS-BUILT PLANS.
- ANY ALTERATION/ADJUSTMENT TO THESE PLANS AFTER CONSTRUCTION IS COMPLETE SHALL BE CONSIDERED FIELD-POSTED AS-BUILT PLANS. INFORMATION ADDED AS FIELD-POSTED AS-BUILT PLANS ARE NOT DRAFTED AS PART OF THE DESIGNED CONSTRUCTION DOCUMENTS AND MUST BE VERIFIED IN THE FIELD.

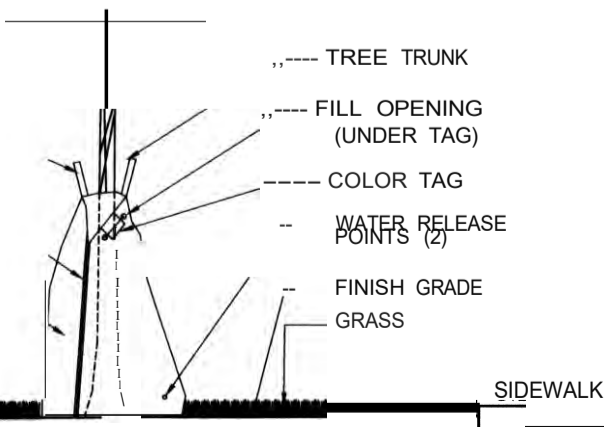
**PATENTED DESIGN:**

- ONE BAG FITS 1" TO 4" CALIPER TREES
- TWO BAGS FITS 4" TO 8" CALIPER TREES (2 BAGS ZIPPED BACK-TO-BACK)
- TIME TO EMPTY 5 TO 9 HOURS (APPROXIMATE)
- DIMENSIONS: 18" WIDE (FILLED), 26" TALL (FILLED)

**DIRECTIONS FOR USE:**

- WRAP BOTH SIDES OF TREEGATOR BAG AROUND TREE TRUNK.
- ZIP UP ZIPPER, INSERT HOSE IN OPENING UNDER TAG AND BEGIN FILLING.
- RELEASE POINTS MAY SQUIRT INITIALLY, BUT WILL SLOW AS BAG IS FILLED.
- FILL BAG TO APPROXIMATELY 1/4 CAPACITY.
- AFTER BAG IS 1/4 FULL, GENTLY LIFT UP ON BLACK STRAPS AT TOP OF BAG.
- ADD PREMIXED WATER-SOLUBLE FERTILIZER, IF DESIRED. RESUME FILLING.
- BAG WILL BE EMPTY IN APPROXIMATELY 5 TO 9 HOURS.
- FILL SCHEDULE FOR MOST NEW TREE PLANTINGS IS ONCE PER WEEK.

PULL STRAPS (2) -----  
 NYLON ZIPPERS (2) -  
 UV PROTECTED---  
 POLYETHYLENE



**GATOR BAG DETAIL**

N.T.S.

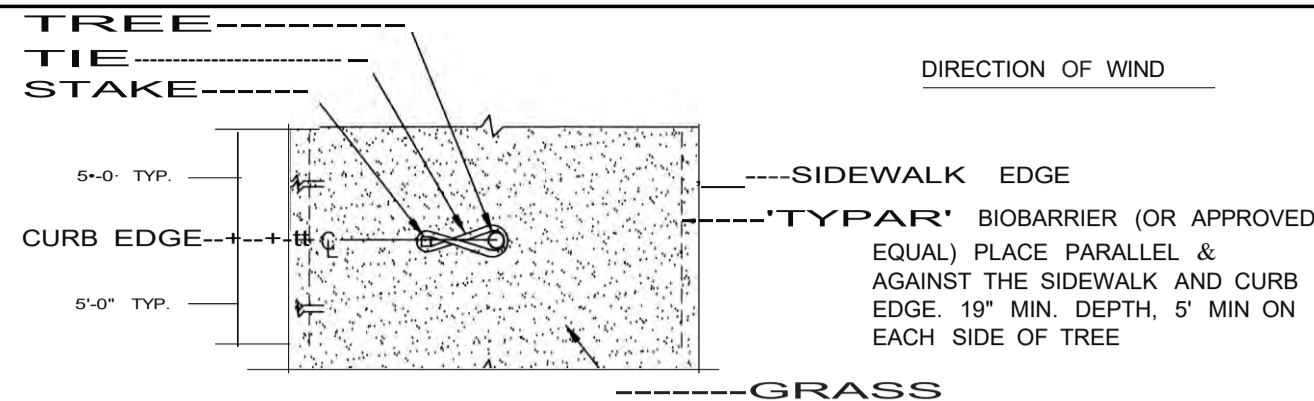
**PRECAUTIONS:**

- FILL THIS PRODUCT WITH CLEAN WATER ONLY! IF NECESSARY, FILTER WATER THROUGH COTTON CLOTH ON HOSE END.
- DO NOT SUSPEND AND/OR HANG BAG FROM BLACK STRAPS.
- DO NOT UNZIP BAG WHEN FULL.
- DO NOT TEAR/RIP FILL OPENINGS.
- THIS PRODUCT IS NOT A TOY. KEEP AWAY FROM CHILDREN.
- IF USING WATER SOLUBLE FERTILIZERS, PREMIX IN SEPARATE CONTAINER BEFORE ADDING TO BAG. (NOT NECESSARY IF USING DISSOLVABLE FERTILIZER PACKETS.)
- FAILURE TO FOLLOW THESE PRECAUTIONS WILL VOID PRODUCT WARRANTY.

**WATERING SCHEDULE:**

FOR MOST 20 GALLON TREEGATOR ORIGINAL WATERING APPLICATIONS, BEGIN WITH A FILL SCHEDULE OF ONCE PER WEEK. ADJUST WATERING SCHEDULE AS NEEDED. PROPER WATERING FREQUENCY AND APPLICATION AMOUNTS VARY. THIS WATERING SCHEDULE WILL NOT GUARANTEE THAT YOUR TREE IS BEING WATERED PROPERLY. CONSULT A LOCAL GARDENING OR TREE CARE PROFESSIONAL FOR INFO ON PROPER WATERING PRACTICES FOR YOUR PARTICULAR TREE AND REGION. FOR MORE INFORMATION REGARDING RECOMMENDED TREEGATOR NEW TREE WATERING SCHEDULES, PLEASE CALL: 1-866-TREEGATOR OR VISIT: WWW.TREEGATOR.COM.

**NOTE:**  
 DIRECTION OF MAIN BRANCHING SHALL BE PARALLEL TO PLANTING STRIP AND NOT ONTO ROADWAY.



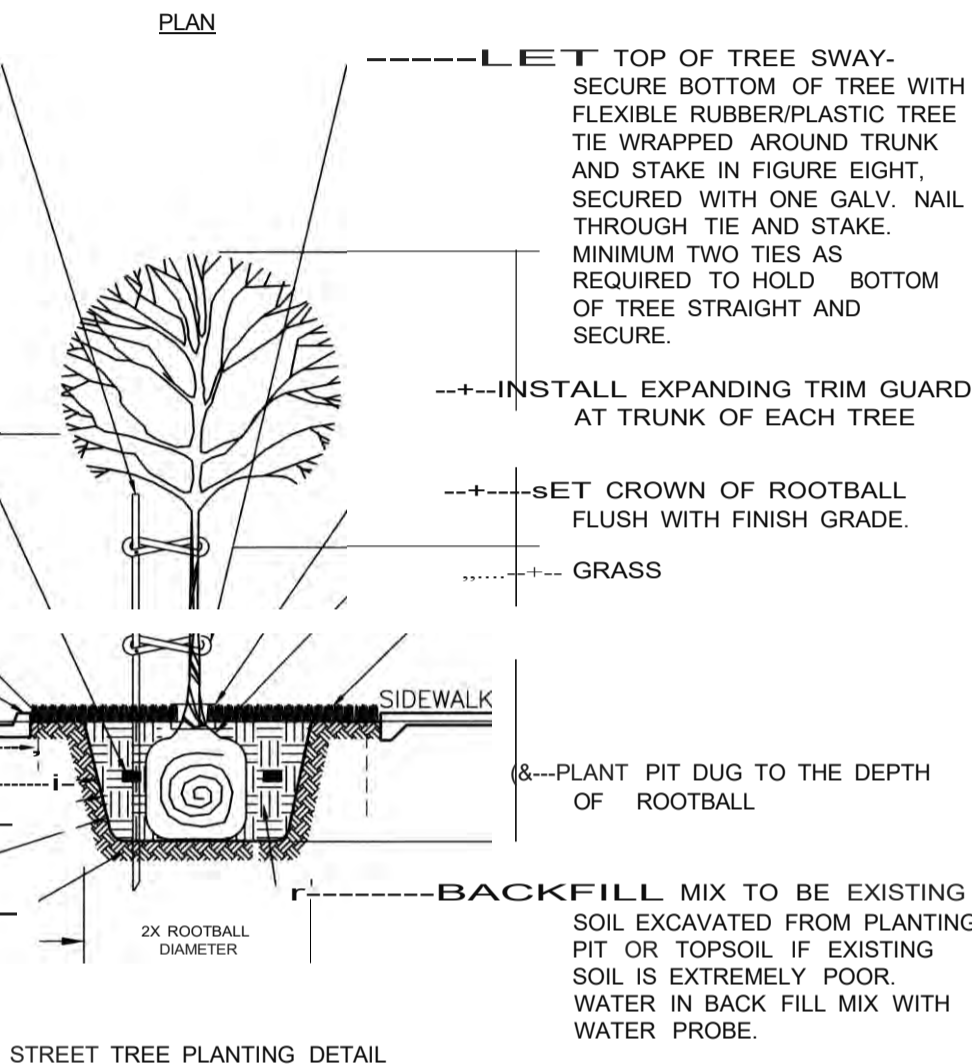
**DO NOT STAKE THROUGH ROOTBALL**  
 3/4" X 8" LONG REDWOOD OR TREATED STAKE OR ACCEPTABLE W/ DPR. BEAUTIF. DIV., HAMMERED INTO SUBGRADE. AVOID ROOTBALL. DO NOT ALLOW TREE TO RUB AGAINST STAKE, PROVIDE ADDITIONAL STAKES AS REQUIRED.

