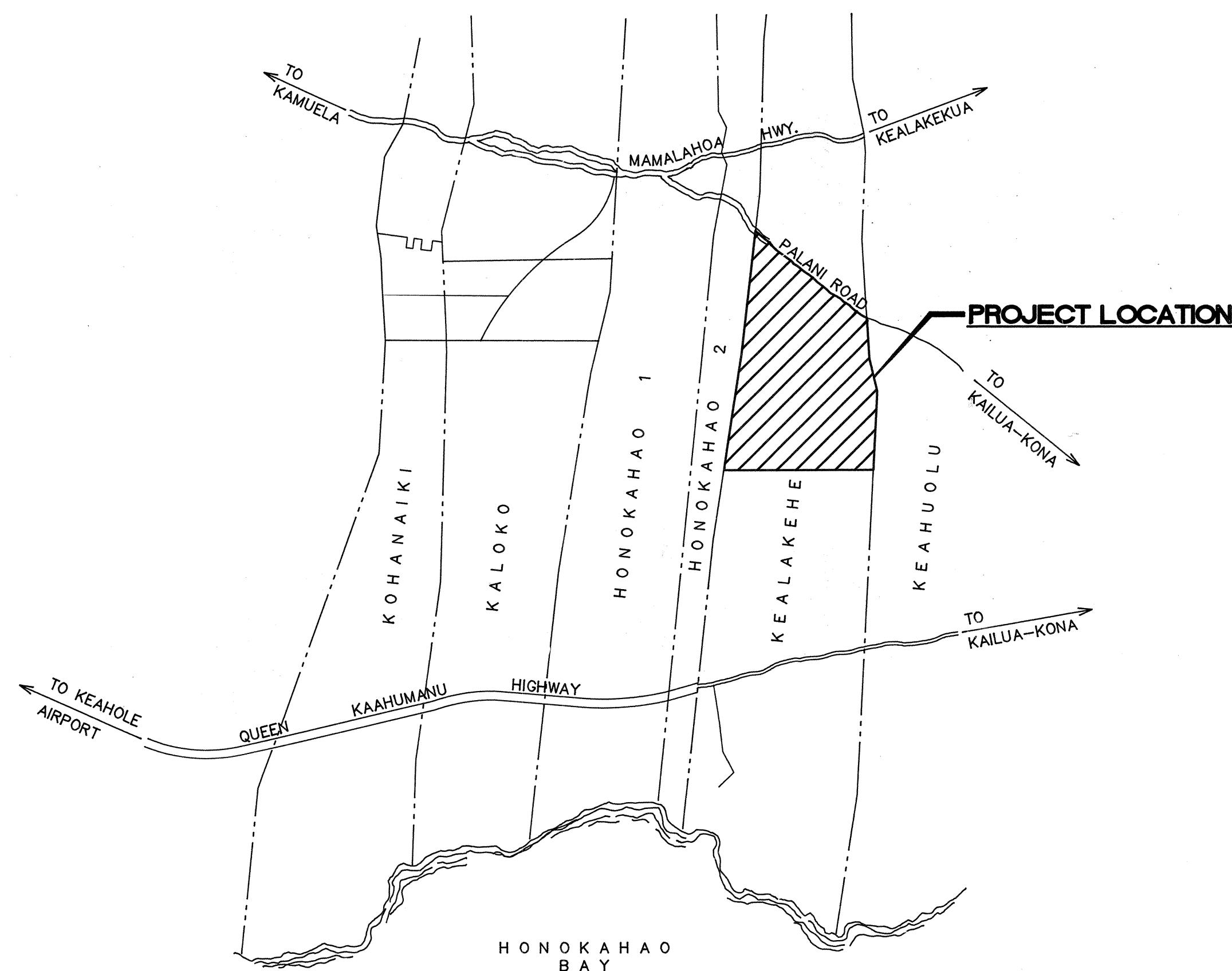


VICINITY MAP

0 2 4 6 8
APPROXIMATE
SCALE IN MILES



LOCATION MAP
NOT TO SCALE

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	STREET LIGHT, LPS LUMINAIRE, WATTAGE AS INDICATED, POLE & BRACKET ARM, SEE DET. A/E-11
	STREET LIGHT, LPS LUMINAIRE, WATTAGE AS INDICATED, POLE & BRACKET ARM, SEE DET. A/E-11
	EXST. STREET LIGHT
	HELCO VACUUM SWITCH PAD LOT, SEE DET. C/E-12
	HELCO MANUAL SWITCHING EQUIP. PAD LOT, SEE DET. B/E-12
	CATV EQUIPMENT PAD, SEE DETAIL B/E-2
	HELCO 5'x7' HANDHOLE
	HELCO 6'x11' MANHOLE
	HTCO 4'x6' HANDHOLE
	HTCO 5'x10' MANHOLE
	CATV 2'x4' PULLBOX
	STREET LIGHT 19'x28' PULLBOX
	STATE STREET LIGHT 24'x32' PULLBOX W/ MOD. COVER
	EXST. PULLBOX OR HANDHOLE, SEE PLAN FOR SIZE
	COUNTY TRAFF. SIG. PB. TYPE "B"
	STATE STREET LIGHT 24' x 32' PULLBOX
	HELCO VACUUM SWITCH PAD, SEE C/E-12
	CATV 3'x5' PULLBOX
	CONCRETE STUB-UP MARKER, SEE DET. A/E-2
	NOTE DESIGNATOR, SEE SHEET
	STUB, CAP & MARK CONDUIT WITH CONCRETE MARKER
	STREET LIGHT 2'x4' PULLBOX
	ELEC/SIGNAL/DUCTLINE DESIGNATORS; INDICATES TYPE "B" DUCT SECTION W/ TYPE "3E" DUCT, SEE SCHEDULE, SHEET E-10
	EXST. STREET LIGHT CONDUIT & WIRING
	STREET LIGHT DUCTS & CABLES
	EXST. CONDUIT & WIRING
	STATE STREET LIGHT DUCTS & WIRING
	EXST. OVERHEAD CABLES
	NEW OVERHEAD CABLES
	EXST. OVERHEAD CABLES TO BE REMOVED BY RESPECTIVE UTILITY CO.
	EXST. POLE TO BE REMOVED
	UTILITY POLE PROVIDED BY HECO.
	EXST. UTILITY POLE
	TRAFFIC WARNING BEACON
	HELCO 3' x 5' HANDHOLE
	HTCO 3' x 5' HANDHOLE
	HTCO 6' x 12' MANHOLE

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard, Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Algaroba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'IOPIA
BACKBONE INFRASTRUCTURE PHASE-2A

ELECTRICAL SYMBOLS, LOCATION & VICINITY MAP

Designed by: **GF** Date: _____
Drawn by: **EDA** Proj. no.: **(BCA) 841-0104**

Approved: _____ Date: _____
HAWAIIAN ELECTRIC LIGHT COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

E-1





RECORD DRAWINGS

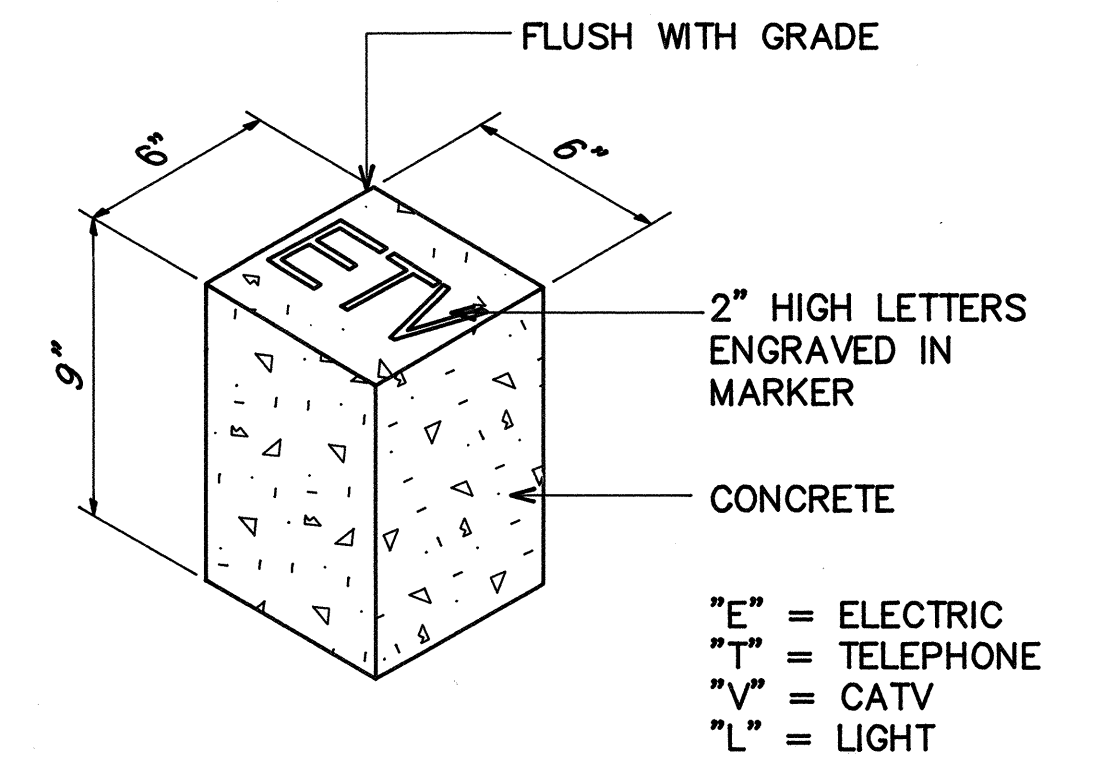
SHEET E-1 of III Sheets

EQUIPMENT SCHEDULE

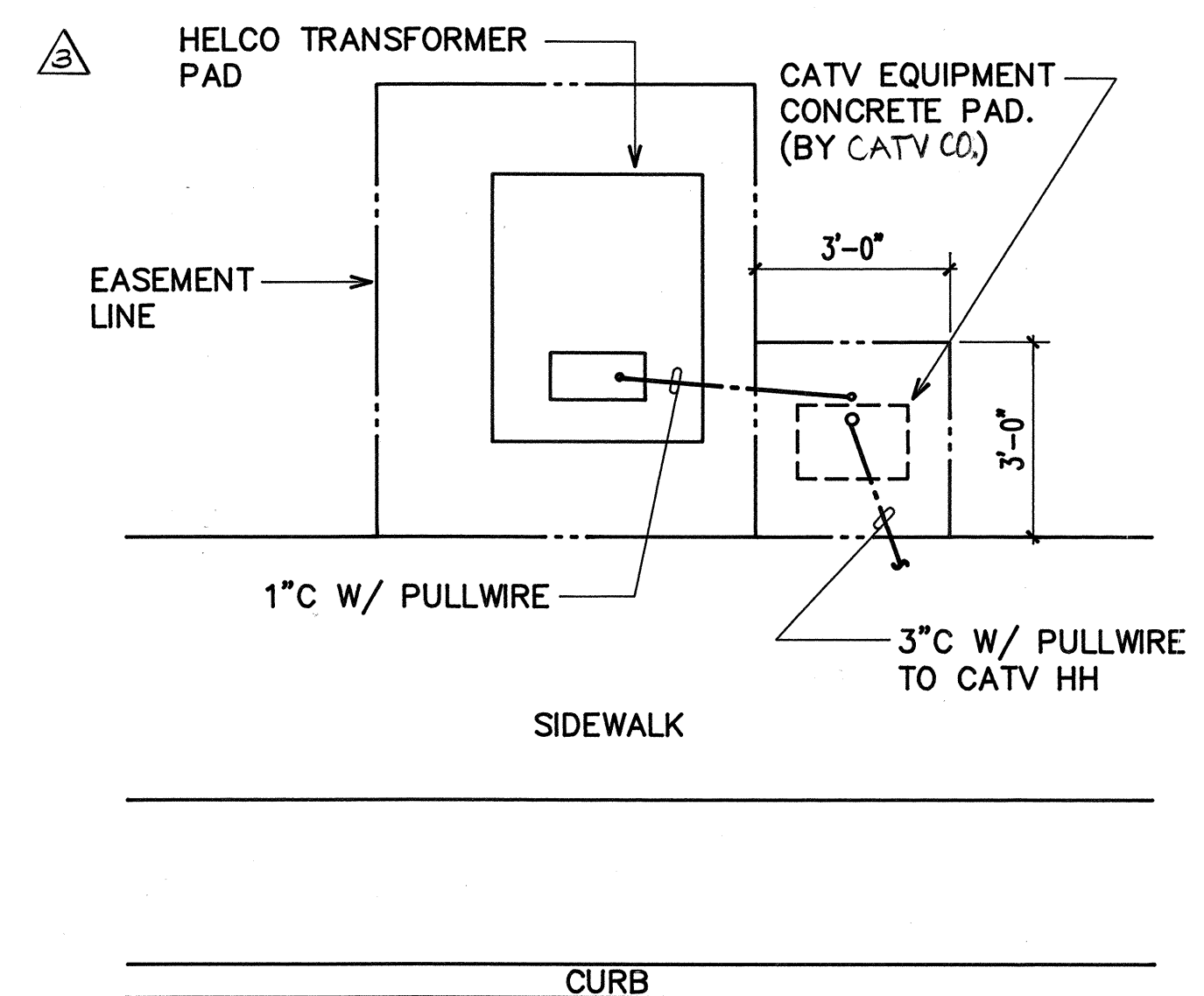
1. THE LOCATION OF OVERHEAD LINES AND UNDERGROUND FACILITIES SHOWN ON THE PLANS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHENEVER CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD LINES.
2. THE CONTRACTOR SHALL OBTAIN AN EXCAVATION PERMIT FROM HELCO TWO WEEKS PRIOR TO STARTING CONSTRUCTIONS.
3. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO HELCO FACILITIES AND SHALL IMMEDIATELY REPORT SUCH DAMAGES TO HELCO'S TROUBLE DISPATCHER.
4. THE CONTRACTOR IS TO COMPLY WITH THE DIRECTIONS OF THE STATE OF HAWAII OCCUPATIONAL SAFETY AND HEALTH LAW (DOSH).
5. FOR VERIFYING THE LOCATION OF UNDERGROUND DUCT LINES AND FOR ASSISTANCE IN PROVIDING PROPER SUPPORT AND PROTECTION OF THE UNDERGROUND DUCT LINES, THE CONTRACTOR IS TO CONTACT HELCO. A MINIMUM OF 72 HOURS IN ADVANCE. (PH # 326-1795)
6. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN THE EXCAVATION AND CONSTRUCTION CROSSES OR IS IN CLOSE PROXIMITY OF UNDERGROUND TELEPHONE AND SIGNAL CABLE FACILITIES AND SHALL MAINTAIN ADEQUATE CLEARANCE FOR HIS EQUIPMENT WHILE WORKING CLOSE TO AND/OR UNDER OVERHEAD FACILITIES. ANY DAMAGES TO THE EXISTING UNDERGROUND FACILITIES SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR.
7. FOR FIELD LOCATION OF HTCO FACILITIES, CONTACT HTCO OUTSIDE PLANT ENGINEERING SECTION, A MINIMUM OF 72 HOURS IN ADVANCE PRIOR TO START OF EXCAVATION.
8. SHOULD FIELD CONDITIONS AND CONSTRUCTION PROCEDURES REQUIRE THAT UTILITY POLES BE BRACED, THE CONTRACTOR SHALL CONTACT THE FOLLOWING PERSON FOR POLE BRACING INSTRUCTIONS A MINIMUM OF 72 HOURS IN ADVANCE OF ACTUAL REQUIRED BRACING. (HELCO PH # 326-1795)
9. WHEN TRENCH EXCAVATION IS ADJACENT TO EXISTING STRUCTURES OR FACILITIES, THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SHEETING AND BRACING THE EXCAVATION AND STABILIZING THE EXISTING GROUND TO RENDER IT SAFE AND SECURE FROM POSSIBLE SLIDES, CAVE-INS, AND SETTLEMENT, AND FOR PROPERLY SUPPORTING EXISTING STRUCTURES AND FACILITIES WITH BEAMS, STRUTS, OR UNDERPINNING TO FULLY PROTECT IT FROM DAMAGE.
10. A 4" WIDE WARNING TAPE, ORANGE IN COLOR WITH A BLACK IMPRINTED MESSAGE "WARNING-STOP DIGGING-CALL GTE COMMUNICATIONS CABLE BURIED BELOW, FAILURE TO COMPLY COULD RESULT IN LEGAL ACTION" SHALL BE PLACED 12" BELOW THE SURFACE, OVER THE DUCT OR CONCRETE JACKET FOR THE ENTIRE LENGTH OF DUCT INSTALLATIONS. SEE HTCO. STD. DWG. NO. 34028. RECOMMENDED TAPE IS MANUFACTURED BY THOR ENTERPRISES, DTOTGE-41 OR DTOTGE-46, EQUIVALENT TAPES ARE ACCEPTABLE.
11. PROVIDE NEPTCO MULETAPE (WP180P) IN ALL NEW DUCTS AND CAP ALL DUCTS AFTER TESTING. NEPTCO MULETAPE IS AVAILABLE FROM WESTINGHOUSE SUPPLY CO. (WESCO). THE NEPTCO MULETAPE IS PRELUBRICATED AND PRINTED WITH SEQUENTIAL FOOTAGE MARKINGS.
12. USING THE NEPTCO MULETAPE, THE CONTRACTOR SHALL MEASURE AT LEAST ONE DUCT OF A COMMON DUCT RUN. THE DISTANCE SHALL BE MARKED ON THE RECORD PRINTS AND SUBMITTED TO THE HTCO INSPECTOR FOR RECORD KEEPING.
13. ALL ELEC./COMM. CONDUITS SHALL CROSS BELOW ALL WATERLINES. MINIMUM VERTICAL CLEARANCE BETWEEN WATER LINE AND ELEC./COMM DUC CROSSING SHALL BE 1'-6".
14. CONTACT HTCO. WEST HAWAII CONSTRUCTION MR. FLOYD KAHALIOUMI A MINIMUM OF 72 HOURS IN ADVANCE TO ANY REQUEST FOR INSPECTION.
15. ALL WORK ON ELEC./COMM. DUCTLINES COMPLETED BY THE CONTRACTOR WITHOUT UTILITY CO. INSPECTION AND, SUBSEQUENTLY, CONDEMNED BY THE UTILITY CO. MUST BE REDONE BY THE CONTRACTOR AT NO ADDITIONAL COST.
16. MINIMUM HORIZONTAL CLEARANCE BETWEEN WATER DUCTLINE IN PARALLEL SHALL BE 8'-0"

THE HAWAII ELECTRIC LIGHT CO., INC., HAWAIIAN TELEPHONE CO., COMMUNITY ANTENNA
TELEVISION & STREET LIGHTING PULLBOXES, HANDHOLES, 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:

TYPE	DESCRIPTION	
(*) 5' X 7' HELCO. HANDHOLE	5' X 7' TYPE 57 REINFORCED CONCRETE HANDHOLE WITH PRECAST CONCRETE COVERS, PROVIDED IN ACCORDANCE WITH HELCO. STANDARD DRAWING NO. 18848. 	3' X 5' HELCO HANDHOLE
SEE NOTE BELOW		
(*) 6' X 11' HELCO. MANHOLE	6' X 11' REINFORCED CONCRETE MANHOLE WITH FRAME AND COVER, PROVIDED IN ACCORDANCE WITH HELCO. STANDARD DRAWING NO. 18775, 892003 & 922003. 	3' X 5' HTCO PULLBOX
4' X 6' HTCO. HANDHOLE	4' X 6' TYPE 1 REINFORCED CONCRETE HANDHOLE WITH STEEL COVERS, PER HTCO. STANDARD DRAWING NO. 34029.	
5' X 10' HTCO. MANHOLE	5' X 10' REINFORCED CONCRETE MANHOLE PROVIDED IN ACCORDANCE WITH HTCO. STANDARD DRAWINGS, WITH 6'-6" HEADROOM. DWG. NO. GTE 5X10.5X6.5	6' X 12' HTCO MANHOLE
2' X 4' CATV PULLBOX	2' X 4' PRECAST CONCRETE PULLBOX WITH PRECAST CONCRETE COVER, SIMILAR TO HC&D TYPE 435TB EXCEPT WITH "CATV" INSCRIBED ON COVER.	2' X 4' ST LT PULLBOX
19" X 28" ST. LT. PULLBOX	19" X 28" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND COVER, SIMILAR TO THE CITY & COUNTY OF HONOLULU DEPT. OF TRANSPORTATION SERVICES TYPE "SLD-1" PULLBOX.	
24" X 32" STREET LIGHT PULLBOX (STATE OF HAWAII)	24" X 32" TYPE "A" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND COVER, PROVIDED IN ACCORDANCE WITH DEPT. OF TRANSPORTATION STANDARDS.	
24" X 32" STREET LIGHT PULLBOX (STATE OF HAWAII)	24" X 32" TYPE "A" PRECAST CONCRETE PULLBOX WITH CAST IRON FRAME AND MODIFIED COVER, PROVIDED IN ACCORDANCE WITH DEPT. OF TRANSPORTATION STANDARDS AND AS INDICATED ON THE DRAWINGS.	
6' X 7' HELCO. TRANSFORMER PAD LOT	6' X 7' TRANSFORMER PAD LOT WITH REINFORCED CONCRETE TRANSFORMER PAD AND GROUND ROD PER HELCO. STANDARD DRAWING NOS. 30-5001 & 011249.	
9' X 12'-9" HELCO. MANUAL SWITCHING EQUIPMENT PAD LOT	9' X 12'-9" MANUAL SWITCHING EQUIPMENT ENCLOSURE PAD LOT WITH REINFORCED PAD AND GROUND ROD, PER HELCO. STANDARD DRAWING NO. 30-5031.	
4'-6" X 6'-4" HELCO VACUUM SWITCH PAD	4'-6" X 6'-4" REINFORCED CONCRETE PAD AND GROUND ROD PER HELCO SPECIFICATIONS AND THESE DRAWINGS.	
(*) THE 5' X 7' HANDHOLE MAY BE PRECASTED IN ACCORDANCE WITH HELCO'S DWG. NO. 18848 OR 892002. 		
THE 6' X 11' MANHOLE MAY BE PRECASTED IN ACCORDANCE WITH HELCO'S DWG. NO. 892003 & 922003. 		
3' X 5' CATV PULLBOX	3' X 5' PRECAST CONCRETE PULLBOX w/ 3-PIECE PRECAST CONC. COVERS PROVIDE SIMILAR TO HELCO. STD. DWG. NO. 18841.	



