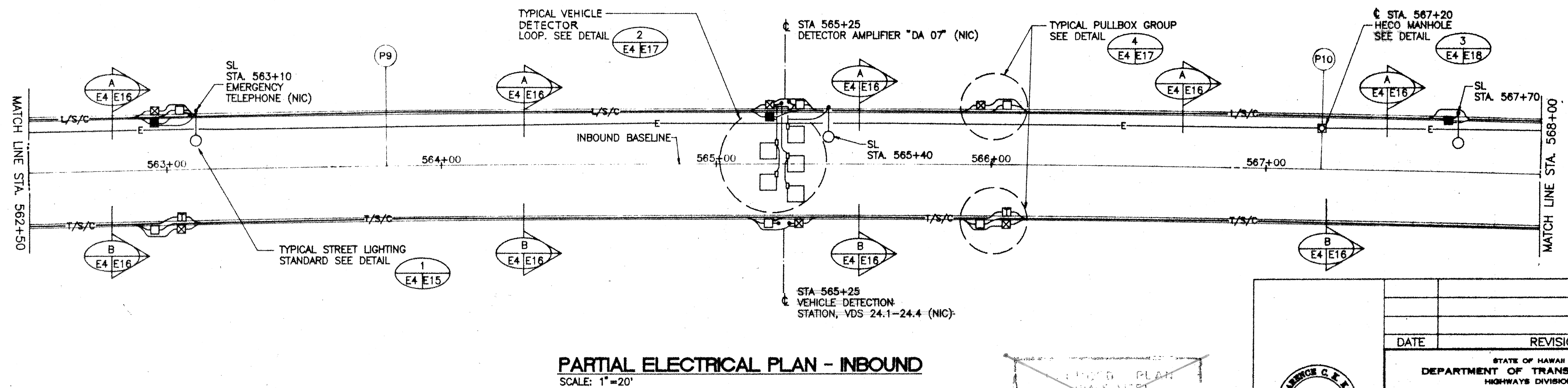
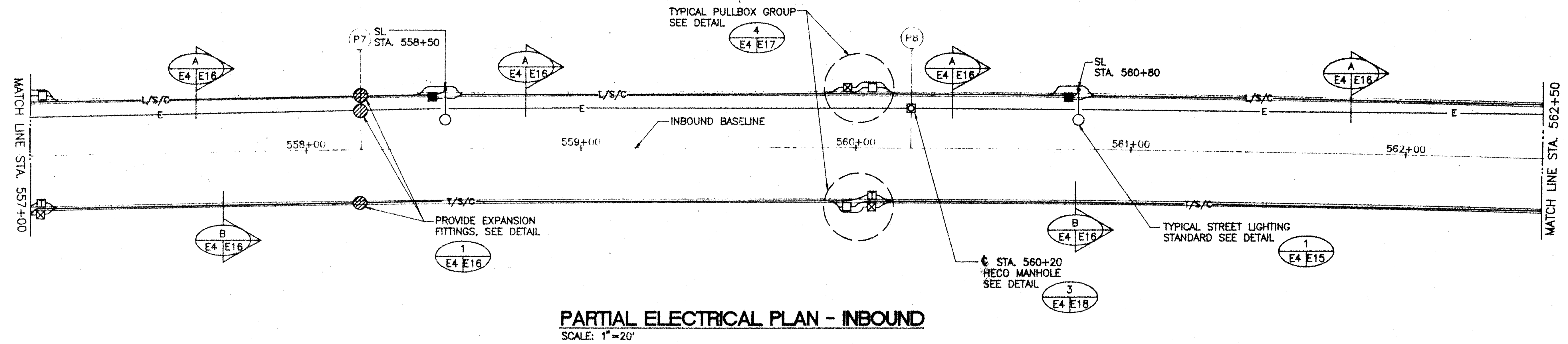
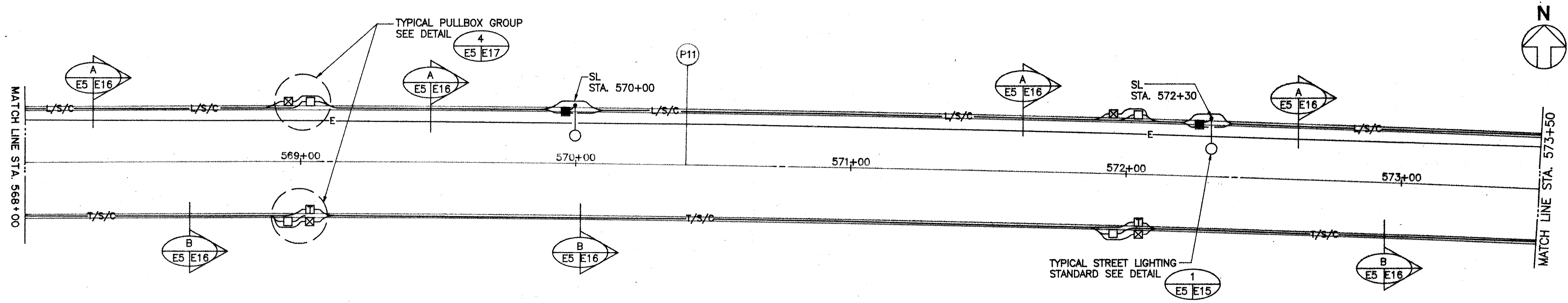


