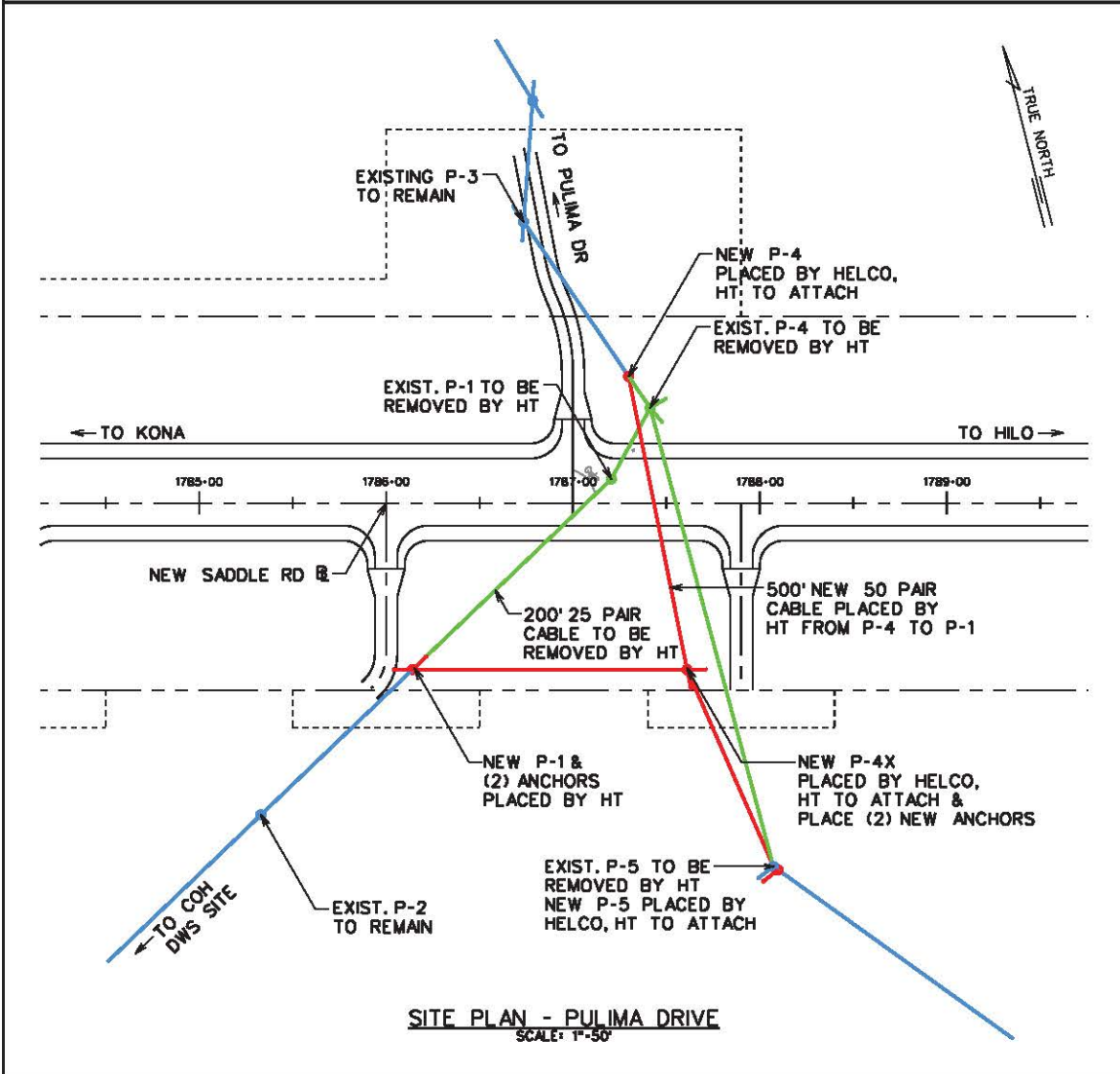
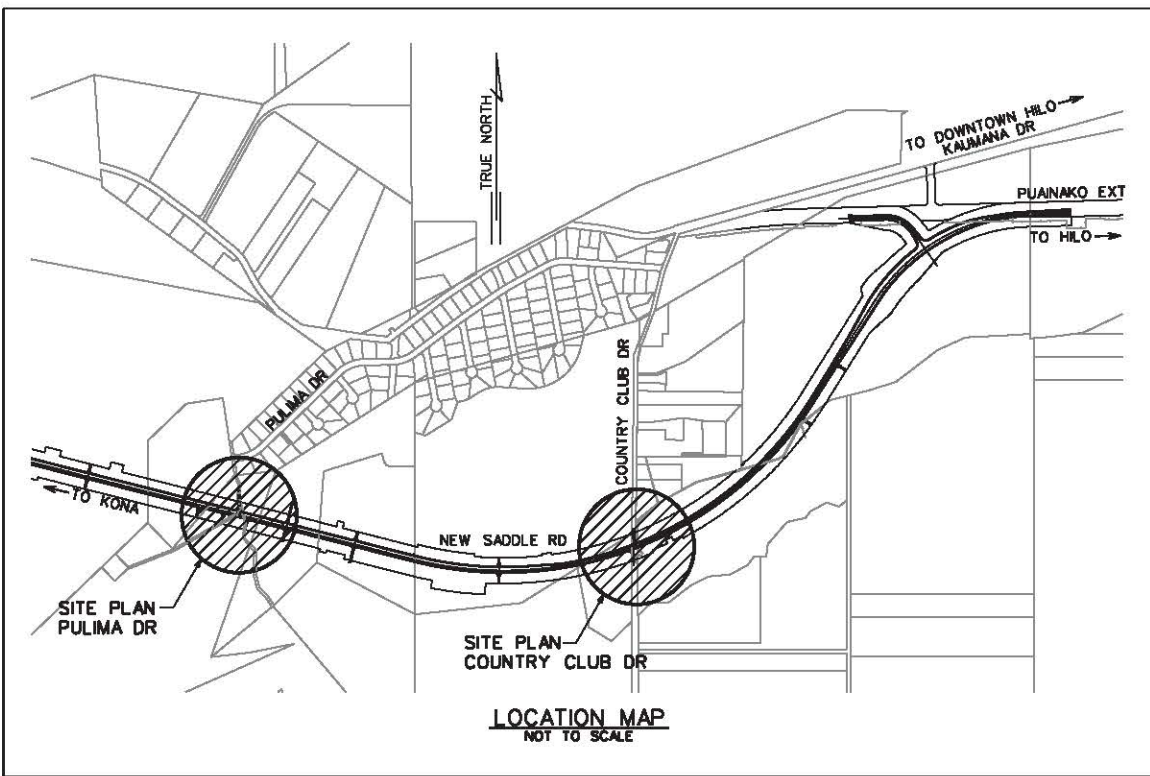
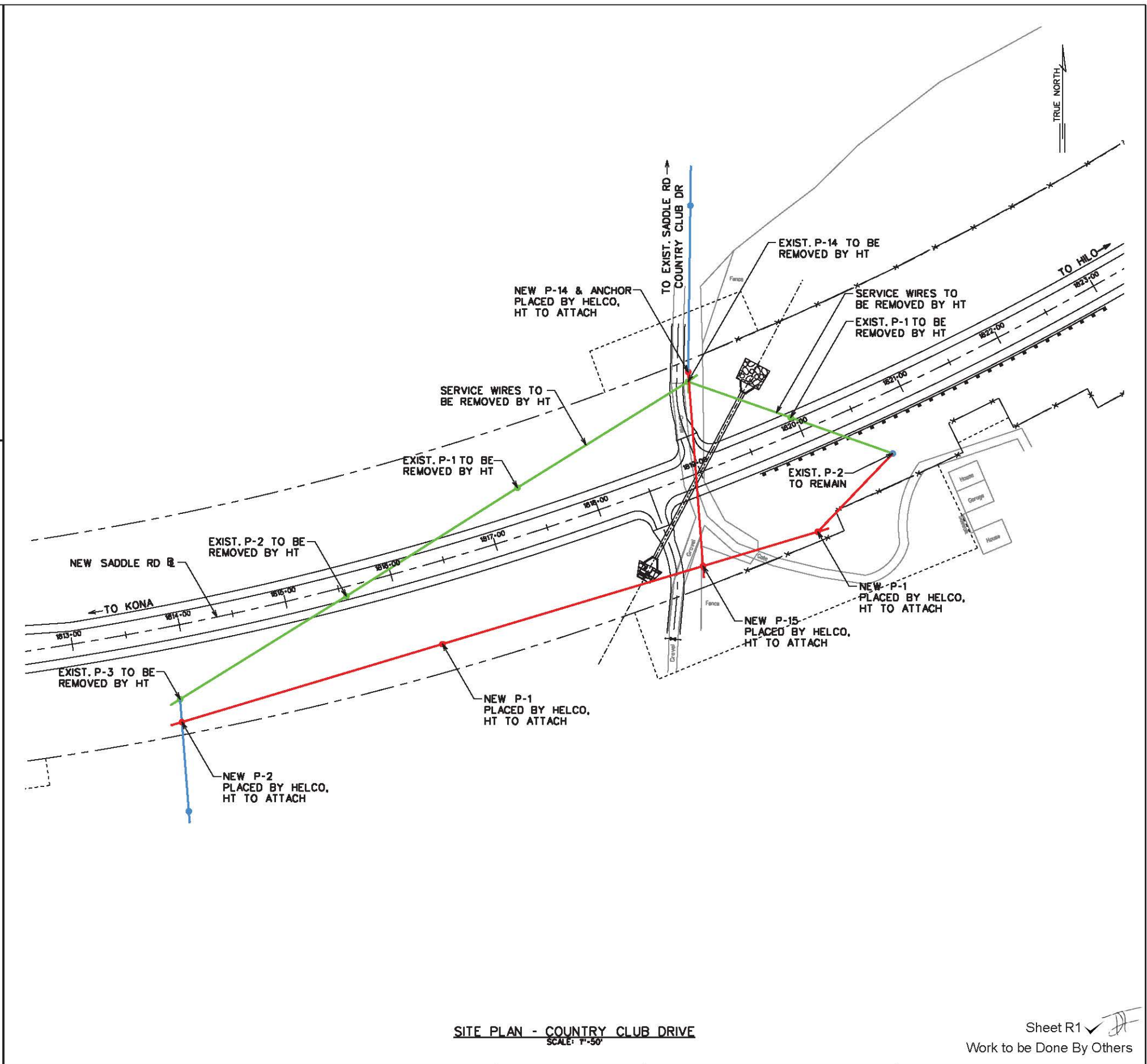




COLOR CODE LEGEND:	
—	EXISTING FACILITIES TO BE REMOVED
—	EXISTING FACILITIES TO REMAIN
—	NEW FACILITIES
●	NEW POLE/ANCHOR

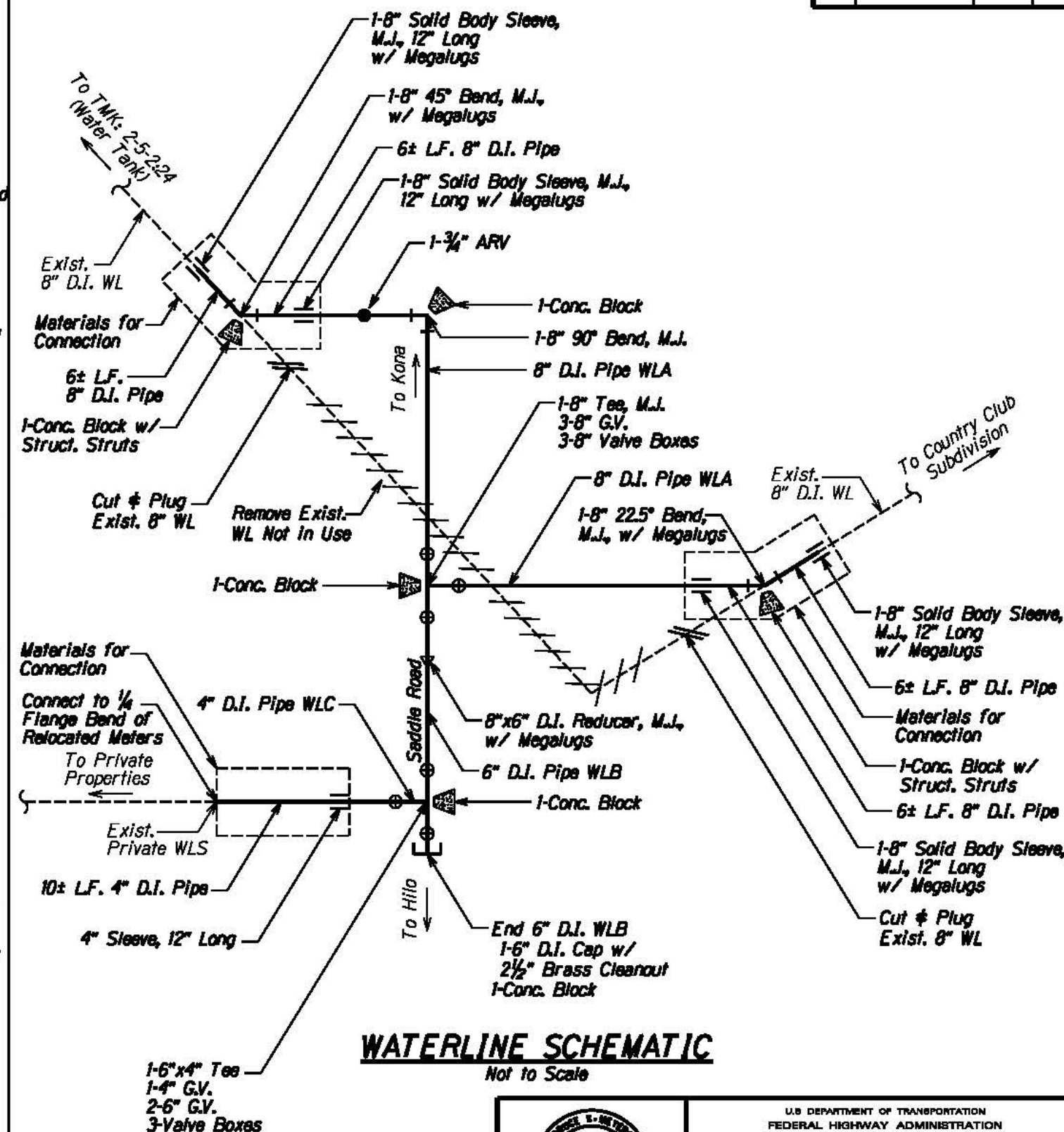


				JOB PRE-FIELDED BY: KMW		DATE PRE-FIELDED:							
WORK SAFELY HIGH VOLTAGE POWER CO. _____KV _____PHASE CONNECTED _____ GROUNDED _____ COMMENTS _____ _____ TOTAL _____				DISTRIBUTION		PROPRIETARY INFORMATION FOR USE BY AUTHORIZED HTI EMPLOYEES ONLY							
				FILE									
				CONSTRUCTION									
				PIPELINE NO. _____		ENG. KMW _____TEL. 933-6413		SADDLE ROAD - EAST SIDE (MP 11-6) COUNTRY CLUB DR, PULIMA DR & SADDLE RD POLE LINE & ANCHOR RELOCATION		☐ MAJOR ☐ INTERM ☐ ROUTINE ☐ NC ☐ NCB ☐ DATA ☐ JTB			
				CPA AFFECTED: YES _____NO _____		DRAWN BY: KMW _____DATE: 06/18/15							
				SALIS AFFECTED: _____		APP'D: G. SAGUNCIO _____SHT. 1 OF 1							
						Hawaiian Telcom		W.C.1 -		WD NO.1 -		CTRL.1	