 **CONCRETE CONDUIT
STUB-OUT MARKER**
NOT TO SCALE



B CATV EQUIPMENT PAD DETAIL
E-2 N.T.S.

△			
△			
△ 3	7/2/94	REVISED EQUIPMENT SCHEDULE & NOTES	SI
Rev.	Date	Description	Eng. Appr.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS
PROJECT WILL BE UNDER MY
OBSERVATION.

gmalinso

6/5/92

RONALD N. S. HO.
REGISTERED
PROFESSIONAL
ENGINEER
No. 3737-E
HAWAII, U.S.A.

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)536-7819

Consultant:
 **RONALD N. S. HO & ASSOCIATES, INC.**
Electrical Engineers
2138 Algaroba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

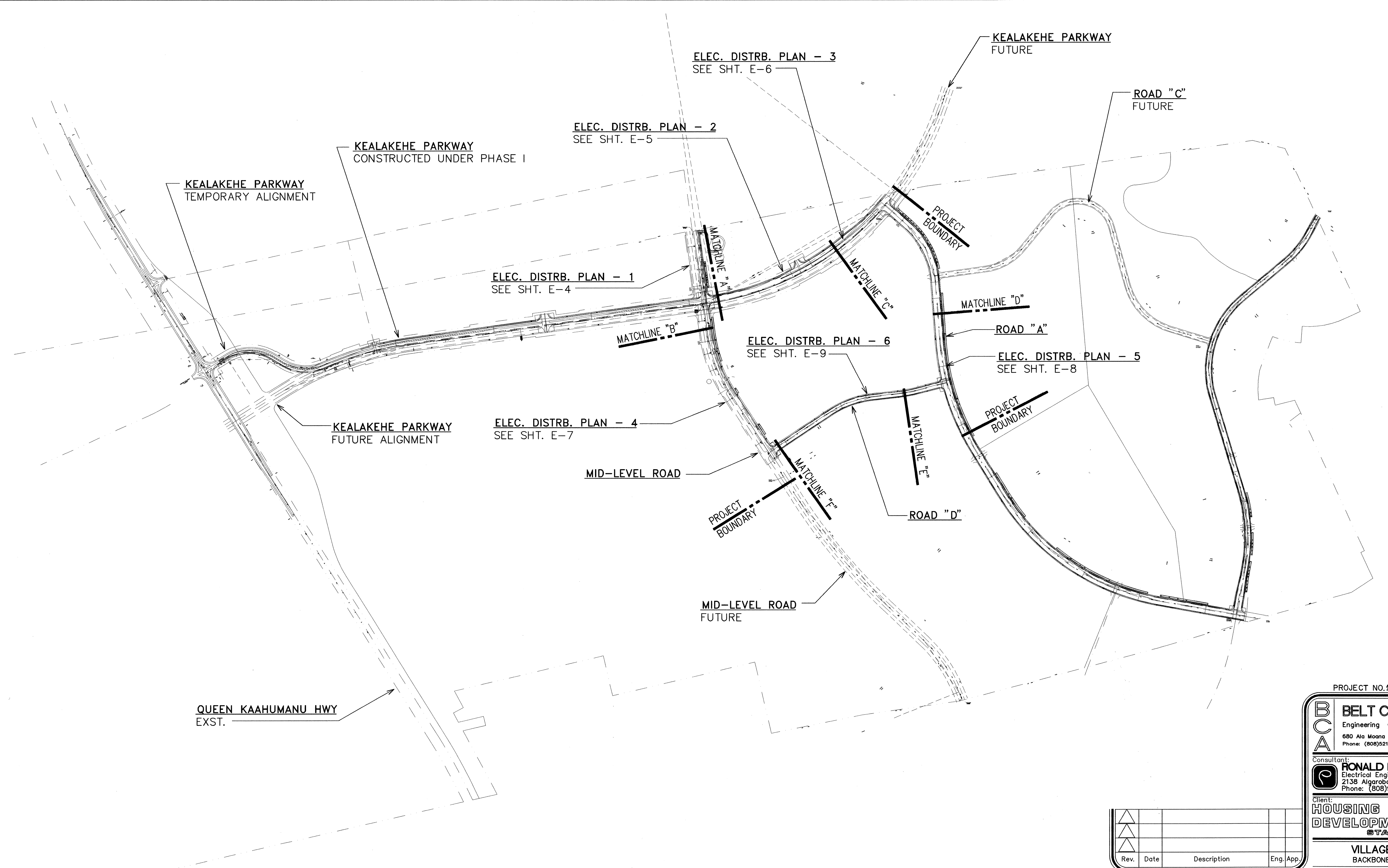
Client:
**HOUSING FINANCE AND
DEVELOPMENT CORPORATION
STATE OF HAWAII**

VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

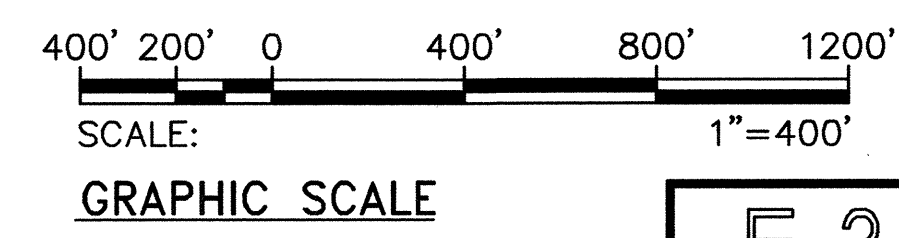
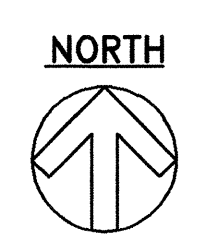
GENERAL NOTES, EQUIPMENT SCHEDULE & DETAILS

Designed by: GF Date: _____
 Drawn by: EDA Proj. no.: (BCA) 841-0104
 Approved: [Signature] 7/25/54
DAVID ELECTRIC LIGHT COMPANY Date: _____
HUMAN ENGINEERING COMPANY Date: _____
 DEPARTMENT OF PLANNING Date: _____
 DEPARTMENT OF PUBLIC WORKS Date: _____

Let's save: 11/08/93 • 08:18:27
C:\MCD\PROJECTS\SUBDIV\VILLAGES\82270A.Plot2



ELECTRICAL SITE PLAN
SCALE: 1"=400'



E-3

Rev.	Date	Description	Eng. App.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS
PROJECT WILL BE UNDER MY
OBSERVATION.

Ronald N. S. Ho
REGISTERED PROFESSIONAL ENGINEER
No. 5737-E
HAWAII, U.S.A.

PROJECT NO. 190A-02-92

BCA **BELT COLLINS & ASSOCIATES**
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Algaroba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

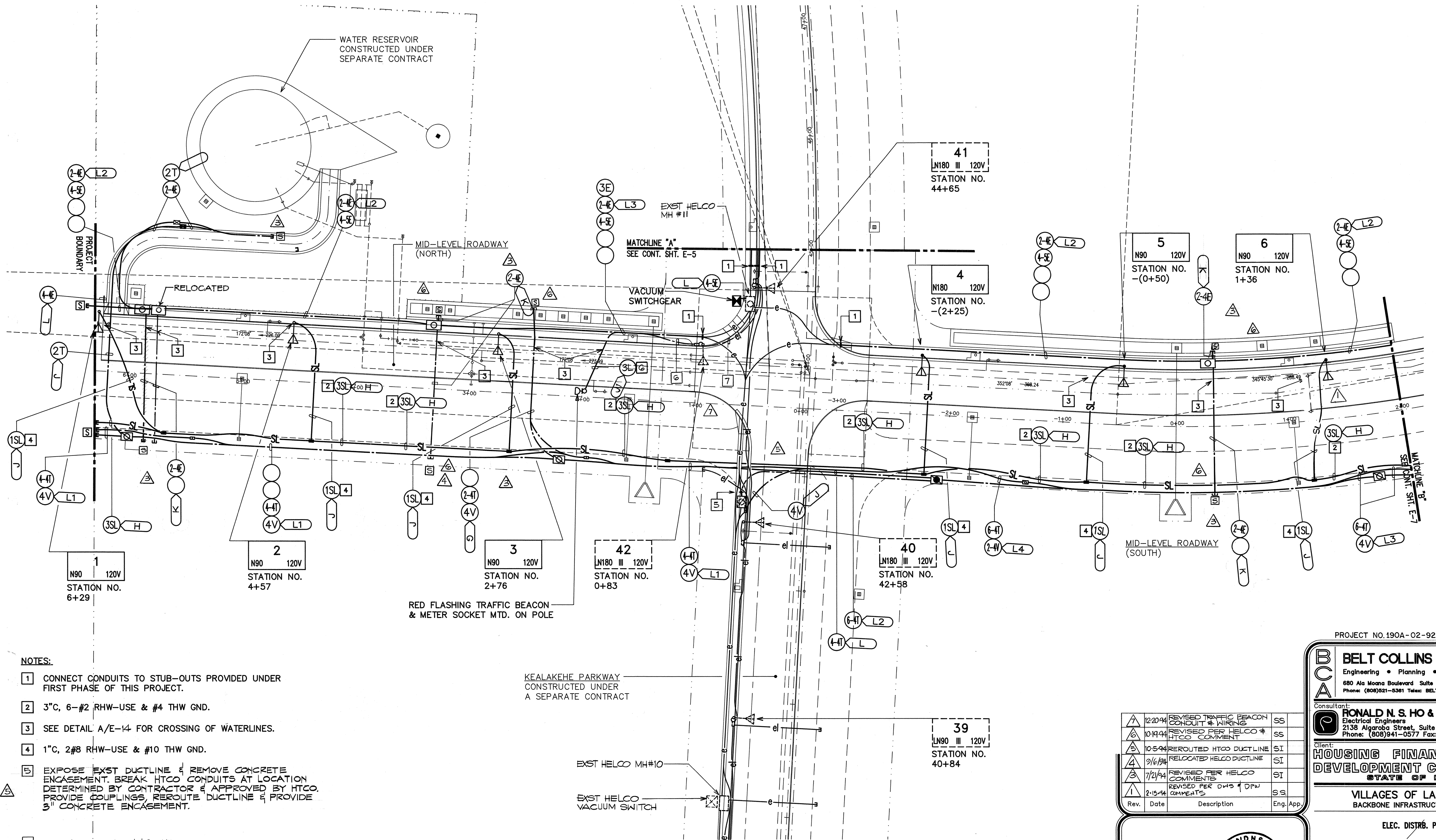
VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

ELECTRICAL SITE PLAN

Designed by: SS Date: _____
Drawn by: CV Proj. no.: (BCA) 841-0104

Approved: _____ Date: _____
HAWAII ELECTRIC LIGHT COMPANY Date: _____
HAWAIIAN TELEPHONE COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____



NOTES:

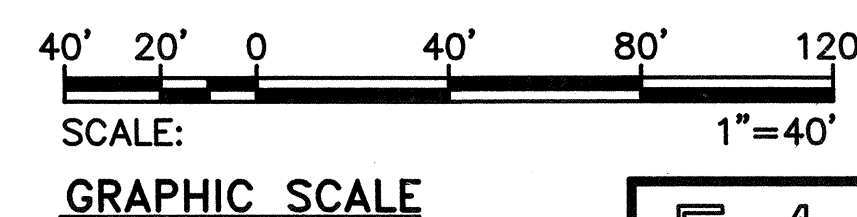
- 1 CONNECT CONDUITS TO STUB-OUTS PROVIDED UNDER FIRST PHASE OF THIS PROJECT.
- 2 3"C, 6-#2 RHW-USE & #4 THW GND.
- 3 SEE DETAIL A/E-14 FOR CROSSING OF WATERLINES.
- 4 1"C, 2#8 RHW-USE & #10 THW GND.
- 5 EXPOSE EXIST DUCTLINE & REMOVE CONCRETE ENCASUREMENT. BREAK HTCO CONDUITS AT LOCATION DETERMINED BY CONTRACTOR & APPROVED BY HTCO. PROVIDE COUPLINGS, REROUTE DUCTLINE & PROVIDE 3" CONCRETE ENCASUREMENT.
- 6 3"C, 3#6 RHW-USE & #8 GND.
- 7 EXIST 2"C. PROVIDE 3#2 RHW-USE, 3#6 RHW-USE & #4 GND.

KEALAKEHE PARKWAY
CONSTRUCTED UNDER
A SEPARATE CONTRACT

RED FLASHING TRAFFIC BEACON
& METER SOCKET MTD. ON POLE

EXIST HELCO MH#10
EXIST HELCO
VACUUM SWITCH

ELECTRICAL DISTRIBUTION PLAN - 1
SCALE: 1"=40'



E-4

Rev.	Date	Description	Eng. App.
1	12/20/94	REVISED TRAFFIC BEACON CONDUIT & WIRING	SS
2	10/19/94	REVISED PER HELCO & HTCO COMMENT	SS
3	10/5/94	REROUTED HTCO DUCTLINE	SI
4	9/6/94	RELOCATED HELCO DUCTLINE	SI
5	7/21/94	REVISED PER HELCO COMMENTS	SI
6	2/15/94	REVISED PER DWS & DPW COMMENTS	SS

RONALD N. S. HO
REGISTERED
PROFESSIONAL
ENGINEER
No. 3737-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS
PROJECT WILL BE UNDER MY
OBSERVATION.

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard, Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Algoroba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
**HOUSING FINANCE AND
DEVELOPMENT CORPORATION**
STATE OF HAWAII

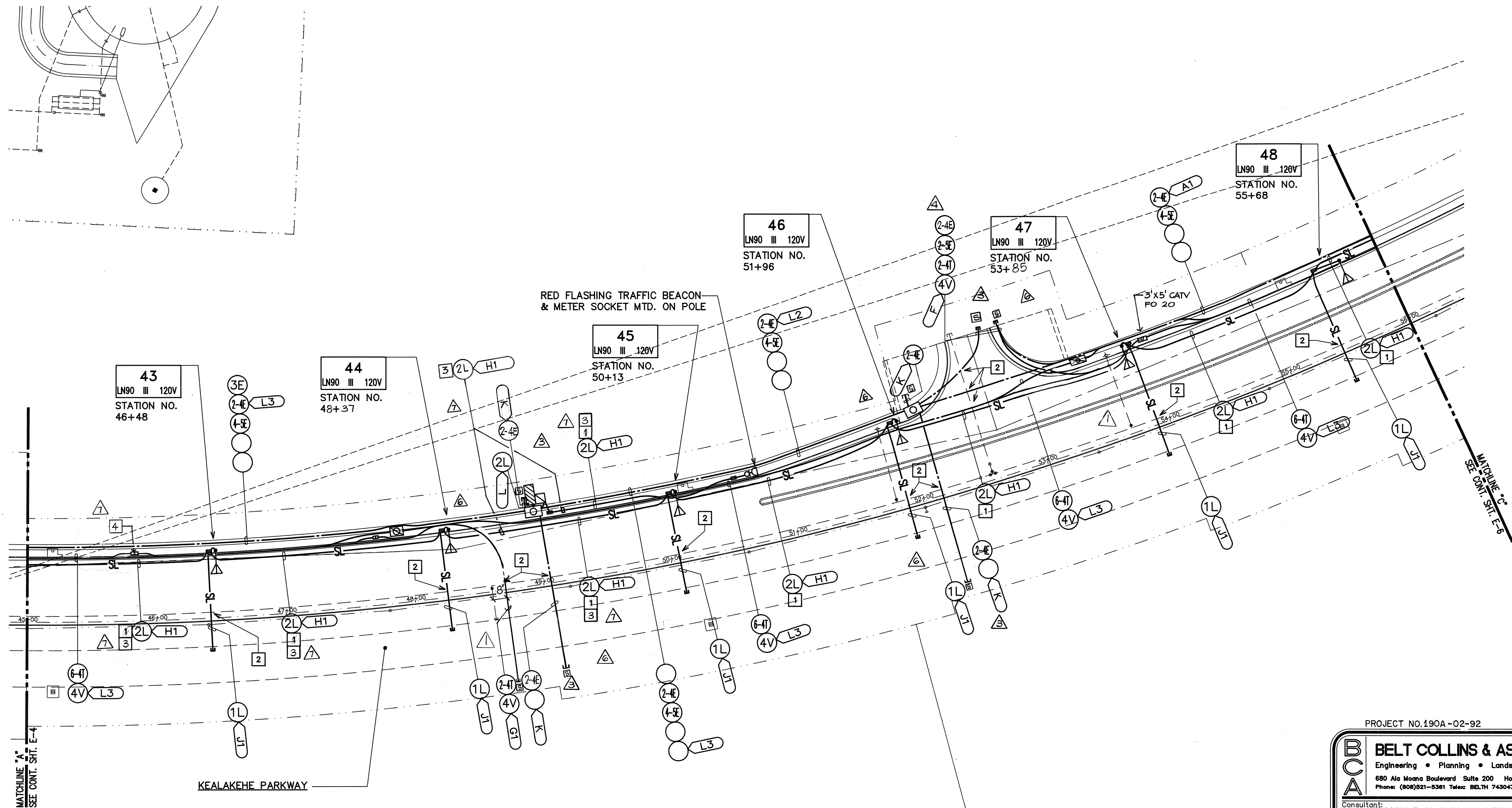
VILLAGES OF LA'IOPIA
BACKBONE INFRASTRUCTURE PHASE-2A

ELEC. DISTR. PLAN - 1

Designed by: SS Date: _____
Drawn by: CO Proj. no.: (BCA) 841-0104

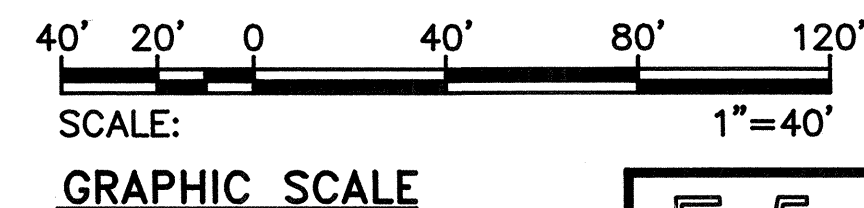
Approved: _____
Date: 7/25/94
HAWAIIAN ELECTRIC LIGHT COMPANY Date: _____
HAWAIIAN TELEPHONE COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____



- NOTES:
- 2" C, 3-#1 RHW-USE & #2 THW GND.
 - ROUTE DUCTLINE BELOW WATERLINE. PROVIDE 18" MIN. CLEARANCE BETWEEN DUCTLINE AND WATERLINE.
 - 2" C, 3-#2 RHW-USE, 3-#6 RHW-USE & #4 THW GND.
 - PROVIDE CATV 2'x4' PULLBOX.

ELECTRICAL DISTRIBUTION PLAN - 2 SCALE: 1"=40'



E-5

Rev.	Date	Description	Eng. App.
1	12/20/94	REVISED WIRE COUNT ADDED CATV PULLBOX	SS
2	10/19/94	REVISED PER HELCO & HTCO COMMENT	SS
3	9/16/94	REVISED PER HELCO COMMENT	SI
4	7/21/94	REVISED PER HELCO COMMENT	SI
5	2-15-94	REVISED PER DHS & DPW COMMENTS	SS

THIS WORK WAS PREPARED BY ME
OR UNDER MY SUPERVISION
AND CONSTRUCTION OF THIS
PROJECT WILL BE UNDER MY
OBSERVATION.

Rene Linsley

Approved: _____
Date: 7/25/94

DEPARTMENT OF PLANNING Date: _____
DEPARTMENT OF PUBLIC WORKS Date: _____

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2846

Client:
**HOUSING FINANCE AND
DEVELOPMENT CORPORATION**
STATE OF HAWAII

VILLAGES OF LA'IOPIA
BACKBONE INFRASTRUCTURE PHASE-2A

ELEC. DISTR. PLAN - 2

Designed by: SS Date: _____
Drawn by: CO Proj. no.: (BCA) 841-0104

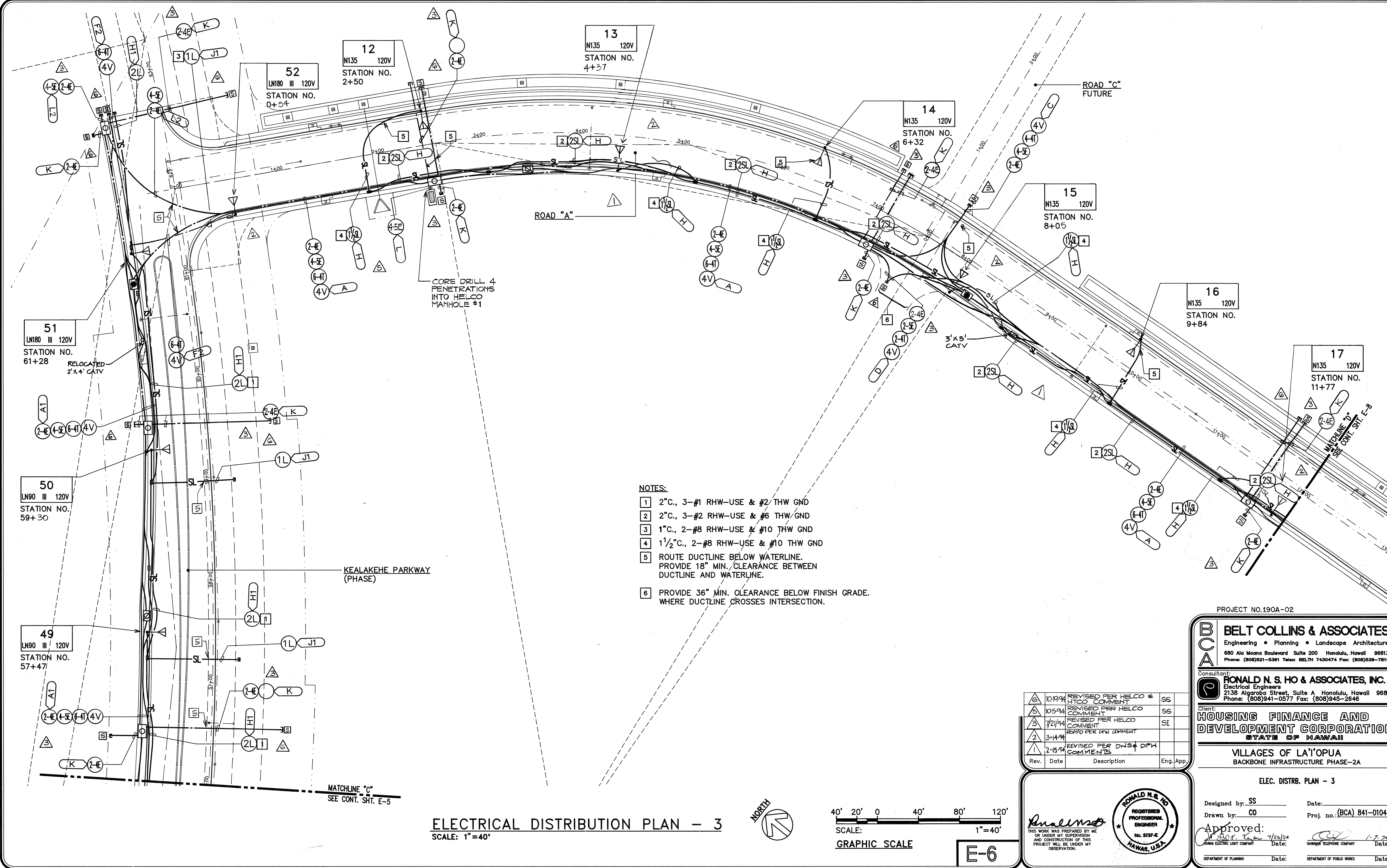
Approved: _____
Date: 7/25/94
HAWAIIAN ELECTRIC LIGHT COMPANY Date: _____
HAWAIIAN TELEPHONE COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____
DEPARTMENT OF PUBLIC WORKS Date: _____

RECORD DRAWINGS

SHEET E-5 of 11 Sheets

DATE: 11/25/94 BY: J.E. 11-11-94
G:\VOLUME PROJECTS\SUBDIVISIONS\VILLAGES OF LA'OPUA\PLANS 3.dwg



- NOTES:
- 1 2"C., 3-#1 RHW-USE & #2 THW GND
 - 2 2"C., 3-#2 RHW-USE & #6 THW GND
 - 3 1"C., 2-#8 RHW-USE & #10 THW GND
 - 4 1 1/2"C., 2-#8 RHW-USE & #10 THW GND
 - 5 ROUTE DUCTLINE BELOW WATERLINE. PROVIDE 18" MIN. CLEARANCE BETWEEN DUCTLINE AND WATERLINE.
 - 6 PROVIDE 36" MIN. CLEARANCE BELOW FINISH GRADE. WHERE DUCTLINE CROSSES INTERSECTION.