SLOW RELEASE TABLETS SPREAD--- EVENLY AROUND ROOTBALL AT MID DEPTH DEEP AWAY FROM ROOTBALL.

HORIZONTAL BRANCH--- 8'0" CLEAR TO LOWEST

FINISH GRADE  
 CURB

TYPAR BIOBARRIER, TYP  
 LOOSEN SIDES OF PLANTING PIT W/ PICK  
 SLOPE THE SIDES OF THE PLANT PIT  
 SCARIFY SIDES OF HOLE  
 UNDISTURBED SUBGRADE



STREET TREE PLANTING DETAIL

**STREET TREE PLANTING STANDARDS (MIN. CLEARANCE):**

| STREET FEATURE              | SMALL TREES | MEDIUM TREES | LARGE TREES |
|-----------------------------|-------------|--------------|-------------|
| STREET INTERSECTION         | 30'         | 30'          | 30'         |
| STORM DRAIN/SEWER LINE      | 5'          | 5'           | 5'          |
| UTILITY POLE                | 5'          | 1A'          | 10'         |
| FIRE HYDRANT                | 5'          | 5'           | 5'          |
| WATER LATERALS              | 5'          | 5'           | 5'          |
| ELECTROLIER (STREET LIGHTS) | 5'          | 5'           | 10'         |
| METER BOXES                 | 5'          | 5'           | 10'         |
| PEDESTRIAN CROSSWALK        | 5'          | 5'           | 10'         |
| DRIVEWAY                    | 5'          | 5'           | 10'         |
| ANOTHER TREE                | 22'         | 22'          | 60'         |

TREE SIZES ARE: "SMALL" IF UP TO 25 FEET IN HEIGHT, "MEDIUM" IF BETWEEN 26 TO 35 FEET, AND "LARGE" IF HIGHER THAN 35 FEET.

**STREET TREE DETAIL**

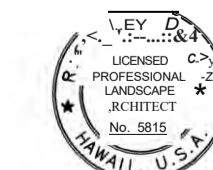
**HYDRO SEED/ HYDRO SPRIG:**

SHALL BE SPECIFICALLY PROCESSED FIBER CONTAINING NO GROWTH OR GERMINATION INHIBITING FACTORS. IT SHALL BE SUCH THAT AFTER ADDITION AND AGITATION IN THE HYDRAULIC EQUIPMENT WITH SEEDS/SPRINGS, FERTILIZER, WATER AND, OTHER ADDITIVES NOT DETRIMENTAL TO PLANT GROWTH. THE FIBERS WILL FORM A HOMOGENEOUS SLURRY. WHEN HYDRAULICALLY SPRAYED ON THE SOIL, THE FIBERS SHALL FORM A BLOTTER-LIKE GROUND COVER WHICH READILY ABSORBS WATER AND ALLOWS INFILTRATION, COMPLETE COVERAGE OF THE SURFACE SHALL BE ATTAINED.



**HYDRO SEED/SPRIG DETAIL**

NOT TO SCALE



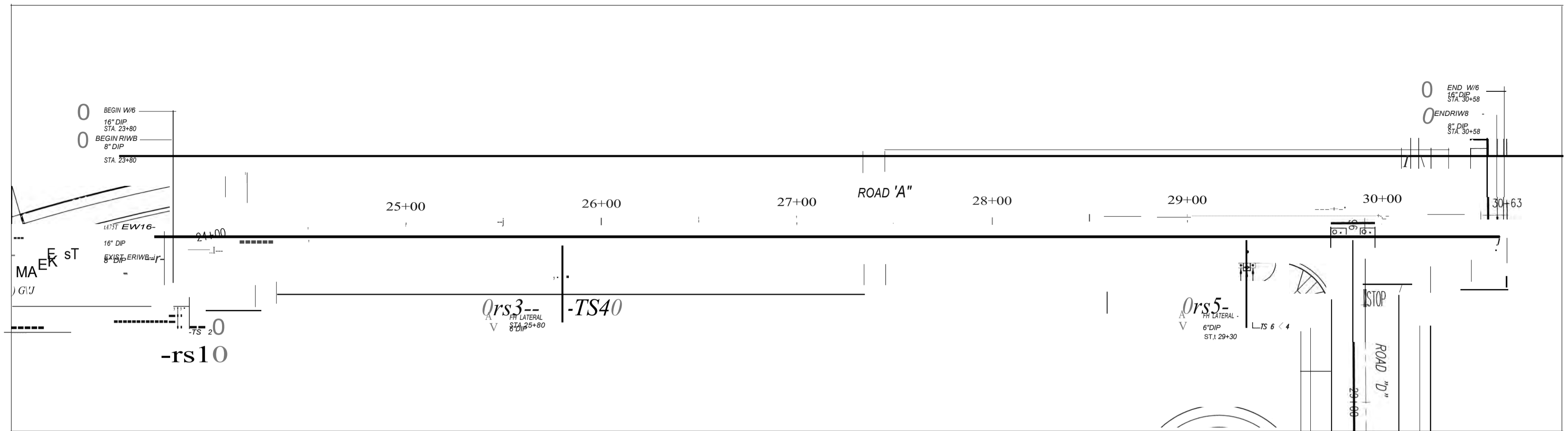
THIS WORK WAS PREPARED BY ME UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT YOU BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 1/0/22

**Community Planning and Engineering, Inc.**  
 Engineering Design | Construction Management | Infrastructure Planning  
 1286 Queen Emma Street Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
 HONOUULUU, EWA, OAHU, HAWAII  
 (DPP SUBO. FILE NO. 2017/SUB-37)  
 OYNER & DEWEOPER, DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17; Portion 110

**PLANTING SCHEDULE, NOTES & DETAILS**

DRAWN BY: CB ENGINEER: SD OUT-ED BY: RH  
 APPROVED:



**ROAD A CATHODIC PROTECTION LAYOUT**  
SCALE: NTS CP-1

**KEY NOTES:**

- 1 INSTALL INSULATING JOINT ANODE TEST STATION. SEE DETAILS 7/8 ON CP-7.
- 2 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND RINGS. SEE DETAILS 5/6 ON CP-8.
- 3 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MAINLINE TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND RINGS. SEE DETAILS 5/6/9 ON CP-8.
- 4 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2/4/5 ON CP-8.

| EAST KAPOLEI II DEVELOPMENT - 16" DIP |         |              |                |                                     |                                |
|---------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                  | STATION | LOCATION NO. | DETAIL/DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| A                                     | 23+80   | TS 1         | 7/8 CP-1       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| A                                     | 25+76   | TS 3         | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| A                                     | 29+26   | TS 5         | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |

| EAST KAPOLEI II DEVELOPMENT - 8" DIP |         |              |                |                                     |                                |
|--------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                 | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| A                                    | 23+80   | TS 2         | 1/8 CP-1       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| A                                    | 25+84   | TS 4         | 4/5 CP-1       | ANODE TEST STATION                  | TWO (2) 48LB MAGNESIUM ANODES  |
| A                                    | 29+34   | TS 6         | 4/5 CP-7       | ANODE TEST STATION                  | TWO (2) 48LB MAGNESIUM ANODES  |