WATERLINE NOTES

- All work shall be done according to the Water System Standards, State of Hawaii, dated 2002 as amended.
- The Contractor shall inform the Department of Water Supply (DWS) Engineer 72 hours prior to the beginning of any waterline work and two weeks prior to any connection, chlorination, shut-off or relocation work.
- The Contractor shall pay for all work, equipment and materials furnished by the DWS.
- All existing waterlines, waterline appurtenances and other utility locations shown on the plans are obtained from the latest reliable sources. The Contractor shall be responsible to verify the exact location of all utilities in the field and shall bear all cost for damages done to the water system.
- All connections to existing waterlines shall be done by the DWS. Contractor shall perform all excavation, backfill, road repair, traffic control, and provide equipment necessary to complete the connection.
- Where water shut-off of more than 3 hours becomes necessary, the Contractor, at his own expense, shall provide a temporary by-pass line. The DWS Engineer shall determine the by-pass line size. If necessary, the DWS Engineer may require a by-pass line, regardless of the expected shut-off period.
- Minimum horizontal clearance between waterline and other utilities shall be 8 feet unless otherwise specified. Minimum vertical clearance between waterlines and other utilities shall be 12" provided concrete jackets are used, and 18" if no concrete jackets are used. In all applicable instances, the waterline shall be at a grade higher than other utilities.
- All fittings (class 250 minimum) and all gate valves (class 200) shall be ductile iron, with mechanical joints unless otherwise specified. butterfly valves shall be class 250 with epoxy-coated interior unless otherwise specified.
- The waterline shall be tested at a minimum of 225 psi or one and a half times the static pressure at the low point, whichever is greater, under dws supervision just prior to paving.
- The Contractor shall be responsible for the chlorination of the water system and shall bear all costs. The person(s) engaged to do the chlorination work must have the appropriate license to perform the work in the State of Hawaii.
- Existing valves, F.H. units, valve boxes, frames and covers designated "remove and salvage" shall be cleaned of all dirt, scabs, and concrete and delivered to the respective DWS baseyard. This work shall be considered incidental to the various bid items, unless specified otherwise.
- Existing waterlines, valves, fittings and appurtenances not designated "remove" or "to remain" shall be abandoned in place. All exposed valve boxes, valves, pipes and appurtenances shall be removed and disposed of properly at no cost to the DWS.
- Relocation of existing meters shall be done by or under DWS supervision. Relocations of customer service lines to relocated meters shall be copper and done by the Contractor. All work and materials required shall be provided by the Contractor and considered incidental to the relocation work. Existing meter boxes damaged by the Contractor shall be replaced at the Contractor's cost. A dielectric union shall be used to connect the copper pipe to the customer's G.I. pipe (if applicable).
- The DWS will not assume ownership of nor grant any water service until the water system is dedicated to the DWS along with all necessary easements and documents.
- When compaction tests are required, the Contractor shall be responsible to provide the DWS with proctor results of materials to be used for that portion of work requiring compaction, these results shall be certified and shall be furnished to DWS one week prior to commencement of work. Cost for compaction tests shall be incidental to pipeline installation.
- All newly installed waterlines shall have a blue warning tape labeled "WATERLINE" placed directly over the compacted cushion material.
- Construction projects requiring temporary water service shall be metered and paid for by the Contractor.
- The Contractor shall be responsible for record drawings (as-built drawings) and the licensed engineer shall certify the drawings as to accuracy and submit the drawings and as-built tracings to the DWS.
- All retainer glands shall be "Megalog" series 1100, as manufactured by EBAA Iron Sales, Inc., of Eastland, Texas, or approved equal.
- All existing water meter boxes, meters, and service laterals shall be removed and salvaged unless otherwise noted in plans.
- The various schedules shown on the plans are for information only. The contractor shall be responsible in verifying the type, size, etc. of existing and new utilities and appurtenances. The Contractor shall coordinate with the Engineer and DWS to ensure the new system is built properly and to the satisfaction of DWS.
- Work incidental to the contract and necessary to complete the project, although not specifically referred to on the contract documents, shall be furnished and performed by the Contractor.

STATE	SADDLE ROAD PROJECT	SHEET NO.	TOTAL SHEETS
HI	HI SR 200(3)	R2	R3



The work was prepared by me or under my supervision and construction of this project will be under my supervision.
Signature: [Signature]
Expiration Date of License: 08/21/2015

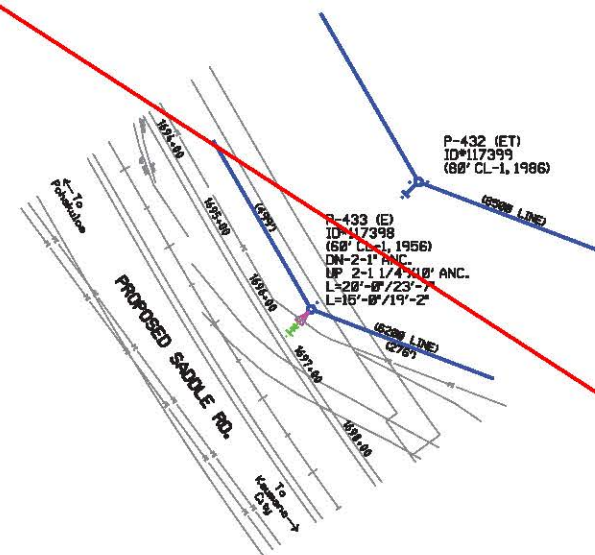
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
CENTRAL FEDERAL LANDS HIGHWAY DIVISION

WATERLINE NOTES & SCHEMATIC

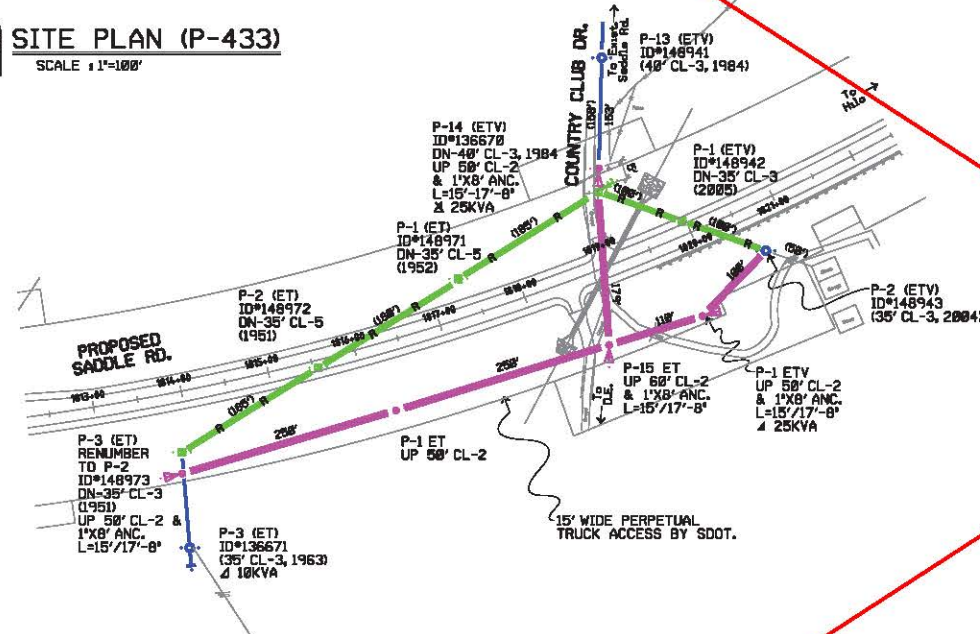
Scale: As Noted

Date: August 21, 2015

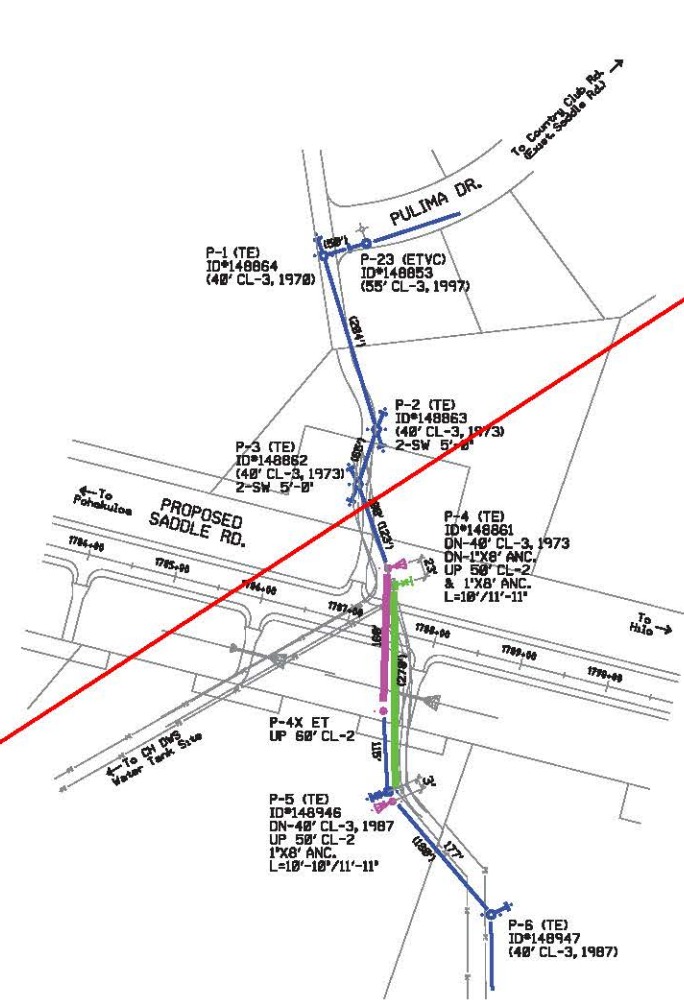
SHEET No. 2 OF 3



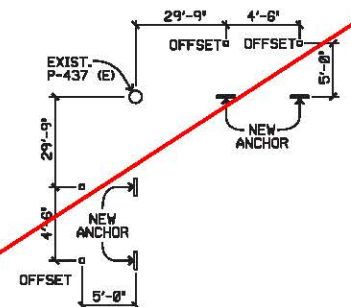
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SCALE: 1"=100'



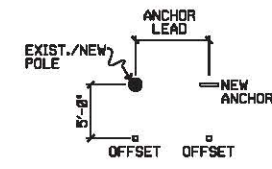
SITE PLAN (P-437)
SCALE: 1"=100'



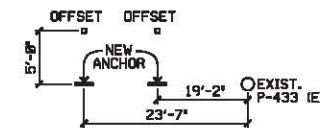
SITE PLAN (PULIMA DR.)
SCALE: 1"=100'



ANCHOR PLACEMENT
NOT TO SCALE



POLE/ANCHOR PLACEMENT
NOT TO SCALE



ANCHOR PLACEMENT
NOT TO SCALE

COLOR CODE LEGEND
 - EXISTING FACILITIES TO REMAIN
 - NEW FACILITIES
 - EXISTING FACILITIES TO BE REMOVED
 - NEW POLE/ANCHOR

SITE PLAN (COUNTRY CLUB DR.)
SCALE: 1"=100'

CONSTRUCTION NOTES :

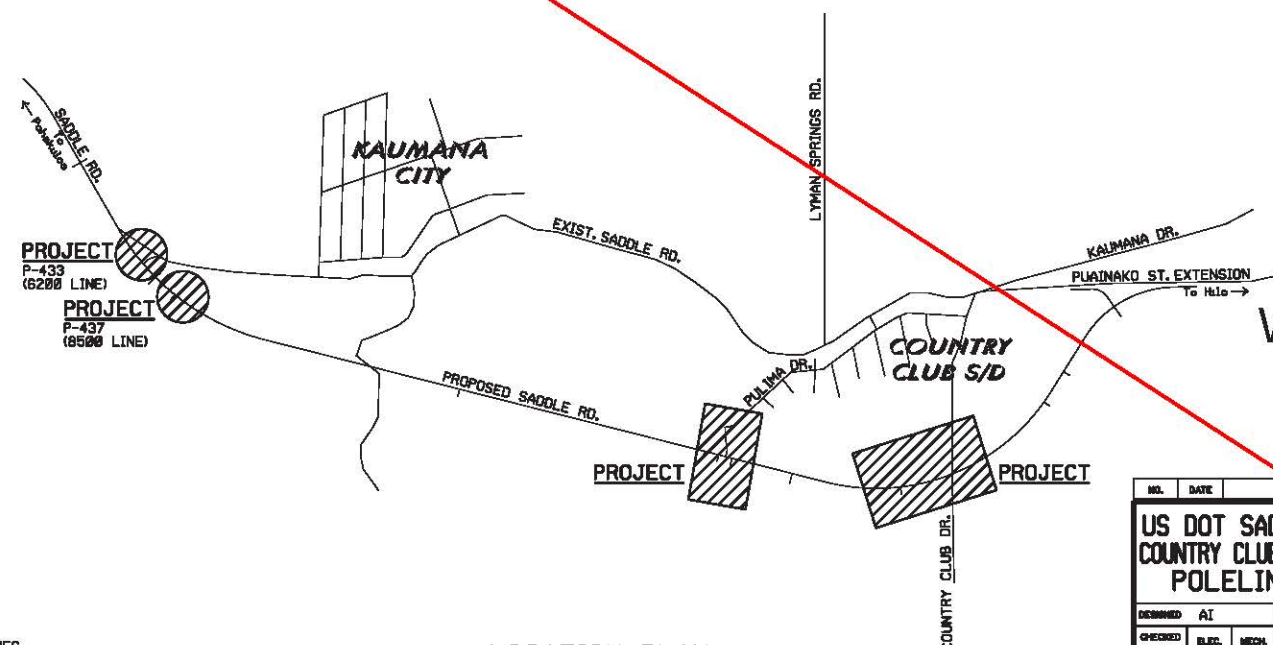
- INSTALL :**
- 949 FT. 1W-1/8 AAC PRIMARY:
A. 174 FT. FROM P-14 (ETV) TO P-15 ET COUNTRY CLUB DR.
B. 618 FT. FROM P-1 (ETV) TO RENUMBERED P-3 (ET) NEW SADDLE RD.
C. 168 FT. FROM P-4 (TE) TO P-4X ET OFF PULIMA DR.
 - 949 FT. 1W-1/8 AAC NEUTRAL:
A. 174 FT. FROM P-14 (ETV) TO P-15 ET COUNTRY CLUB DR.
B. 618 FT. FROM RENUMBERED P-3 TO NEW P-1 ETV NEW SADDLE RD. (OFF COUNTRY CLUB DR.)
C. 168 FT. FROM P-4 (TE) TO P-4X ET OFF PULIMA DR.
 - 188 FT. OF 1/8 AL TPX FROM P-1 ETV TO P-2 (ETV) NEW SADDLE RD (OFF COUNTRY CLUB DR.)
 - 1-25KVA, 1-PH., 7.2KV-120/240V TRANSFORMER ON P-1 ETV SADDLE RD. (OFF COUNTRY CLUB DR.) FUSE @ 5 AMPS
 - FUSE PER SINGLE LINE DIAGRAM.
- TRANSFER :**
- PRIMARY AND SECONDARY TO NEW POLES.
- REMOVE :**
- 928 FT. 1W-1/8 AAC PRIMARY:
A. 365 FT. FROM P-14 (ETV) TO P-3 (ET) NEW SADDLE RD.
B. 132 FT. FROM P-4 ET TO P-4X ET OFF PULIMA DR.
 - 1-25KVA, 1-PH., 7.2KV-120/240V TRANSFORMER ON P-14 (ETV) COUNTRY CLUB DR.

CUSTOMER NOTES :

- DO ALL CUTTING AND TRIMMING OF TREES ALONG THE PROPOSED POLELINE ROUTE PER HAWAII ELECTRIC LIGHT'S TREE TRIMMING POLICY.
- CLEARLY MARK FRONT AND BACK PROPERTY PINS PRIOR TO HAWAII ELECTRIC LIGHT'S STAKEOUT.
- PROVIDE AND MAINTAIN VEHICULAR ACCESS FOR HAWAII ELECTRIC LIGHT'S HEAVY EQUIPMENT TO ALL POLE LOCATIONS ALONG POLE LINE ROUTE PRIOR TO CONSTRUCTION. ACCESS IS SUBJECT TO HAWAII ELECTRIC LIGHT'S ACCEPTANCE. ACCESS TO POLES NEAR THE VICINITY OF COUNTRY CLUB DRIVE SHALL BE VIA PROPOSED SADDLE ROAD.
- CONTRACTOR TO COMPLETE FINISH GRADE PRIOR TO THE INSTALLATION OF HAWAII ELECTRIC LIGHT'S POLES, ANCHORS AND CONDUCTORS. FINISH GRADE IN THE PROXIMITY OF POLE OR ANCHOR SHALL BE STAKED WITH THE FINISH ELEVATION. HAWAII ELECTRIC LIGHT'S POLE INSTALLATION AND REMOVAL SHALL BE COMPLETED PRIOR TO THE INSTALLATION OF ROADWAY AC.

HOLE DIGGER NOTES :

- DO NOT DISTURB BOUNDARY PINS.
- STAKE INDICATES 'CENTER OF POLE/ANCHOR'. SEE DETAIL.
- BE CAUTIOUS OF UNDERGROUND FACILITIES SUCH AS WATER LINES, GAS LINES AND HAWAIIAN TELCOM FACILITIES.
- UTILIZE 'HAWAII ONE CALL' CENTER AT 1-866-423-7287 A MINIMUM OF 5 WORKING DAYS PRIOR TO EXCAVATION.