Rev.	Date	Description	Eng. App.
1	10/19/94	REVISED PER HELCO COMMENT	SS
2	10/5/94	REVISED PER HELCO COMMENT	SS
3	7/21/94	REVISED PER HELCO COMMENT	SI
4	3/14/94	REVISED PER DPW COMMENT	
5	2/15/94	REVISED PER DWS & DPW COMMENTS	

RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

ELEC. DISTR. PLAN - 3

Designed by: SS Date: _____
Drawn by: CO Proj. no.: (BCA) 841-0104

Approved: _____ Date: 7/25/94
HAWAII ELECTRIC LIGHT COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

PROJECT NO. 190A-02

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5381 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant: **RONALD N. S. HO & ASSOCIATES, INC.**
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client: **HOUSING FINANCE AND DEVELOPMENT CORPORATION**
STATE OF HAWAII

VILLAGES OF LA'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

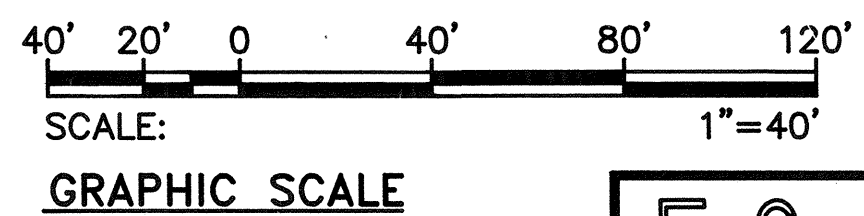
ELEC. DISTR. PLAN - 3

Designed by: SS Date: _____
Drawn by: CO Proj. no.: (BCA) 841-0104

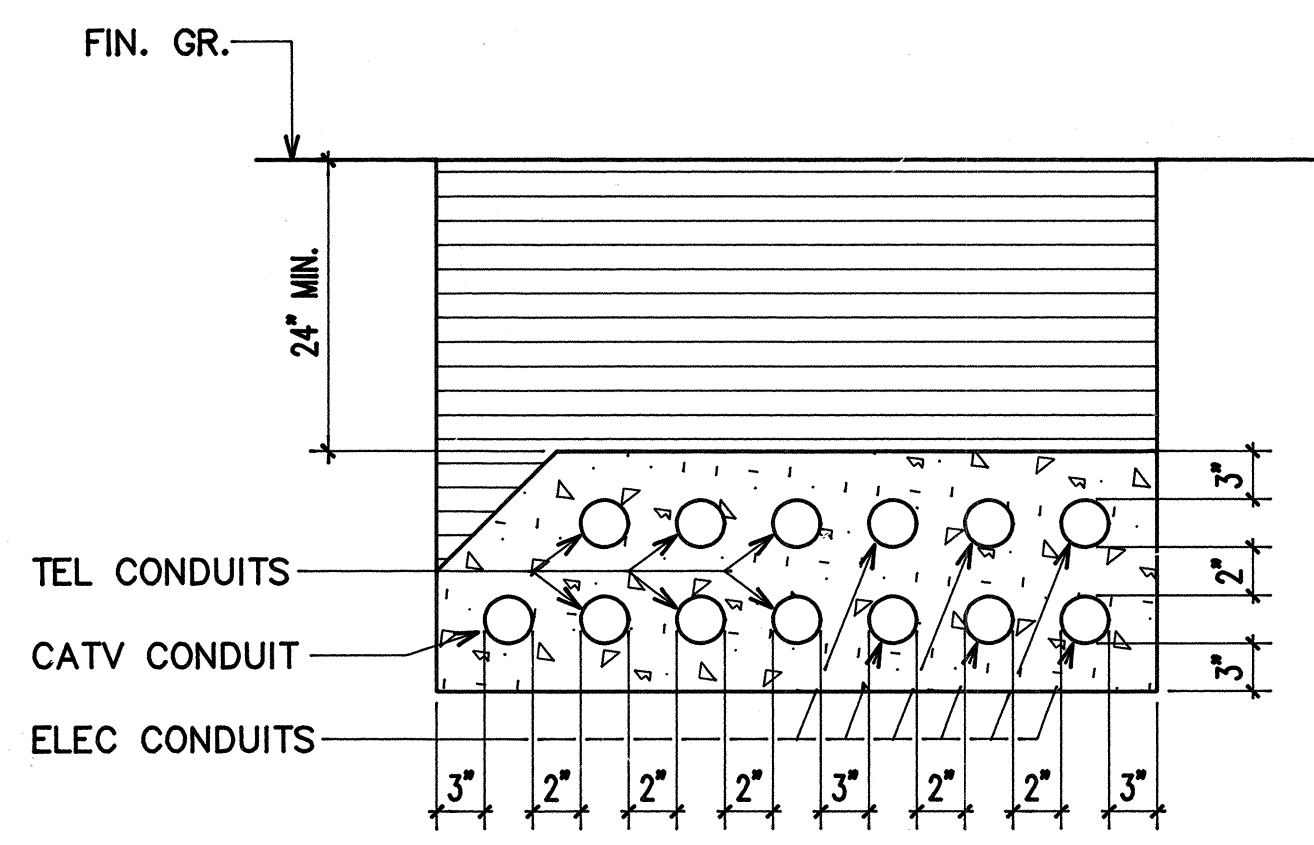
Approved: _____ Date: 7/25/94
HAWAII ELECTRIC LIGHT COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

ELECTRICAL DISTRIBUTION PLAN - 3
SCALE: 1"=40'

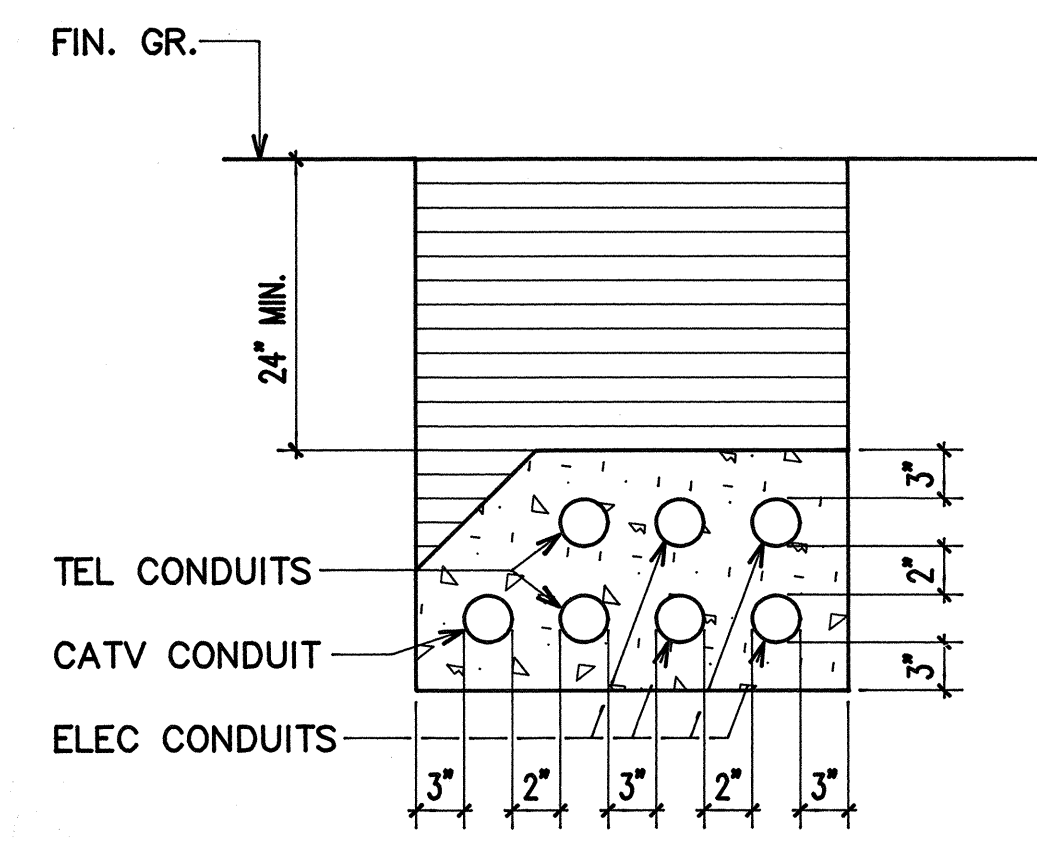


E-6



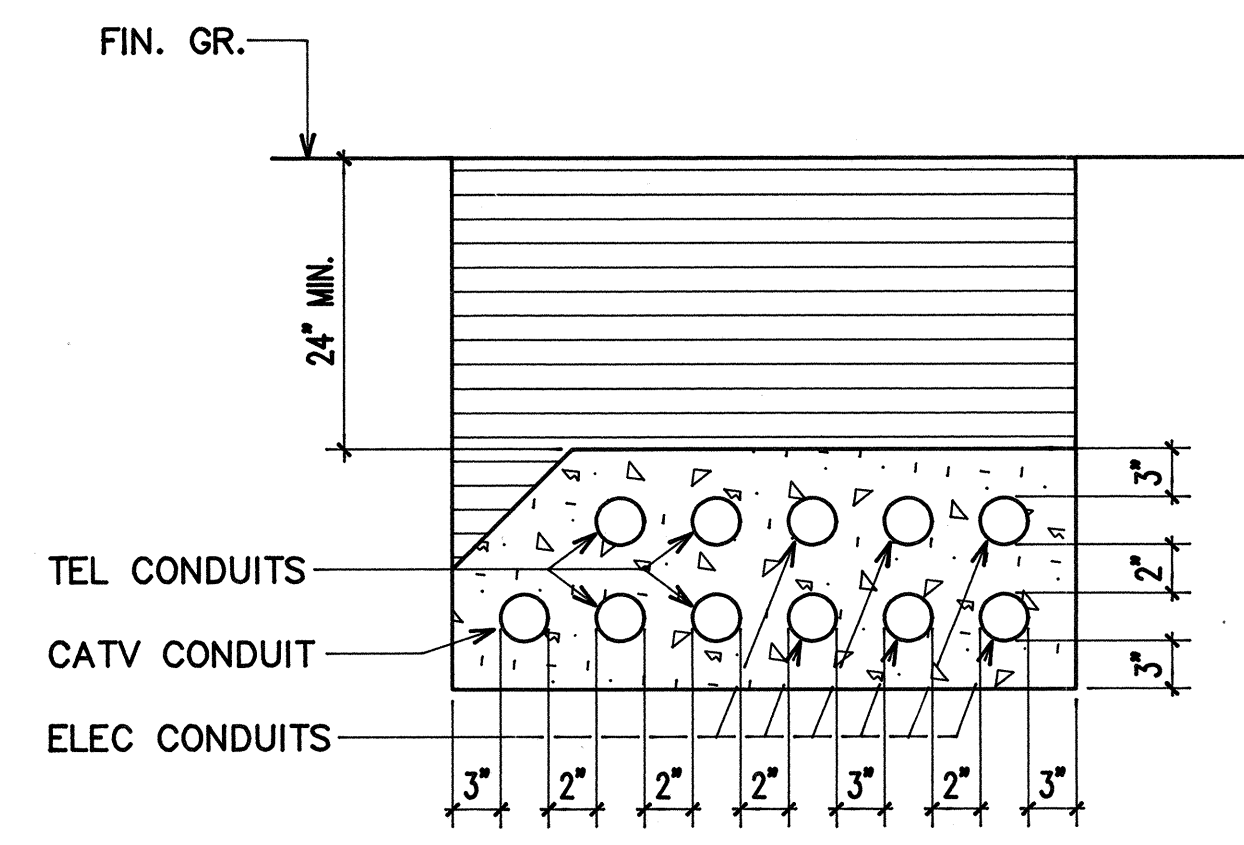
SECTION (A)

SECTION (A1) SIMILAR EXCEPT MIN. COVER OVER CONC. ENCASEMENT SHALL BE 36", SEE STATE BACKFILL NOTES
SECTION (A2) SIMILAR EXCEPT WITH 4-HELCO CONDUITS INSTEAD OF 6-HELCO CONDUITS

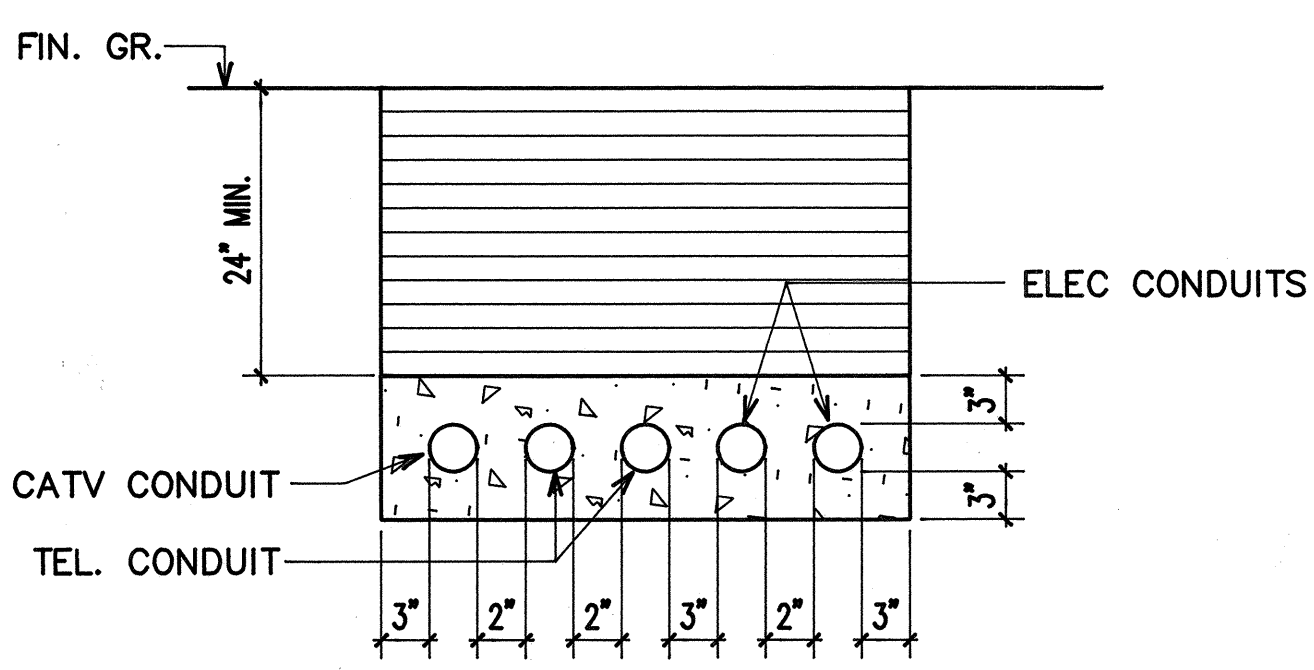


SECTION (B)

SECTION (B1) SIMILAR EXCEPT WITH 2 ADDITIONAL TEL. CONDUITS

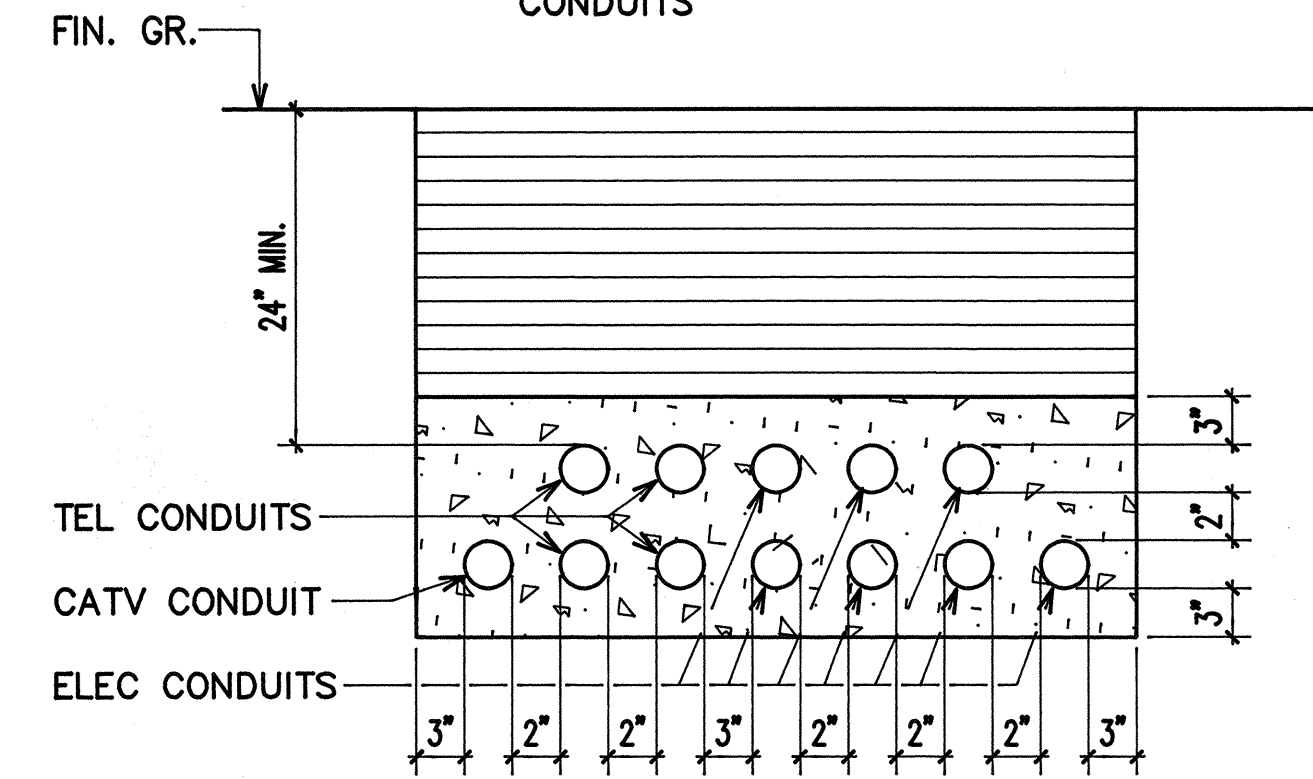


SECTION (C)

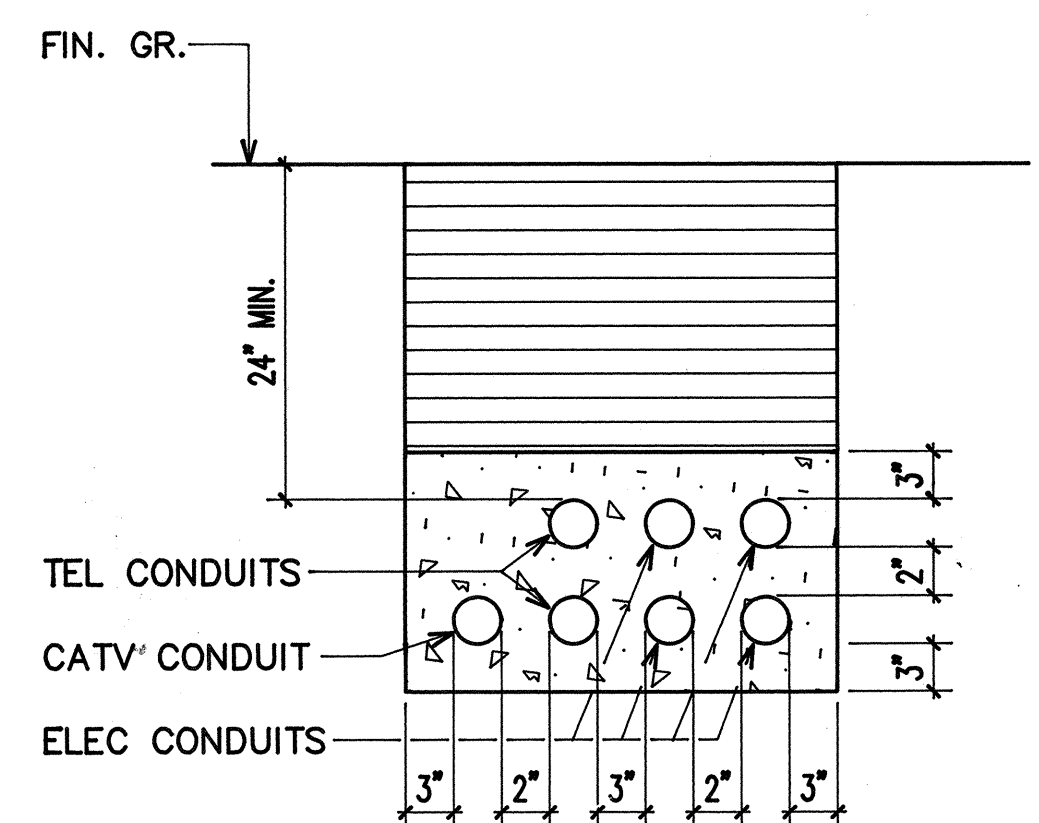


SECTION (D)