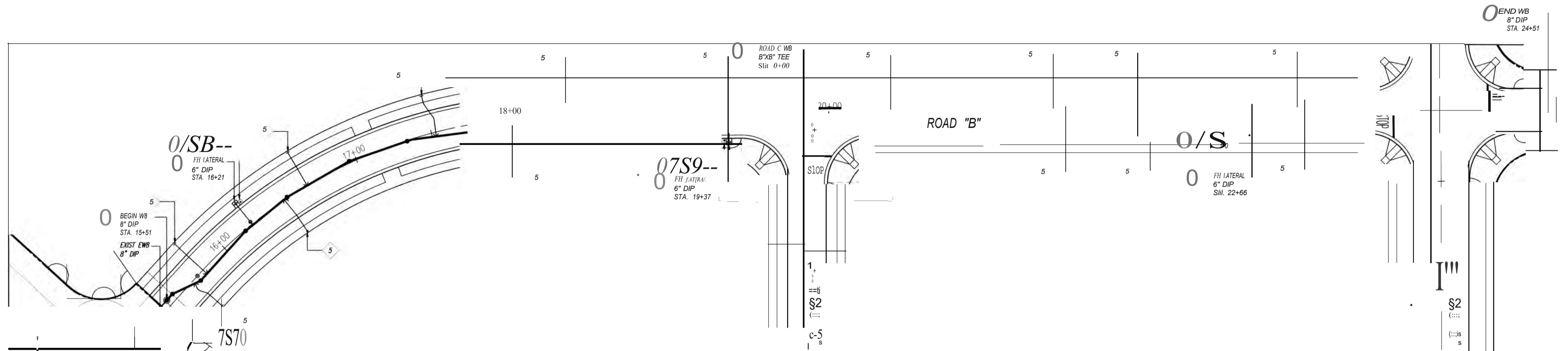
W. HUNT  
 CIVIL ENGINEER  
 LICENSED PROFESSIONAL ENGINEER  
 No. 6975-C  
 REGISTERED



WE OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/01/22

BY  
 ME OR UNDER MY SUPERVISION, CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 11/01/24

|                                                                                                                                                                                                                 |              |                |         |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|----------------|---------|
| REVISION DATE                                                                                                                                                                                                   | DESCRIPTION  | BY             | CHKD BY |
|                                                                                                                                                                                                                 |              |                |         |
|                                                                                                                                                                                                                 |              |                |         |
| <b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(OPP SUBO. FILE NO. 2019/SUB-171)<br>OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17: Portion 161 |              |                |         |
| <b>ROAD A CP LAYOUT</b>                                                                                                                                                                                         |              |                |         |
| DRAWN BY: MJ                                                                                                                                                                                                    | ENGINEER: MV | CHECKED BY: WJ |         |
| APPROVED:                                                                                                                                                                                                       |              |                |         |



**ROAD B CATHODIC PROTECTION LAYOUT**  
SCALE: NTS CP-2

**KEY NOTES:**

- 1 INSTALL INSULATING JOINT ANODE TEST STATION. SEE DETAILS 7/8 ON CP-7.
- 2 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND FITTINGS. SEE DETAILS 5/6 ON CP-8.
- 3 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MAINLINE TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND FITTINGS. SEE DETAILS 5/6/9 ON CP-8.
- 4 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2 ON CP-8.
- 5 INSTANTLY INSULATING CORPORATION STOP AND APPLY PETROLATUM WAX TAPE TO ALL COPPER WATER SERVICE CONNECTIONS BETWEEN DIP MAIN AND CUSTOMER SERVICE VALVE. SEE DETAIL 8 ON CP-8.

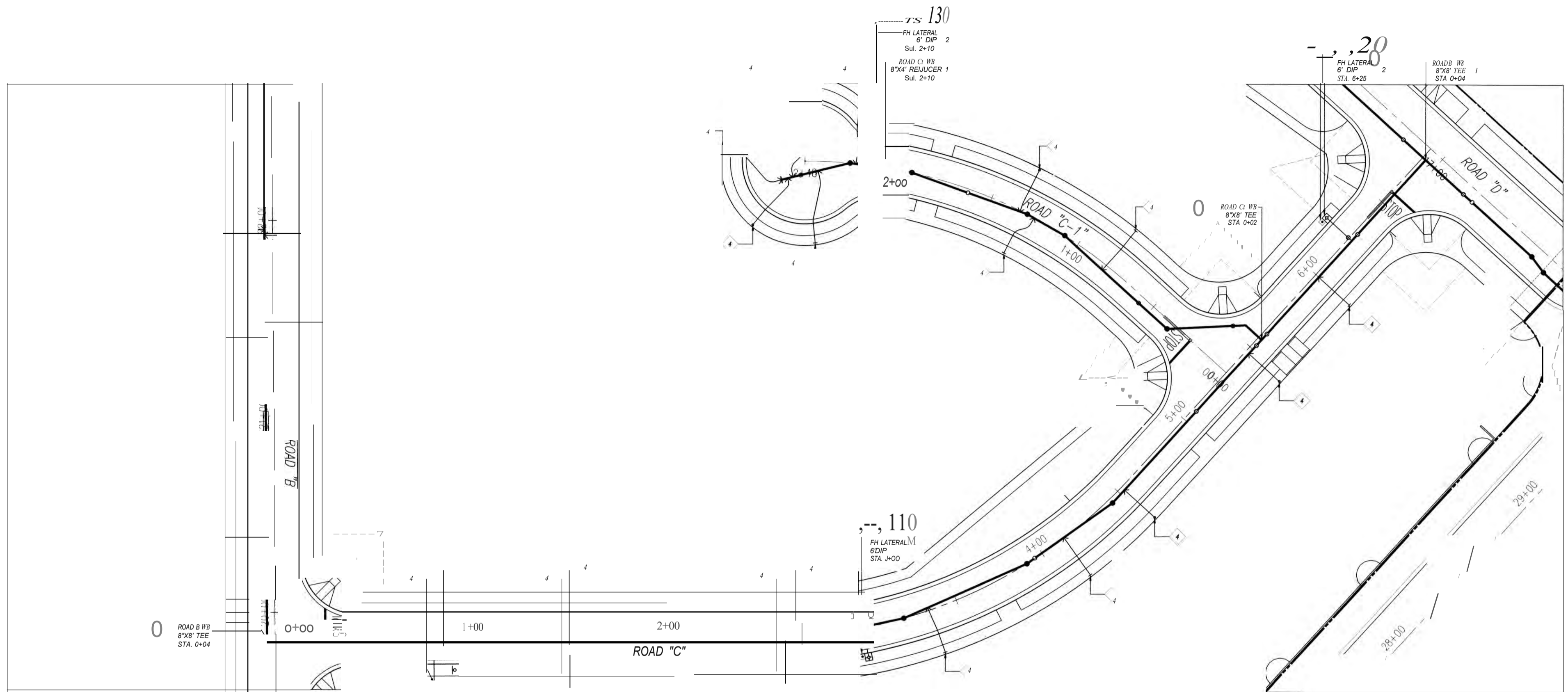
| EAST KAPOLEI II DEVELOPMENT - 8" DIP |         |              |                |                                     |                                |
|--------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                 | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| B                                    | 15+51   | TS 7         | 7/8 CP-1       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| B                                    | 16+25   | TS 8         | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| B                                    | 19+33   | TS 9         | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| B                                    | 22+62   | TS 10        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |

PROFESSIONAL ENGINEER  
 No. 6975-C  
 LICENSE EXPIRATION DATE: 04/30/22

PROFESSIONAL ENGINEER  
 No. 113024  
 LICENSE EXPIRATION DATE: 11/30/24

|                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <br>Community Planning and Engineering, Inc.<br>Engineering Design   Construction Management   Infrastructure Planning<br>1286 Queen Emma Street, Honolulu, Hawaii                                             |
| <b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(OPP SUBD. FILE NO. 2019/SUB-171)<br>OWNER & DE-UPPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17: Portion 161 |
| <b>ROAD B CP LAYOUT PLAN</b>                                                                                                                                                                                   |
| DRAWN BY: MJ      ENGINEER: MV      CHECKED BY: VJ<br>APPROVED:                                                                                                                                                |
| <br>DATE: MAR 11 2022<br><small>FOR WORK AFFECTING BNS FACILITIES IN CITY/STATE RIGHT-OF-WAY AND BNS EASEMENTS ONLY</small>                                                                                    |





**ROAD C / C1 CATHODIC PROTECTION LAYOUT**  
SCALE: NTS CP-3

**KEY NOTES:**

- 1 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND FITINGS. SEE DETAILS 5/6 ON CP-8.
- 2 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MAINLINE TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND FITINGS. SEE DETAILS 5/6/9 ON CP-8.
- 3 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2 ON CP-8.
- 4 INSTALL INSULATING CORPORATION STOP AND APPLY PETROLATUM WAX TAPE TO ALL COPPER WATER SERVICE CONNECTIONS BETWEEN DIP MAIN AND CUSTOMER SERVICE VALVE. SEE DETAIL 8 ON CP-8.

| EAST KAPOLEI II DEVELOPMENT - 8" DIP      |         |              |                |                    |                                |
|-------------------------------------------|---------|--------------|----------------|--------------------|--------------------------------|
| ROAD                                      | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION        | ANODE QUANTITY & SIZE          |
| C                                         | 2+96    | TS 11        | 1/2 CP-1       | ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| C                                         | 6+21    | TS 12        | 1/2 CP-1       | ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| EAST KAPOLEI II DEVELOPMENT - 4" & 8" DIP |         |              |                |                    |                                |
| ROAD                                      | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION        | ANODE QUANTITY & SIZE          |
| CJ                                        | 2+14    | TS 13        | 1/2 CP-7       | ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |

U. I. I. P.  
COMMUNITY PLANNING AND ENGINEERING, INC.  
LICENSED PROFESSIONAL ENGINEER  
No. 6975-C  
STATE OF HAWAII

ASSOCIATION OF ENGINEERS AND SURVEYORS  
LICENSED PROFESSIONAL ENGINEER  
No. 10428  
STATE OF HAWAII

ABY  
CONSTRUCTION OF THIS PROJECT  
WILL BE UNDER MY OBSERVATION.  
LICENSE EXPIRATION DATE: 11/1/24

| REVISION DATE | DESCRIPTION | MADE BY | APPROVED |
|---------------|-------------|---------|----------|
|               |             |         |          |

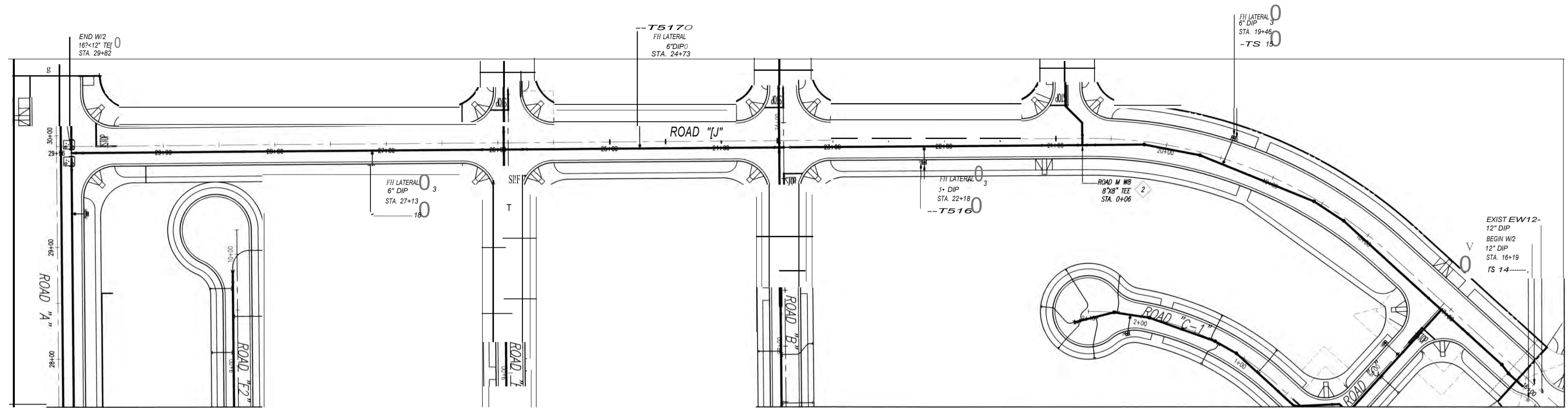
Community Planning and Engineering, Inc.  
Engineering, Design | Construction Management | Infrastructure Planning  
1286 Queen Emma Street, Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
HONOLULU, EWA, OAHU, HAWAII  
(DPP SUBD. FILE NO. 2019/SUB-171)  
OWNER & DEVELOPER: DEPARTMENT HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17; Portion 161

**ROAD C / C1 CP LAYOUT**

DRA. BY: MJ ENGINEER, MV CHECKED BY: VJ  
APPROVED: \_\_\_\_\_

DATE: 11/1/22  
CITY & COUNTY OF HONOLULU  
FOR USE APPLICATING FOR FACILITIES IN CITY/STATE  
RIGHT-OF-WAY AND EASEMENTS ONLY



ROAD D CATHODIC PROTECTION LAYOUT  
SCALE: NTS CP-4

KEY NOTES:

- 1 INSTALL INSULATING JOINT ANODE TEST STATION. SEE DETAILS 7/8 ON CP-7.
- 2 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND FITTINGS. SEE DETAILS 5/6 ON CP-8.
- 3 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MANUNU TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND FITTINGS. SEE DETAILS 5/6/9 ON CP-8.
- 4 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2 ON CP-8.

| [EAST KAPOLEI II DEVELOPMENT - 8" & 12" DIP] |         |              |                |                                     |                                |
|----------------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                         | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| D                                            | 16+19   | TS 14        | 7/8 CP-1       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| D                                            | 19+42   | TS 15        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| D                                            | 22+22   | TS 16        | 1/2 CP-7       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| D                                            | 24+77   | TS 17        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| D                                            | 27+17   | TS 18        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48                    |

**V. MUI**  
LICENSED PROFESSIONAL ENGINEER  
No. 6975-C  
04/02/22

**MATTHEW M. VAN ALLEN**  
LICENSED PROFESSIONAL ENGINEER  
No. 9232  
11/02/24

REVISION DATE: 11/11/22  
MADE BY:

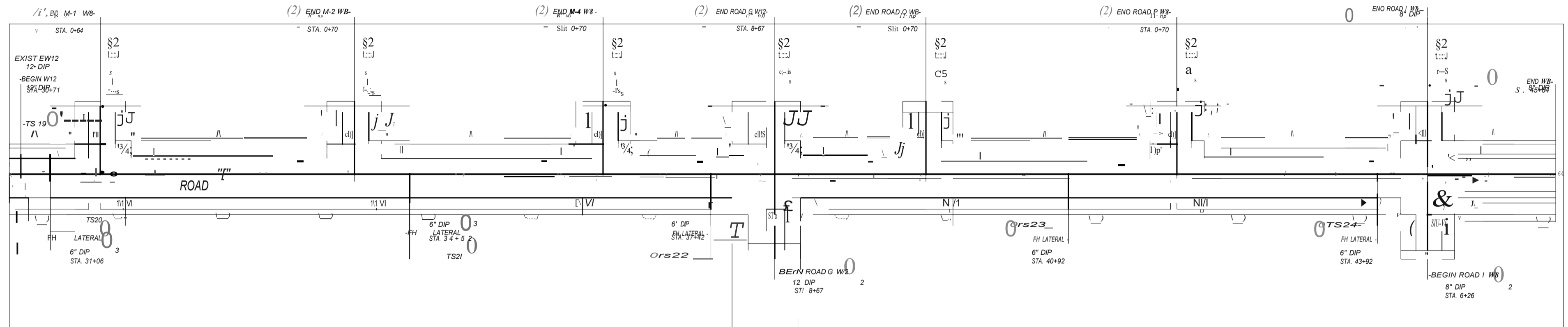
**cp&e** Community Planning and Engineering, Inc.  
Engineering Design | Construction Management | Infrastructure Planning  
1286 Queen Emma Street, Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
HONOLULU, EWA, OAHU, HAWAII  
(DPP SUBD. ALE NO. 2019/SUB-171)  
011NER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17: Portion 161

**ROAD D/M CP LAYOUT**

DRAWN BY: WJ ENGINEER: MV CHECKED BY: WJ  
APPROVED BY:

**MAR 11 2022**  
MANAGER AND CHIEF ENGINEER, A.I.C.E. # 1111  
CITY OF HONOLULU  
FOR WORK AFFECTING THE FACILITIES IN CITY/STATE  
RIGHT-OF-WAY AND EASEMENTS ONLY



ROAD E / INTERSECTIONS CATHODIC PROTECTION LAYOUT  
SCALE: NTS CP-5

KEY NOTES:

- 1 INSTALL INSULATING JOINT ANODE TEST STATION. SEE DETAILS 7/8 ON CP-1
- 2 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND FITTINGS. SEE DETAILS 5/6 ON CP-8.
- 3 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MANHOLE TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND FITTINGS. SEE DETAILS 5/6/9 ON CP-8.
- 4 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2 ON CP-8.

| EAST KAPOLEI II DEVELOPMENT - 8" & 12" DIP |         |              |                |                                     |                                |
|--------------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                       | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| E                                          | 30+71   | TS 19        | 7/8 CP-1       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| E                                          | 31+06   | TS 20        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| E                                          | 34+48   | TS 21        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| E                                          | 37+46   | TS 22        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| E                                          | 40+88   | TS 23        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| E                                          | 43+88   | TS 24        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |

Community Planning and Engineering, Inc.  
 Engineering Design | Construction Management | Infrastructure Planning  
 1286 Queen Emma Street, Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT  
 INCREMENT 2C**  
 HONOLULU, EWA, OAHU, HAWAII  
 (OPP SUBD. FILE NO. 2019/SUB-171)  
 OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17: Portion 161

**ROAD E/G/L/M-1/M-2/M-4/O/P  
 CP LAYOUT**

DESIGNED BY: MJ ENGINEER: MV CHECKED BY: VJ  
 APPROVED:

DATE: 11/11/2022

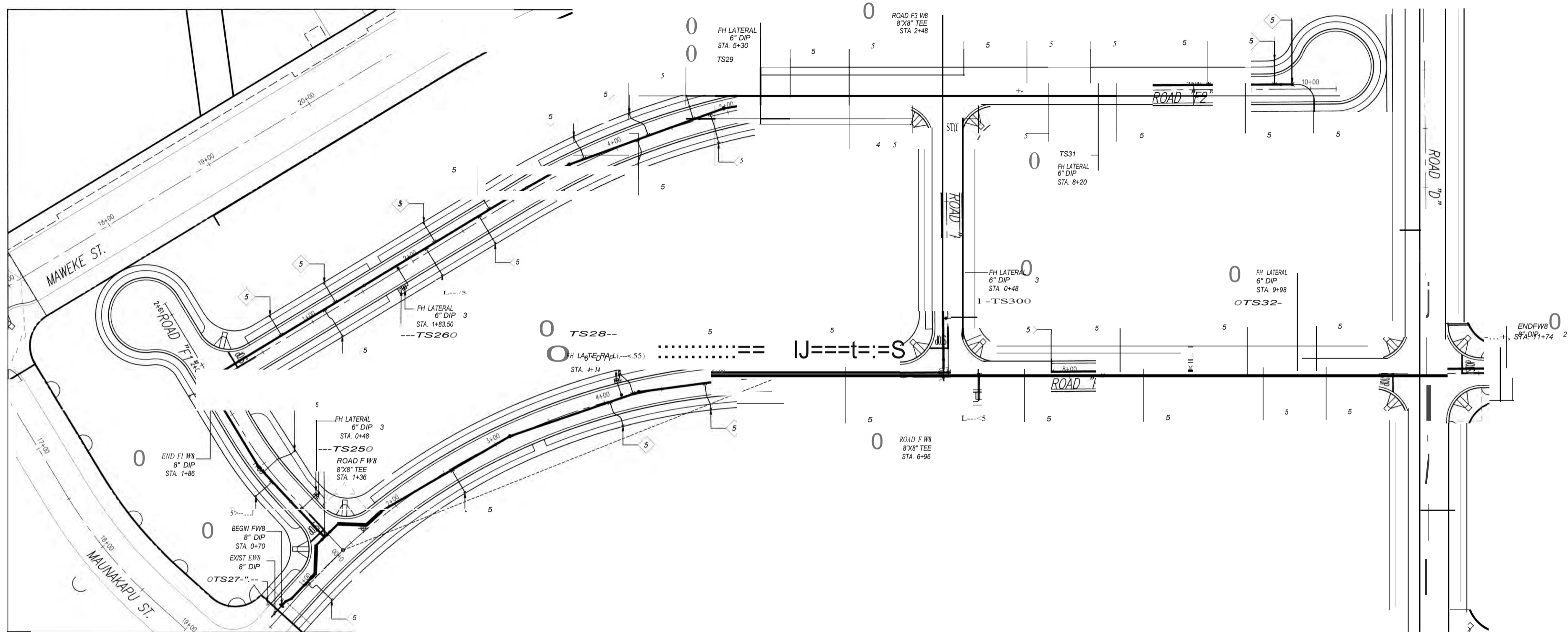
LICENSED PROFESSIONAL ENGINEER  
 No. 8975-C  
 HAWAII

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/12/22

ASSOCIATION OF PROFESSIONAL ENGINEERS OF HAWAII

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 11/11/22





ROAD F/F1 /F2/F3 CATHODIC PROTECTION LAYOUT  
SCALE: NTS CP-6

**KEY NOTES:**

- 1 INSTALL INSULATING JOINT ANODE TEST STATION. SEE DETAILS 7/8 ON CP-Z
- 2 INSTALL CONTINUITY (JOINT) BONDS AND APPLY BONDED DIELECTRIC COATING ON ALL BURIED DIP PIPE AND FITINGS. SEE DETAILS 5/6 ON CP-8.
- 3 INSTALL CONTINUITY (JOINT) BONDS ON BURIED DIP FROM MAIN TO HYDRANT AND APPLY BONDED DIELECTRIC COATING TO ALL DIP PIPE AND FITINGS. SEE DETAILS 5/5/9 ON CP-8.
- 4 INSTALL ANODE TEST STATION NEXT TO HYDRANT. SEE DETAILS 1/2 ON CP-8.
- 5 INSTALL INSULATING CORPORATION STOP AND APPLY PETROLATUM WAX TAPE TO ALL COPPER WATER SERVICE CONNECTIONS BETWEEN DIP MAIN AND CUSTOMER SERVICE VALVE. SEE DETAIL 8 ON CP-8.

| EAST KAPOLEI II DEVELOPMENT - 8" DIP |         |              |                |                                     |                                |
|--------------------------------------|---------|--------------|----------------|-------------------------------------|--------------------------------|
| ROAD                                 | STATION | LOCATION NO. | DETAIL DRAWING | DESCRIPTION                         | ANODE QUANTITY & SIZE          |
| F1                                   | 0+44    | TS 25        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F2                                   | 1+79.50 | TS 26        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F                                    | 0+70    | TS 27        | 7/8 CP-7       | INSULATING JOINT ANODE TEST STATION | FOUR (4) 48LB MAGNESIUM ANODES |
| F                                    | 4+18    | TS 28        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F2                                   | 5+26    | TS 29        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F3                                   | 0+44    | TS 30        | 1/2 CP-7       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F2                                   | 8+16    | TS 31        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |
| F                                    | 9+94    | TS 32        | 1/2 CP-1       | ANODE TEST STATION                  | FOUR (4) 48LB MAGNESIUM ANODES |

**T.M. URBAN**  
LICENSED PROFESSIONAL ENGINEER  
No. 6976-C  
DATE: 11/13/22

**AVR**  
THIS WORK WAS PREPARED BY ME UNDER MY SUPERVISION. CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 11/30/24

REVISION DATE: 11/13/22

**Community Planning and Engineering, Inc.**  
Engineering | Design | Construction Management | Infrastructure Planning  
1286 Queen Emma Street, Honolulu, Hawaii

**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
HONOLULU, EWA, OAHU, HAWAII  
(OPP SUBD. FILE NO. 2019/SUB-171)  
OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
TAX MAP KEY: 9-1-17: Portion 161

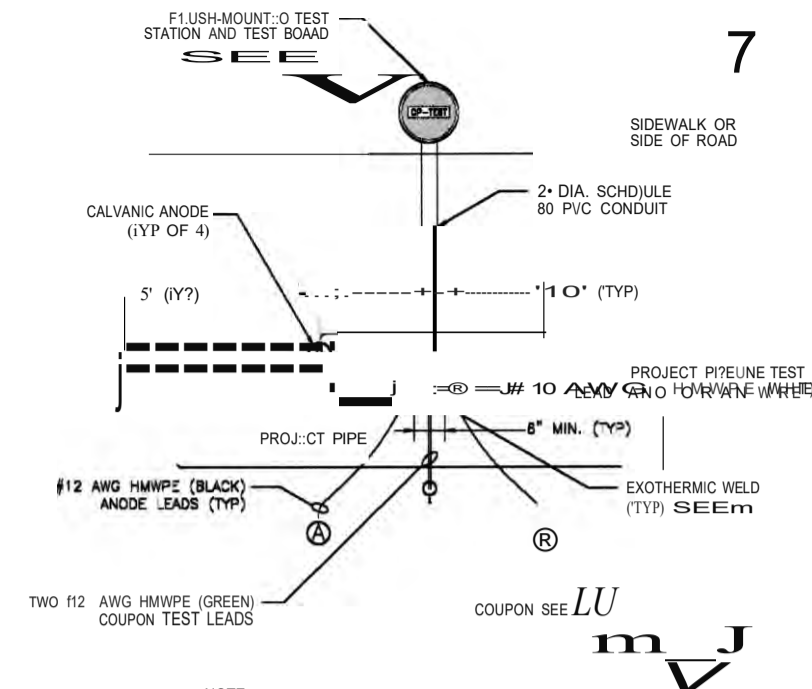
**ROAD F/F1/F2/F3 CP LAYOUT**

DESIGNED BY: MJ ENGINEER: MV CHECKED BY: VJ

APPROVED: *[Signature]* DATE: 11/13/22

MANAGER AND OWNER, E.W.S. V.P. DATE: 11/13/22  
CITY & COUNTY OF HONOLULU (FOR ATTENDING THE FACILITIES IN CITY/STATE RIGHT-OF-WAY AND EASEMENTS ONLY)