LOCATION PLAN
NOT TO SCALE

Sheet R3
Work to be Done
by Others

NO.	DATE	REVISIONS	BY	CHKD	APPD
US DOT SADDLE RD. - EAST SIDE - (MP 11-6) COUNTRY CLUB DR., PULIMA DR. & SADDLE RD., S. HILO POLELINE & ANCHOR RELOCATION					
DESIGNED	AI	DRAWN	JJV	DATE	6/30/14
CHECKED	ELEC.	MECH.	STRUC.	CIVIL	SCALE AS NOTED
APPROVAL				HAWAII ELECTRIC LIGHT ENGINEERING DEPARTMENT HILO, HAWAII	
10/1/14				DRAWING NUMBER 14-E-550	
P.W.D. NO.	6804982	J.P. NO.	33582	PROJ. NO.	H
				T.M.K.	2-6-018/004

CONSTRUCTION NOTES :

INSTALL :

- 1615 FT. 1W-#1/0 AAC PRIMARY:
 - 765 FT. FROM P-1(ET) ID#148864 TO P-6(TE) ID#148947 ON PULIMA DR..
 - 240 FT. FROM P-14(ET) ID#136670 TO NEW P-15(ET) ON COUNTRY CLUB DR..
 - 610 FT. FROM RENUMBERED P-2(ET) ID#148973 TO NEW P-1(ET) ON SADDLE RD. ADJACENT TO COUNTRY CLUB DR..
- 1615 FT. #1/0 AAC NEUTRAL:
 - 765 FT. FROM P-1(ET) ID#148864 TO P-6(TE) ID#148947 ON PULIMA DR..
 - 240 FT. FROM P-14(ET) ID#136670 TO NEW P-15(ET) ON COUNTRY CLUB DR..
 - 610 FT. FROM RENUMBERED P-2(ET) ID#148973 TO NEW P-1(ET) ON SADDLE RD. ADJACENT TO COUNTRY CLUB DR..
- 100 FT. OF #1/0 AL. TPX FROM NEW P-1(ET) TO P-2(ET) ID#148943 ALONG SADDLE RD. ADJACENT TO COUNTRY CLUB DR..
- 1-25KVA, 1-PH., 7.2KV-120/240V TRANSFORMER ON NEW P-1(ET) OFF OF COUNTRY CLUB DR..
- FUSE PER SINGLE LINE DIAGRAM.

TRANSFER :

- PRIMARY AND SECONDARY TO NEW POLES AS INDICATED.

REMOVE :

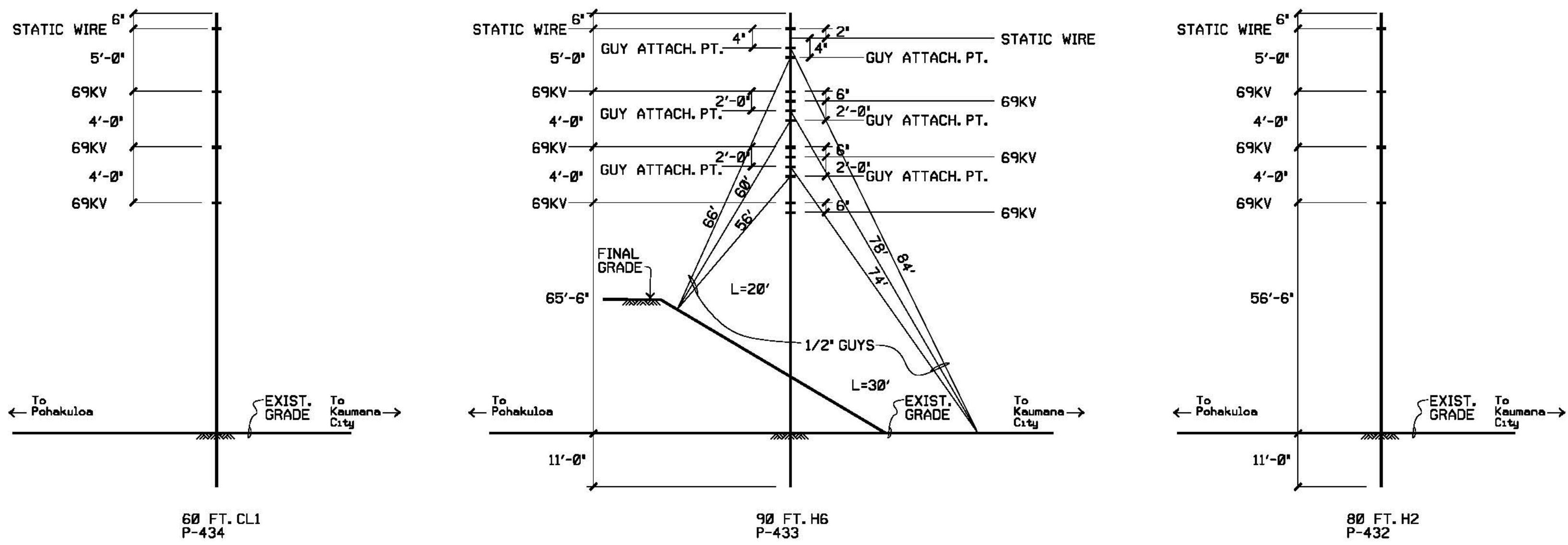
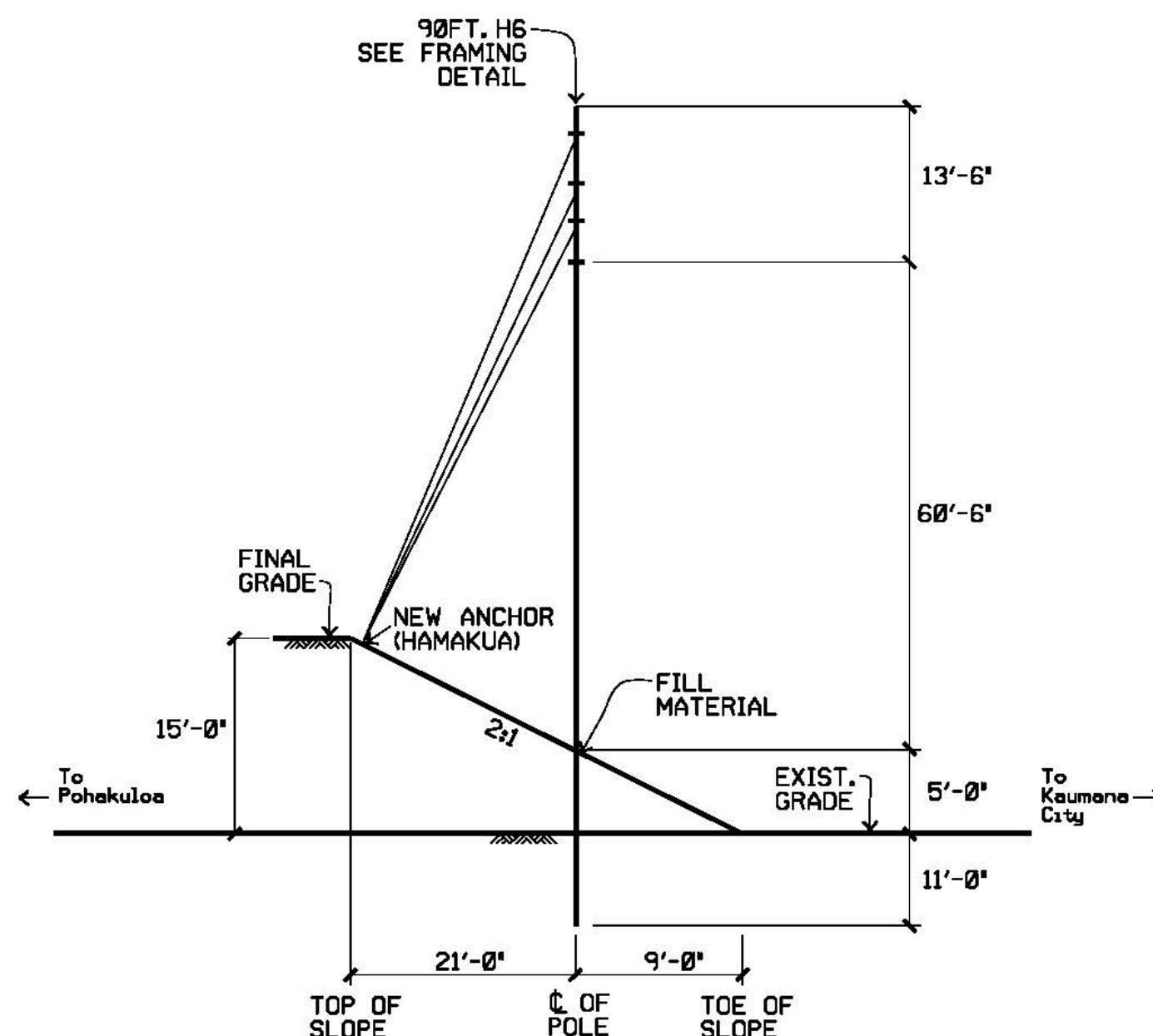
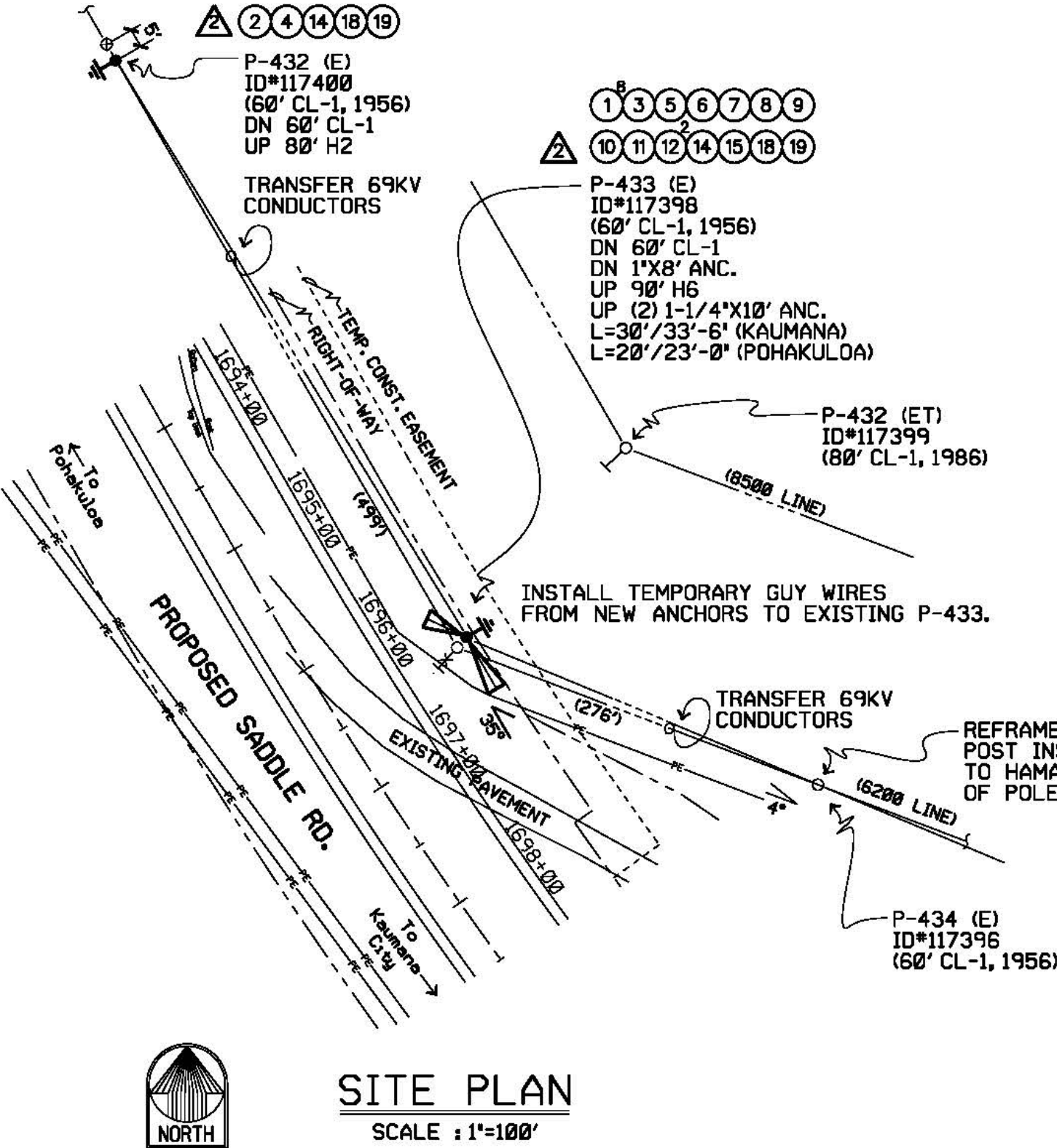
- 1,392 FT. 1W-#1/0 AAC PRIMARY:
 - 550 FT. FROM P-2(ET) ID#148973 TO P-14(ET) ID#136670 OFF OF COUNTRY CLUB DR..
 - 842 FT. FROM P-1(ET) ID#148864 TO P-6(TE) ID#148947 ON PULIMA DR..
- 1,392 FT. 1W-#1/0 AAC NEUTRAL:
 - 550 FT. FROM P-2(ET) ID#148973 TO P-14(ET) ID#136670 OFF OF COUNTRY CLUB DR..
 - 842 FT. FROM P-1(ET) ID#148864 TO P-6(TE) ID#148947 ON PULIMA DR..
- 250 FT. #1/0 AL. TPX FROM P-14(ET) ID#136670 TO P-2(ET) ID#148943 ON COUNTRY CLUB DR..
- 1-25KVA, 1-PH., 7.2KV-120/240V TRANSFORMER ON P-14(ET) ID#136670 ON COUNTRY CLUB DR..

CUSTOMER NOTES :