SECTION (D1) SIMILAR EXCEPT MIN. COVER OVER CONC. ENCASEMENT SHALL BE 36", SEE STATE BACKFILL NOTES

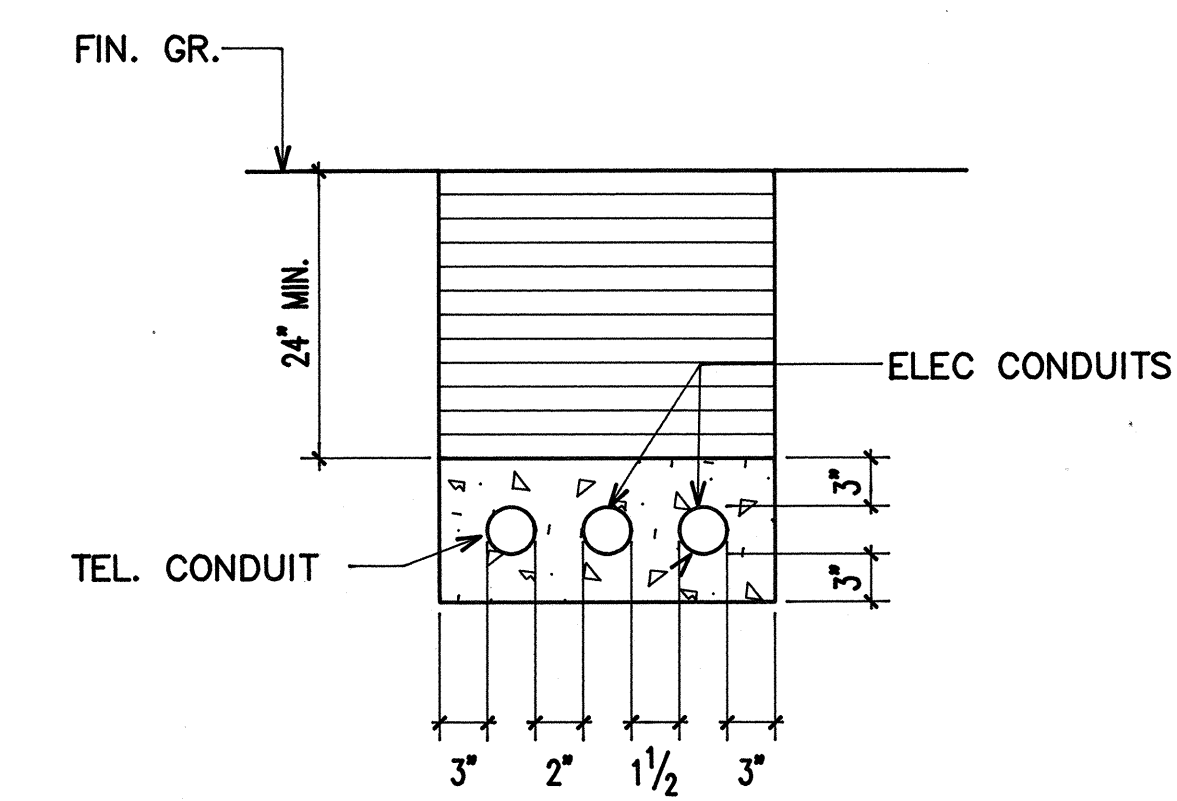


SECTION (E)



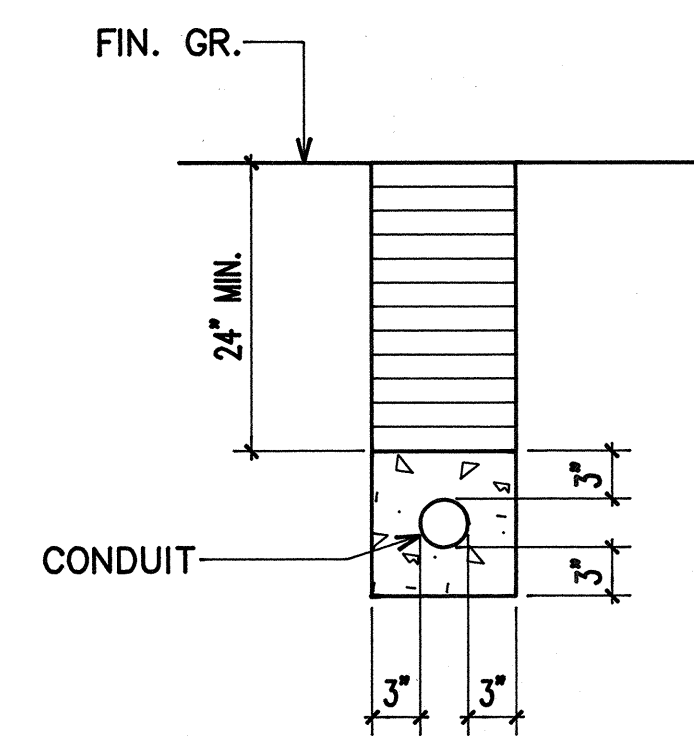
SECTION (F)

SECTION (F1) SIMILAR EXCEPT WITH 6-HELCO CONDUITS
SECTION (F2) SIMILAR EXCEPT WITH 6-HTCO CONDUITS AND 1-CATV CONDUIT AND MIN. COVER OVER CONCRETE ENCASEMENT SHALL BE 36", SEE STATE BACKFILL NOTES



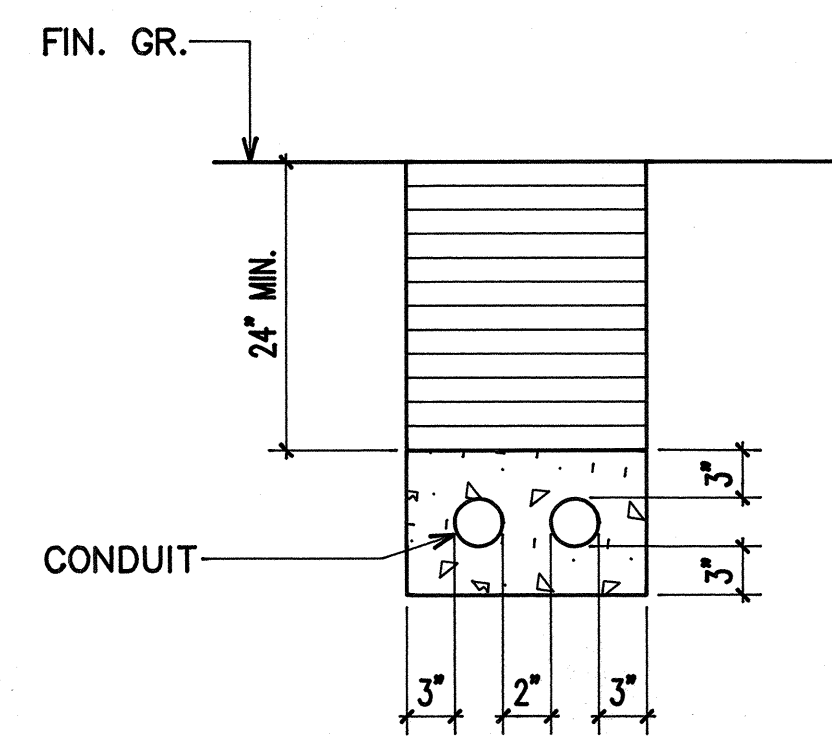
SECTION (G)

SECTION (G1) SIMILAR EXCEPT WITH 2-HTCO CONDUITS AND 1-CATV CONDUIT



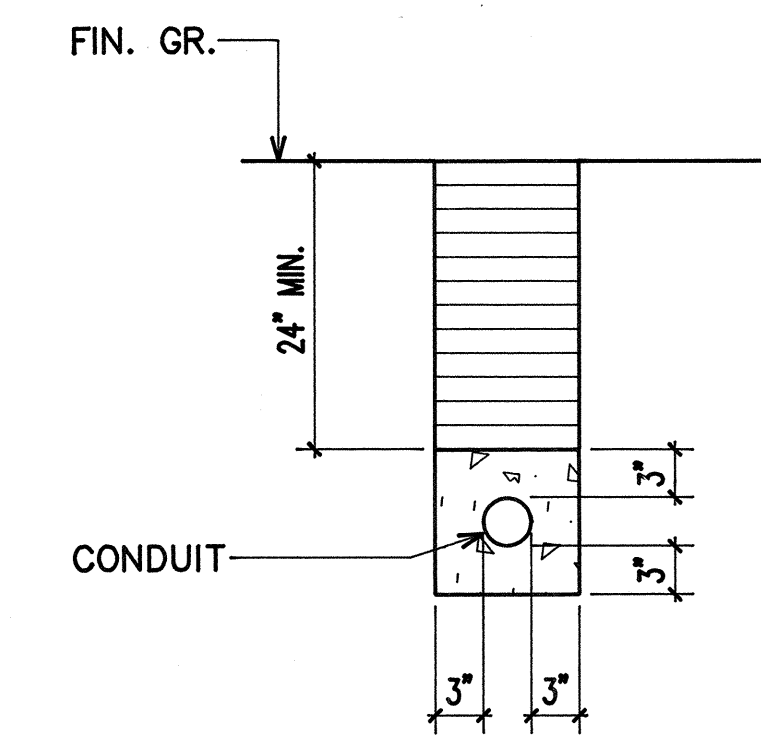
SECTION (H)

SECTION (H1) SIMILAR EXCEPT MIN. COVER OVER CONDUIT SHALL BE 36", SEE STATE BACKFILL NOTES



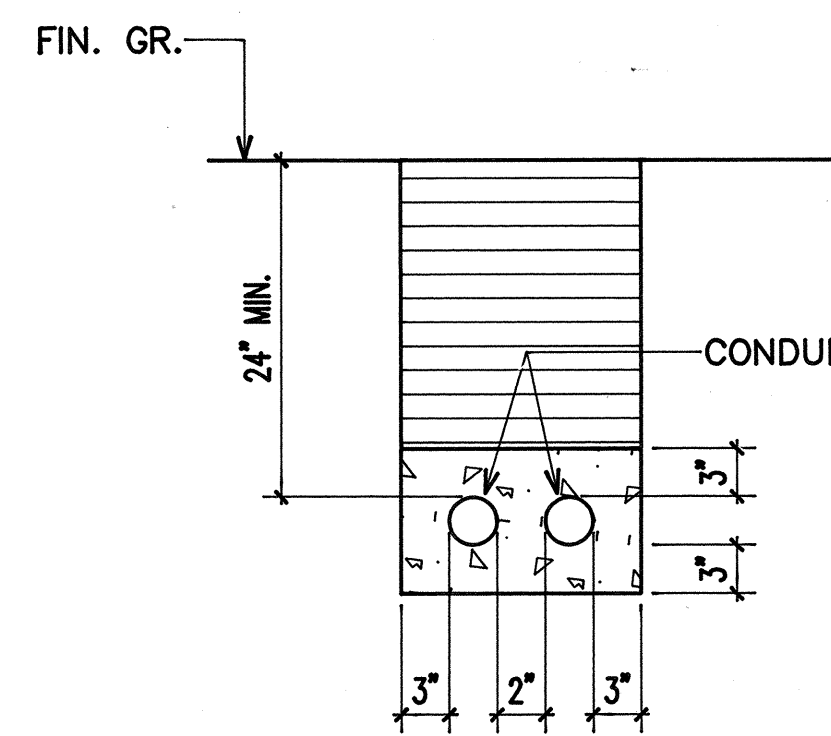
SECTION (I)

SECTION (I1) SIMILAR EXCEPT MIN. COVER OVER CONDUIT SHALL BE 36", SEE STATE BACKFILL NOTES



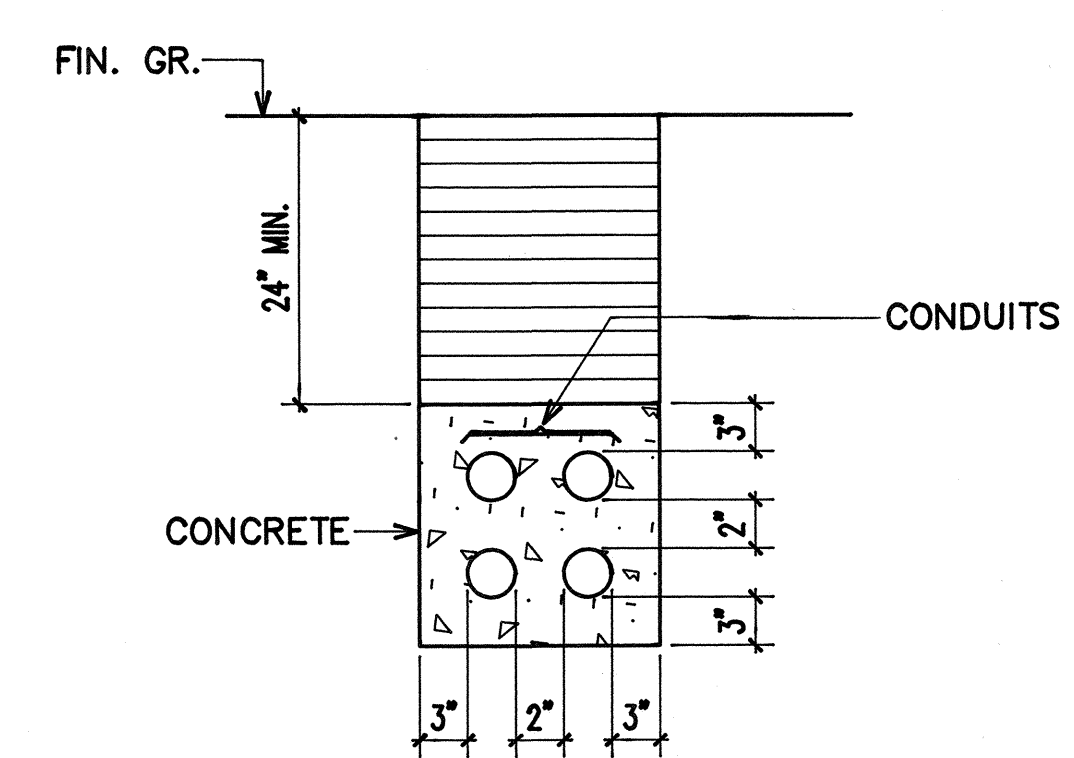
SECTION (J)

SECTION (J1) SIMILAR EXCEPT MIN. COVER OVER CONC. ENCASEMENT SHALL BE 36", SEE STATE BACKFILL NOTES



SECTION (K)

SECTION (K1) SIMILAR EXCEPT WITH 4-2" TRAFFIC SIGNAL CONDUITS



SECTION (L)

SECTION (L1) SIMILAR EXCEPT WITH 5 CONDUITS
SECTION (L2) SIMILAR EXCEPT WITH 6 CONDUITS
SECTION (L3) SIMILAR EXCEPT WITH 7 CONDUITS
SECTION (L4) SIMILAR EXCEPT WITH 8 CONDUITS

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. 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 MIN COMPRESSIVE STRENGTH @ 28 DAYS.

CONDUIT SCHEDULE

ITEM	DESCRIPTION
(2-2)	HELCO 2-2"C.
(3E)	FLASHING BEACON CONDUCTORS BY CUSTOMER 3"C.
(2-4E)	HELCO 2-4"C.
(2-5E)	HELCO 2-5"C.
(4-5E)	HELCO 4-5"C.
(2-4I)	HTCO 2-4"C.
(4-4I)	HTCO 4-4"C.
(6-4I)	HTCO 6-4"C.
(10-4I)	HTCO 10-4"C.
(1SL)	STREET LIGHT 1"C
(1 1/2 SL)	STREET LIGHT 1 1/4"C W/ WIRING
(2SL)	STREET LIGHT 2"C W/ WIRING
(3SL)	STREET LIGHT 3"C W/ WIRING
(4-2S)	TRAFFIC SIGNAL 4-2"C. PVC SCHDL 40
(4V)	CATV 4"C.
(2-4V)	CATV 2-4"C.
(1L)	STATE STREET LIGHT 1"C
(2L)	STATE STREET LIGHT 2"C W/ WIRING
(3L)	STATE STREET LIGHT 3"C W/ WIRING
(2-2L)	STATE STREET LIGHT 2-2"C W/ WIRING

STATE BACKFILL NOTES:

- TRENCH BACKFILL MATERIAL "B"
 1. SAND EQUIVALENT ≥ 2
 2. 8" MAX. LIFT
 3. 95% COMPACTION
- TRENCH BACKFILL MATERIAL "A"
 1. SAND EQUIVALENT ≥ 20
 2. 8" MAX. LIFT
 3. 95% COMPACTION
- CONCRETE - 3" ENCASEMENT, 2500 psi COMPRESSIVE STRENGTH @ 28 DAYS.

PROJECT NO.190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

DUCT SECTIONS

Designed by: SS Date: _____
Drawn by: EDA/CV Proj. no.: (BCA) 841-0104
Approved: _____ Date: 7/25/04
HAWAII ELECTRIC LIGHT COMPANY Date: _____
DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

Rev.	Date	Description	Eng. App.

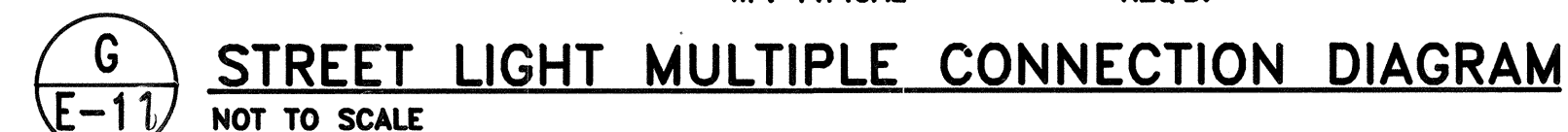
RONALD N. S. HO
REGISTERED PROFESSIONAL ENGINEER
No. 3737-E
HAWAII, U.S.A.
6/5/92


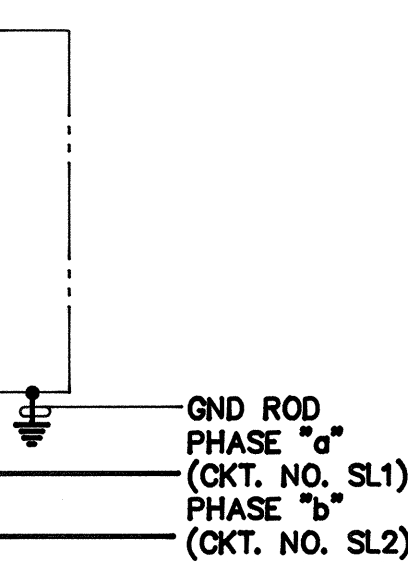
E-10



1. USE 2 PLY PLASTIC - BLACK, WHITE.
2. NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NUMBER AS REQUIRED).
3. NOMENCLATURE SIZE SHALL BE 1/4" HIGH AND ENGRAVED 1/32" WIDE, WHITE IN COLOR (WATTAGE IES DISTRIBUTION AND VOLTAGE AS REQUIRED).
4. ATTACH TO STEEL POLES WITH NO.7 CADMIUM PLATE DRIVE SCREWS.
(a) ATTACH TO ALUMINUM POLE WITH NO.7 ALUMINUM DRIVE SCREWS.
5. USE "H" FOR MERCURY VAPOR AND "N" FOR SODIUM LAMPS

STREET LIGHT I.D. TAG DETAIL
NOT TO SCALE



1. NO CHANGES WILL BE ALLOWED WITHOUT PRIOR APPROVAL FROM TRAFFIC DIVISION.
2. ALL STREET LIGHT IDENTIFICATION TAG NUMBERING FOR METAL POLES SHALL START WITH "1" AND CONTINUE NUMERICALLY FOR EACH STREET IN THE SUBDIVISION. ALL STREET LIGHT I.D. TAG NUMBERING FOR WOODEN POLES SHALL BE IN ACCORDANCE WITH HELCO'S NUMBERING SYSTEM.
3. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY SECONDARY CIRCUIT EXTENSIONS TO THE NEAREST HELCO SECONDARY.
4. IF THE STREET LIGHTS ARE INSTALLED BEFORE HELCO INSTALLS THEIR SECONDARY, THE CONTRACTOR IS RESPONSIBLE FOR COORDINATION AND INFORMING HELCO OF STREET LIGHT LOCATIONS AND POLE CONTACTS.
5. THE CONTRACTOR SHALL ARRANGE AND ASSUME COSTS TO ENERGIZE STREET LIGHTS A MINIMUM OF 6 HOURS FOR FINAL INSPECTION.
6. THE CONTRACTOR SHALL INSCRIBE THE MONTH AND YEAR OF INSTALLATION OF PHOTOCELLS AND LAMPS. ALL P.E.'S SHALL HAVE THE NORTH INDEX FACING NORTH.
7. ALL LABOR AND MATERIALS SHALL BE WARRANTED FOR A MINIMUM OF ONE YEAR FROM THE DATE OF DEDICATION TO THE COUNTY.
8. ACCEPTABLE STREET LIGHT MATERIALS:
- LUMINAIRES:
WITH P.E. RECEPTACLE AND 120-240 VOLT HPF BALLAST
1) AMERICAN ELECTRIC SRX 55, SP II 90, SP II 135 & SP II 180
- PHOTOCELLS:
COMPLETELY SOLID STATE. FAIL "OFF".
1) ALR SST PV
- ALUMINUM POLES:
INTERNALLY MOUNTED VIBRATION DAMPER, MINIMUM 0.188 WALL THICKNESS. MUST BE APPROVED BY F.H.W.A. TO BE IN COMPLIANCE WITH AUGUST 1985 AMENDED AND ADOPTED AASHTO SPECIFICATIONS. 11 TO 12 INCH BOLT CIRCLE. ARM LENGTHS SHALL BE PER PLANS
1) LEXINGTON 2708-45806T4-VD OR APPROVED EQUAL
- TRANSFORMER BASES: 
ALUMINUM WITH 15 INCH BASE BOLT CIRCLE. MUST BE APPROVED BY F.H.W.A. TO BE IN COMPLIANCE WITH AUGUST 1985 AMENDED AND APPROVED AASHTO BREAKAWAY SPECIFICATIONS.
1) LEXINGTON 08R-1315L-17 OR APPROVED EQUAL.
9. A SCALED DRAWING OF STREET LIGHT LOCATIONS (PREFER ON ONE SHEET) AND DETAILS OF FIXTURE MOUNTING, LUMINAIRE TYPE, ARM LENGTH IDENTIFICATION TAGS (AND CIRCUITS, FOUNDATION, BASE, AND POLE IF UNDERGROUND) SHALL BE SUBMITTED TO THE TRAFFIC DIVISION AFTER PLAN APPROVAL AND BEFORE CONSTRUCTION BEGINS.
10. IF STREET LIGHTS ARE INSTALLED ON EXISTING UTILITY POLES, A SKETCH OF THE PROPOSED INSTALLATION(S) INDICATING POLE HEIGHT, CONTACT HEIGHTS OF HTCO, CATV, NEUTRALS, SECONDARY, PRIMARY AND STREET LIGHT, AS APPLICABLE, SHALL BE SUBMITTED TO TRAFFIC DIVISIONS IMMEDIATELY AFTER PLAN APPROVAL, BUT BEFORE CONSTRUCTION, WITH A LETTER CONFIRMING THAT THE JOINT POLE SHARE WILL BE PAID FOR BY THE DEVELOPER.
11. SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL BY TRAFFIC DIVISION.
12. WHEN STREET LIGHTS ARE INSTALLED ON ROADWAYS UNDER STATE JURISDICTION, THE DEVELOPER SHALL SUBMIT PLANS TO THE STATE D.O.T. FOR APPROVAL
13. ALL OVERHEAD WIRING STREET LIGHT FIXTURES SHALL BE BONDED TO THE NEUTRAL WIRE. ALL BONDED STREET LIGHT FIXTURES SHALL HAVE A 2" X 2" REFLECTORIZED GREEN STICKER PLACED AT THE BASE OF THE WIRE OPENING ON ALUMINUM ARM SIGNIFYING THAT STREET LIGHTS ARE BONDED.
14. ALL UNDERGROUND WIRING STREET LIGHTS SHALL BE GROUNDED TO PROVIDE A MINIMUM OF 25 OHMS TO GROUND.
- PROJECT NO 190A-02-92
- 