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-I(71)	1991	595	618

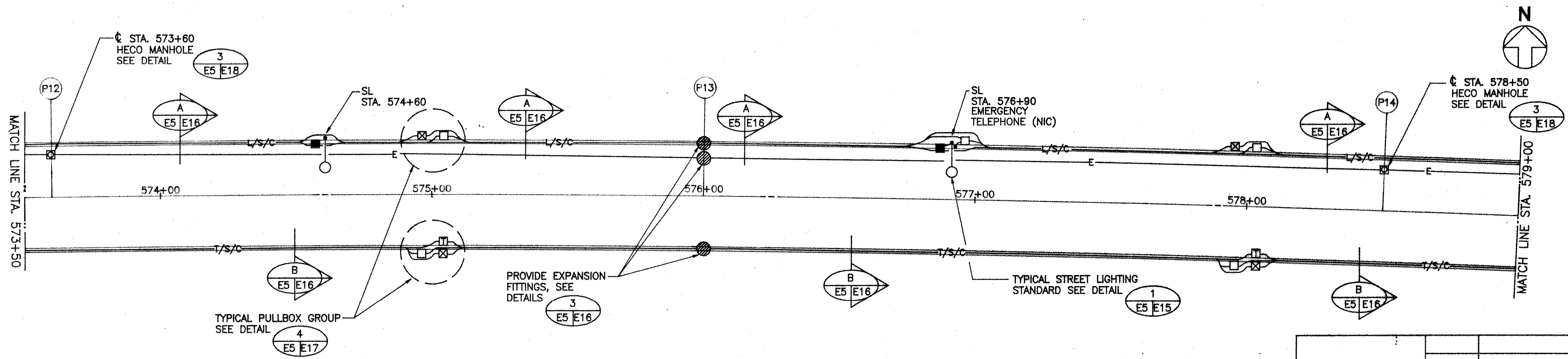


DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
<u>ELECTRICAL PLAN</u> <u>STA. 557+00 TO 568+00</u> <u>INTERSTATE ROUTE H-3</u> <u>F.A.I. PROV. NO. 1 - H3 - 1 (71)</u>	
SCALE: 1" = 20'	DATE: APRIL 1981

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-(71)	1991	596	618

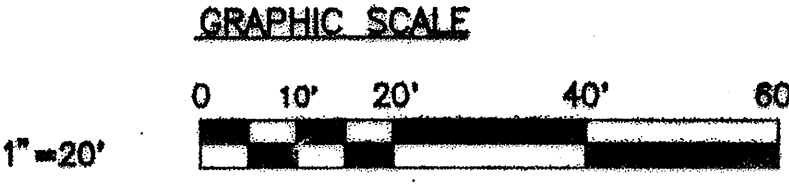


PARTIAL ELECTRICAL PLAN - INBOUND
 SCALE: 1"=20'



PARTIAL ELECTRICAL PLAN - INBOUND
 SCALE: 1"=20'

REDUCED PLAN
 (HALF SIZE)
 0 1 2 3
 1/3 INCHES ON ORIGINAL PLAN



DATE

REVISION

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ELECTRICAL PLAN

STA. 568+00 TO 579+00

INTERSTATE ROUTE H-3

F.A.L. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=20'

DATE: APRIL, 1991

SHEET No. E-5 OF 27 SHEETS

CLARENCE C. E. HAWAII, U.S.A.

REGISTERED PROFESSIONAL ENGINEER

No. 1796-B

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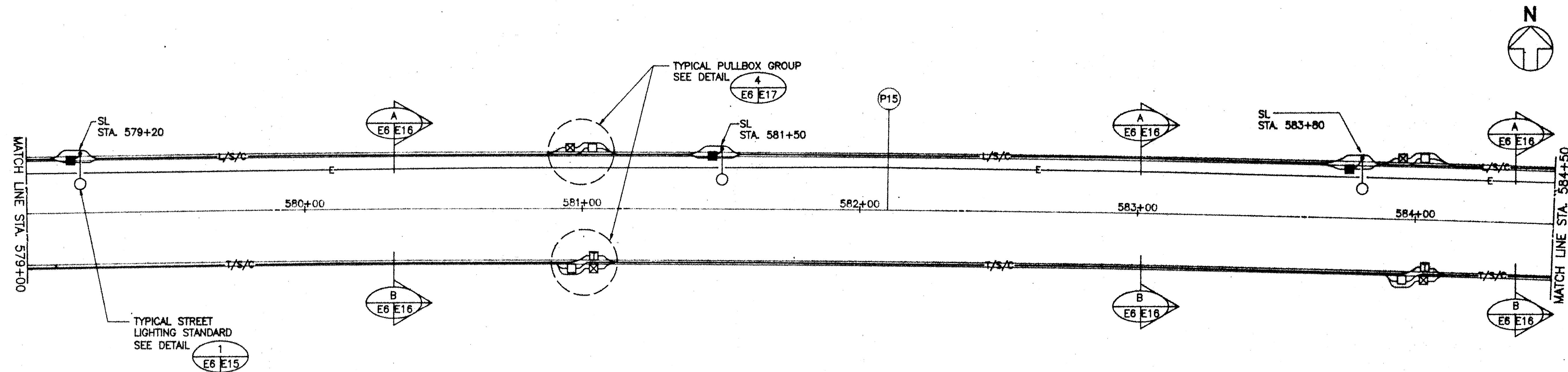
C. Han