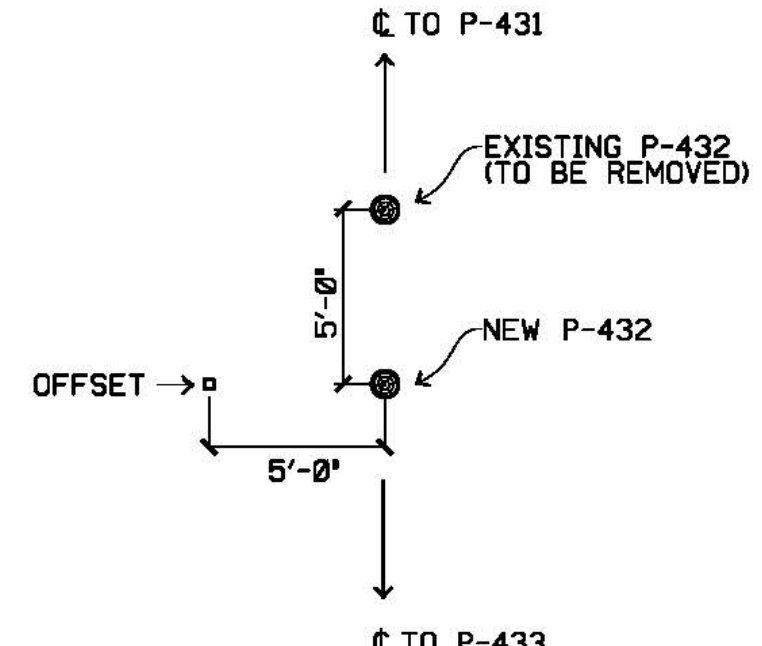
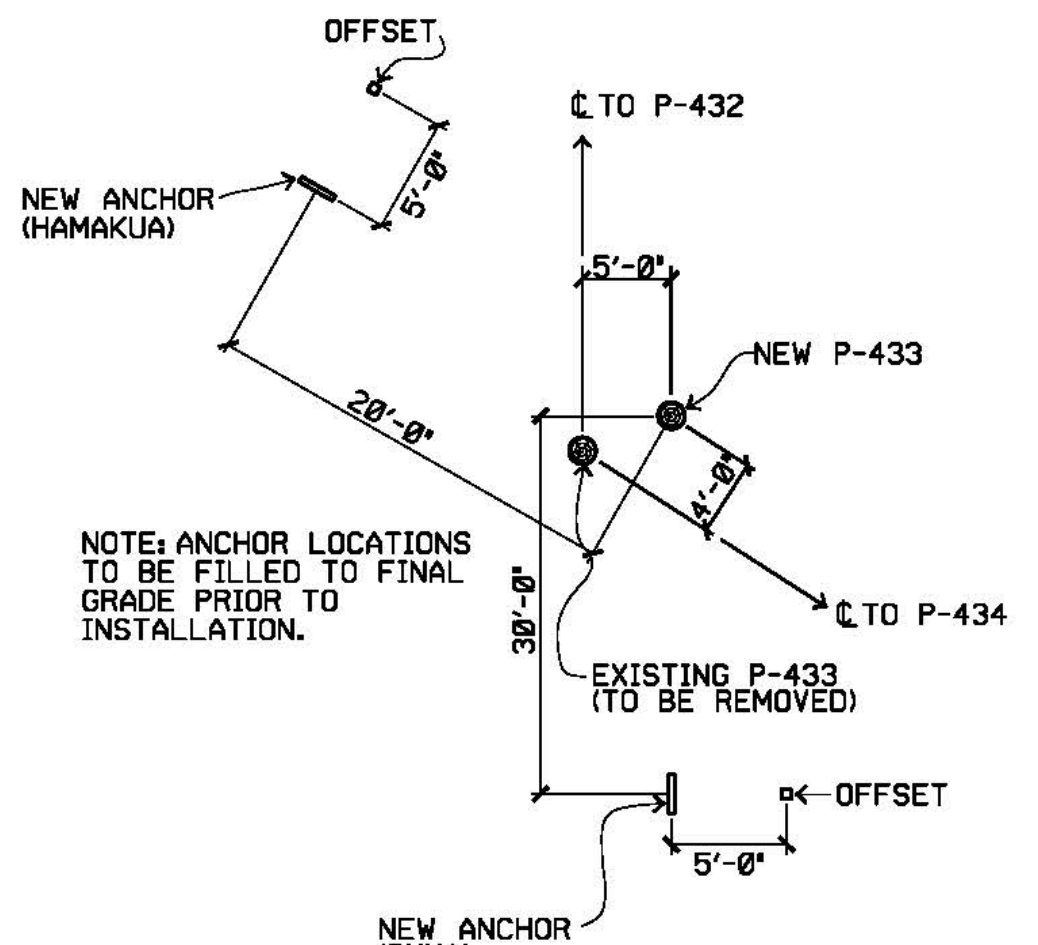
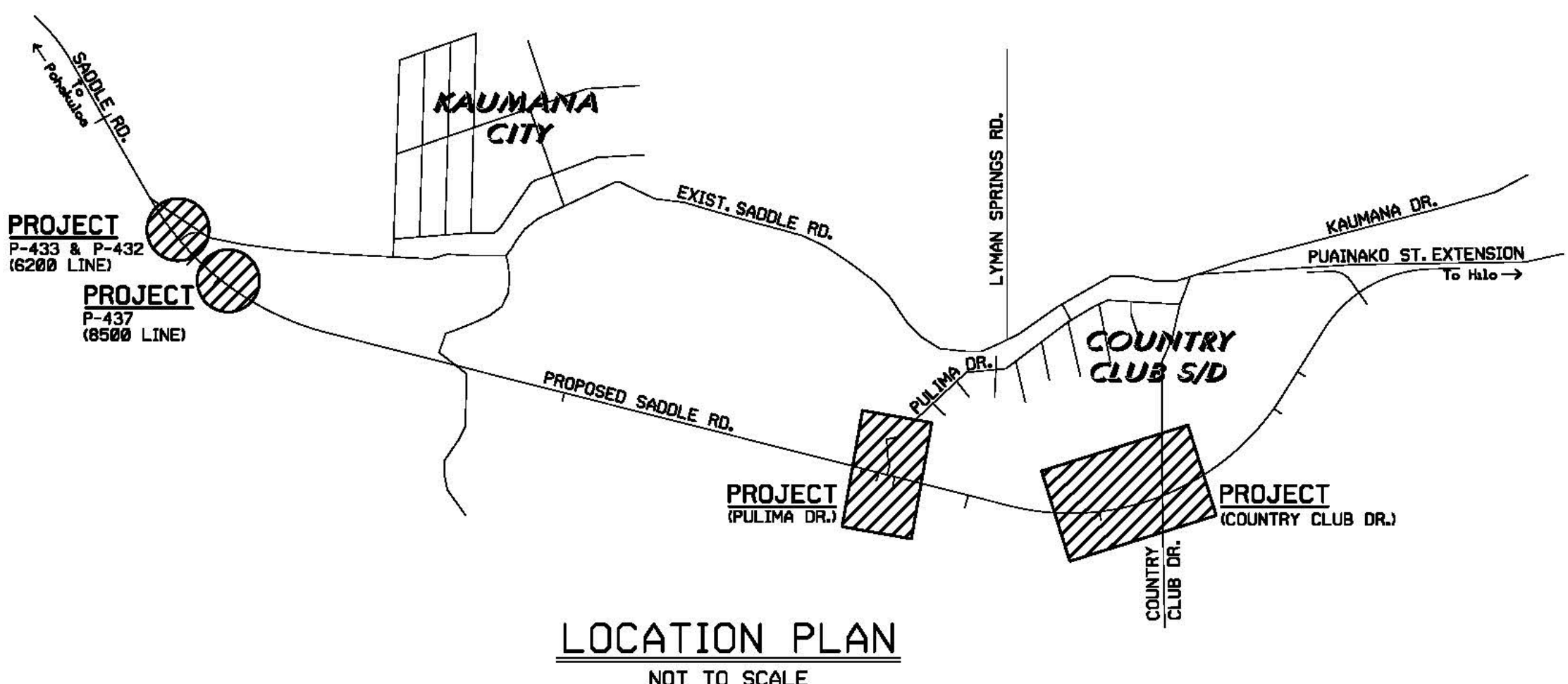
- DO ALL CUTTING AND TRIMMING OF TREES ALONG THE PROPOSED POLELINE ROUTE PER HAWAII ELECTRIC LIGHT'S TREE TRIMMING POLICY.
- CLEARLY MARK FRONT AND BACK PROPERTY PINS PRIOR TO HAWAII ELECTRIC LIGHT'S STAKEDOUT.
- PROVIDE AND MAINTAIN VEHICULAR ACCESS FOR HAWAII ELECTRIC LIGHT'S HEAVY EQUIPMENT TO ALL POLE LOCATIONS ALONG POLE LINE ROUTE PRIOR TO CONSTRUCTION. ACCESS IS SUBJECT TO HAWAII ELECTRIC LIGHT'S ACCEPTANCE. ACCESS TO POLES NEAR THE VICINITY OF COUNTRY CLUB DRIVE SHALL BE VIA PROPOSED SADDLE ROAD.
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HOLE DIGGER NOTES :

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- BE CAUTIOUS OF UNDERGROUND FACILITIES SUCH AS WATER LINES, GAS LINES AND HAWAIIAN TELCOM FACILITIES.
- UTILIZE "HAWAII ONE CALL" CENTER AT 1-866-423-7287 A MINIMUM OF 5 WORKING DAYS PRIOR TO EXCAVATION.



POLE FRAMING

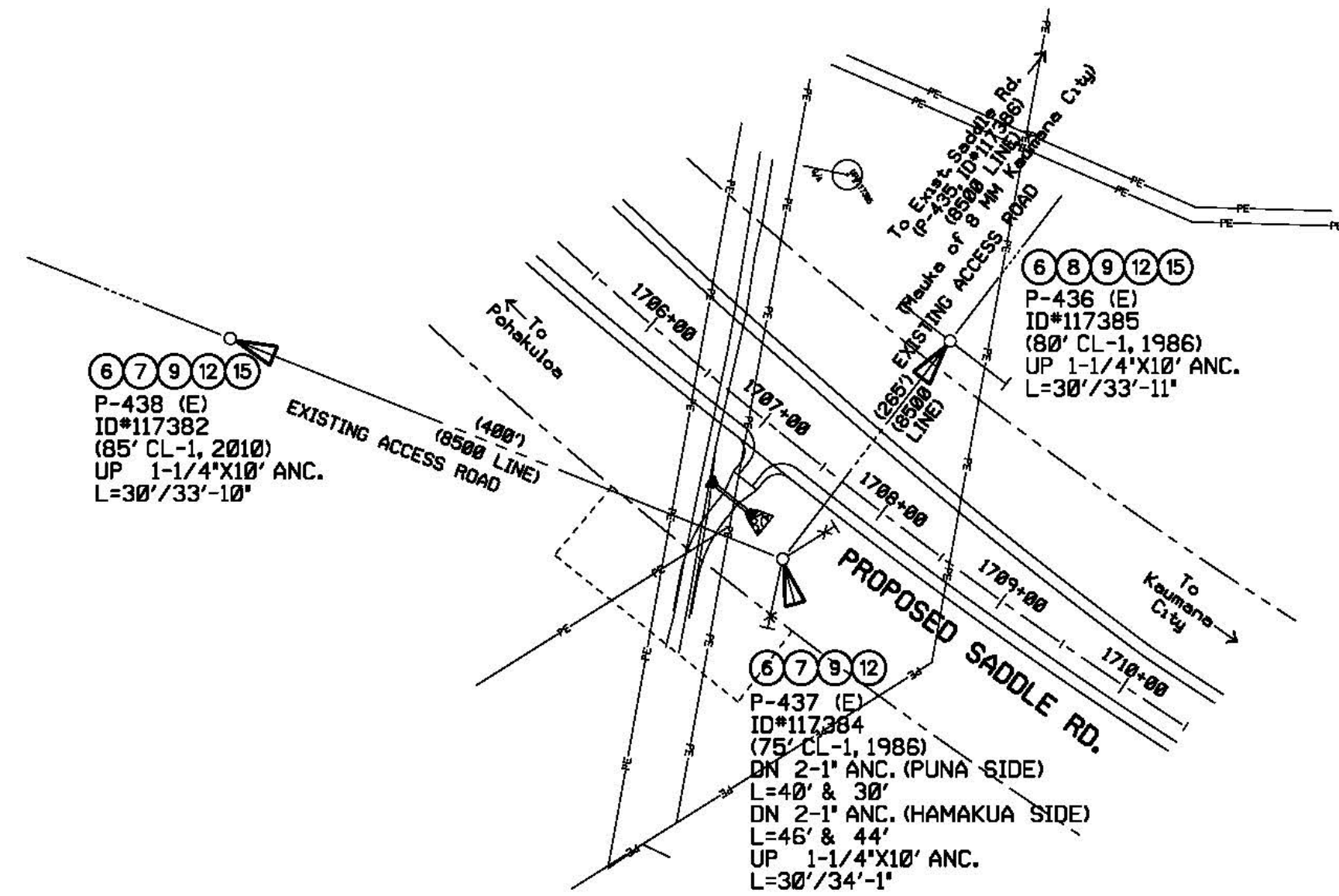


LINE	SMU NO.	QTY.
TRANSMISSION		
1	1-2530 HYSPLICE	8
2	1-5000 (00159) 80FT-CLASS H2	1
3	1-5000 (630755) 90FT-CLASS H6	1
4	1-5156 T-MESH 80' POLE	1
5	1-5156 T-MESH 90' H6 POLE	1
6	3-4100 GUY 1/2" (60FT)	4
7	3-4100 GUY 1/2" (65FT)	3
8	3-4100 GUY 1/2" (70FT)	2
9	3-4100 GUY 1/2" (75FT)	4
10	3-4100 GUY 1/2" (80FT)	1
11	3-4100 GUY 1/2" (85FT)	1
12	3-4120 ANCHOR 1-1/4"X10'	5
14	8-1170 TANGENT 69KV	2
15	8-1310-H2 DOUBLE DEADEND 69KV	3
18	12-1020-F1 SHIELD WIRE GROUNDING	2
19	12-5201 OBJECT MARKER	2
DISTRIBUTION		
25	1-2040 (07951) 1/0 AAC, POPPY (LBS)	405*
26	1-2040 (07955) 1/0 AL TPX, PURPURA (FT)	150*
27	1-4020 JNC, CUTOOT & FUSE	1
28	1-5000 (00046) 50 FT-CLASS 2	5
29	1-5000 (00058) 55 FT-CLASS 2	1
30	1-5000 (00071) 60 FT-CLASS 2	2
31	1-5156 T-MESH 50' POLE	5
32	1-5156 T-MESH 60' POLE	2
33	1-5156 T-MESH 65' POLE	1
34	2-4030 1PH. MIDSPAN TAP CONNECTION (1/0-1/0)	3
38	3-4120 ANCHOR 1'X8'	9
39	3-4100 GUY 3/8" (41 FT)	4
40	3-4100 GUY 3/8" (50 FT)	5
41	3-4100 GUY 3/8" (55 FT)	5
44	5-1009-F1 STR. & ANG. (10deg max)	2
45	5-1009-F3 SDE	2
46	5-1009-F3 SDE (neutral down to sec. pos.)	3
48	5-7300 SECONDARY CLEVIS	1
49	7-2049-F1 1PH. CONDUCTOR	2
50	7-2049-F6 DDE	2
51	7-2049-F7 DE & FUSED BUCK	1
52	7-2049-F9 XFRMR & DE	1
53	7-2049-F6 SDE	1
54	7-2245 TWO WIRE SINGLE PH. DE	6
57	10-2040 1-PH XFRMR SEC. CONN. (15KVA)	1
58	10-2060 1-PH XFRMR PRIMARY CONN. (L-N)	1
59	10-2100 1-PH XFRMR (15KVA)	1
62	12-1020-F1 GROUNDING (neutral)	6
63	12-1020-F2 GROUNDING (transformer)	1
64	12-5201 OBJECT MARKER	9

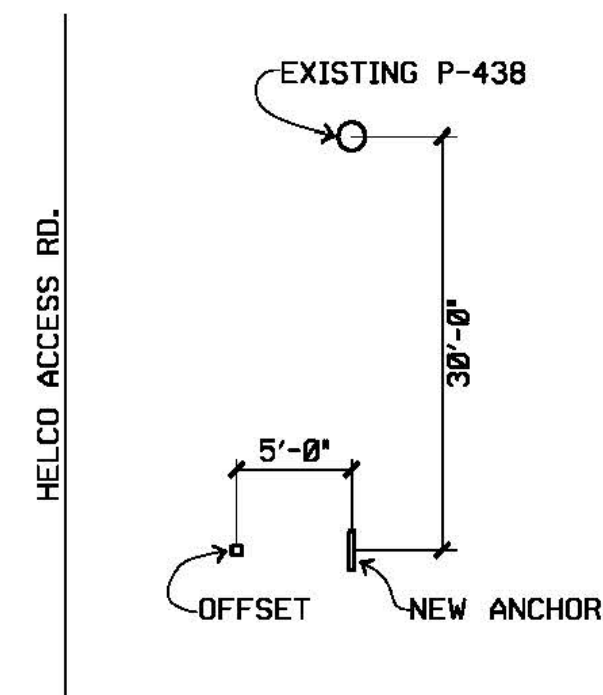
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EE186405 TRANSMISSION REMOVE
EE186406 TRANSMISSION C.O.

EE186401 DISTRIBUTION INSTALL/MATERIALS
EE186404 DISTRIBUTION REMOVE
EE186403 DISTRIBUTION C.O.

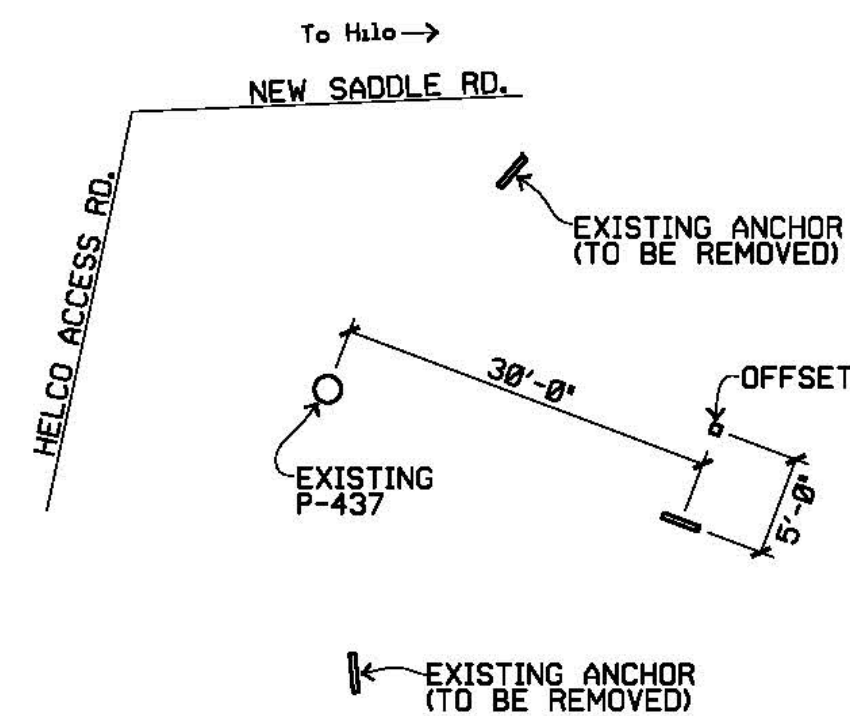
6/30/16	REDESIGNED PER MEETING WITH FHWA. REMOVED P-13 COUNTRY CLUB DR. ADDED AND P-8 PULIMA DR. REPLACING P-432 DUE TO GRADE CLEARANCE. REDESIGNED DUE TO GRADING SCHEDULE AND CLEARANCE.	CV	WS	WS
2/22/16		CV	WS	WS
NO.	DATE	REVISIONS	BY	CHK'D
US DOT SADDLE RD. - EAST SIDE - (MP 11-6) COUNTRY CLUB DR., PULIMA DR. & SADDLE RD., S. HILO POLELINE & ANCHOR RELOCATION				
DESIGNED	AI/CV	DRAWN	JJV/KO	DATE 6/30/14
CHECKED	HC	MECH	STRUC.	CIVIL
APPROVAL	HAWAII ELECTRIC LIGHT ENGINEERING DEPARTMENT HILO, HAWAII			
DRAWING NUMBER				14-E-550
P.W.D. NO.	6004982	J.P. NO.	33582	PROJ. NO. H0003206
TALK				2-6-018:004