PROJECT NO. 190A-02-92

B BELT COLLINS & ASSOCIATES

Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
 **RONALD N. S. HO & ASSOCIATES, INC.**
Electrical Engineers
2138 Algaloba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2848

Client:
**HOUSING FINANCE AND
DEVELOPMENT CORPORATION
STATE OF HAWAII**

VILLAGES OF LA'I'OPUA

STREET LIGHT DETAILS

Designed by: SS Date: _____
 Drawn by: EDA/CV Proj. no.: (BCA) 841-0104

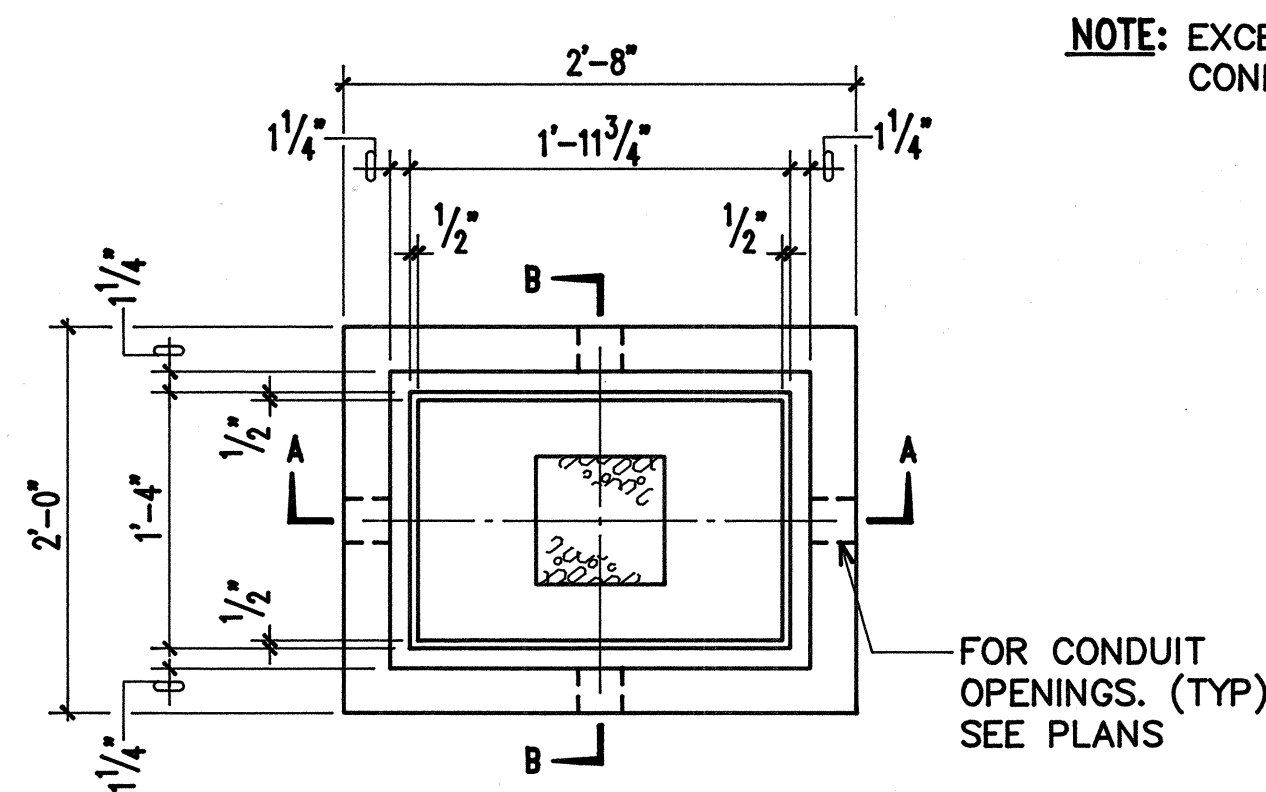
Approved:  7/25/94  1-7-24

HAWAII ELECTRIC LIGHT COMPANY	Date:	HAWAIIAN TELEPHONE COMPANY	Date:
DEPARTMENT OF PLANNING	Date:	DEPARTMENT OF PUBLIC WORKS	Date:

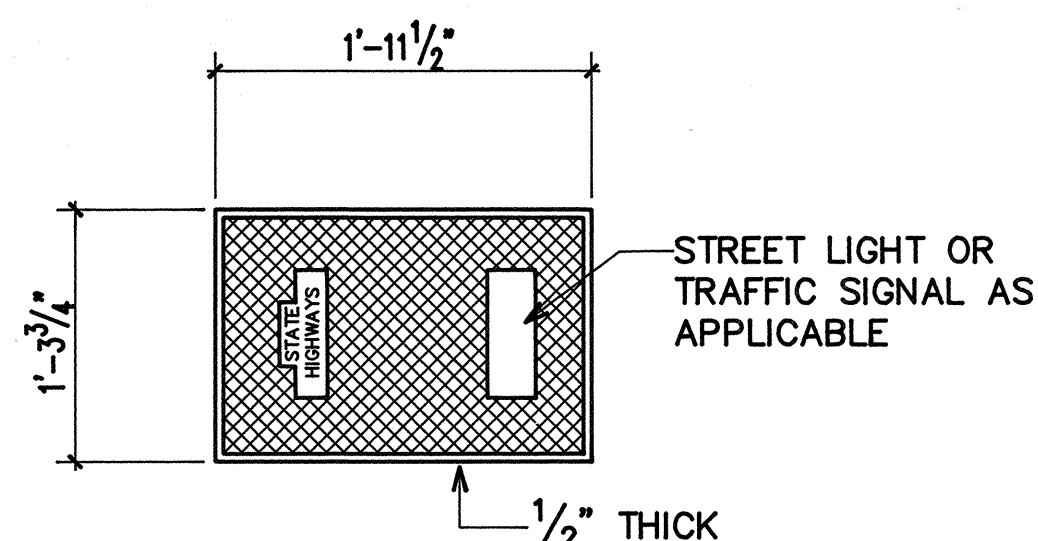
E-11

RECORD DRAWINGS

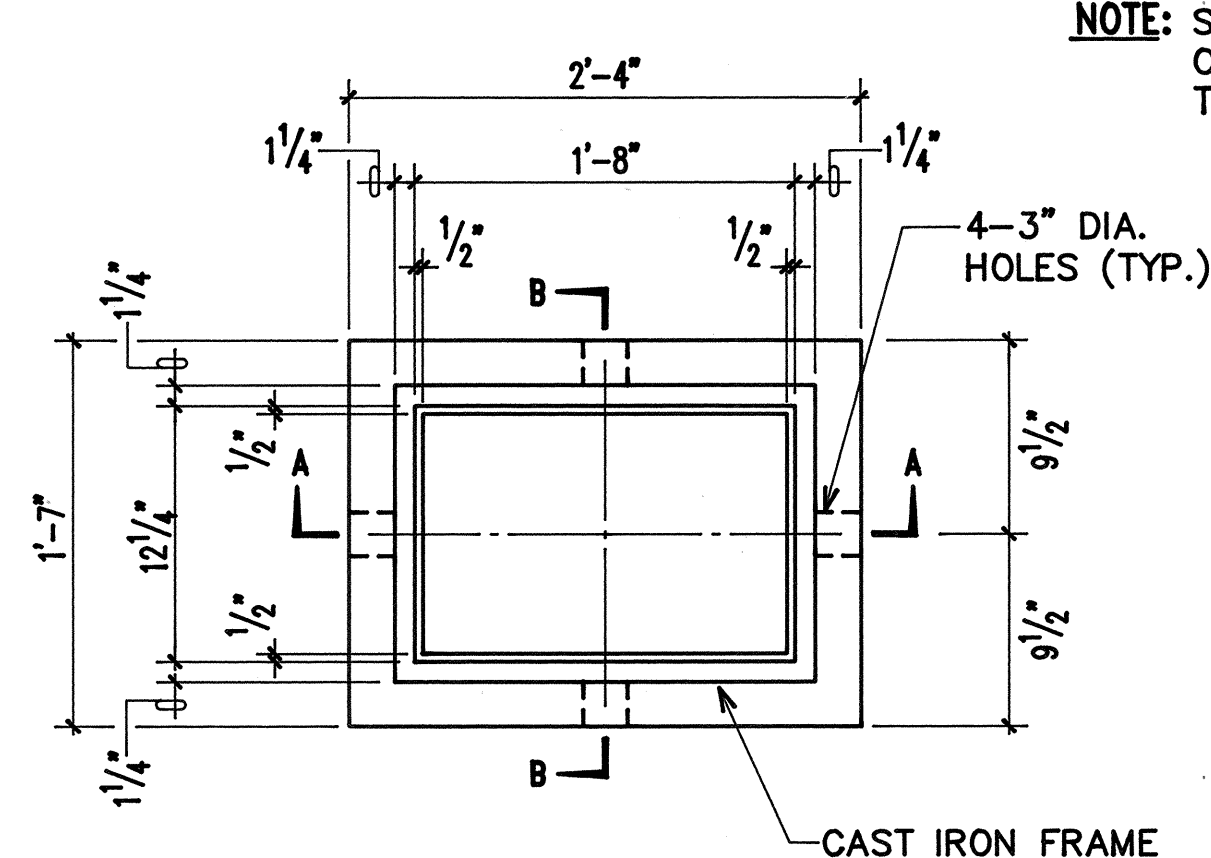
SHEET E-11 of 111 Sheets



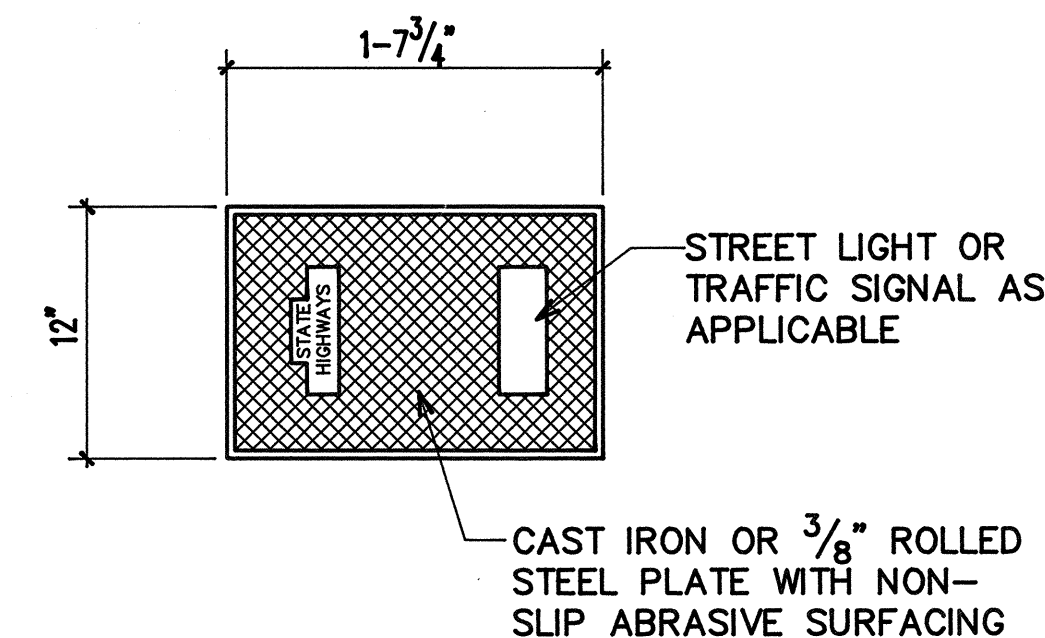
PLAN



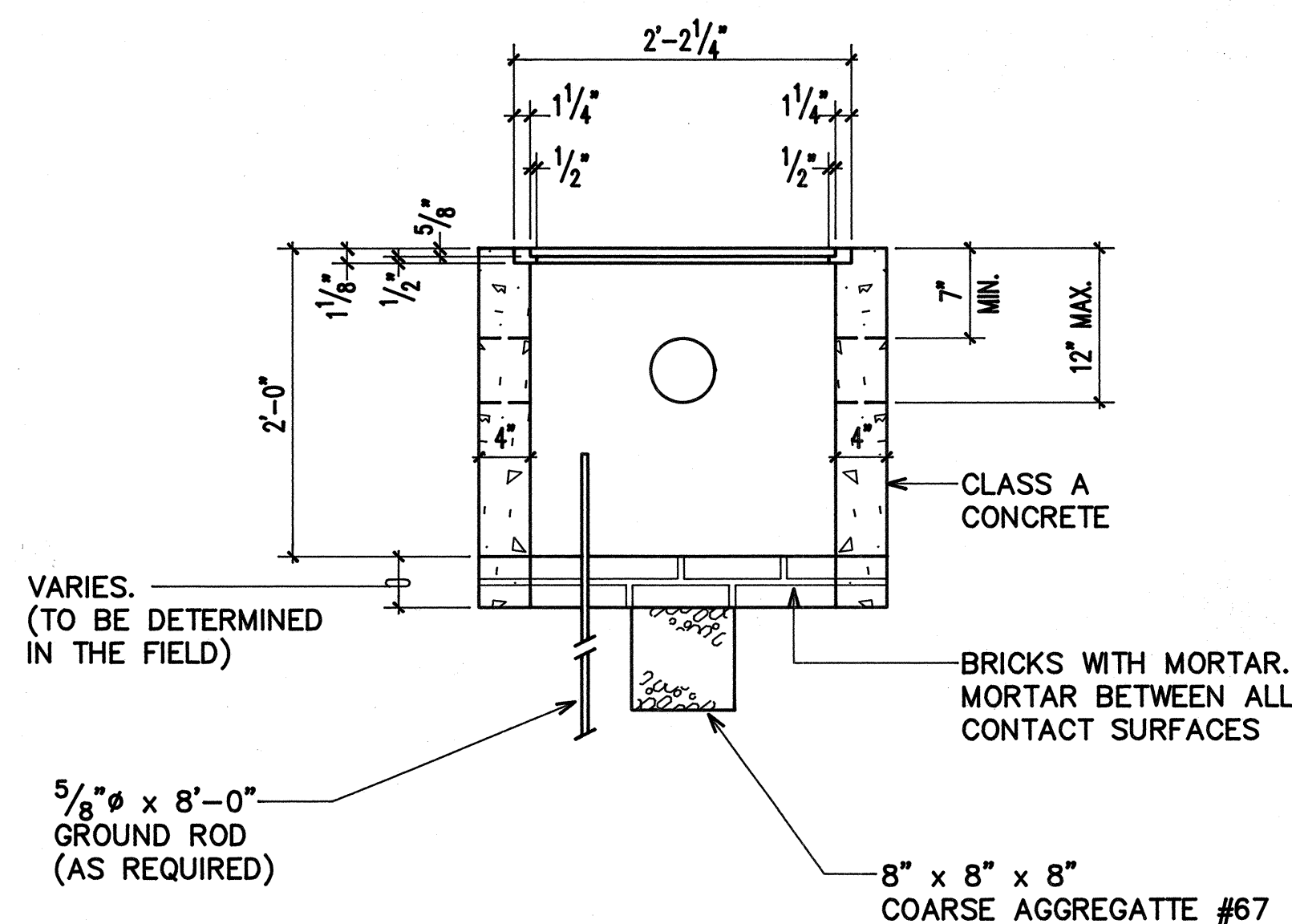
PLAN OF COVER



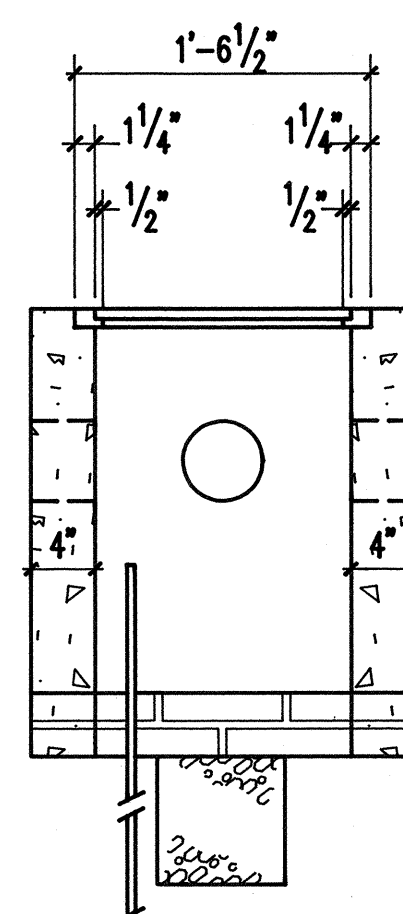
PLAN



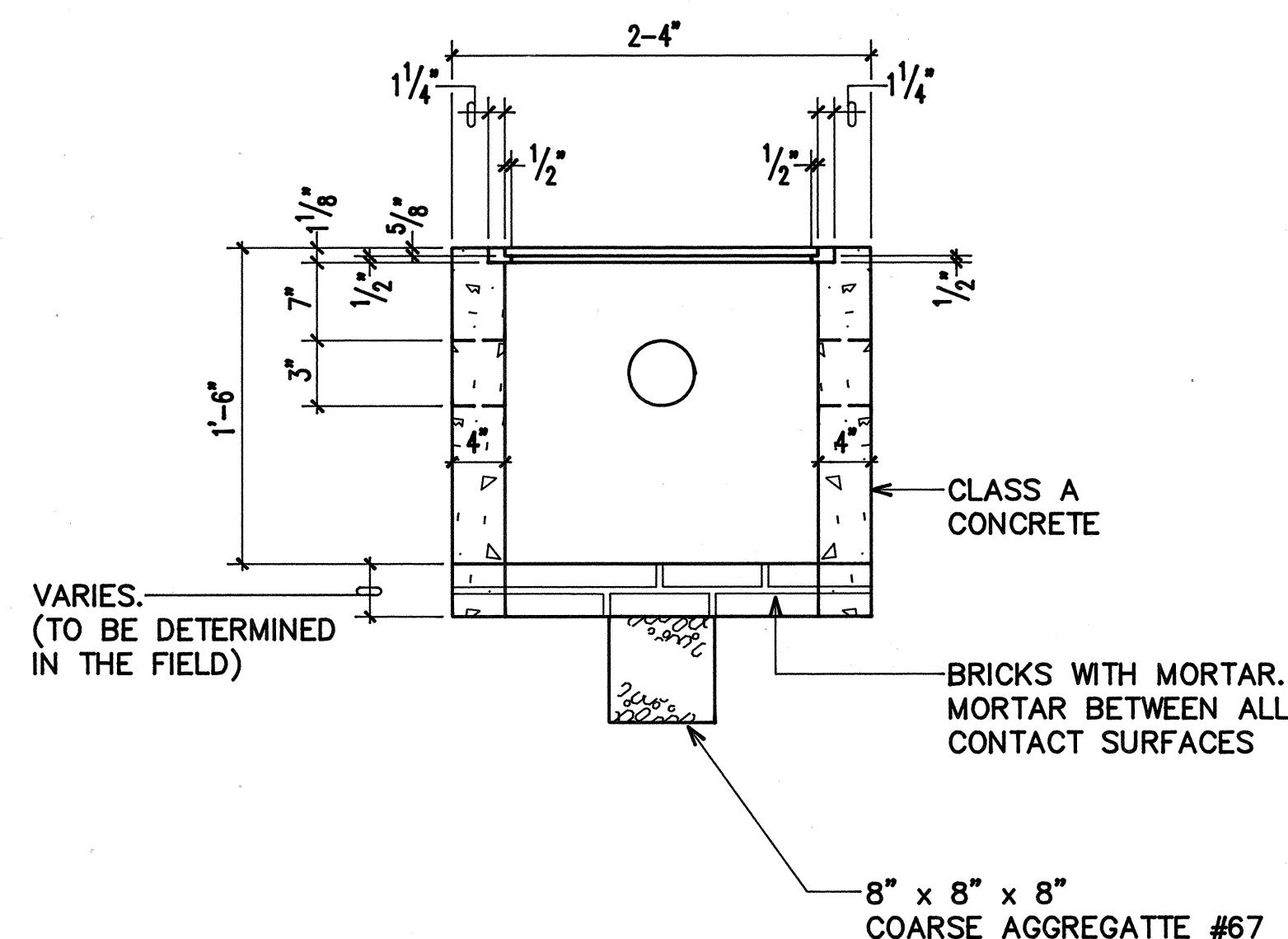
PLAN OF COVER



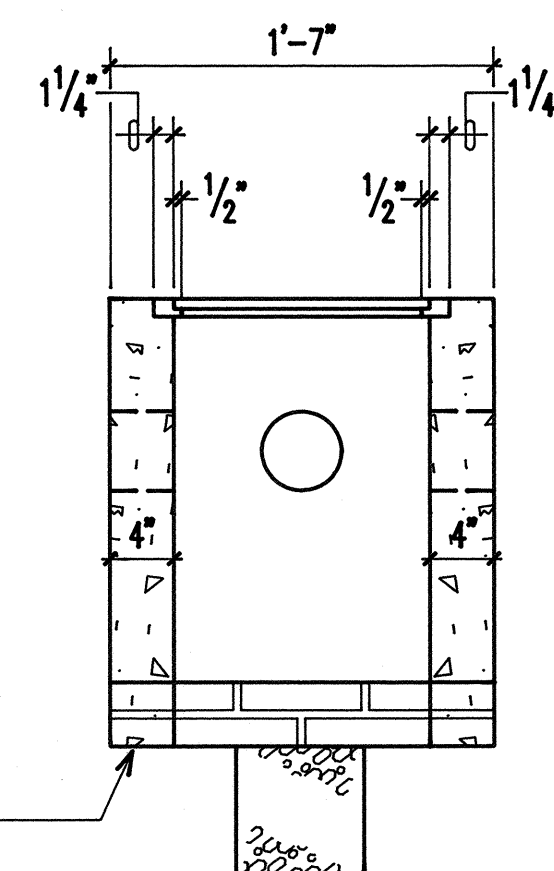
SECTION A-A



SECTION B-B



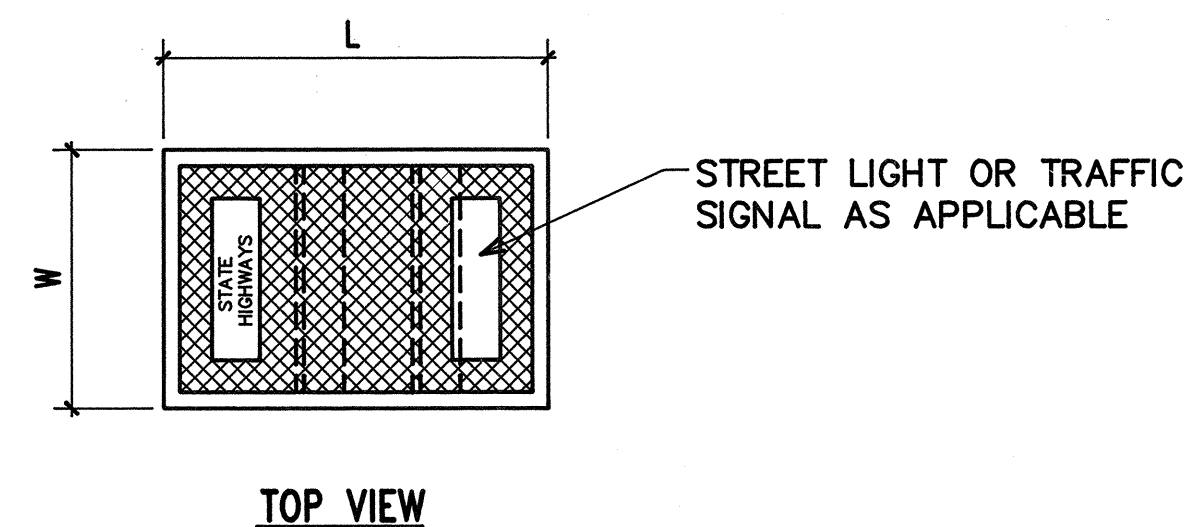
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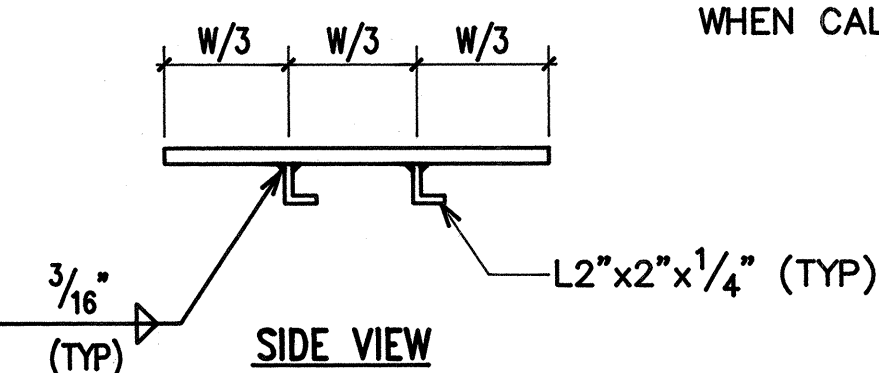
SECTION B-B

A
E-13 TYPE "A" PULLBOX
NOT TO SCALE

B
E-13 TYPE "B" PULLBOX
NOT TO SCALE



TOP VIEW



SIDE VIEW

NOTE:
HOT DIP GALVANIZE AFTER FABRICATION.
MODIFIED COVER SHALL BE FURNISHED
WHEN CALLED FOR ON PLANS.

C
E-13 MODIFIED COVER DETAIL
NOT TO SCALE

Rev.	Date	Description	Eng. App.

RONALD N. S. HO
REGISTERED PROFESSIONAL ENGINEER
No. 3737-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

9/5/92

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
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Consultant:
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Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2848

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

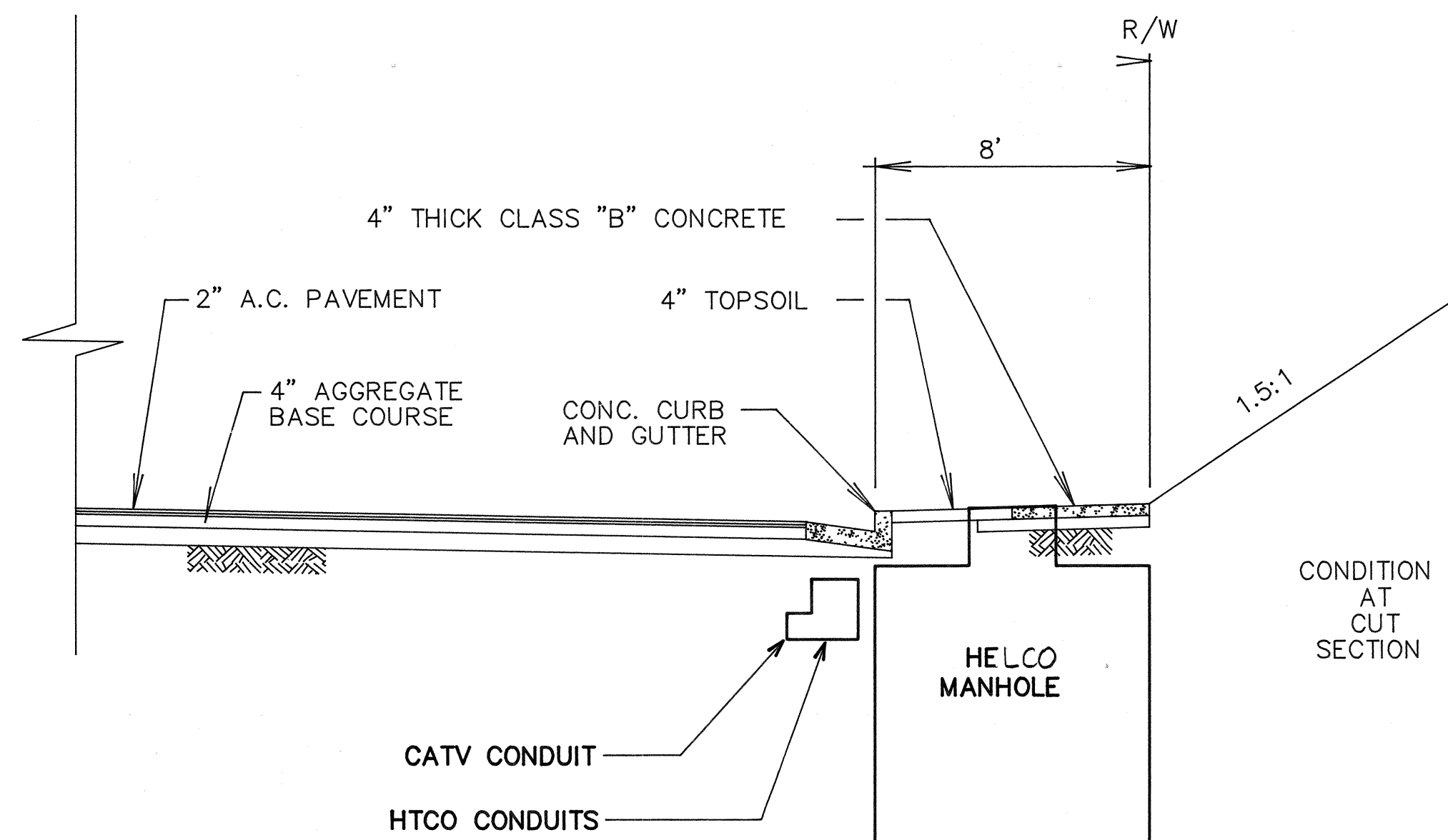
PULLBOX DETAILS

Designed by: SS Date: _____
Drawn by: EDA Date: _____
Approved: _____ Date: _____
HAWAII ELECTRIC LIGHT COMPANY Date: _____
DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

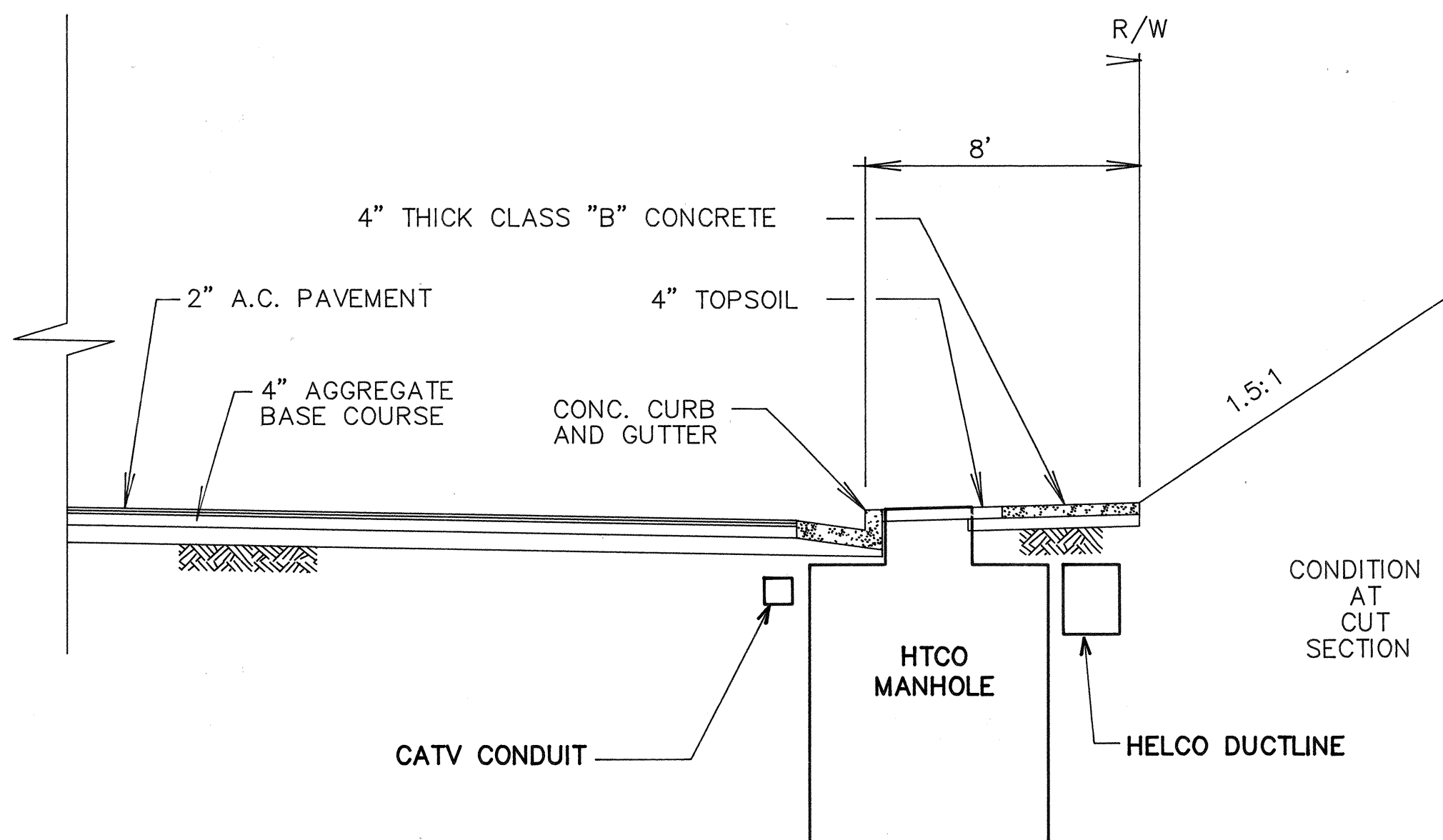
E-13

RECORD DRAWINGS

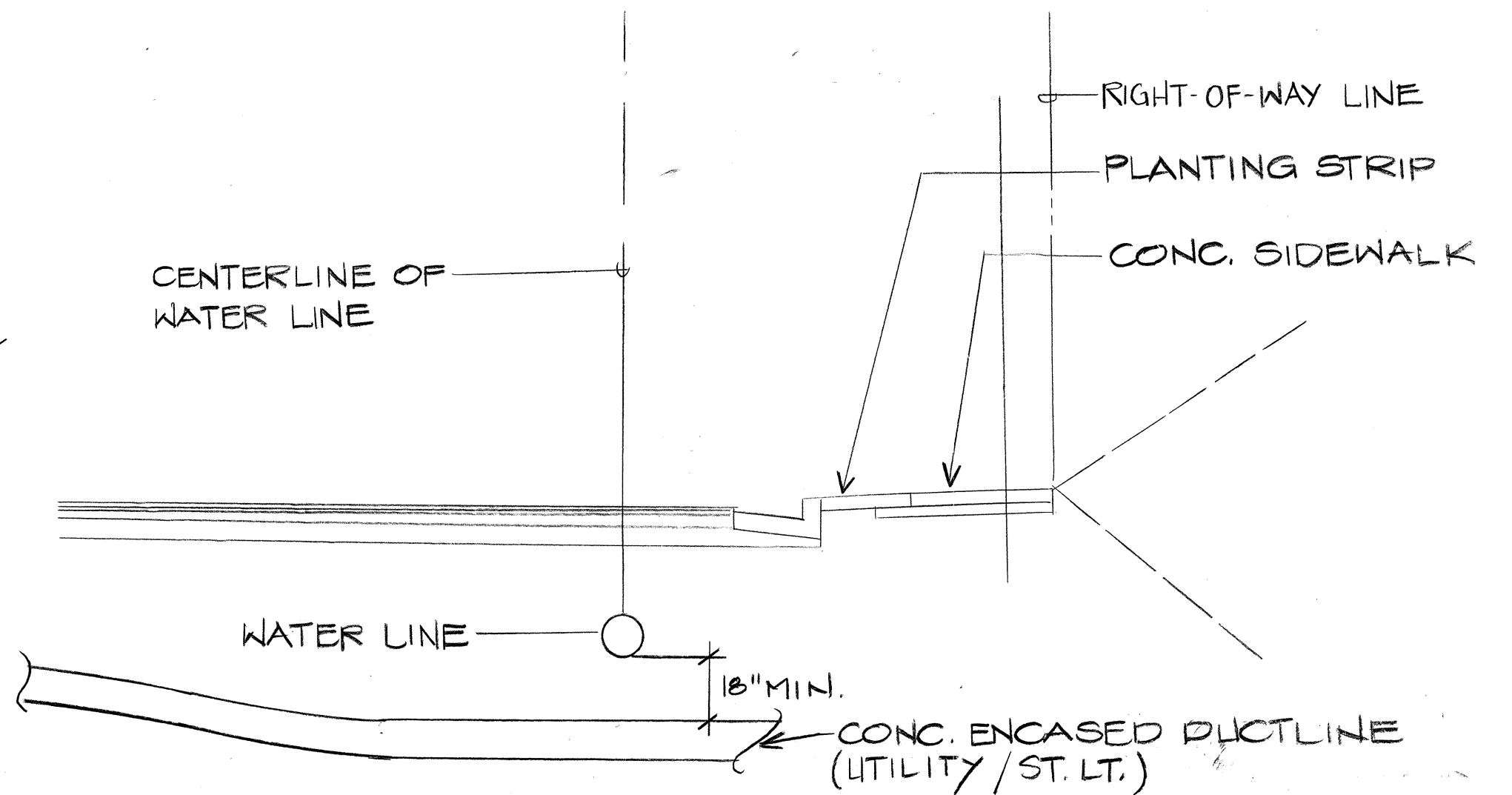
SHEET E-13 of 111 Sheets



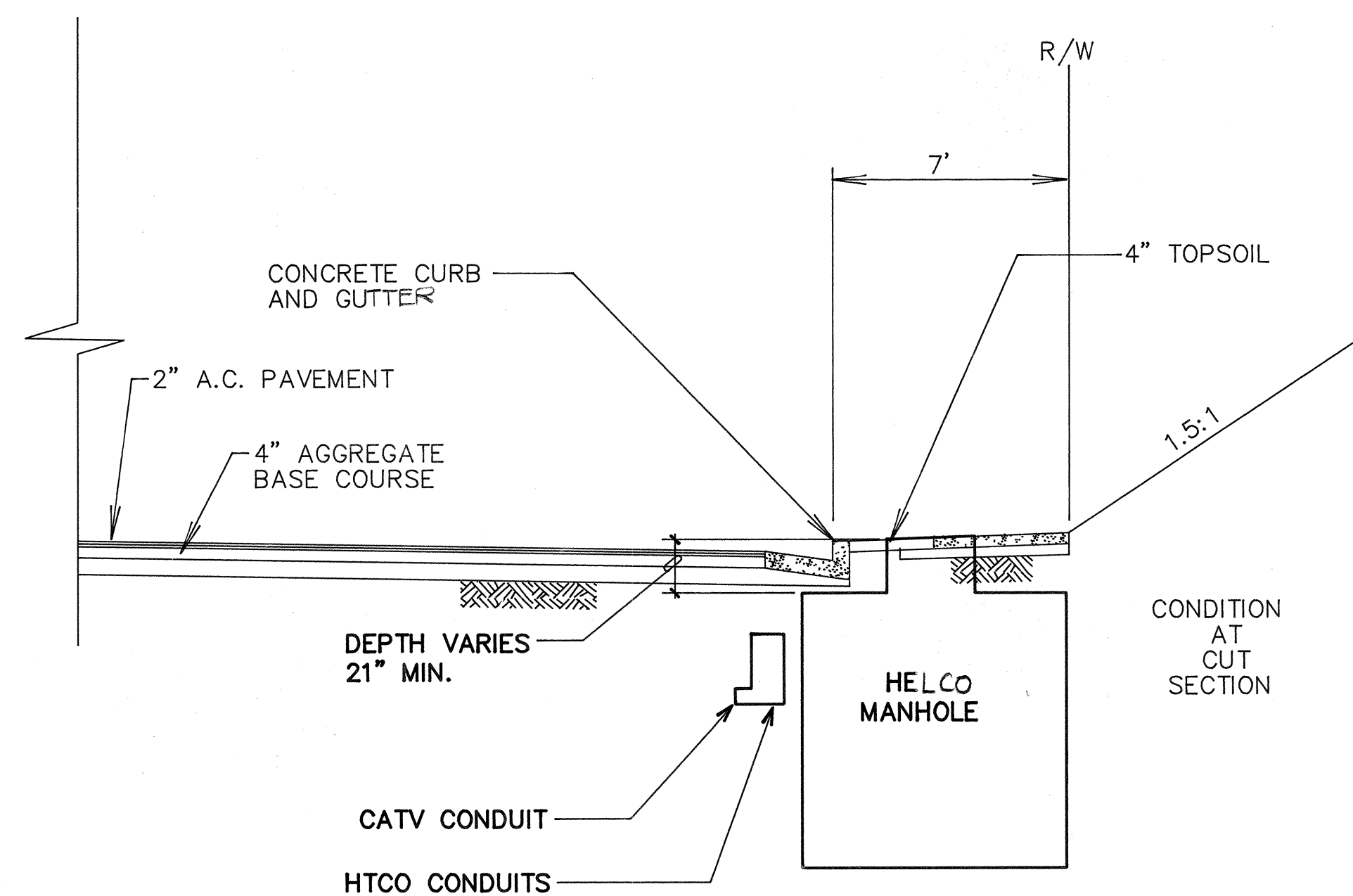
ROAD "A" - TYPICAL SECTION @ HELCO MANHOLE
SCALE: 1/4"=1'-0" (PROCEEDING UP STATION)