SIGNATURE

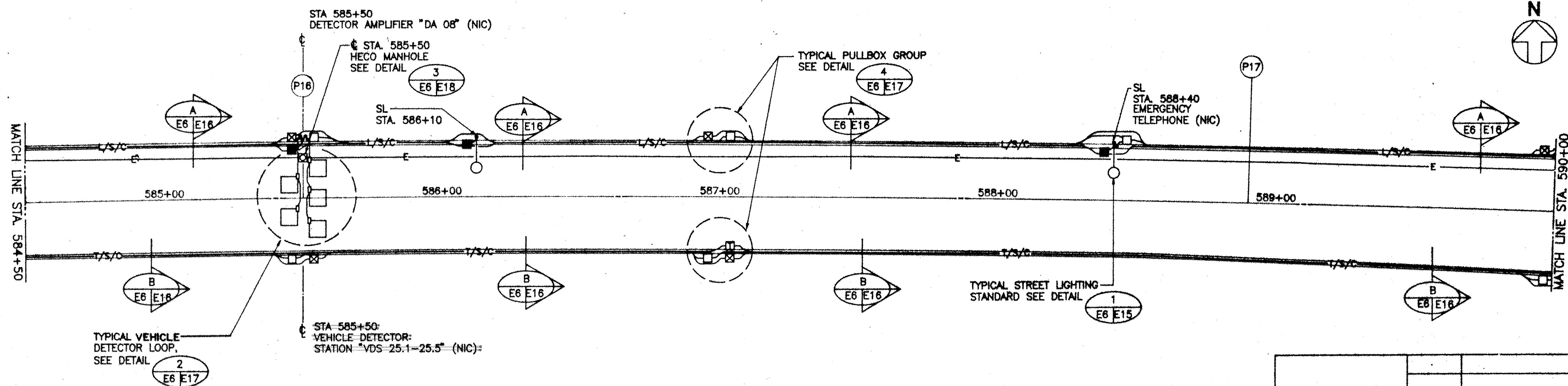
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

596

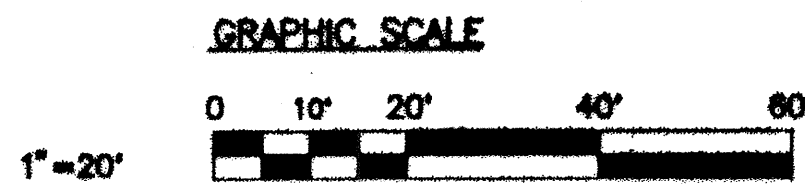
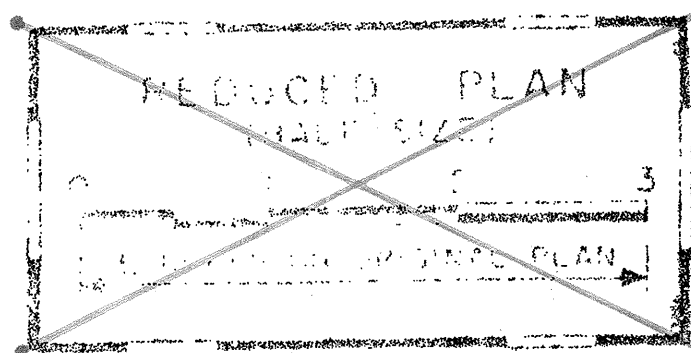
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	597	618



PARTIAL ELECTRICAL PLAN - INBOUND
SCALE: 1" = 20'



PARTIAL ELECTRICAL PLAN - INBOUND
SCALE: 1" = 20'