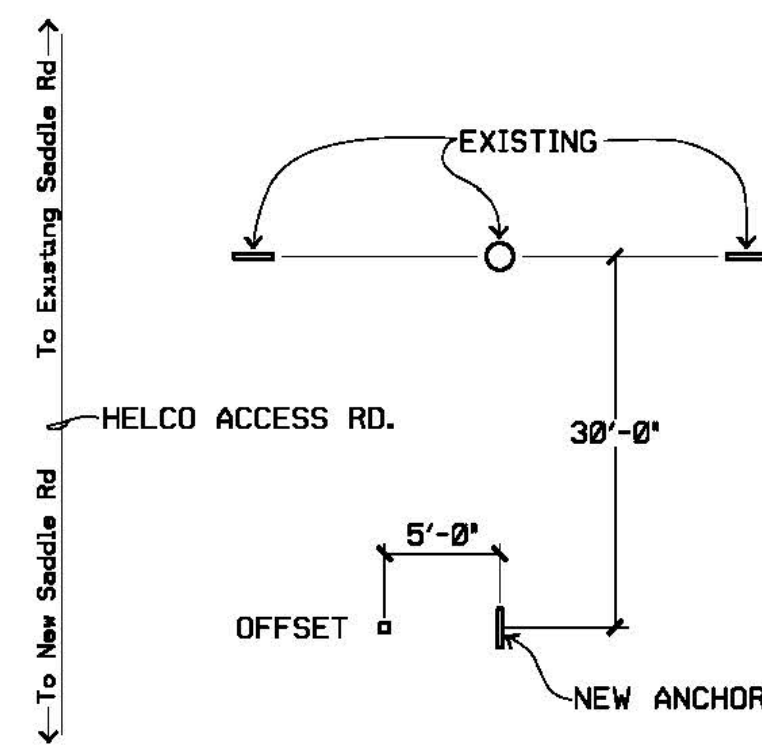
SITE PLAN (P-437)
SCALE : 1"=100'



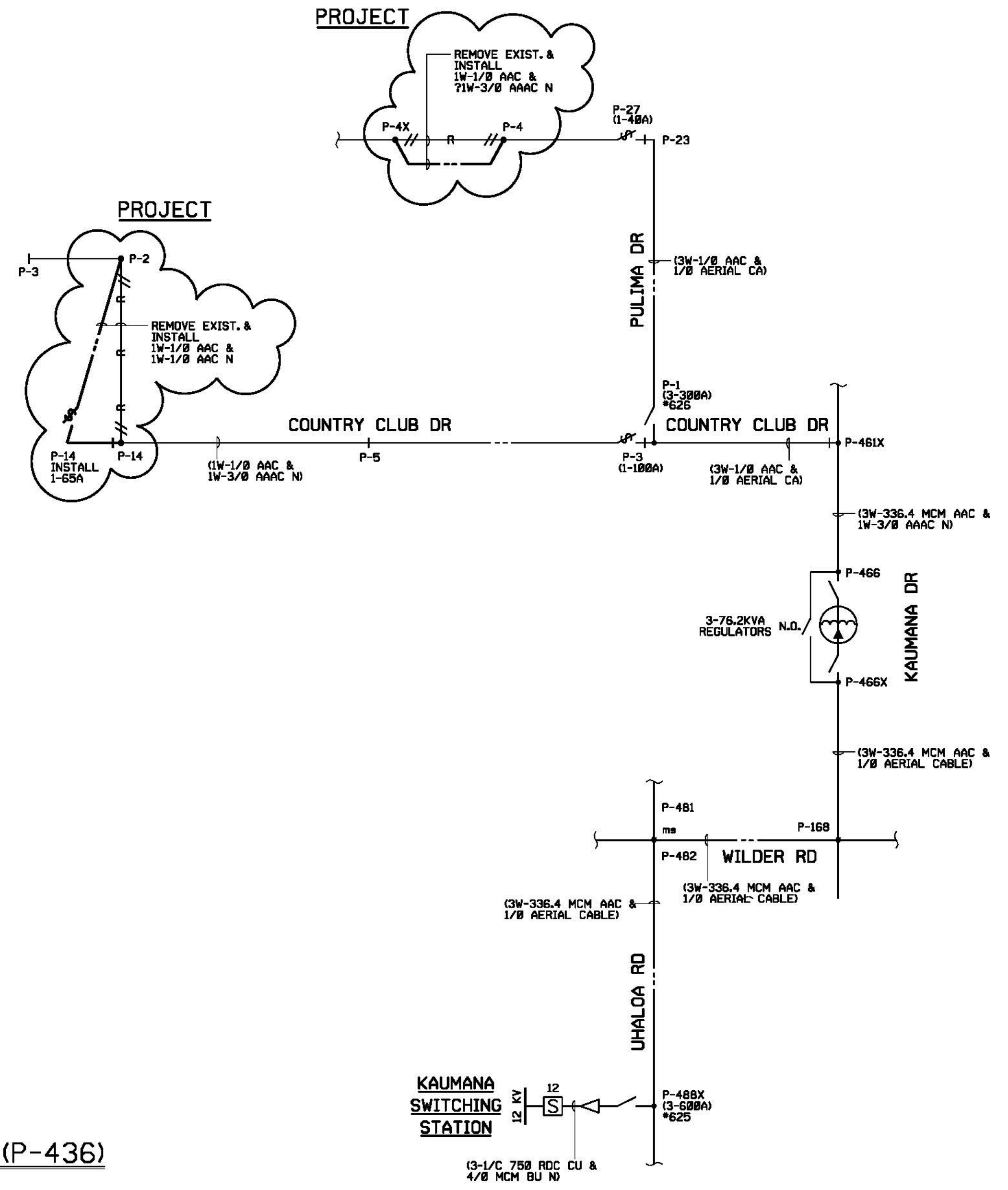
POLE/ANCHOR PLACEMENT (P-438)
NOT TO SCALE