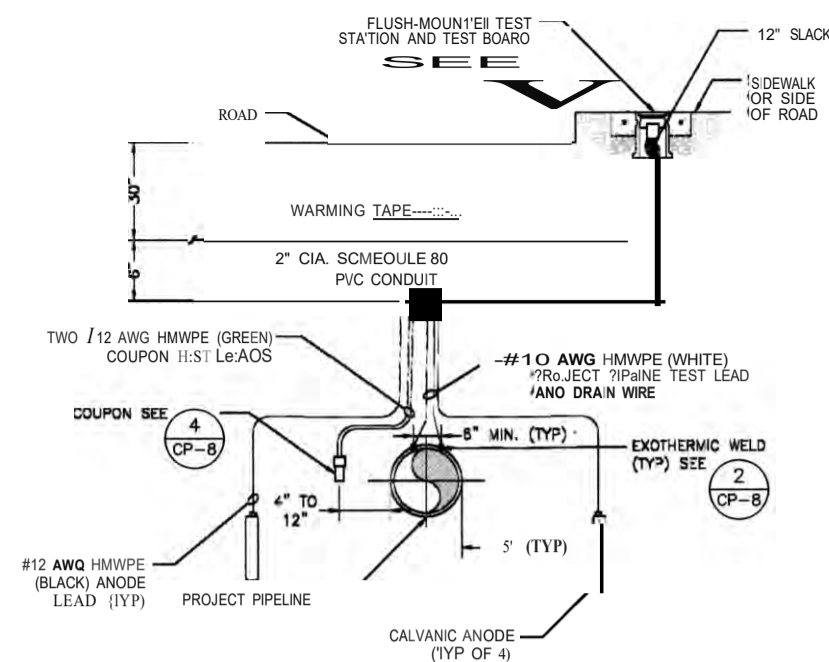




ANODE TEST STATION (ATS) FOR FOUR ANODES  
PLAN VIEW

SCALE: NTS

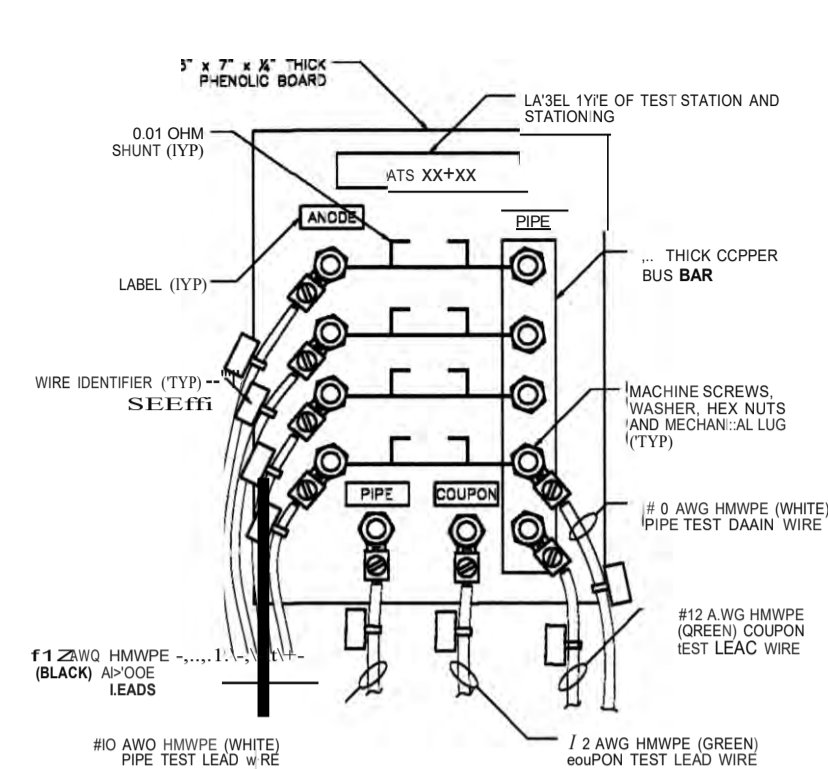
1  
CP-7



ANODE TEST STATION (ATS) FOR FOUR ANODES  
SECTION VIEW

SCALE: NTS

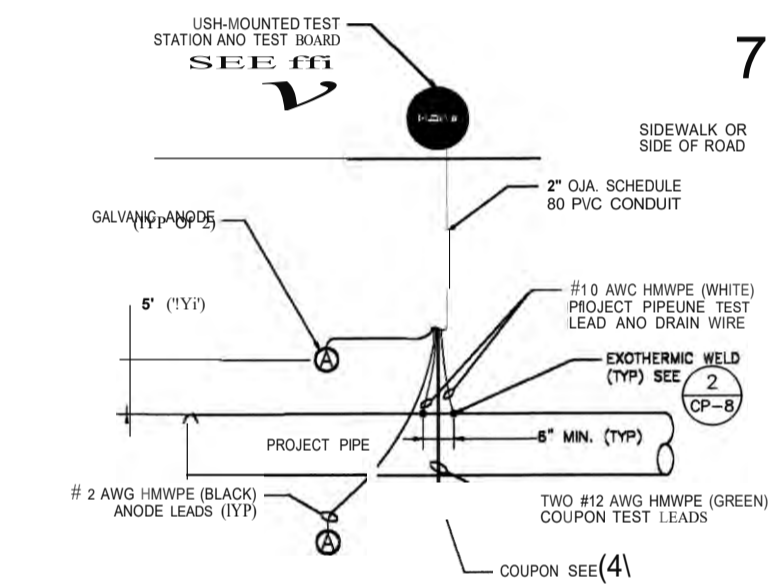
2  
CP-7



ANODE TEST STATION (ATS) FOR FOUR ANODES  
TERMINAL BOARD DETAIL

SCALE: NTS

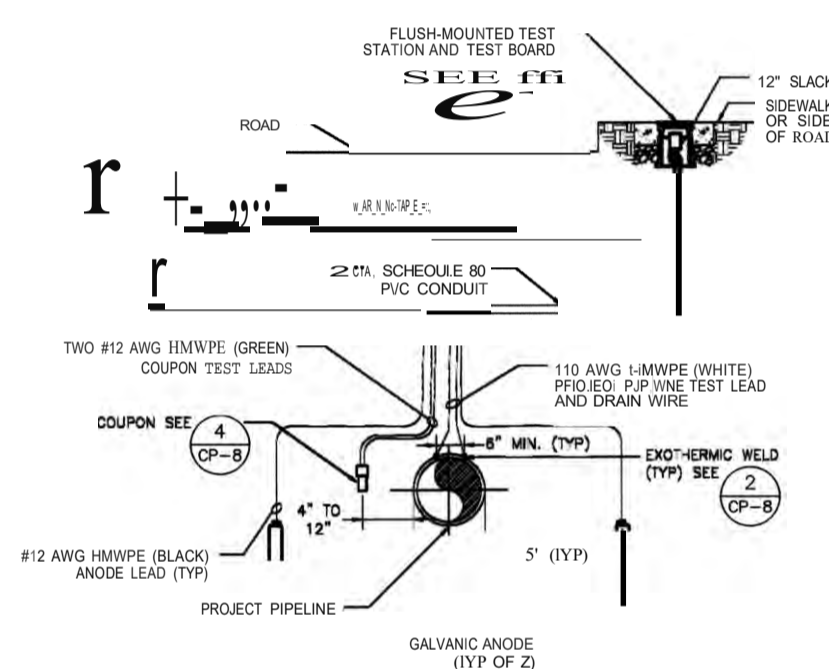
3  
CP-7



ANODE TEST STATION (ATS) FOR TWO ANODES  
PLAN VIEW

SCALE: NTS

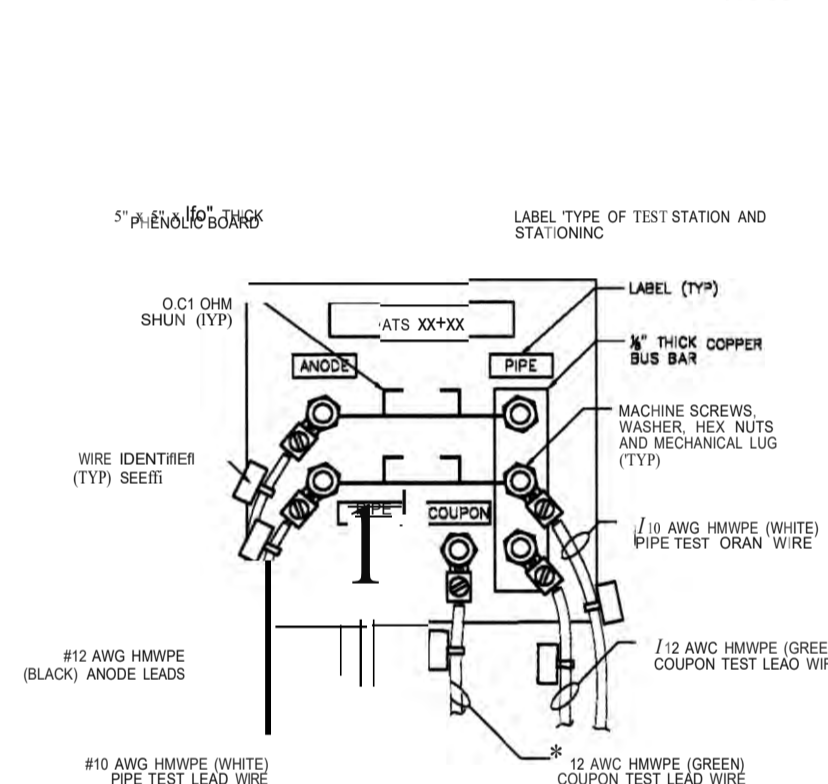
4  
CP-7



ANODE TEST STATION (ATS) FOR TWO ANODES  
SECTION VIEW

SCALE: NTS

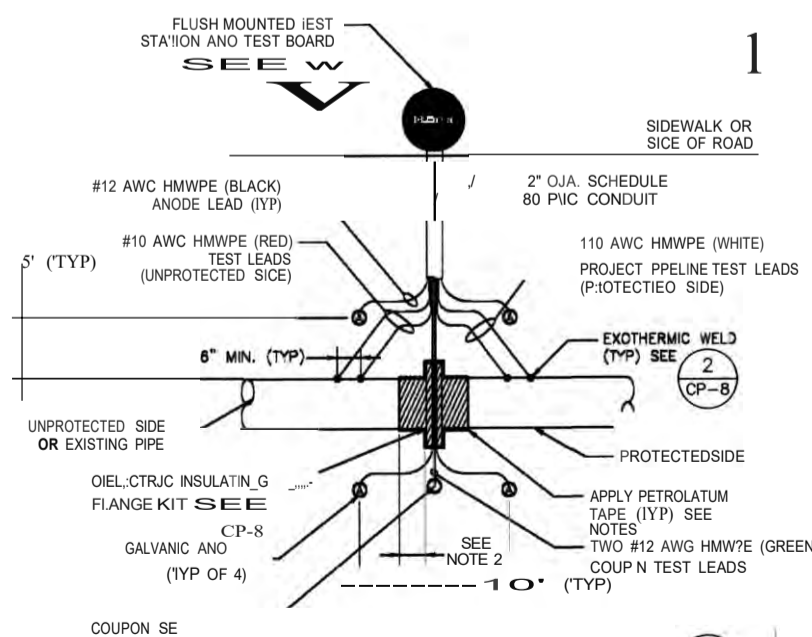
5  
CP-7



ANODE TEST STATION (ATS) FOR TWO ANODES  
TERMINAL BOARD DETAIL

SCALE: NTS

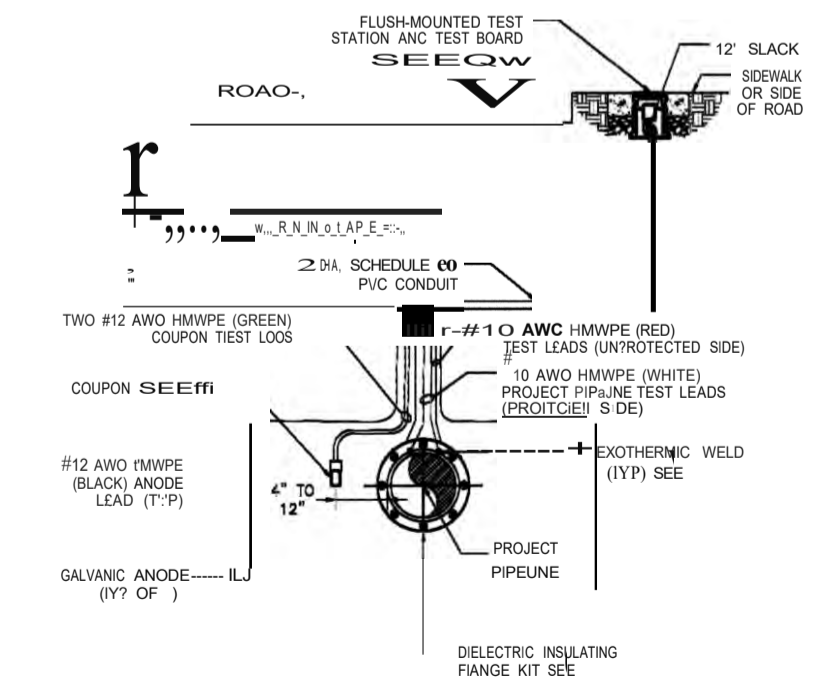
6  
CP-7



INSULATING JOINT ANODE TEST STATION (IJATS)  
PLAN VIEW

SCALE: NTS