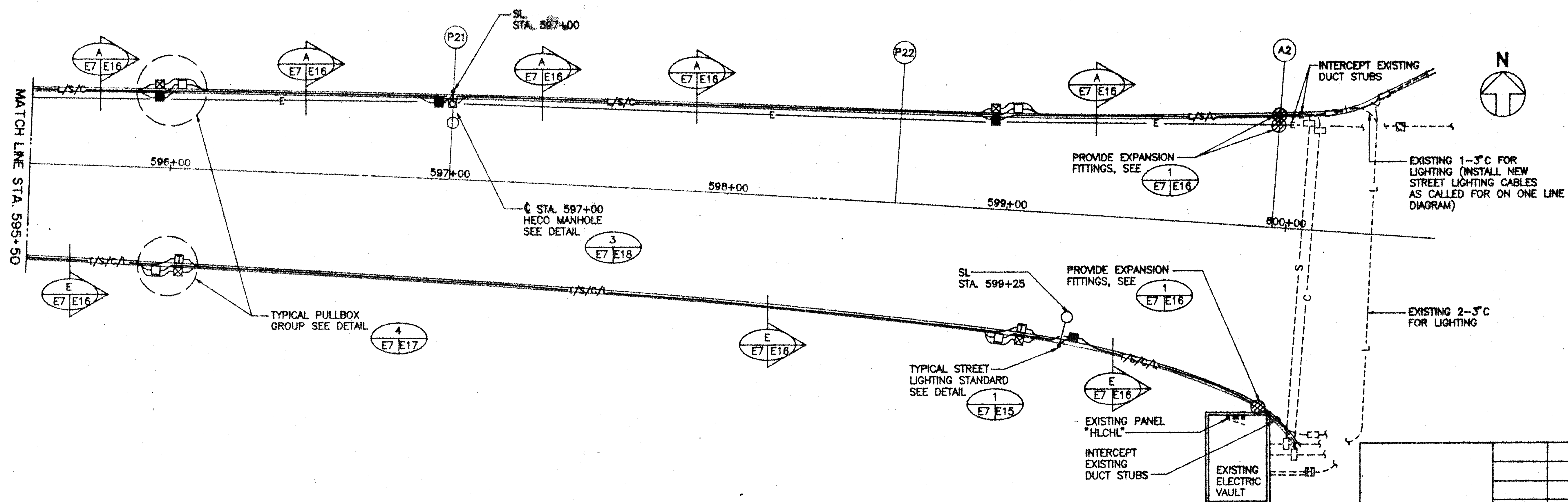
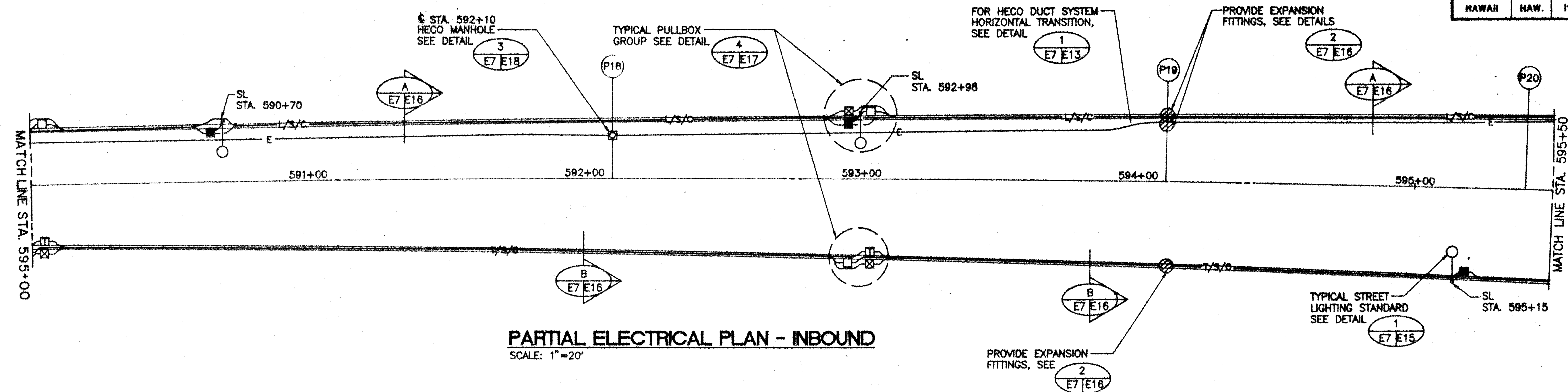


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C. Hall
SIGNATURE

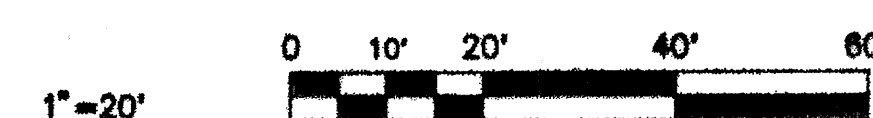
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
ELECTRICAL PLAN STA. 579+00 TO 590+00 INTERSTATE ROUTE H-3 F.A.L. PROJ. NO. 1 - H3 - 1 (71)	
SCALE: 1" = 20'	DATE: APRIL 1991
SHEET No. E-6 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(71)	1991	598	618



PARTIAL ELECTRICAL PLAN - INBOUND
SCALE: 1"=20'

GRAPHIC SCALE



1"=20'



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C. Kan
SIGNATURE

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN
STA. 590+00 TO 599+00
INTERSTATE ROUTE H-3
F.A.L. PROJ. NO. 1 - H3 - 1 (71)