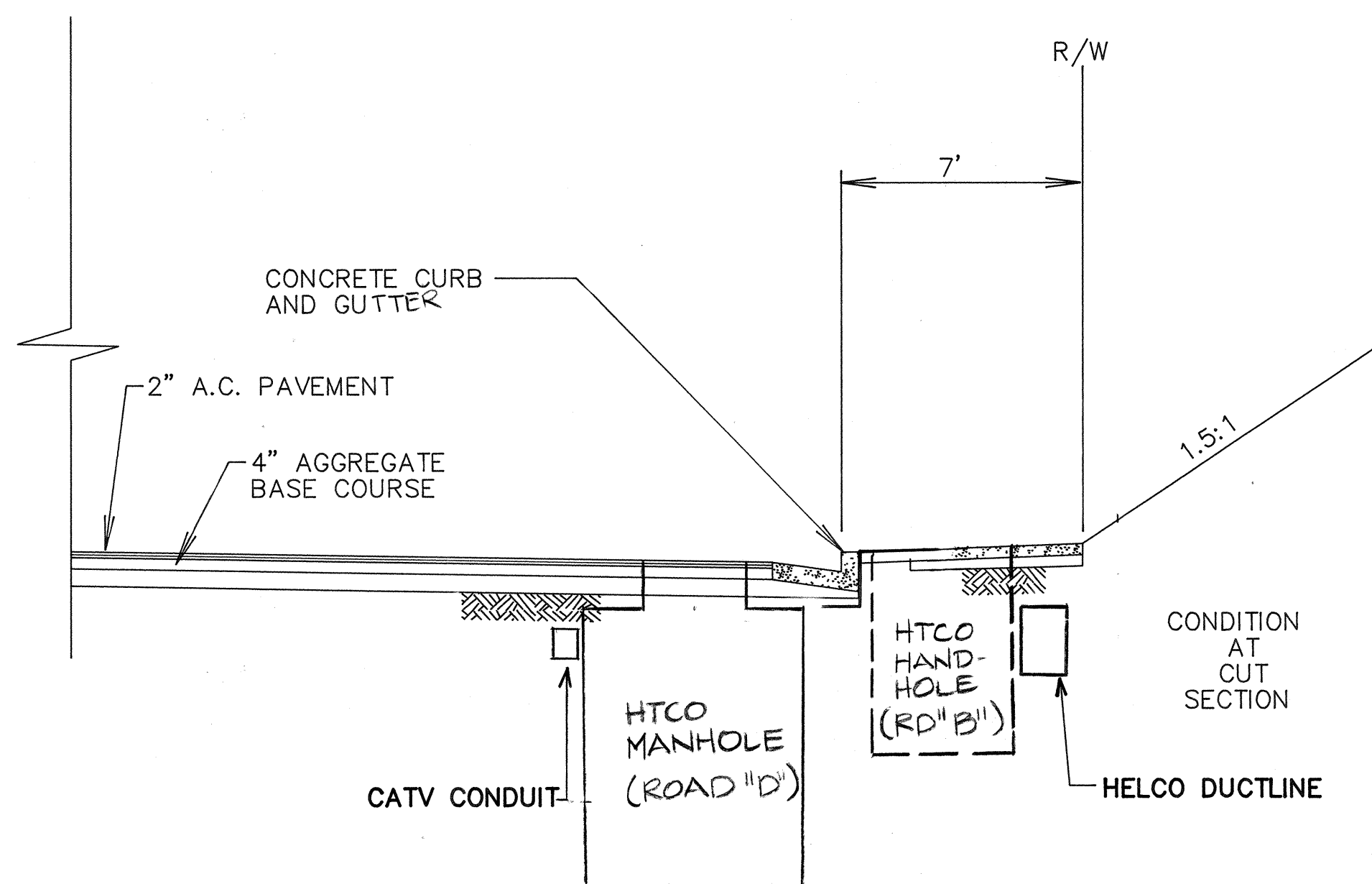
ROAD "A" - TYPICAL SECTION @ HTCO MANHOLE
SCALE: 1/4"=1'-0" (PROCEEDING UP STATION)



A TYPICAL ROAD SECTION @ WATER LINE
E-14



ROAD "B" & "D" - TYPICAL SECTION @ HELCO MANHOLE
SCALE: 1/4"=1'-0" (ROAD "B" - PROCEEDING DOWN STATION)
(ROAD "D" - PROCEEDING UP STATION)



ROAD "B" & "D" - TYPICAL SECTION @ HTCO MANHOLE/HANDHOLE
SCALE: 1/4"=1'-0" (ROAD "B" - PROCEEDING DOWN STATION)
(ROAD "D" - PROCEEDING UP STATION)

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard, Suite 200 Honolulu, Hawaii 96813
Phone: (808)821-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

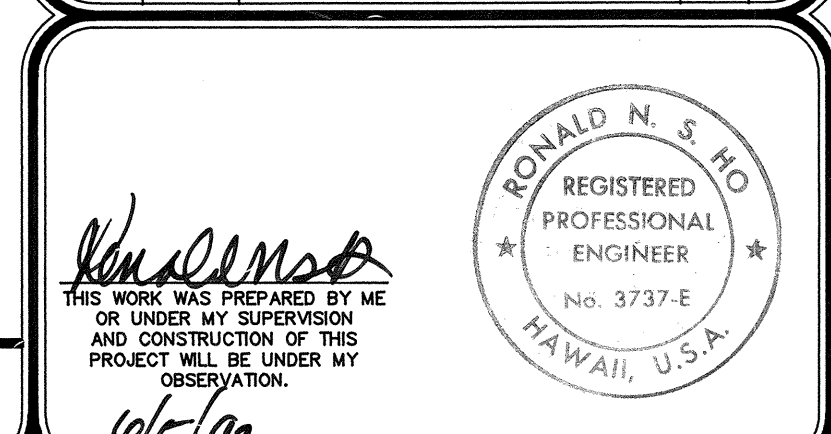
ROAD SECTIONS

Designed by: **SS** Date: _____
Drawn by: **CV** Proj. no.: **(BCA) 841-0104**

Approved: _____ Date: _____
HAWAII ELECTRIC LIGHT COMPANY Date: _____
HAWAII TELEPHONE COMPANY Date: _____

DEPARTMENT OF PLANNING Date: _____
DEPARTMENT OF PUBLIC WORKS Date: _____

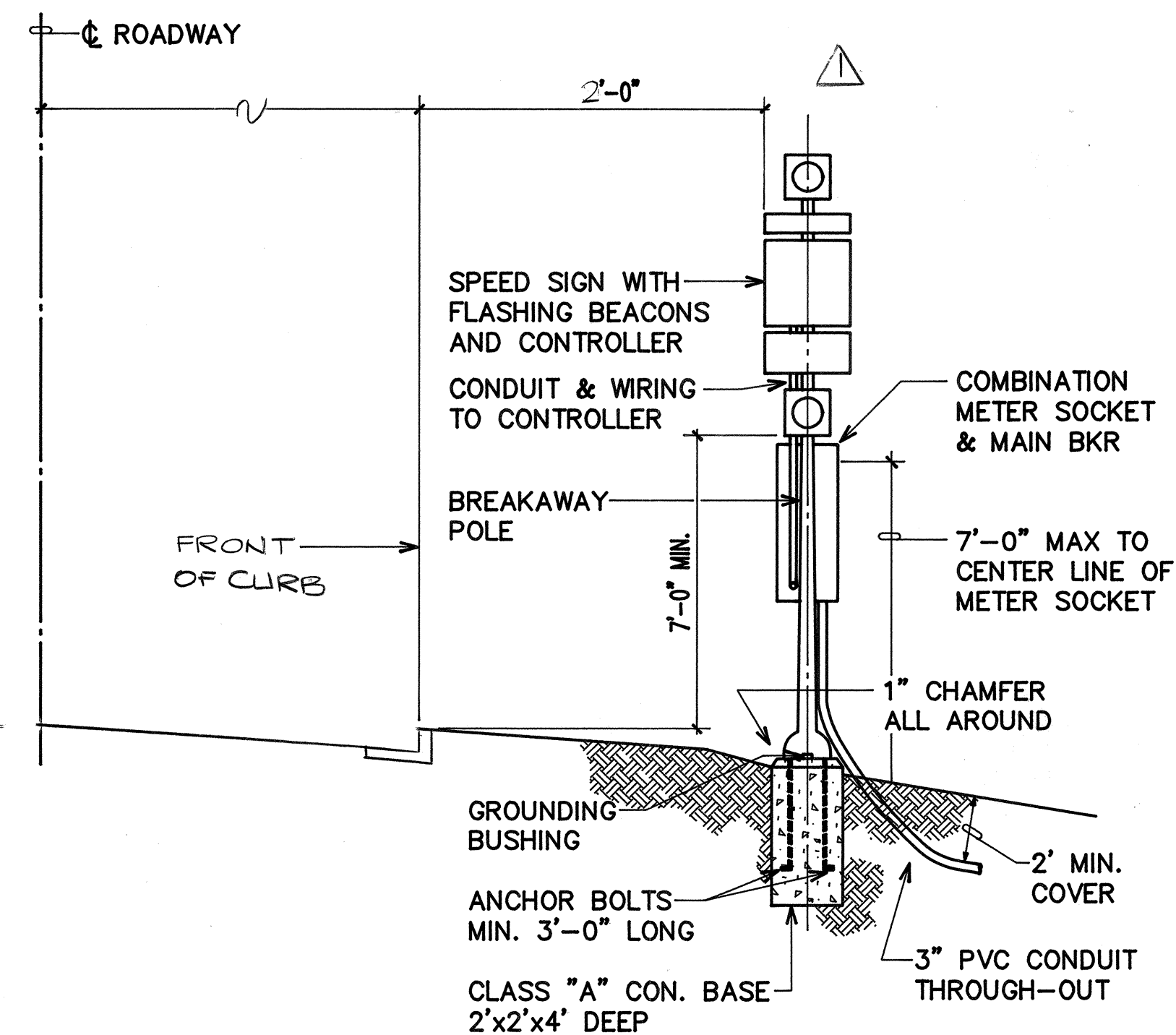
Rev.	Date	Description	Eng. App.



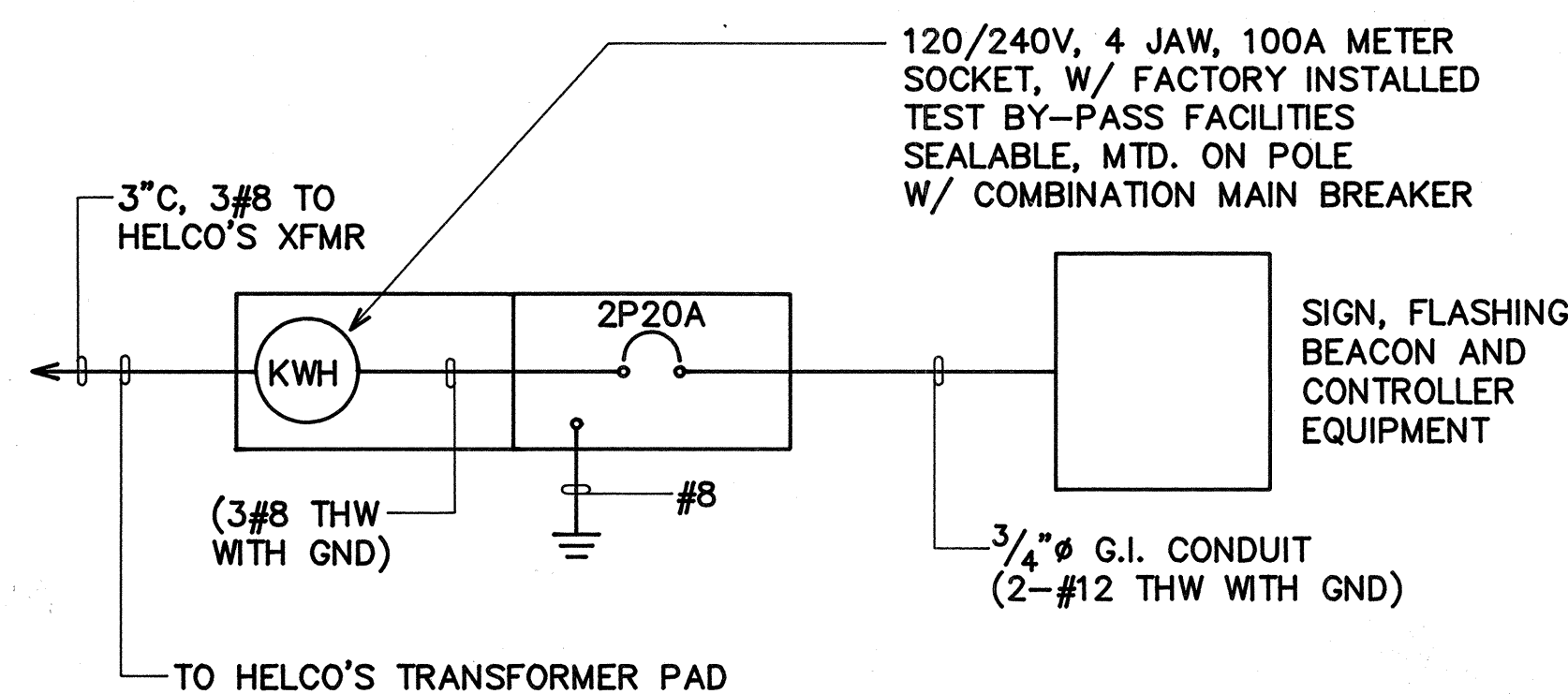
E-14

RECORD DRAWINGS

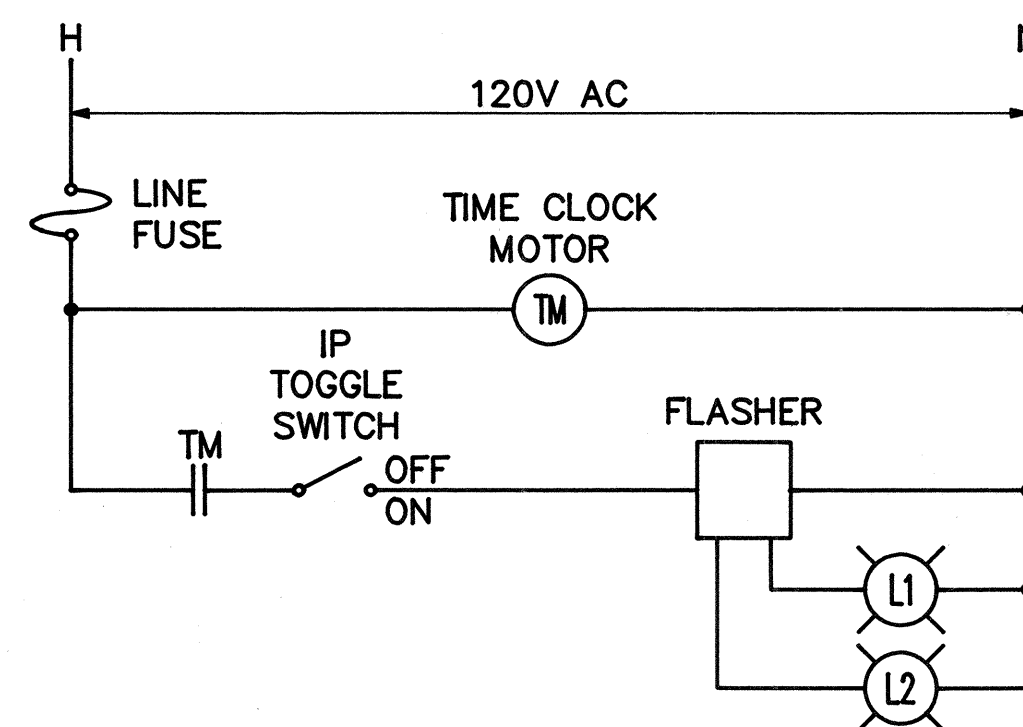
SHEET E-14 of 111 Sheets



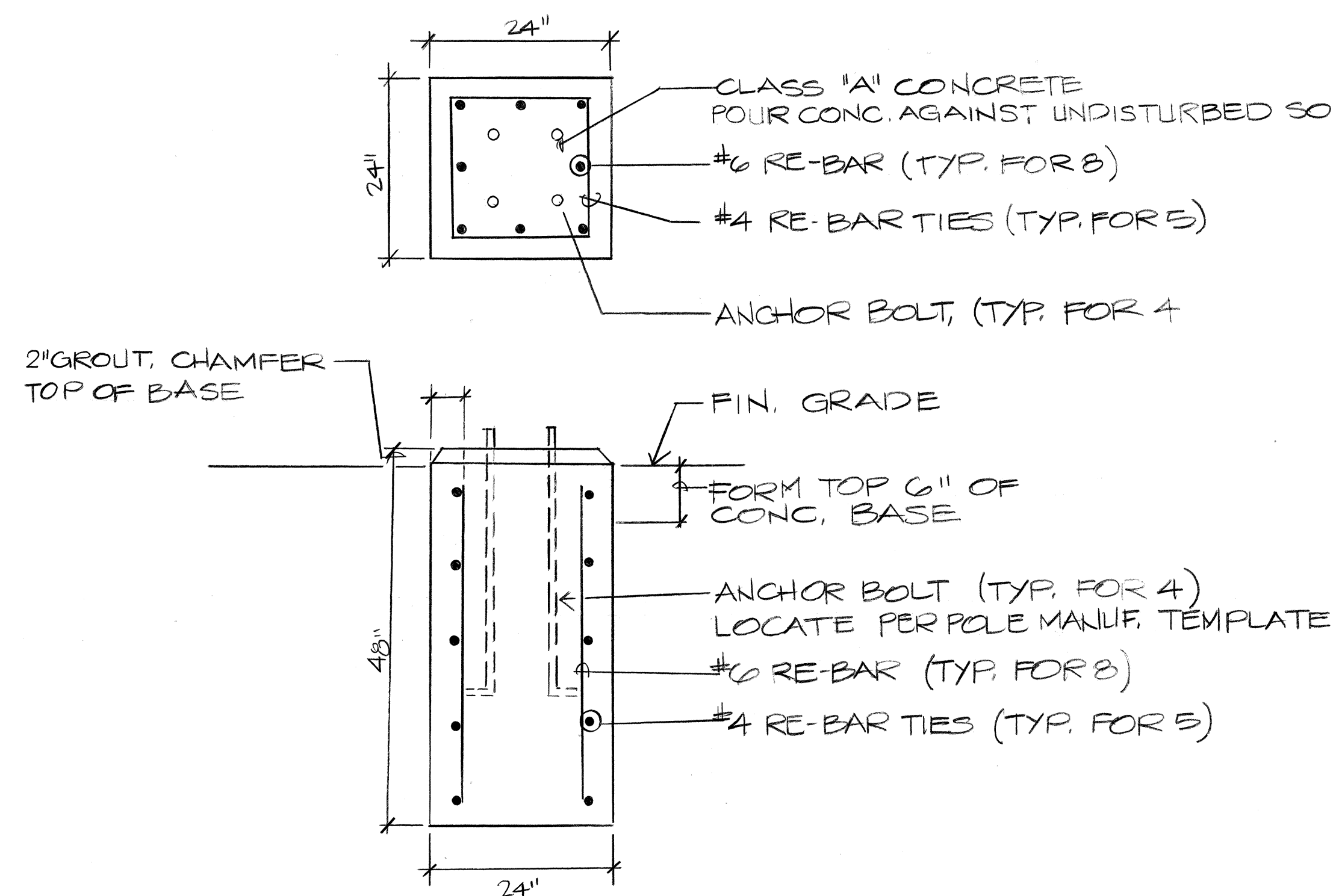
A TYPICAL SECTION
E-15 N.T.S.



ONE-LINE DIAGRAM



CONTROLLER SCHEMATIC



B BASE REINFORCING DETAIL
E-15

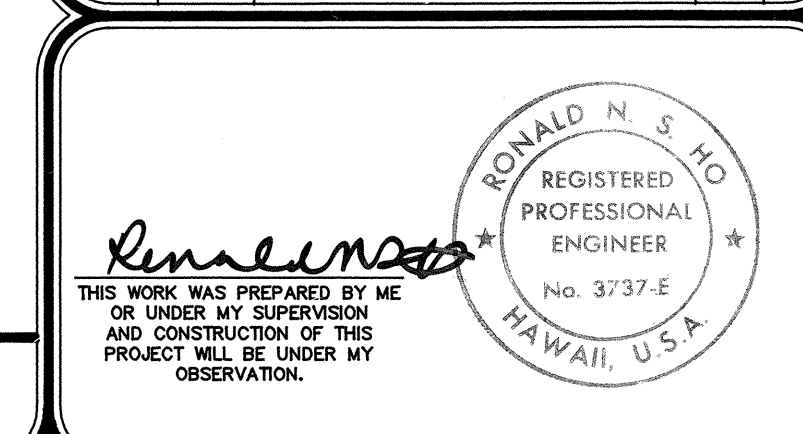
GENERAL NOTES:

1. NEW POLE LOCATIONS SHALL BE STAKED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER PRIOR TO EXCAVATION. ADJUSTMENT OF POLE LOCATIONS IN THE FIELD MAY BE REQUIRED TO CLEAR UNDERGROUND AND AERIAL UTILITY LINES.
2. CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER FROM DEPARTMENT OF TRANSPORTATION, STATE HIGHWAYS DIVISION, 72 HOURS IN ADVANCE BEFORE COMMENCING WORK, PHONE 935-3347.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ENERGIZING FLASHER.
4. FINAL ACCEPTANCE AND INSPECTION WILL BE UNDERTAKEN ONLY AFTER ALL WORK HAS BEEN COMPLETED.
5. CONTRACTOR SHALL AT HIS EXPENSE KEEP THE PROJECT AND SURROUNDING AREA FROM DUST NUISANCE AND SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SILT AND DEBRIS GENERATED BY THE EXCAVATION WORK AND DEPOSITED AND ACCUMULATED WITHIN DITCHES, DRAIN PIPES AND ON PUBLIC ROADWAYS.
6. ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS SHALL BE PROTECTED AT ALL TIMES DURING CONSTRUCTION AND ANY DAMAGES TO THEM SHALL BE REPAIRED AND PAID FOR BY THE CONTRACTOR. CONTRACTOR'S ATTENTION IS CALLED TO SECTION 107.21, "CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES", OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION".
7. CONTRACTOR SHALL PROCURE ALL PERMITS AND PAY AND NECESSARY FEES FOR THE LAWFUL PROSECUTION OF THE WORK. COSTS ARE INCIDENTAL TO THE VARIOUS ITEMS OF WORK.
8. REMOVAL OF EXISTING SIGNS SHALL BE INCIDENTAL TO ITEM NO. 696.0100-FLASHING SCHOOL SPEED LIMIT SIGN.