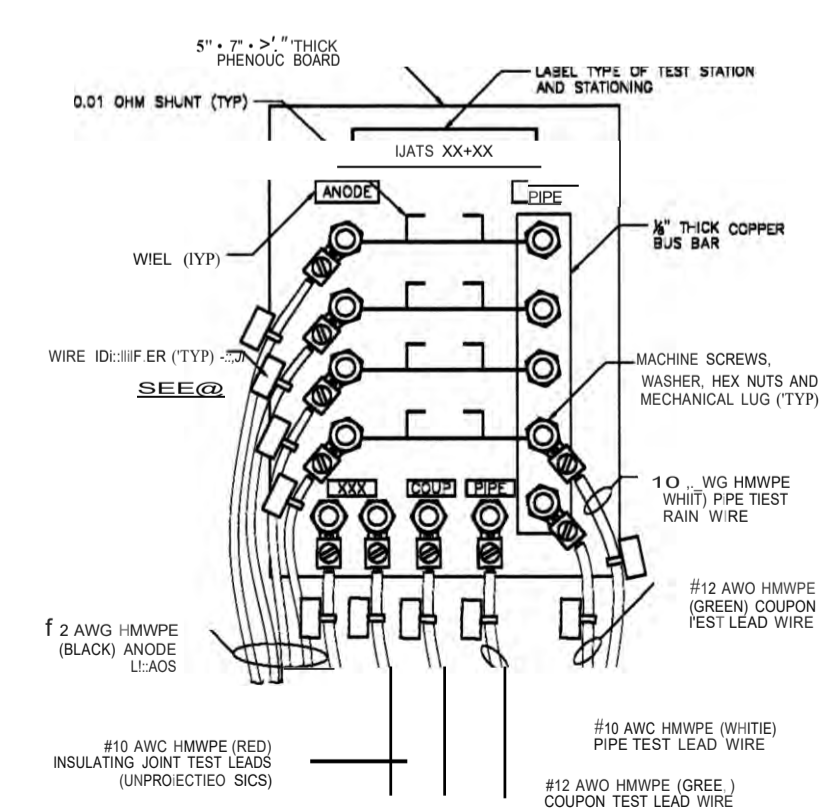
7  
CP-7



INSULATING JOINT ANODE TEST STATION (IJATS)  
SECTION VIEW

SCALE: NTS

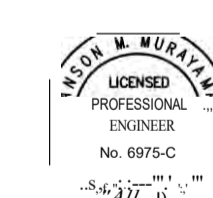
8  
CP-7



INSULATING JOINT ANODE TEST STATION (IJATS)  
TERMINAL BOARD DETAIL

SCALE: NTS

9  
CP-7



CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22



CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 11/30/24

|      |    |          |
|------|----|----------|
| DATE | BY | APPROVED |
|      |    |          |

**Community Planning and Engineering, Inc.**  
 1111 Kalia Road, Suite 100, Honolulu, HI 96813  
 (808) 943-8888

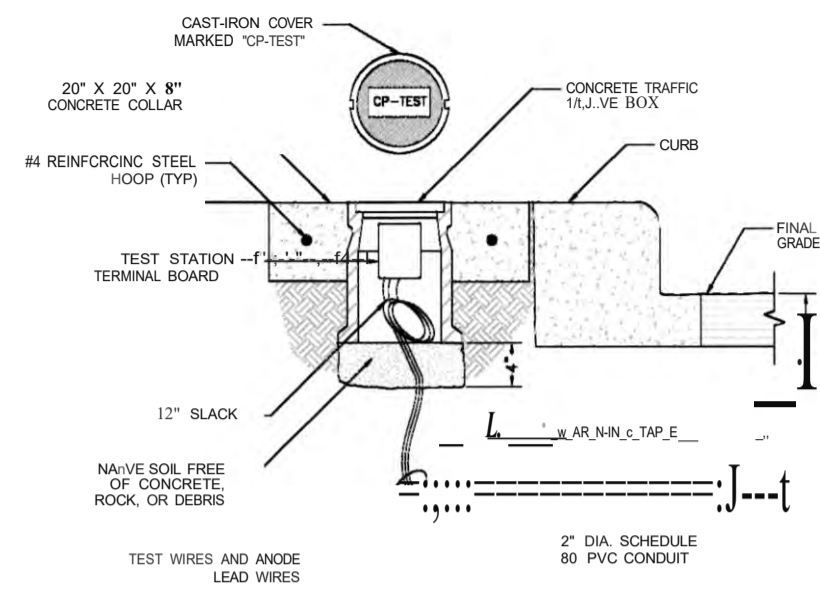
**EAST KAPOLEI II DEVELOPMENT INCREMENT 2C**  
 HONOLULU, HAWAII  
 (OPP. SUBD. FILE NO. 2019SUB-171)

OWNER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS  
 TAX MAP KEY: 9-1-17; Portion 161