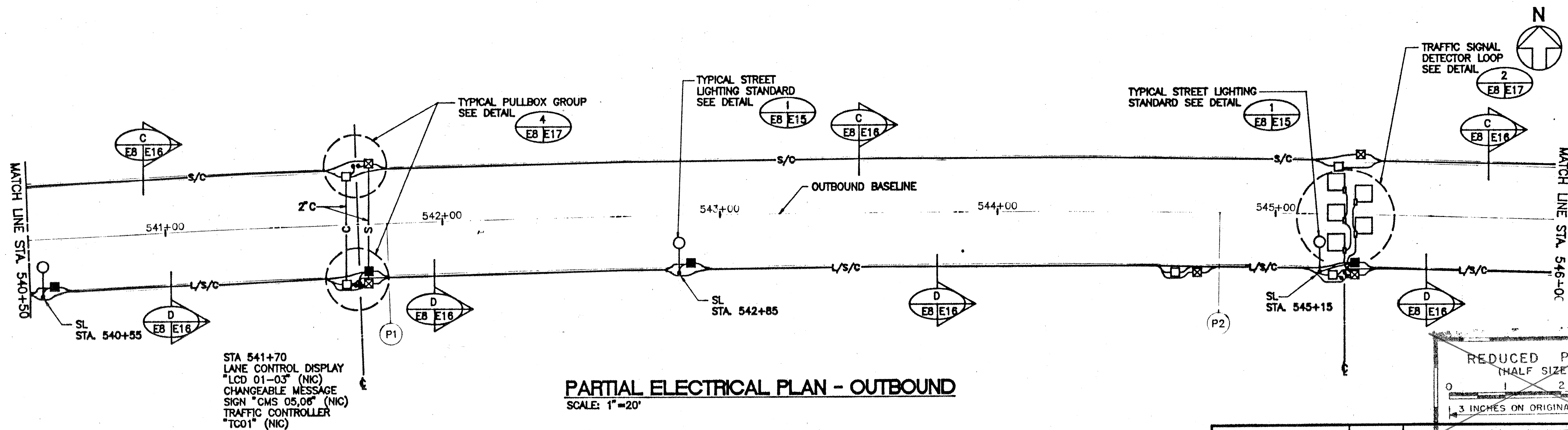
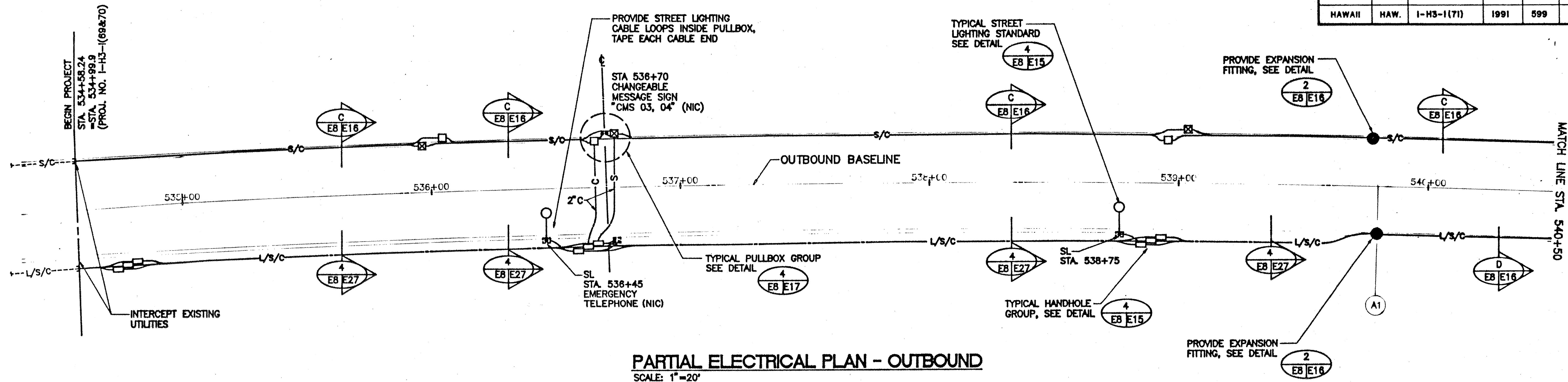
SCALE: 1" = 20'

DATE: APRIL 1981

SHEET No.E-7 OF 27 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____
	TRACED BY _____
	DESIGNED BY _____
	QUANTITIES BY _____
No. _____	CHECKED BY _____

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	599	618



DATE: 8/01/91

REVISION: 1

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN
STA. 534+58.24 TO 546+00
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=20' DATE: APRIL 1991

SHEET No. E-8 OF 27 SHEETS

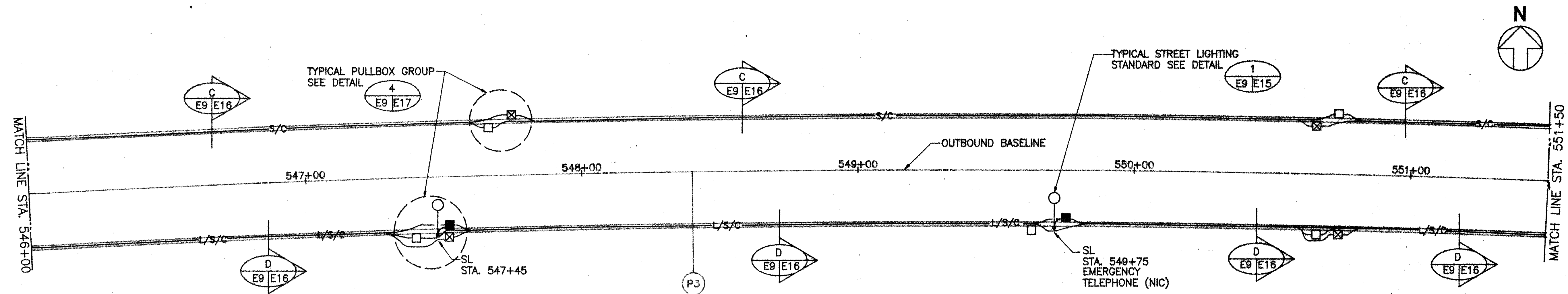
CLARENCE C. K. KIM
REGISTERED PROFESSIONAL ENGINEER
No. 1765-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION