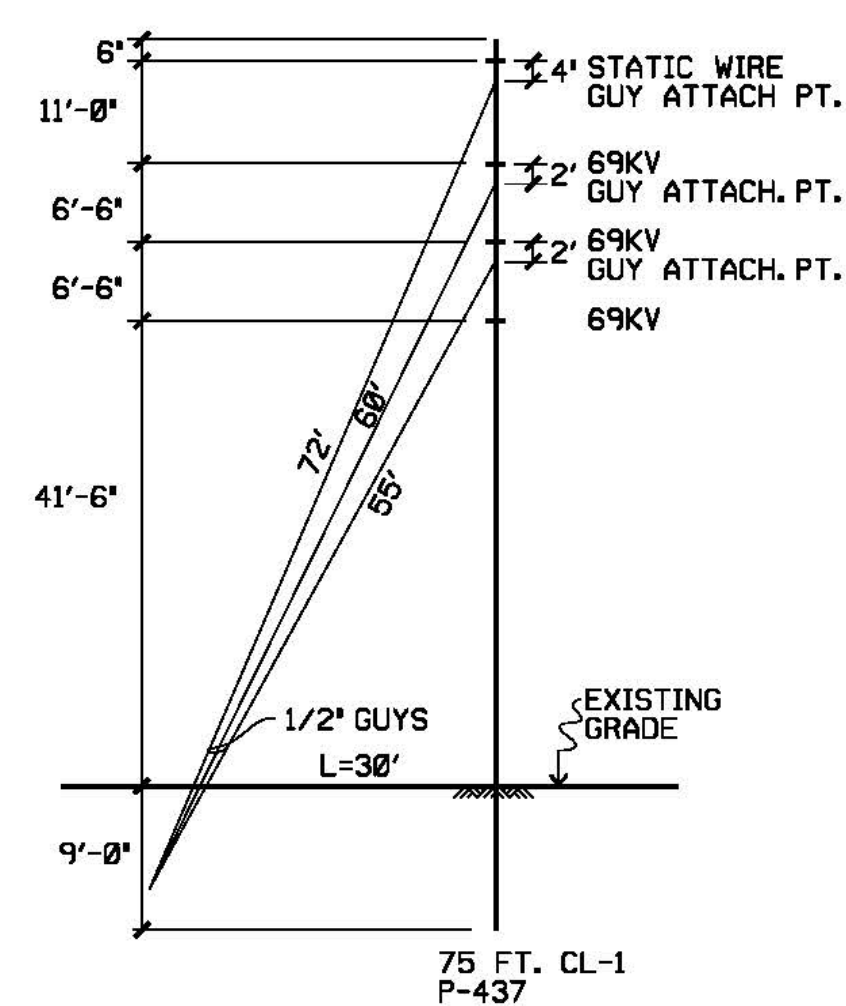
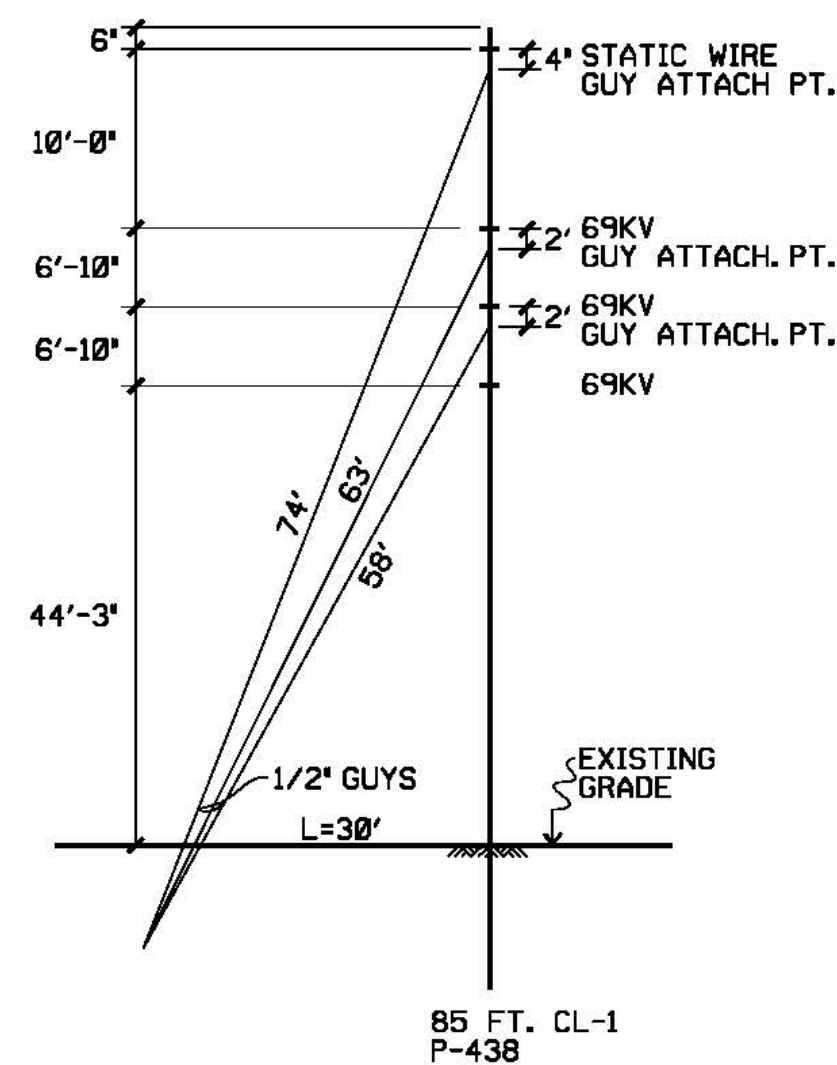
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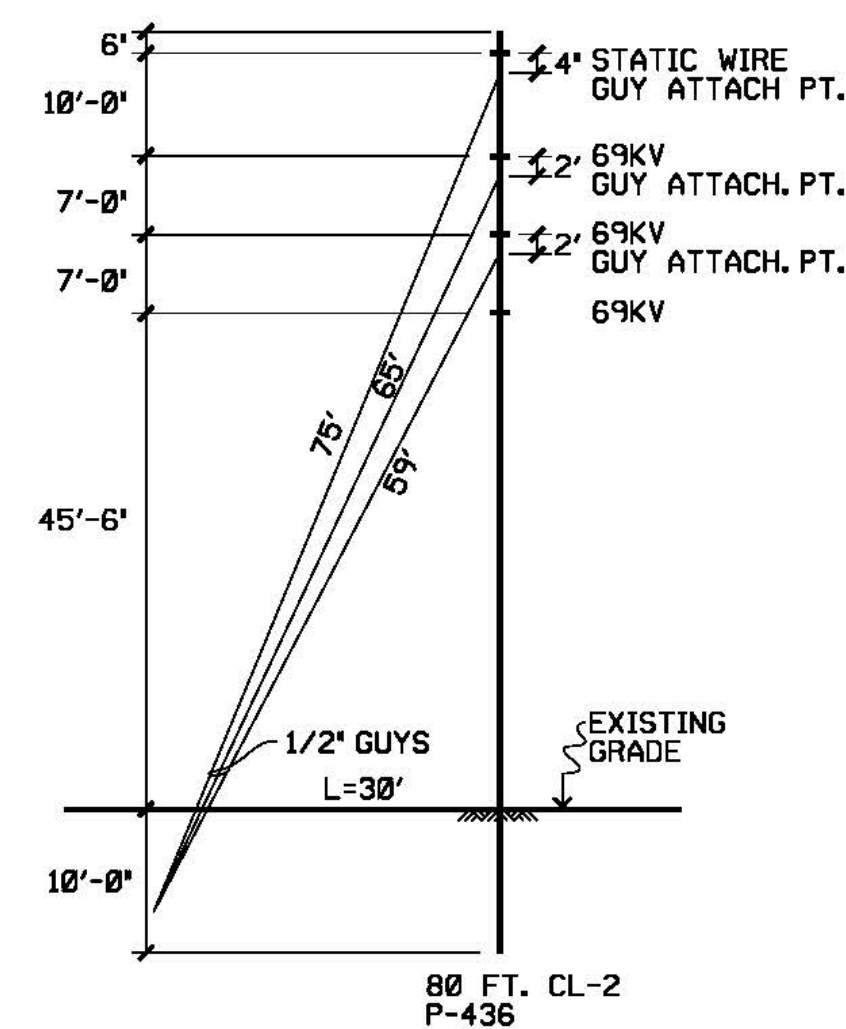
POLE/ANCHOR PLACEMENT (P-436)
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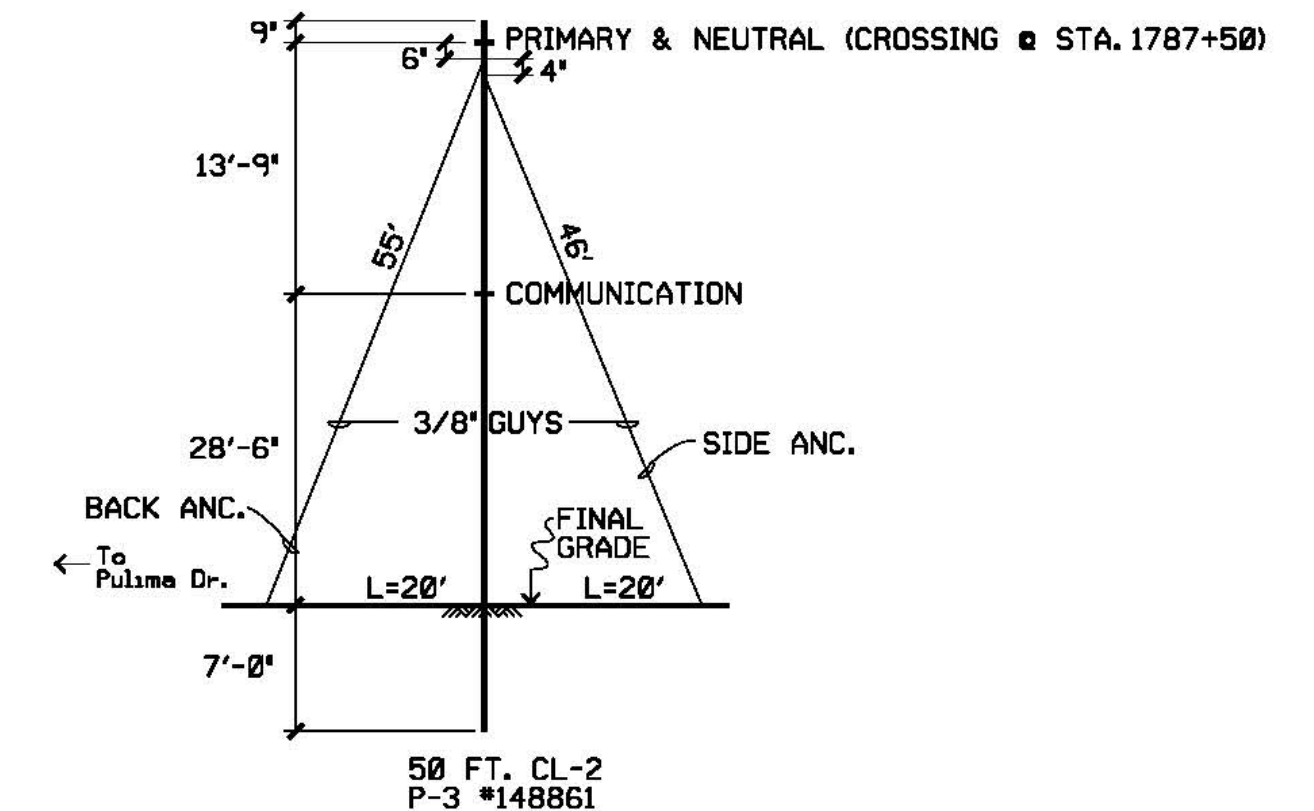
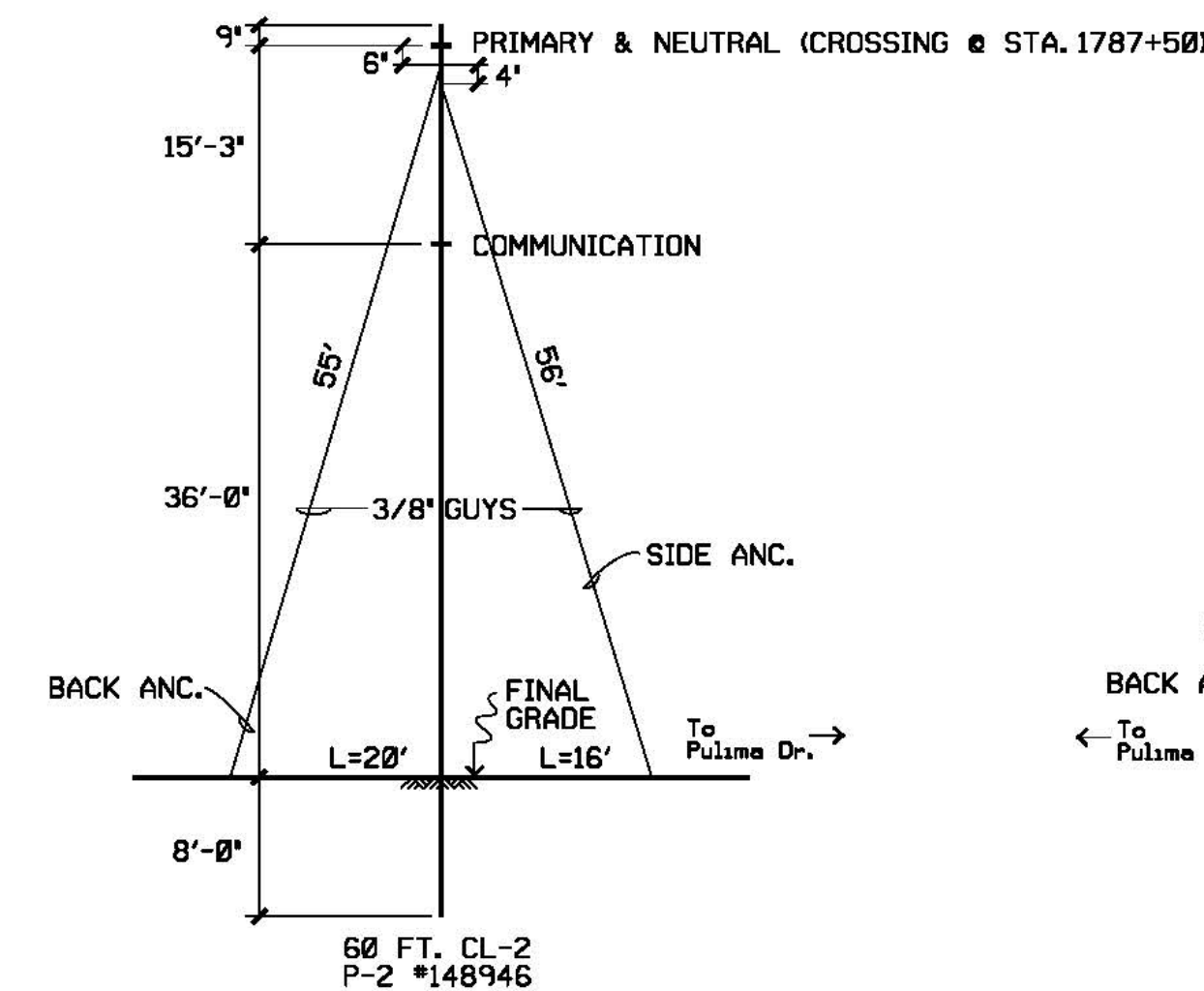
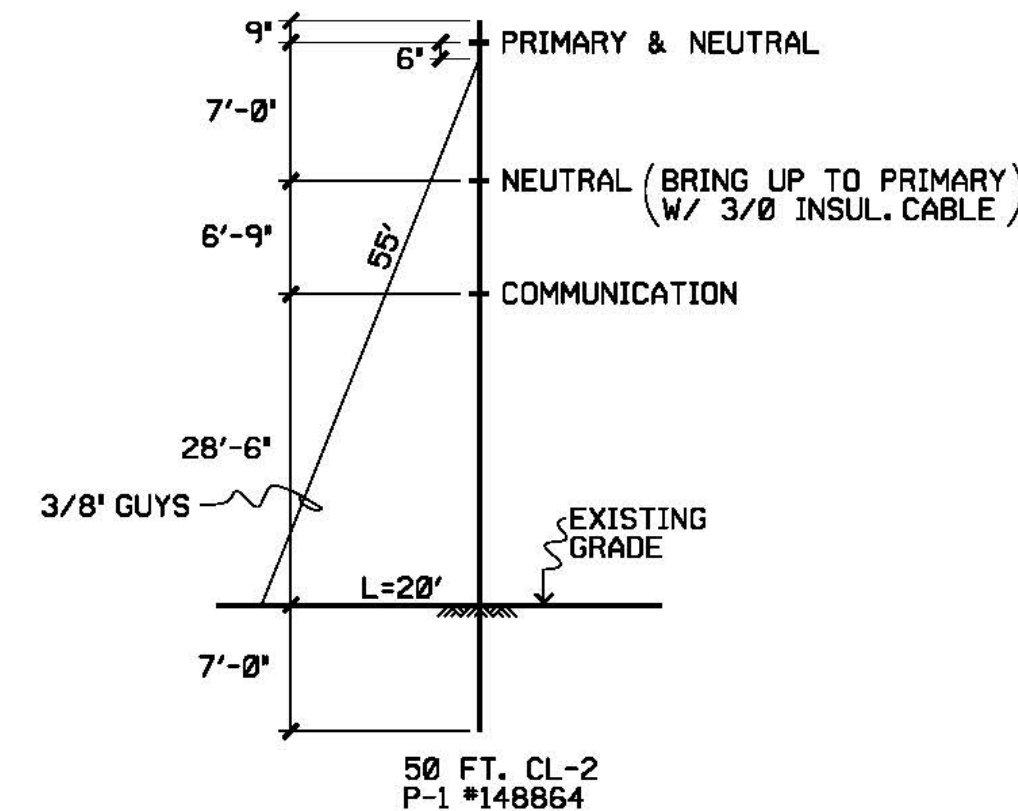
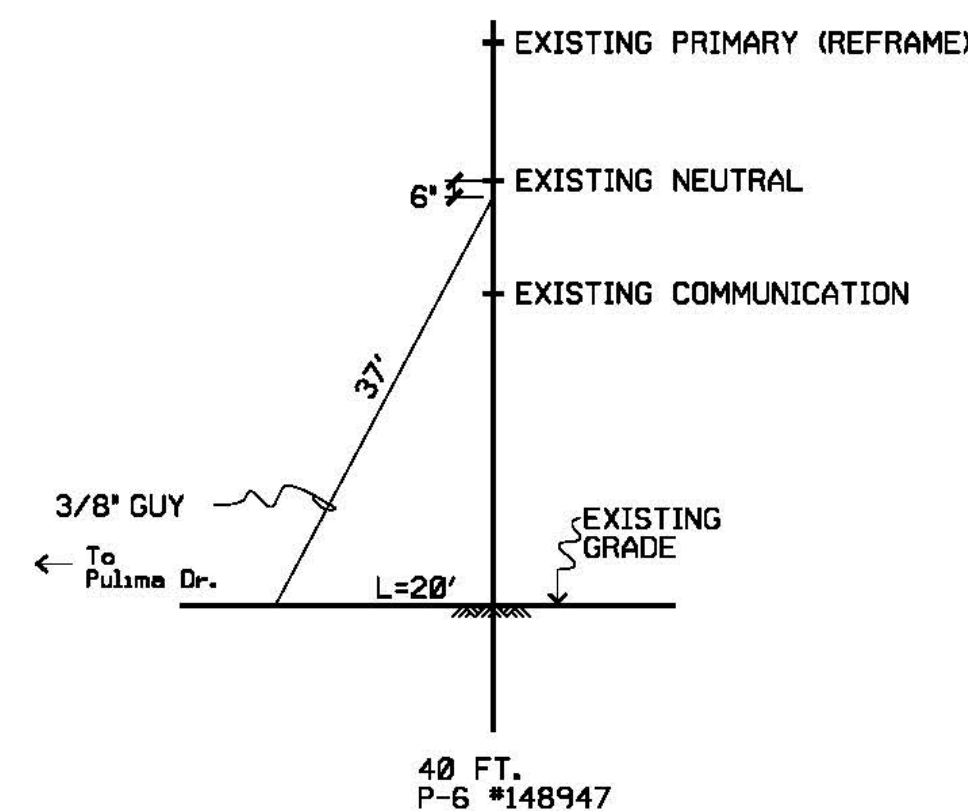
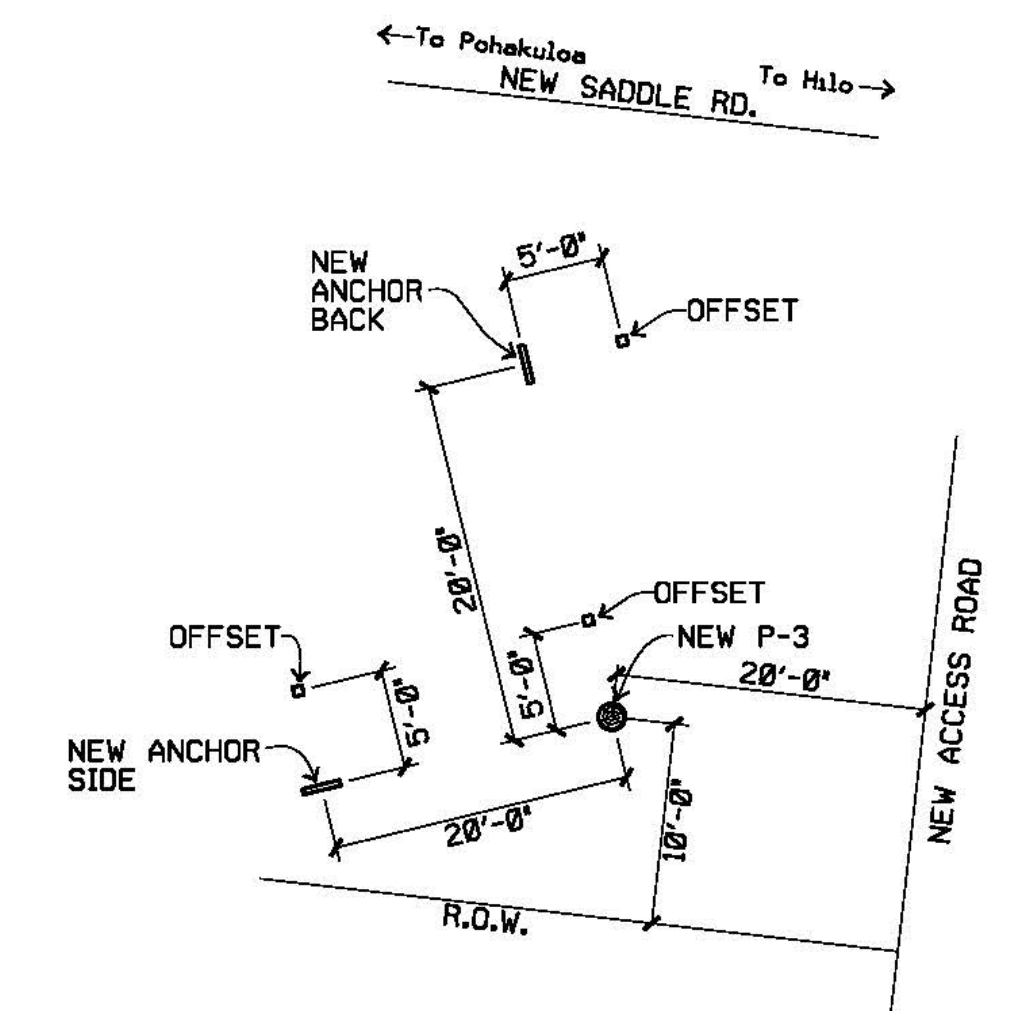
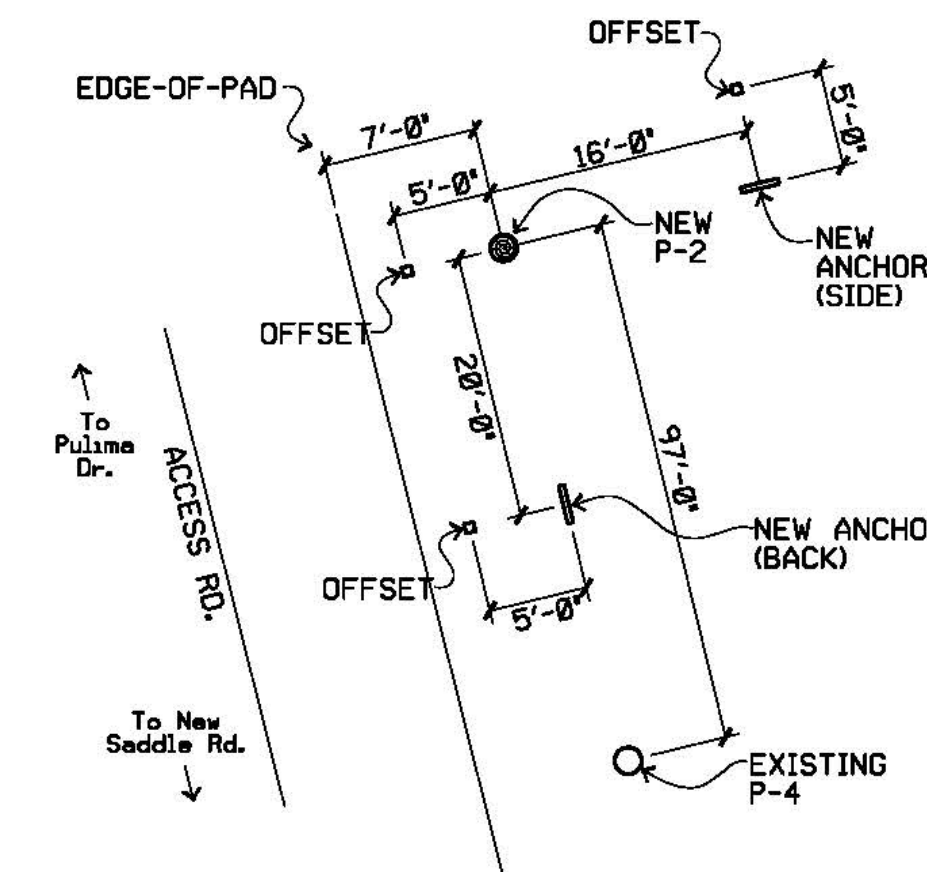
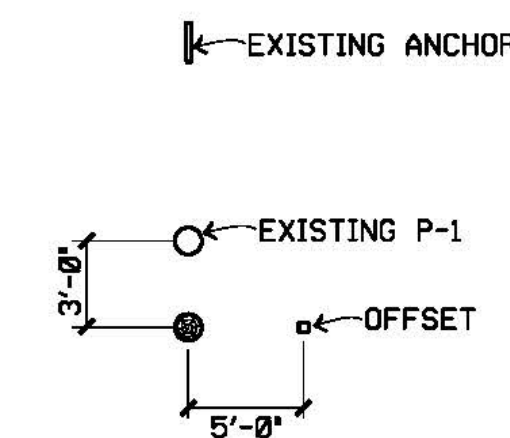
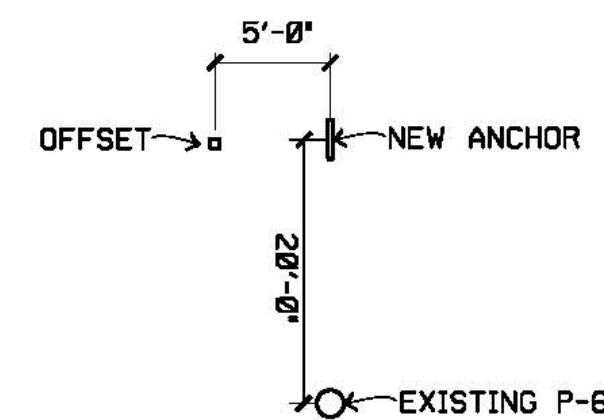
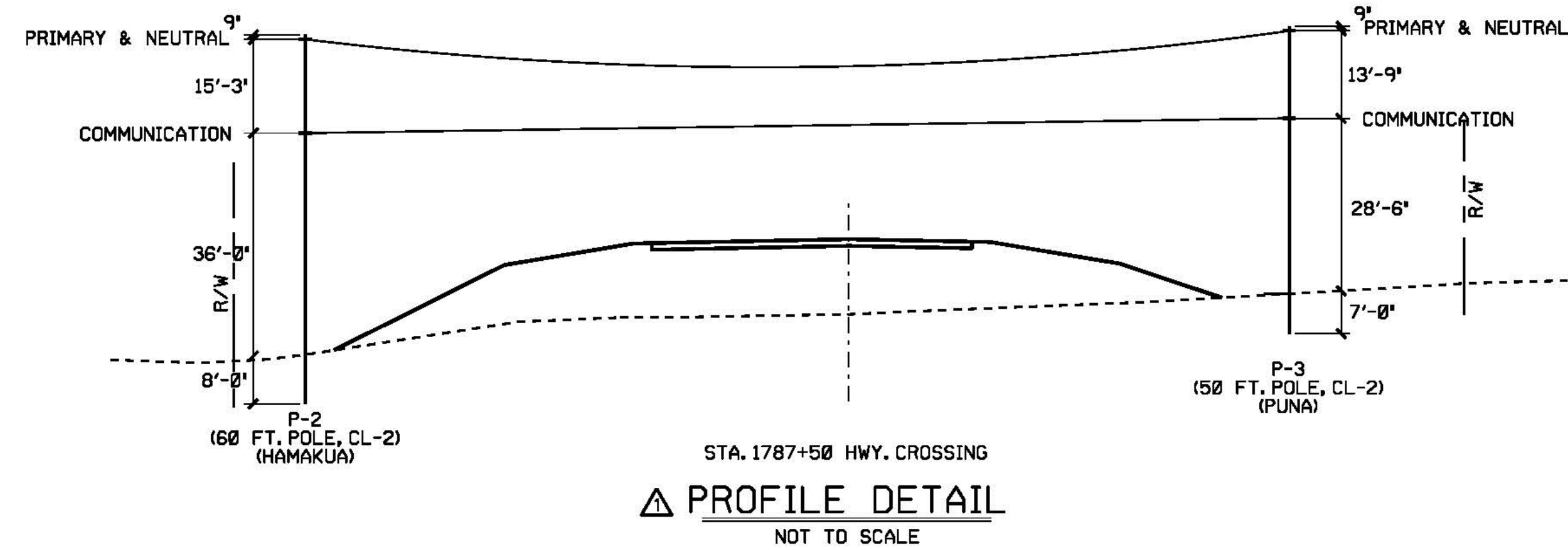
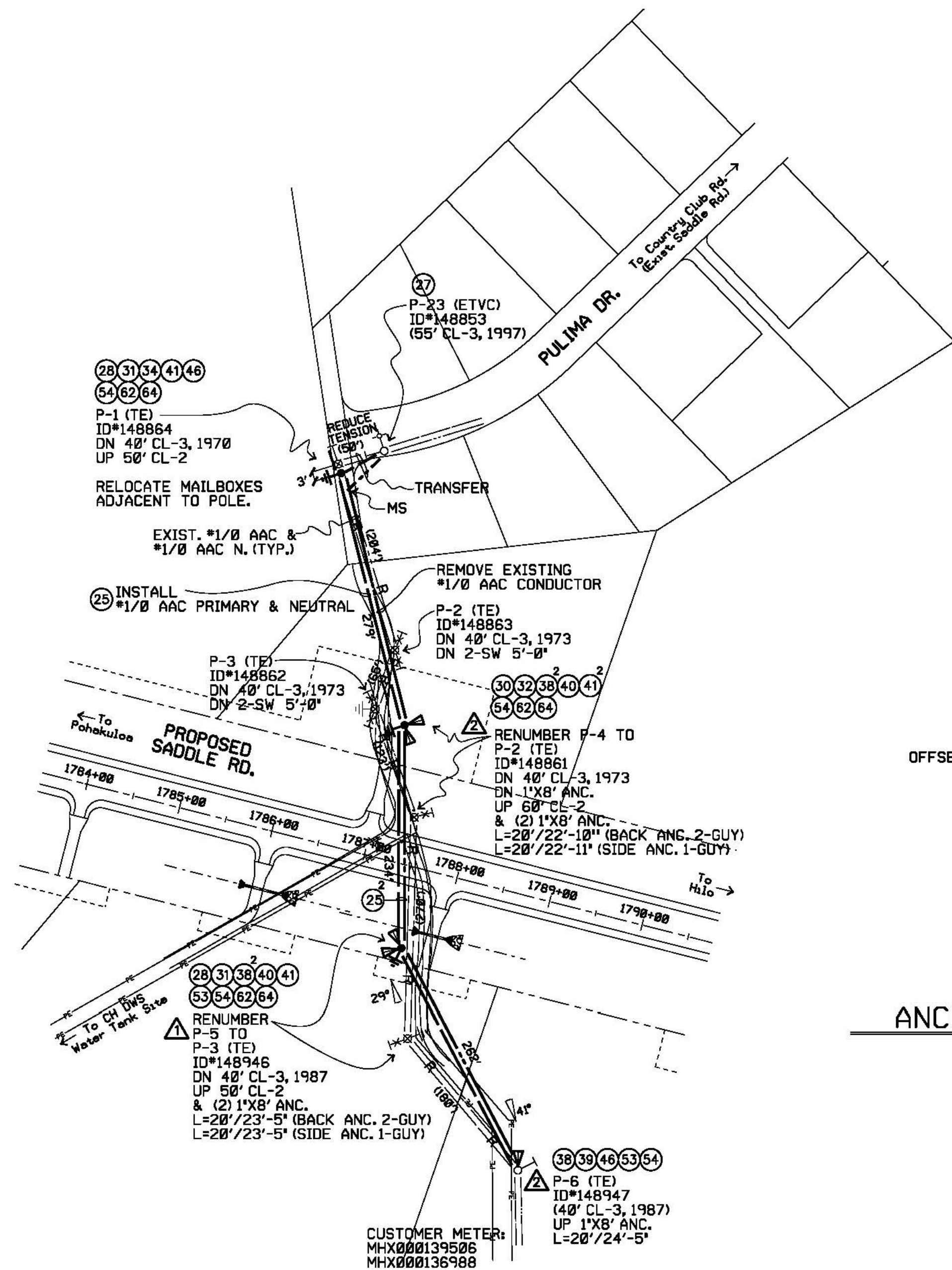
SINGLE LINE DIAGRAM
NOT TO SCALE