**CATHODIC PROTECTION DETAILS - 1**

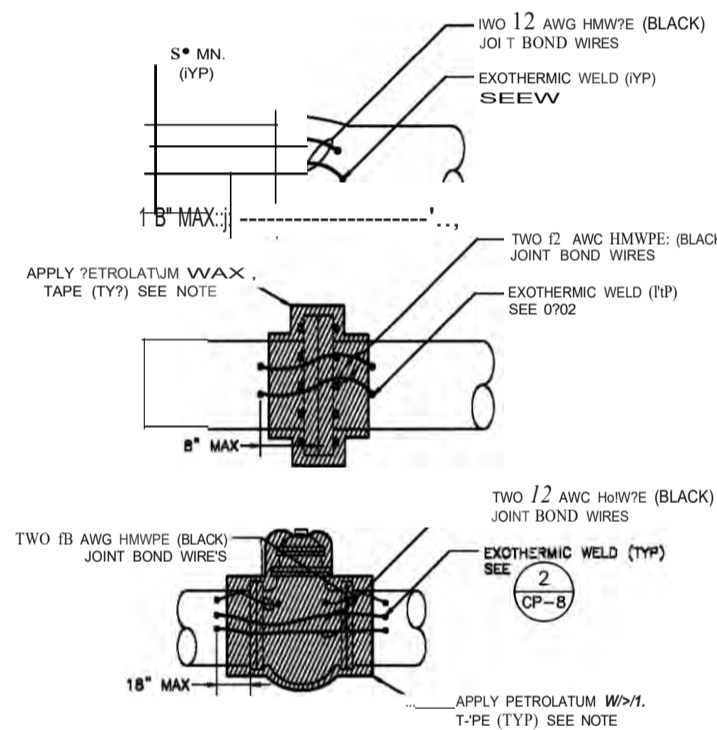
DRAWN BY: RV ENGINEER: SS CHECKED BY: M  
 APPROVED: \_\_\_\_\_

MAR 11 2022



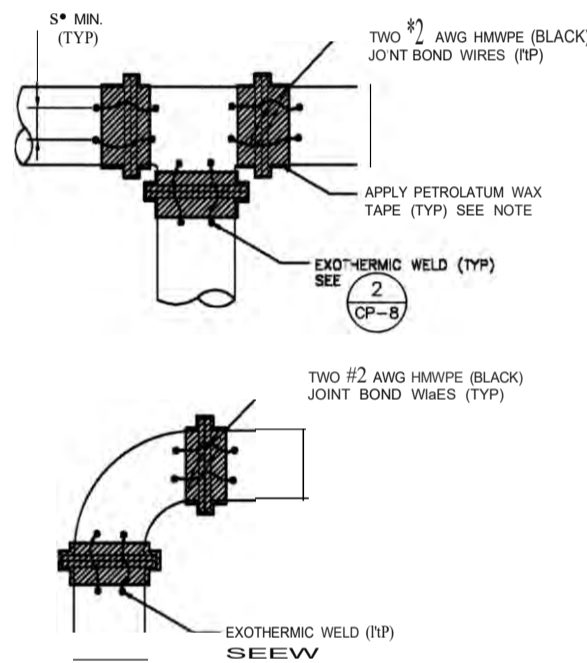
FLUSH MOUNTED TEST STATION  
DETAIL  
SCALE: NTS

1  
CP-8



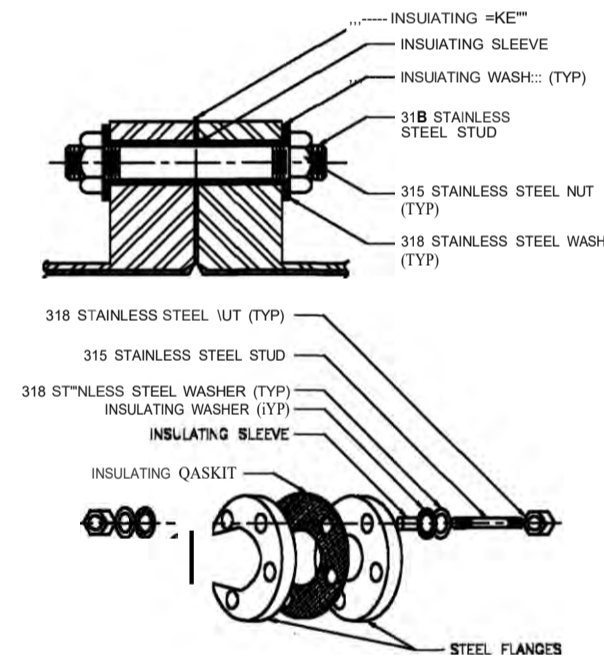
EXOTHERMIC WELD FOR DUCTILE IRON AND STEEL  
DETAIL  
SCALE: NTS

2  
CP-8



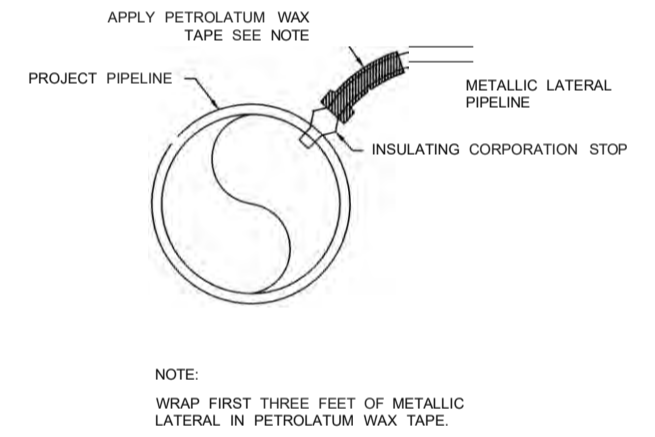
WIRE IDENTIFIER  
DETAIL  
SCALE: NTS

3  
CP-8



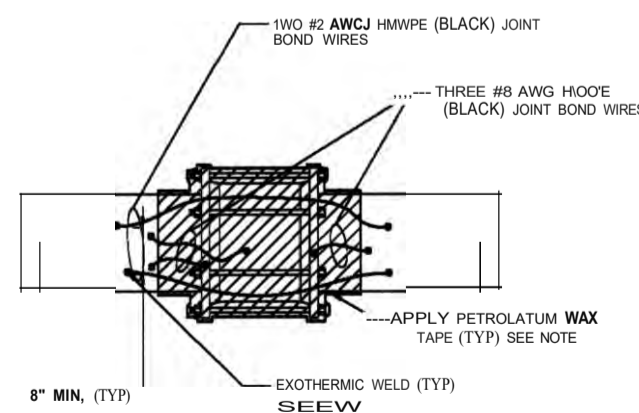
COUPON  
DETAIL  
SCALE: NTS

4  
CP-8



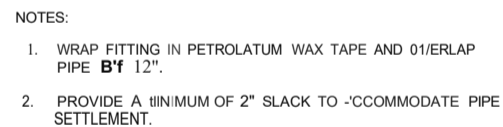
PIPE JOINT BONDING FOR NON-INSULATING JOINTS  
DETAIL  
SCALE: NTS

5  
CP-8



PIPE JOINT BONDING FOR NON-INSULATING JOINTS  
DETAIL  
SCALE: NTS

6  
CP-8



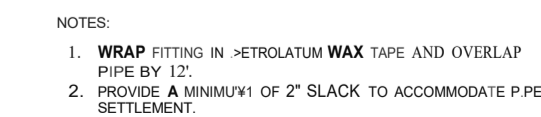
DIELECTRIC INSULATED FLANGE KIT  
DETAIL  
SCALE: NTS

7  
CP-8



LATERAL CONNECTION  
DETAIL  
SCALE: NTS

8  
CP-8



FLEXIBLE COUPLING JOINT BOND  
DETAIL  
SCALE: NTS

9  
CP-8

LICENSED PROFESSIONAL ENGINEER No. 6975-C



ME OR UNDER MY SUPERVISION CONSTRUCTION OF THIS PROJECT I WILL BE UNDER MY OBSERVATION. LICENSE EXPIRATION DATE: 04/30/22

Ji: CONSTRUCTION OF THIS PROJECT I WILL BE UNDER MY SUPERVISION. LICENSE EXPIRATION DATE: 11/30/24

|                                                                                                                                                                                                                 |                   |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| REVISION DATE                                                                                                                                                                                                   | DESCRIPTION       |
|                                                                                                                                                                                                                 |                   |
| <b>Community Planning and Engineering, Inc.</b><br>2209 Queen Emma Street Honolulu, Hawaii<br>Phone: (808) 535-1111                                                                                             |                   |
| <b>EAST KAPOLEI II DEVELOPMENT INCREMENT 2C</b><br>HONOLULU, EWA, OAHU, HAWAII<br>(DPP SUBO. FILE NO. 2019/SUB-171)<br>01WER & DEVELOPER: DEPARTMENT OF HAWAIIAN HOME LANDS<br>TAX MAP KEY: 9-1-17: Portion 161 |                   |
| <b>CATHODIC PROTECTION DETAILS - 2</b>                                                                                                                                                                          |                   |
| DRAWN BY: RM                                                                                                                                                                                                    | ENGINEER: SS      |
| CHECKED BY: AMM                                                                                                                                                                                                 | DATE: MAR 11 2022 |
| APPROVED:                                                                                                                                                                                                       |                   |