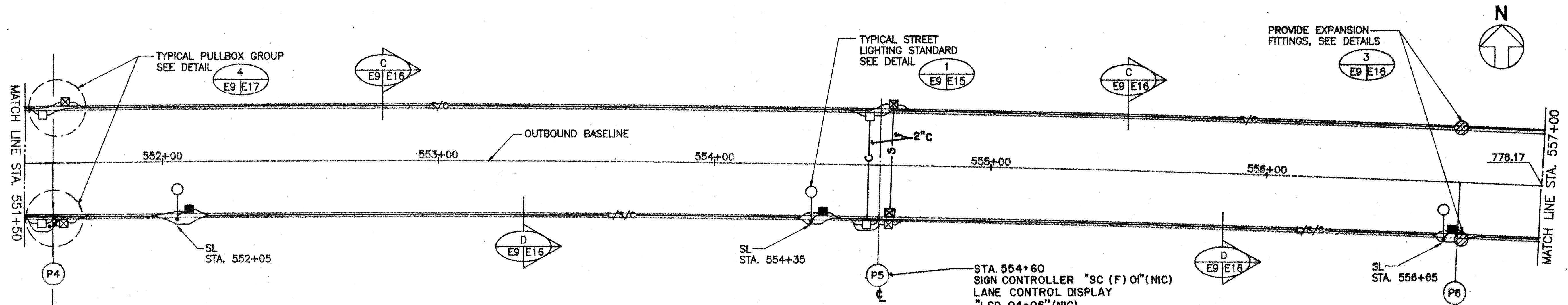
8/01/91 REVISED PLAN

DATE REVISION

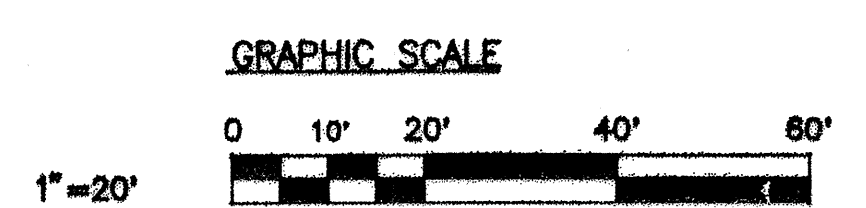
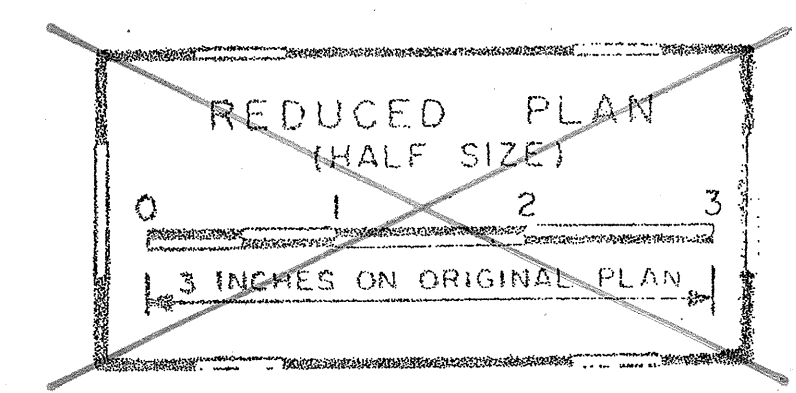
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	J-H3-1(71)	1991	600	618



PARTIAL ELECTRICAL PLAN - OUTBOUND
SCALE: 1"=20'



PARTIAL ELECTRICAL PLAN - OUTBOUND
SCALE: 1"=20'



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C. Kim
SIGNATURE

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

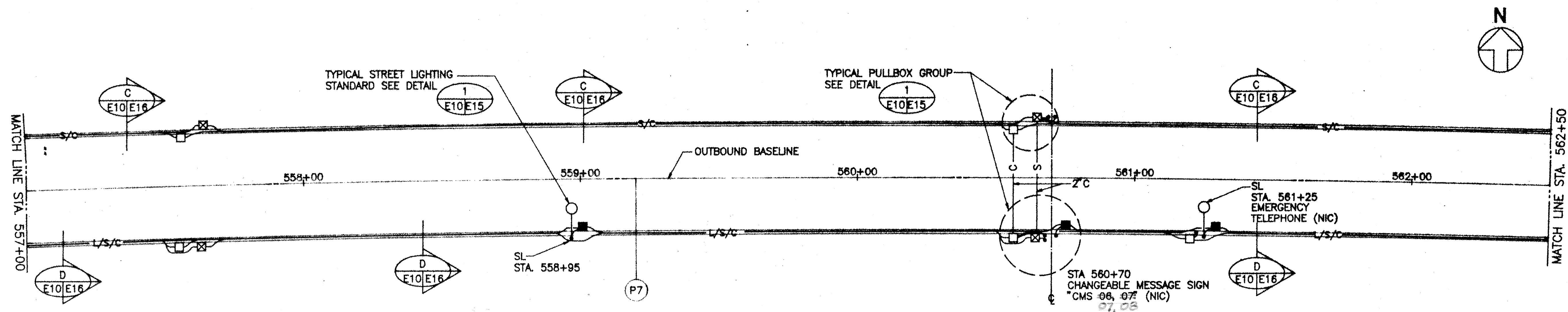
ELECTRICAL PLAN
STA. 546+00 TO 557+00
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=20' DATE: APRIL 1991