SERVICE DATA:

1. SERVICE VOLTAGE: 1Ø, 120/240V, 3W
2. LOAD DATA: METER CONNECTED KVA DEMAND KVA
1 1.0 1.0
3. SERVICE ENTRANCE CONDUCTORS: 3#8 CU
4. METERING: METYER STD B-5; RATE G
5. TYPE: UNDERGROUND
6. BILLING ADDRESS:
HOUSING FINANCE DEVELOPMENT CORP.
677 QUEEN ST.,
SUITE 300
HON., HI 96813

Rev.	Date	Description	Eng. App.
1	2-15-94	REVISED PER DPH COMMENT	SS



E-15

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Alagoraba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2846

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

MISCELLANEOUS DETAILS, GENERAL NOTES

Designed by: SS Date: OCT 1991
Drawn by: GN Proj. no.: (BCA) 841-0104
Approved: [Signature] Date: 1/2/94
HAWAIIAN TELEPHONE COMPANY Date: [Signature] Date: [Signature]
DEPARTMENT OF PLANNING Date: DEPARTMENT OF PUBLIC WORKS Date:



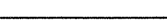

RECORD DRAWINGS

SHEET E-15 of 111 Sheets

NOTE(S):

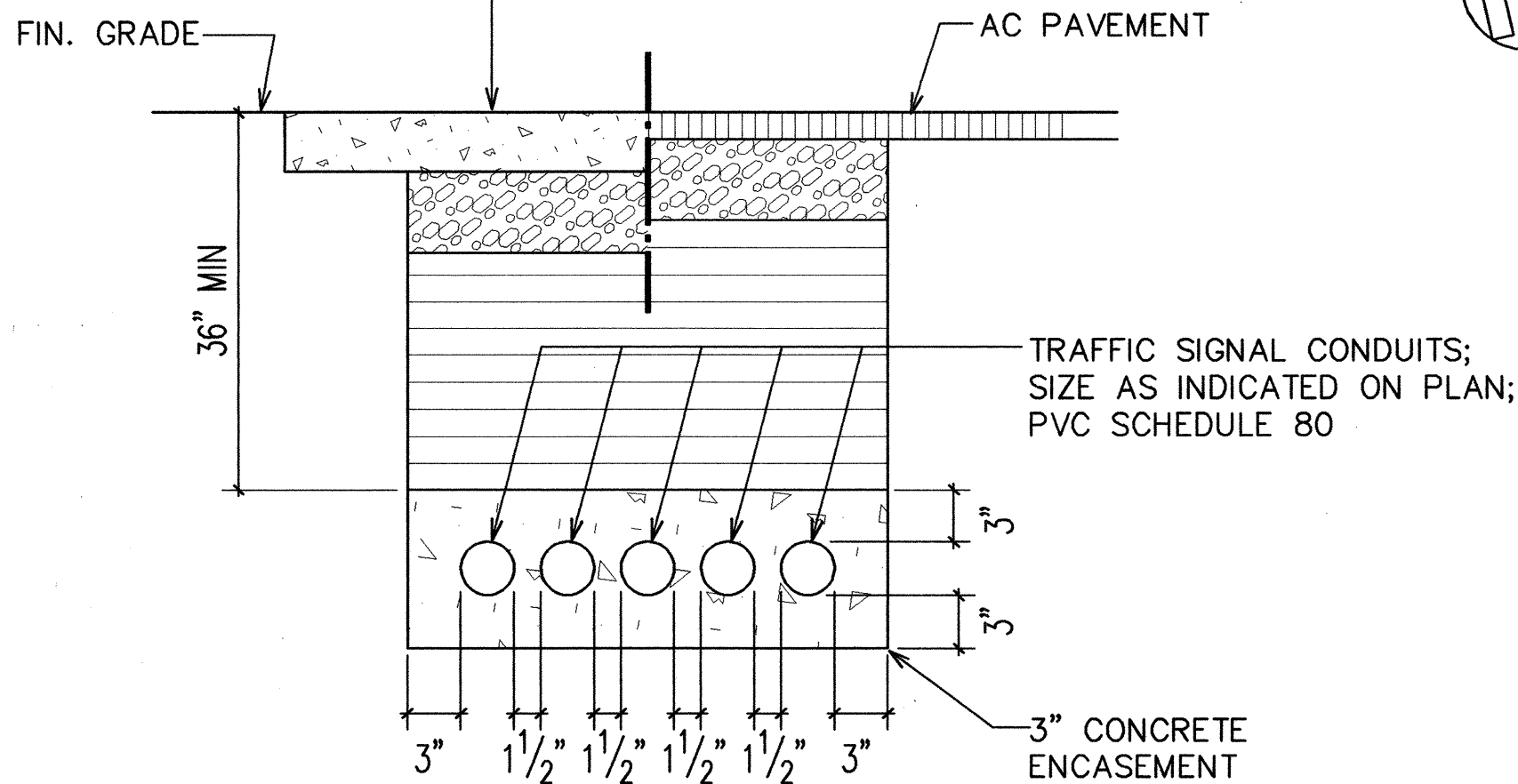
1 2-2"C, 1-1 1/2"C, 2-1"C *
SEE DUCT SECTION "X"

2 CONNECT TO EXST STUB

<u>ELECTRICAL SYMBOLS</u> (FOR THIS SHEET ONLY)	
SYMBOL	DESCRIPTION
	14" X 14" X 18" TRAFFIC SIGNAL PULLBOX QUAZITE PC1211BA12
	17" X 30" X 18" TRAFFIC SIGNAL PULLBOX QUAZITE PG1730BA18
	EXST TRAFFIC SIGNAL DUCTLINE & STUB
	TRAFFIC SIGNAL DUCTLINE

* PROVIDE PULLWIRE IN ALL CONDUITS

SEE BACKFILL SECTION
TYPE AS SHOWN ON
PLAN & SHEET E-17



SECTION (X)

NOTE: SEE SHEET E-17 FOR STATE RIGHT-OF-WAY BACKFILL NOTES &
NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY

TYPICAL DUCT SECTION
NOT TO SCALE

TRAFFIC SIGNAL PLAN

QUEEN KAAHUMANU HWY - KEALAKEHE PARKWAY INTERSECTION

SCALE: 1"=40'-0"

WORK ON THIS SHEET FOR PROVISION
OF TRAFFIC SIGNAL CONDUIT ONLY.
SEE SHEET E-17 FOR TRAFFIC CONTROL
PLAN.

Rev.	Date	Description	Eng.	App.

Approval stamp area with signature lines and dates.

PROJECT NO.190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard Suite 200 Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant:
RONALD N. S. HO & ASSOCIATES, INC.
Electrical Engineers
2138 Aligaba Street, Suite A Honolulu, Hawaii 96826
Phone: (808)941-0577 Fax: (808)945-2646

Client:
HOUSING FINANCE AND DEVELOPMENT CORPORATION
STATE OF HAWAII

VILLAGES OF LA'I'OPUA
BACKBONE INFRASTRUCTURE PHASE-2A

TRAFFIC SIGNAL PLAN

Designed by: SS
Drawn by: CV/FK
Approved: [Signature]
Date: 7/25/94

DATE: 7/25/94

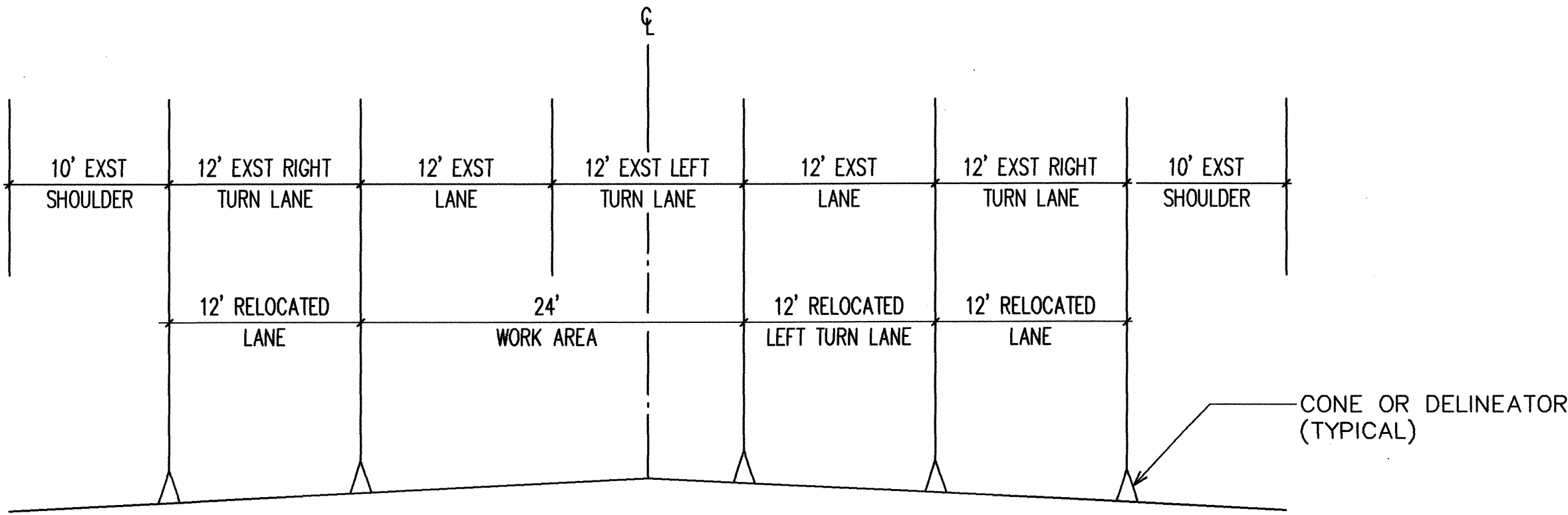
E-16

GENERAL NOTES:

1. THE PERMITTEE SHALL MAKE MINOR ADJUSTMENTS AT INTERSECTIONS, DRIVEWAYS, BRIDGES, STRUCTURES, ETC. TO FIT FIELD CONDITIONS.
2. CONES OR DELINEATORS SHALL BE EXTENDED TO A POINT WHERE THEY ARE VISIBLE TO APPROACHING TRAFFIC.
3. TRAFFIC CONTROL DEVICES SHALL BE INSTALLED SUCH THAT THE SIGN OR DEVICE FARTHEST FROM THE WORK AREA SHALL BE PLACED FIRST. THE OTHERS SHALL THEN BE PLACED PROGRESSIVELY TOWARD THE WORK AREA.
4. REGULATORY AND WARNING SIGNS WITHIN THE CONSTRUCTION ZONE THAT ARE IN CONFLICT WITH THE TRAFFIC CONTROL PLANS SHALL BE REMOVED OR COVERED. ALL SIGNS SHALL BE RESTORED UPON COMPLETION OF THE WORK, UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
5. FLAGGERS OR POLICE OFFICERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
6. ALL TRAFFIC LANES SHALL BE A MINIMUM OF 10 FEET WIDE.
7. ALL CONSTRUCTION WARNING SIGNS SHALL BE PROMPTLY REMOVED OR COVERED WHENEVER THE MESSAGE IS NOT APPLICABLE OR NOT IN USE.
8. AT THE END OF EACH DAY'S WORK OR AS SOON AS THE WORK IS COMPLETED, THE PERMITTEE SHALL REMOVE ALL TRAFFIC CONTROL DEVICES NO LONGER NEEDED TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC. REMOVAL SHALL BE IN THE REVERSE ORDER OF INSTALLATION.
9. REPLACE PERMANENT PAVEMENT MARKINGS AND TRAFFIC SIGNS UPON COMPLETION OF EACH PHASE OF WORK.

SPECIFIC NOTES:

1. CONSTRUCTION OF THE TRAFFIC SIGNAL DUCTLINE SHALL OCCUR IN TWO SEPARATE PHASES.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ACCESS TO THE CONSTRUCTION SITE.
3. NO LANE CLOSURES WILL BE PERMITTED UNLESS SPECIFICALLY AUTHORIZED BY THE ENGINEER.
4. TWO (2) POLICEMEN SHALL BE PROVIDED DURING ALL ACTIVE PERIODS OF CONSTRUCTION ALONG QUEEN KAAHUMANU HIGHWAY.

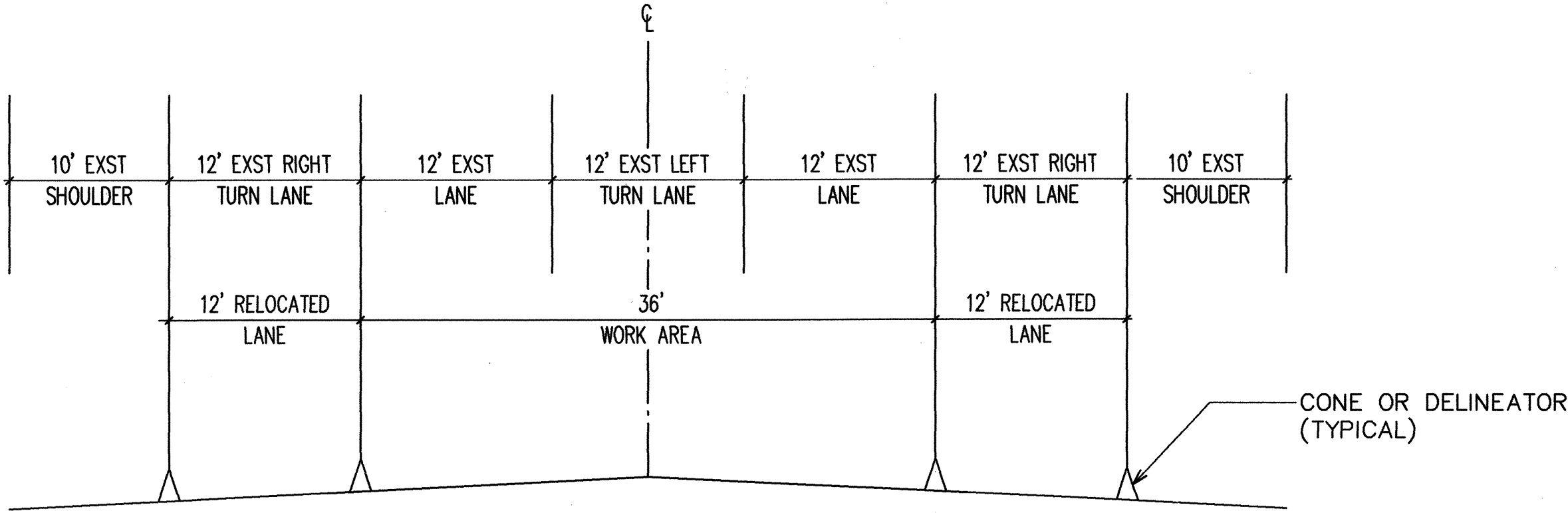


NOTE: CONES SHALL BE 28" IN HEIGHT WITH REFLECTIVE STRIPING.

TYPICAL WORK ZONE SECTION

(SECTION A-A)

SCALE: 1/8"=1'-0"

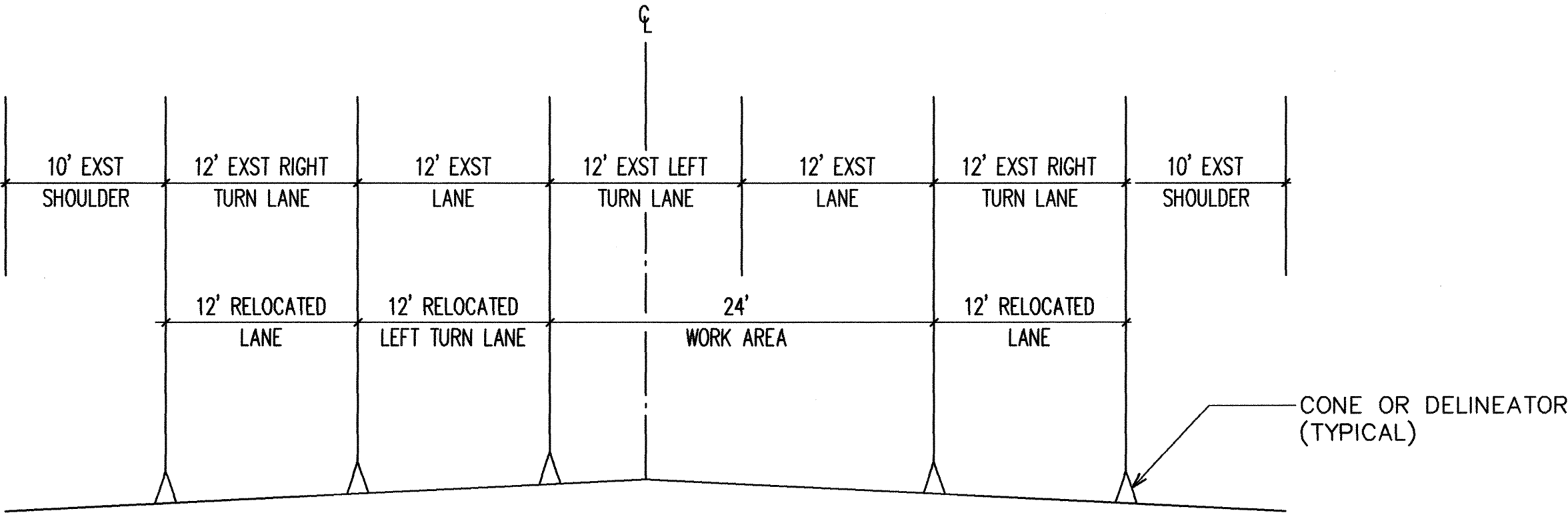


NOTE: CONES SHALL BE 28" IN HEIGHT WITH REFLECTIVE STRIPING.

TYPICAL WORK ZONE SECTION

(SECTION B-B)

SCALE: 1/8"=1'-0"



NOTE: CONES SHALL BE 28" IN HEIGHT WITH REFLECTIVE STRIPING.

TYPICAL WORK ZONE SECTION

(SECTION C-C)

SCALE: 1/8"=1'-0"

8' 4' 0 8' 16' 24'

SCALE:

1/8"=1'-0"

GRAPHIC SCALE

E-17

Rev.	Date	Description	Eng.	App.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION.

Ronald N. S. Ho

RONALD N. S. HO
REGISTERED PROFESSIONAL ENGINEER
No. 5737-E
HAWAII, U.S.A.

Date: 7/25/04

HAWAIIAN ELECTRIC LIGHT COMPANY

PROJECT NO. 190A-02-92

BELT COLLINS & ASSOCIATES
Engineering • Planning • Landscape Architecture
680 Ala Moana Boulevard, Suite 200, Honolulu, Hawaii 96813
Phone: (808)521-5361 Telex: BELTH 7430474 Fax: (808)538-7819

Consultant: **RONALD N. S. HO & ASSOCIATES, INC.**
Electrical Engineers
2138 Algoroba Street, Suite A, Honolulu, Hawaii 96826
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Client: **HOUSING FINANCE AND DEVELOPMENT CORPORATION**
STATE OF HAWAII

VILLAGES OF LA'IOPIA
BACKBONE INFRASTRUCTURE PHASE-2A

QUEEN KAAHUMANU HIGHWAY
TRAFFIC CONTROL NOTES & DETAILS

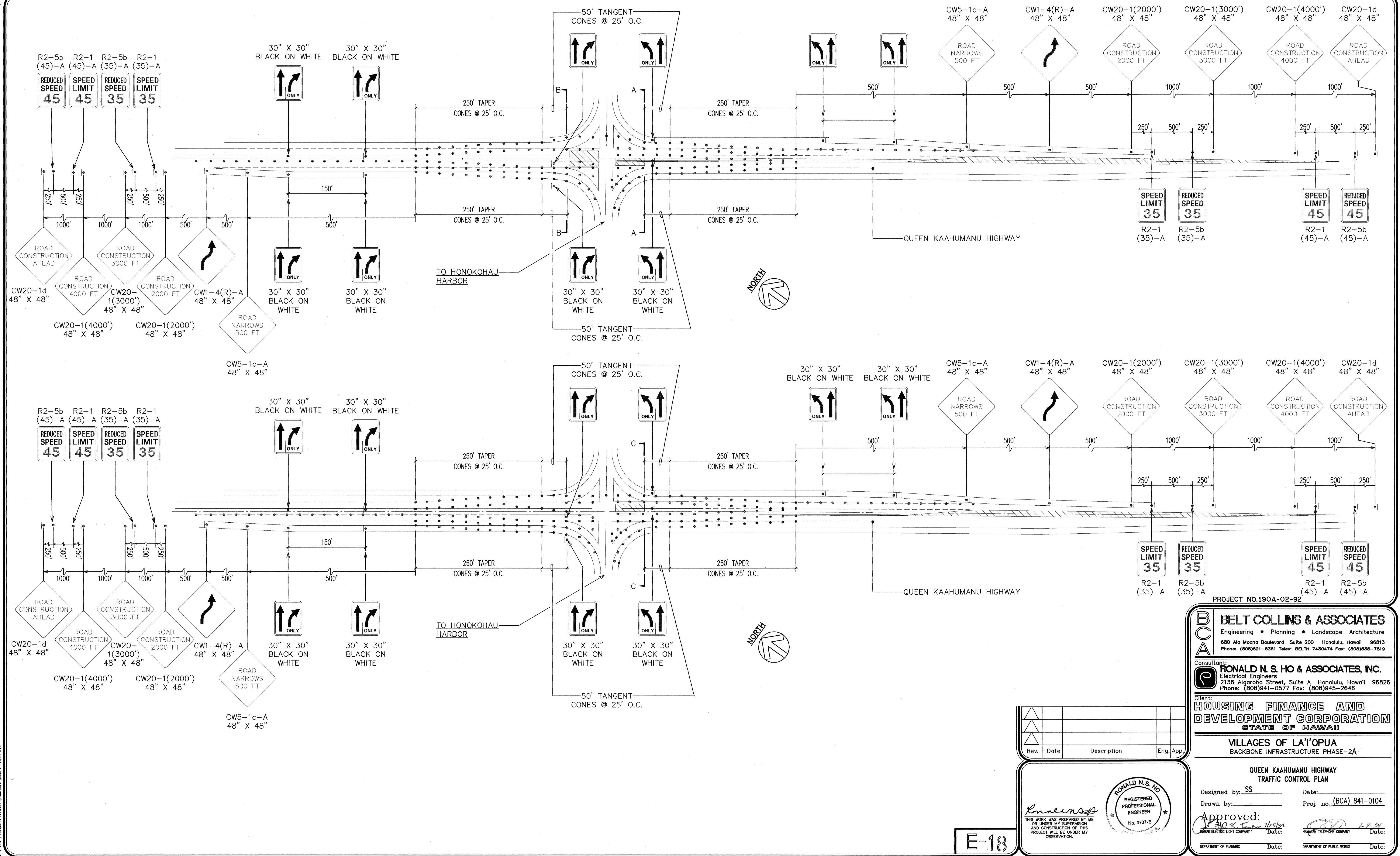
Designed by: SS Date: _____
Drawn by: HL Proj. no.: (BCA) 841-0104

Approved: *[Signature]* Date: 7/25/04
HAWAIIAN ELECTRIC LIGHT COMPANY

DEPARTMENT OF PLANNING Date: _____ DEPARTMENT OF PUBLIC WORKS Date: _____

Let. No. 05/13/93 • 07:56:18
G:\MOO\PROJECTS\SUBDIVISIONS\9270A\TRAFFIC

Trim: 22" x 36"



E-18

RECORD DRAWINGS SHEET E-18 of 111 Sheets