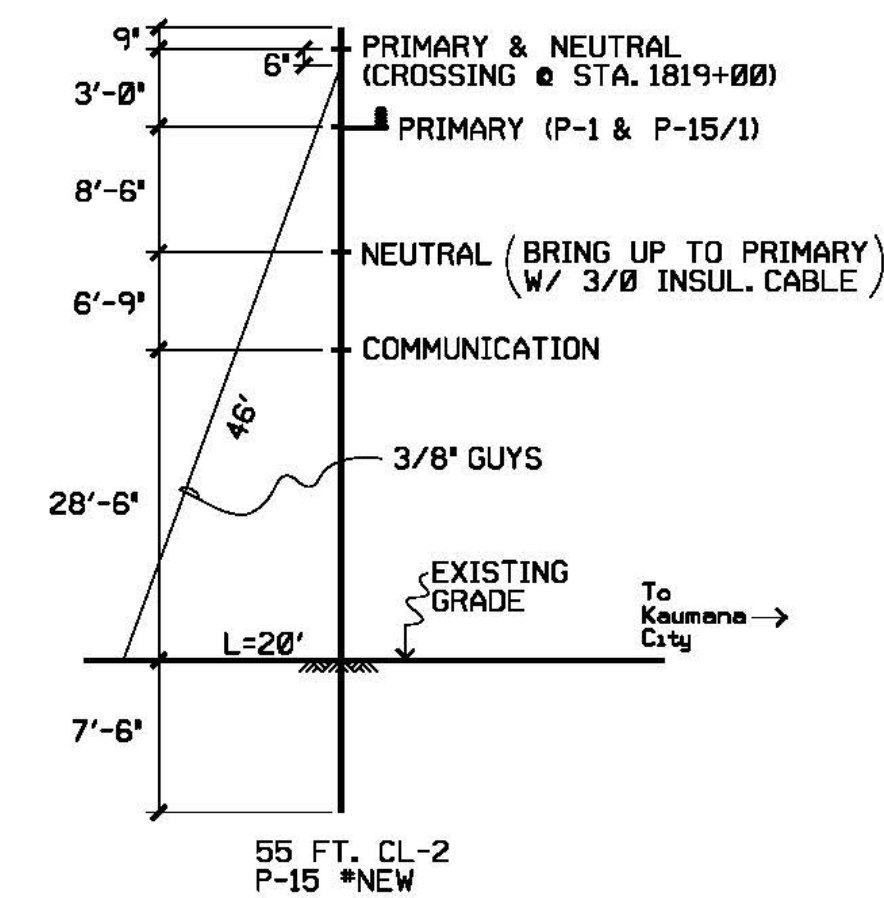
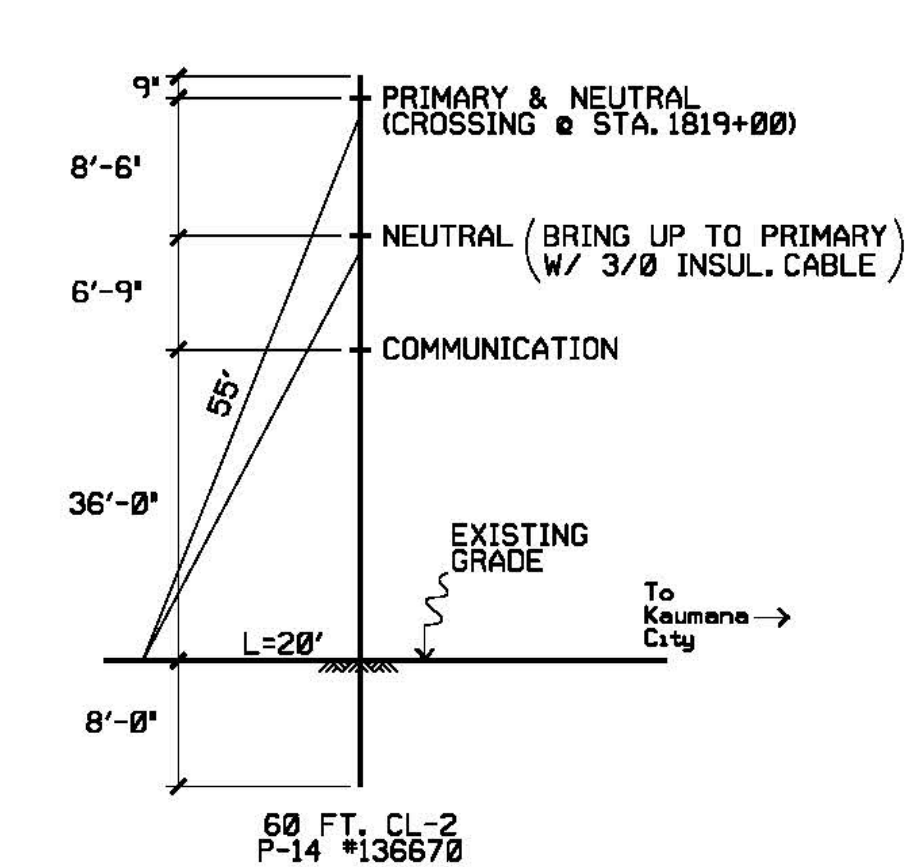
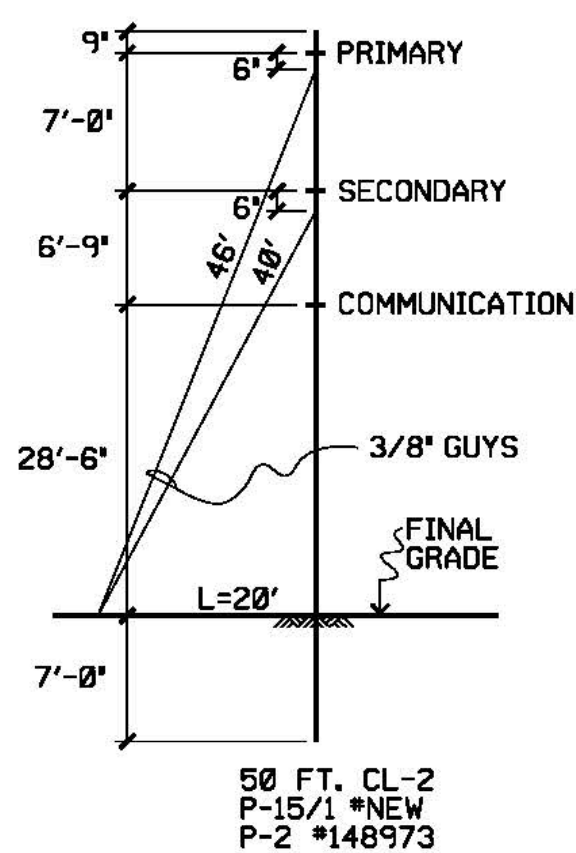
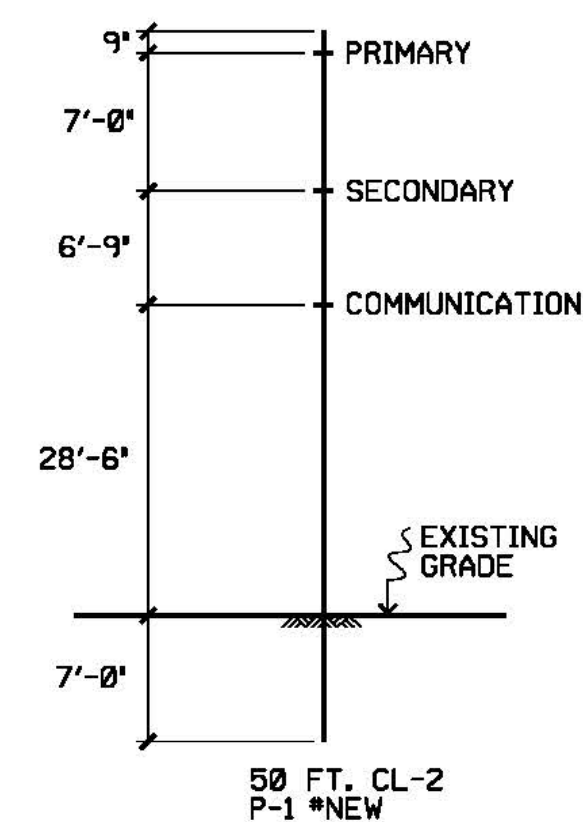
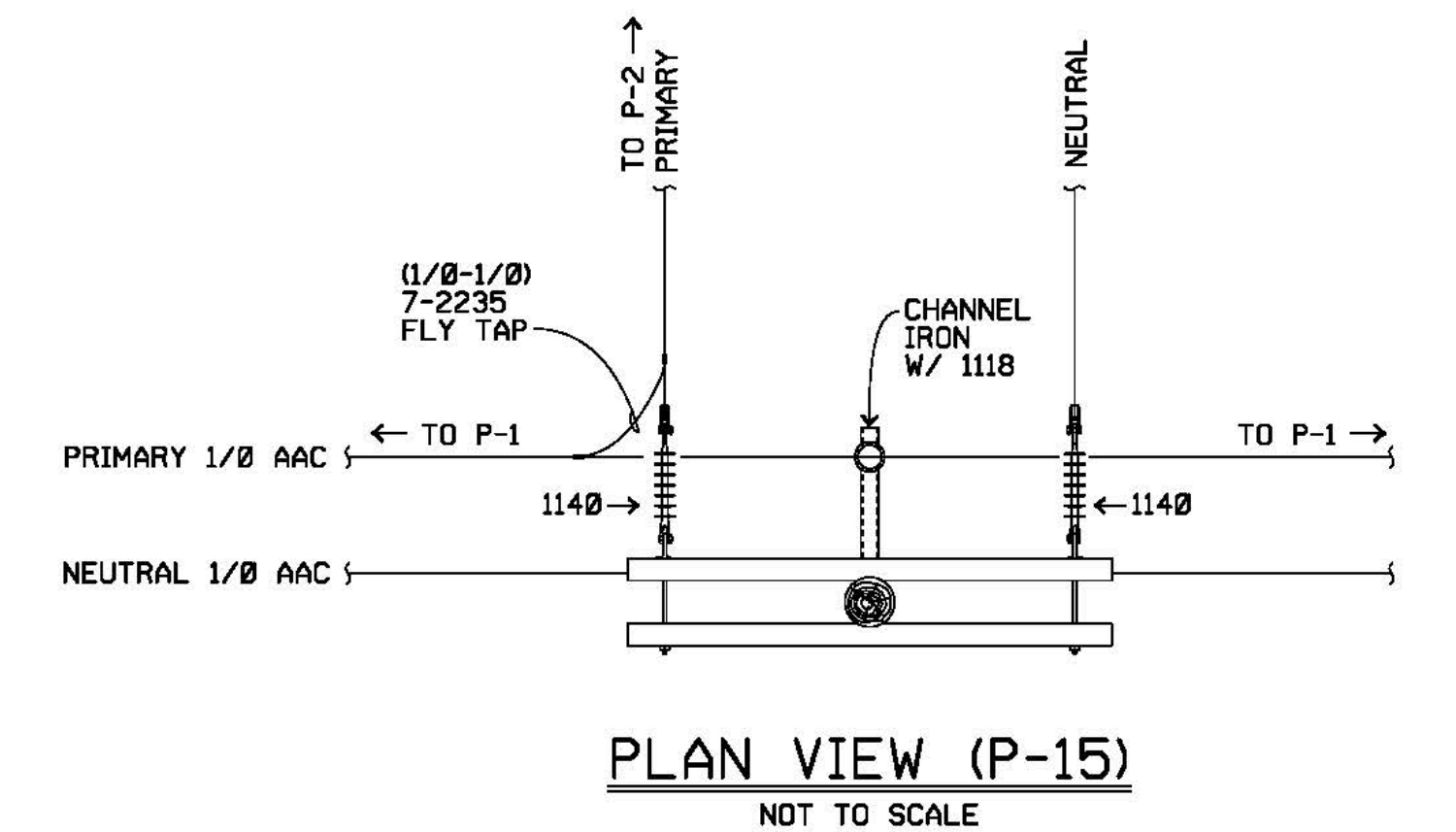
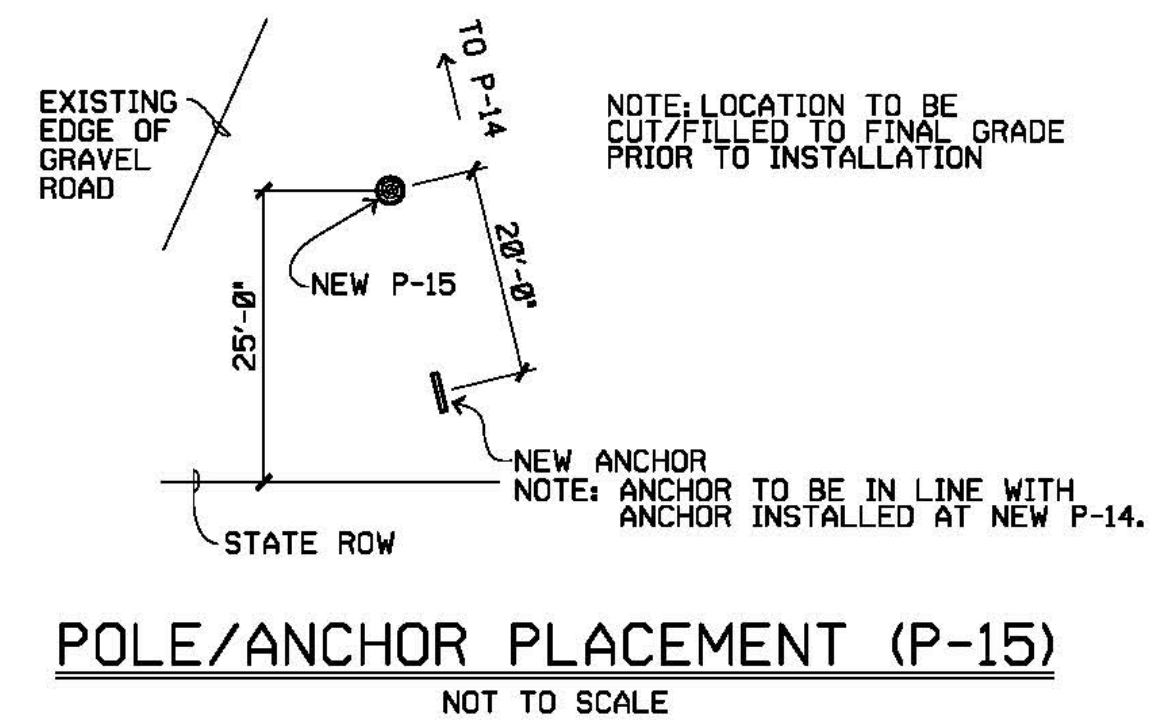
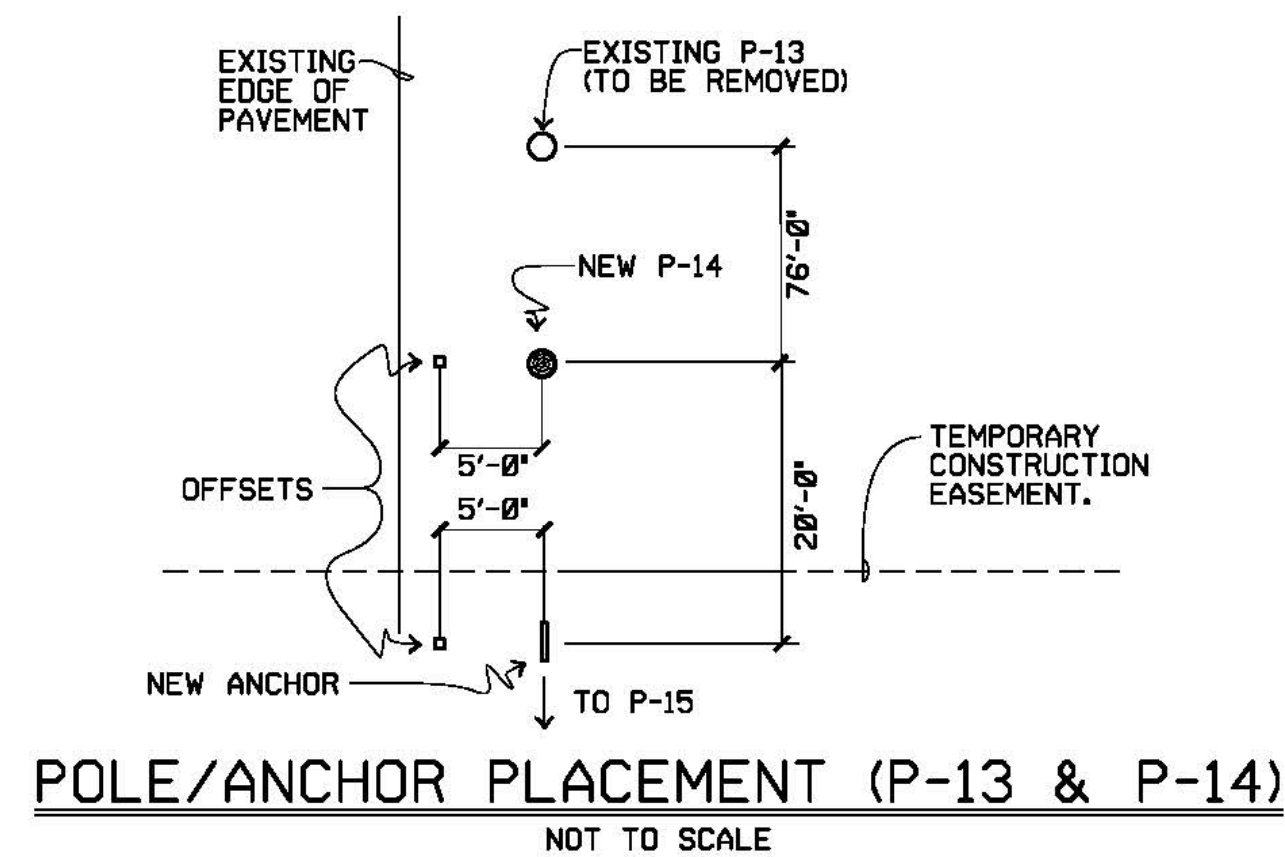
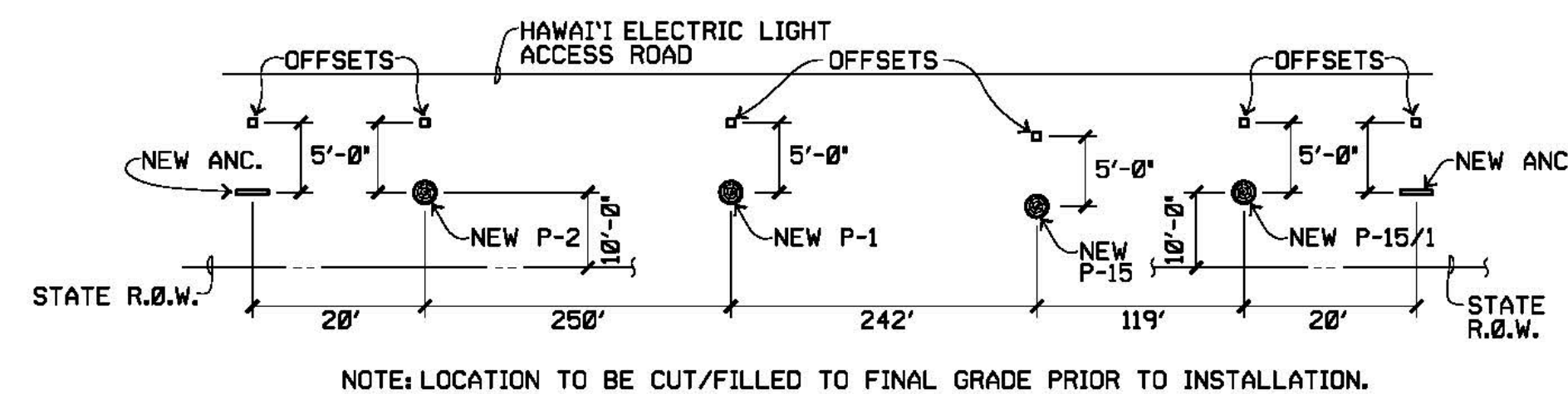
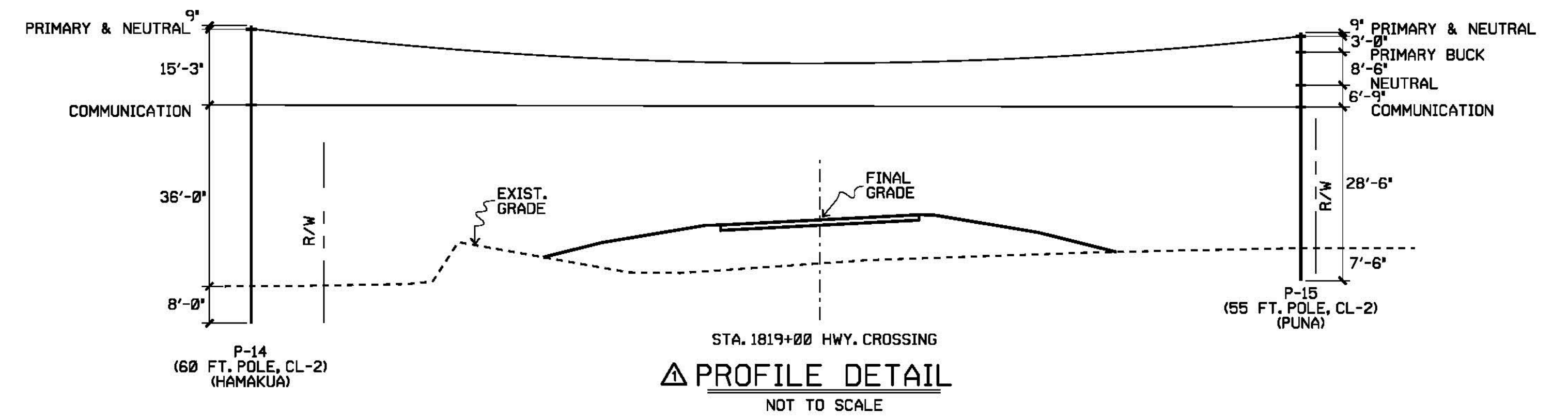
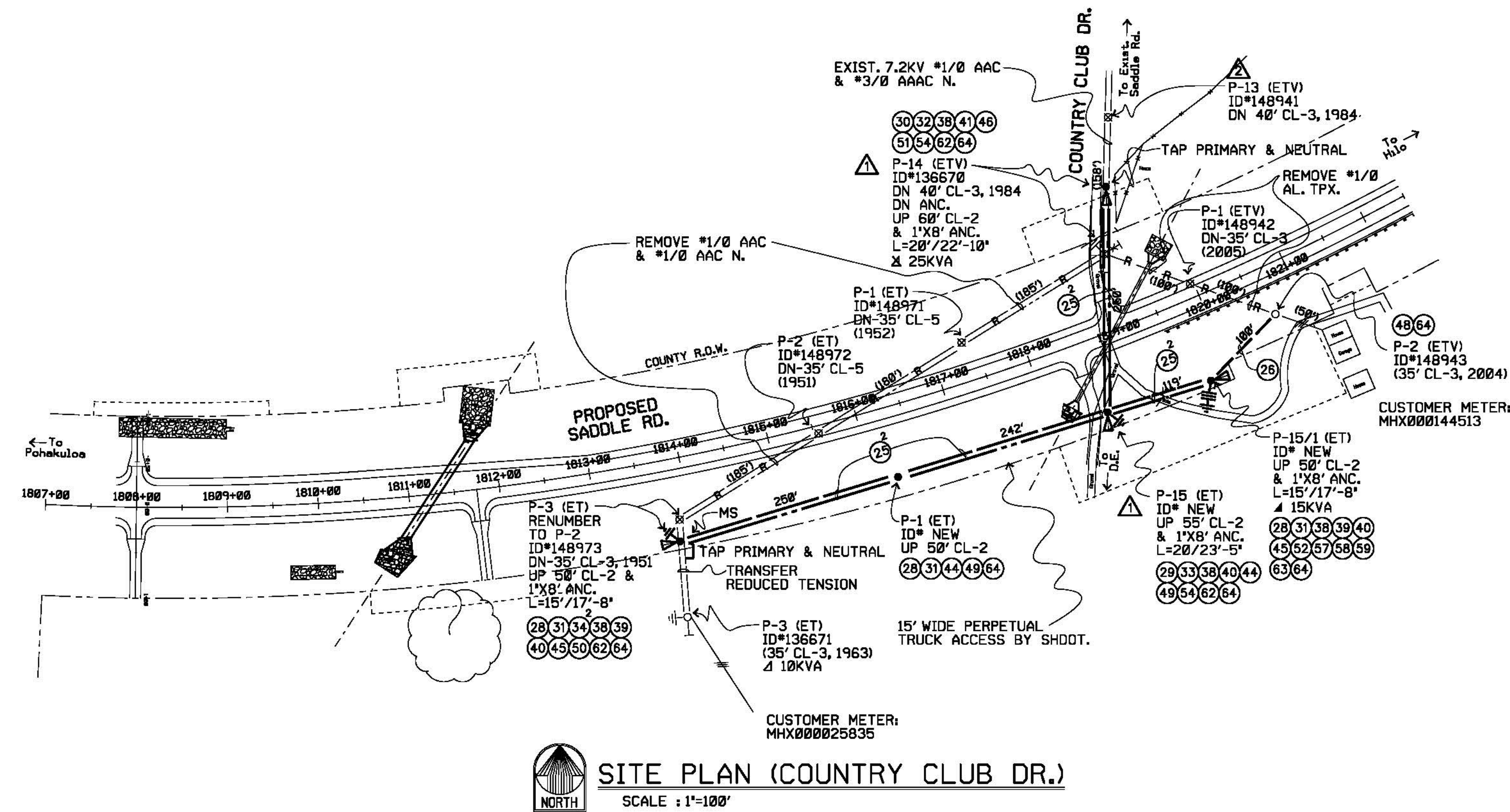
POLE FRAMING
NOT TO SCALE