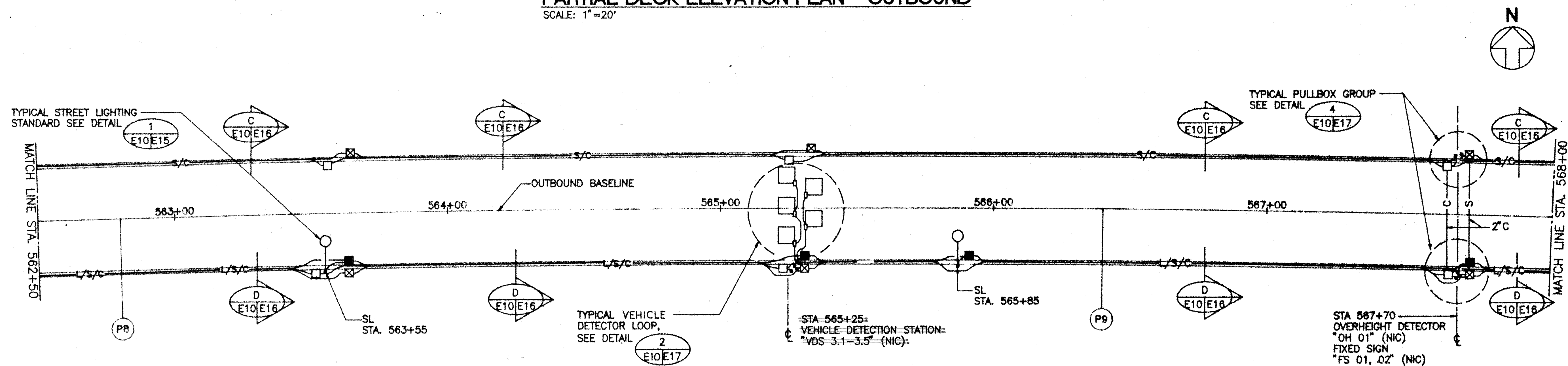
SHEET No. E-9 OF 27 SHEETS

SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	J-H3-1(71)	1991	801	808

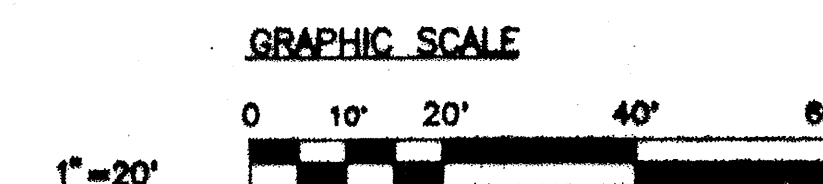
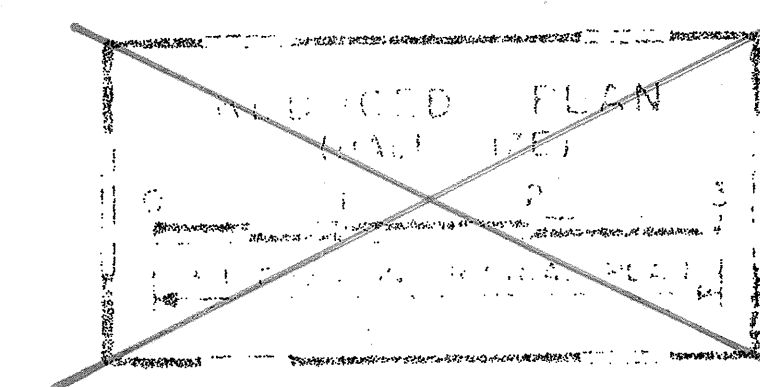


PARTIAL DECK ELEVATION PLAN - OUTBOUND
SCALE: 1"=20'



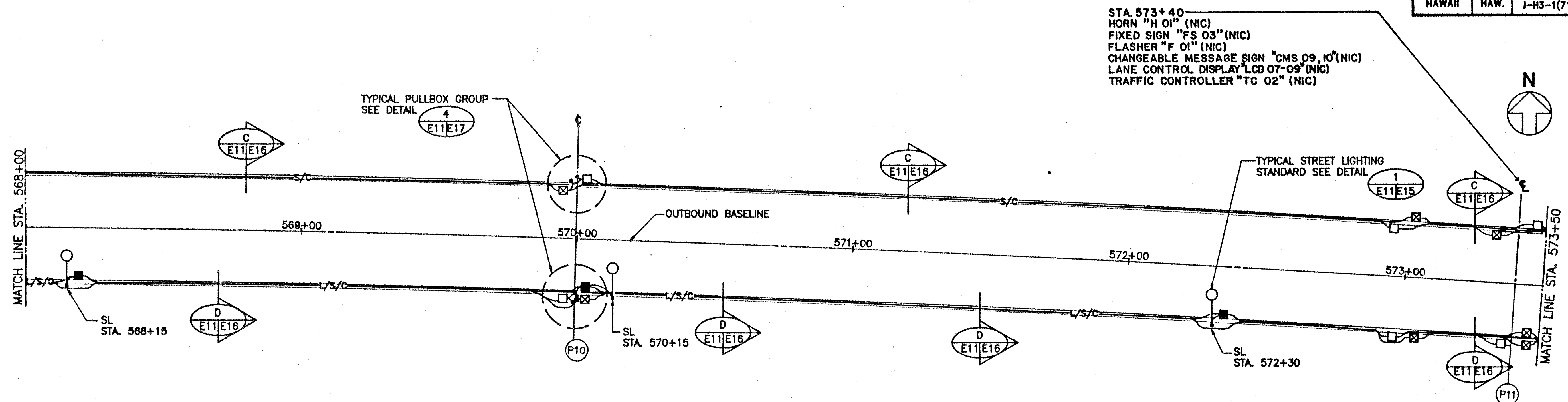
PARTIAL DECK ELEVATION PLAN - OUTBOUND
SCALE: 1"=20'

DATE	
DESIGNED BY	
CHECKED BY	
NO.	