DESIGNED	AI	DRAWN	JJV	DATE	6/30/14	SCALE	AS NOTED
CHECKED	HC	MECH	STRUC.	CIVIL			
APPROVAL							
P.W.D. NO.	6004982	J.P. NO.	33582	PROJ. NO.	H	T.A.M.	2-6-018:004
US DOT SADDLE RD. - EAST SIDE - (MP 11-6) COUNTRY CLUB DR., PULIMA DR. & SADDLE RD., S. HILO POLELINE & ANCHOR RELOCATION				DRAWING NUMBER 14-E-550			
REDESIGNED PER MEETING WITH FHWA. REMOVED P-13 COUNTRY CLUB DR. ADDED P-13 PULIMA DR. REPLACING P-432 DUE TO GRADE CLEARANCE. REDESIGNED DUE TO GRADING SCHEDULE AND CLEARANCE.				NO. DATE REVISIONS BY CHK'D APP'D 2/22/16 10/1/14			
CV	WS	WS	WS	CV	WS	WS	WS



DESIGNED	AI	DRAWN	JJV	DATE	6/30/14	SCALE	AS NOTED
CHECKED	ELEC.	MECH.	STRUC.	CIVIL			
APPROVAL					DATE	10/1/14	
P.W.O. NO.	6004982	J.P. NO.	33582	PROJ. NO.	H	TASK	2-6-018:004



DESIGNED	AI	DRAWN	JJV	DATE	6/30/14	SCALE	AS NOTED
CHECKED	ELEC.	MECH.	STRUC.	CIVIL			
APPROVAL							
P.W.D. NO.	6004982	J.P. NO.	33582	PROJ. NO.	H	TASK	2-6-018:004
US DOT SADDLE RD. - EAST SIDE - (MP 11-6) COUNTRY CLUB DR., PULIMA DR. & SADDLE RD., S. HILO POLELINE & ANCHOR RELOCATION				DRAWING NUMBER 14-E-550			
SHEET 4 OF 4				BY CHK'D APP'D			