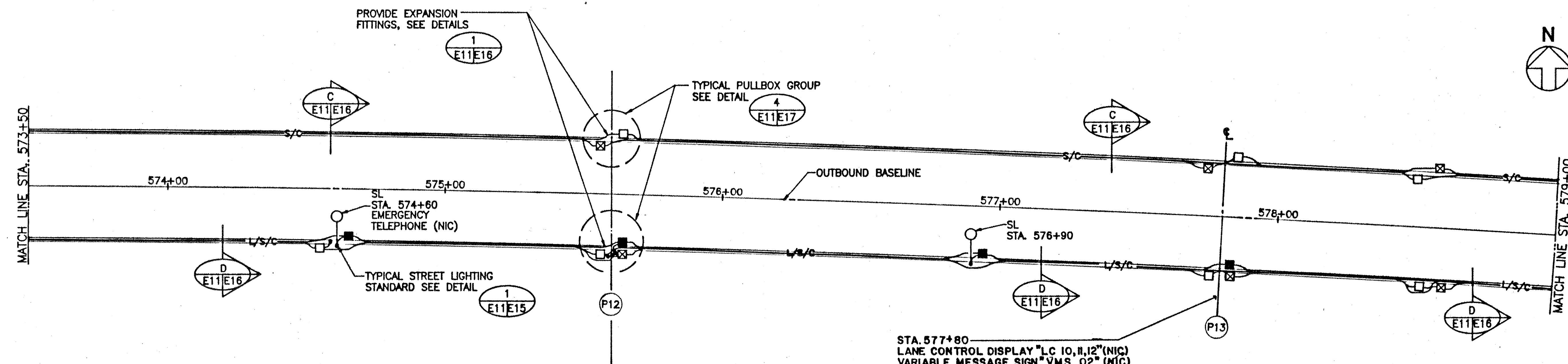


DATE		REVISION	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION			
ELECTRICAL PLAN STA. 557+00 TO 568+00 INTERSTATE ROUTE H-3 F.A.L. PROJ. NO. 1 - H3 - 1 (71)			
SCALE: 1"=20'		DATE: APRIL 1991	
SHEET No. E-10 OF 27 SHEETS			

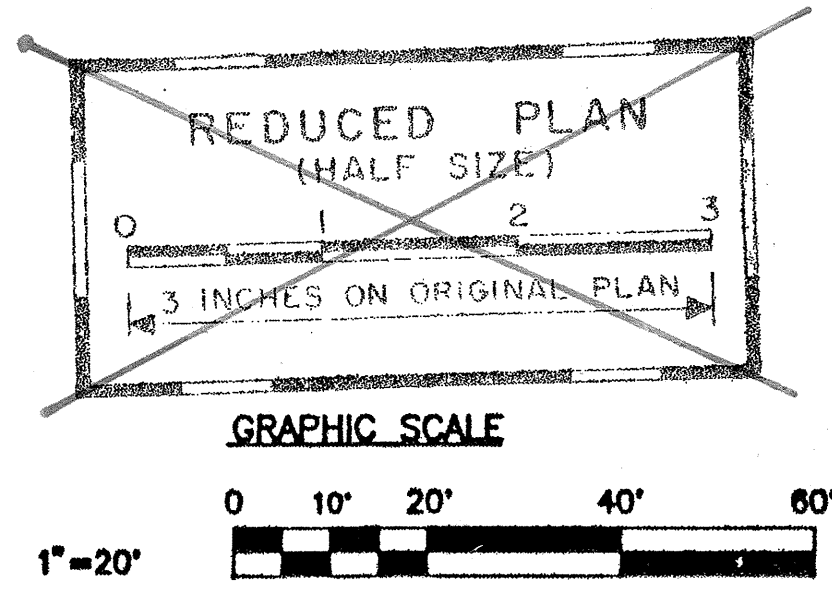
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	J-H3-1(71)	1991	602	618



PARTIAL ELECTRICAL PLAN - OUTBOUND
SCALE: 1"=20'



PARTIAL ELECTRICAL PLAN - OUTBOUND
SCALE: 1"=20'



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C. Kim
SIGNATURE

8/01/91	REVISED CONTROL DISPLAY NOTATION
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

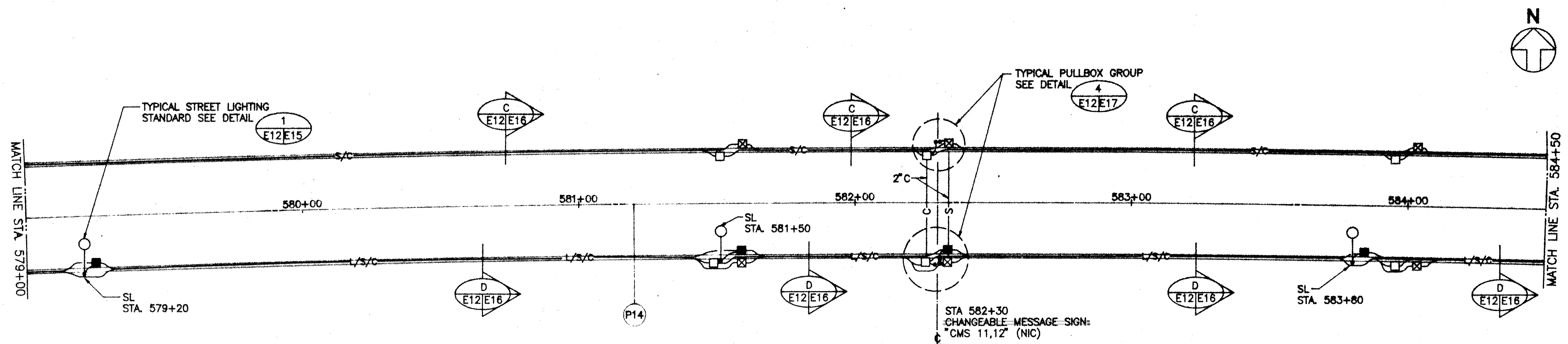
ELECTRICAL PLAN
STA. 568+00 TO 579+00
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=20' DATE: APRIL 1991

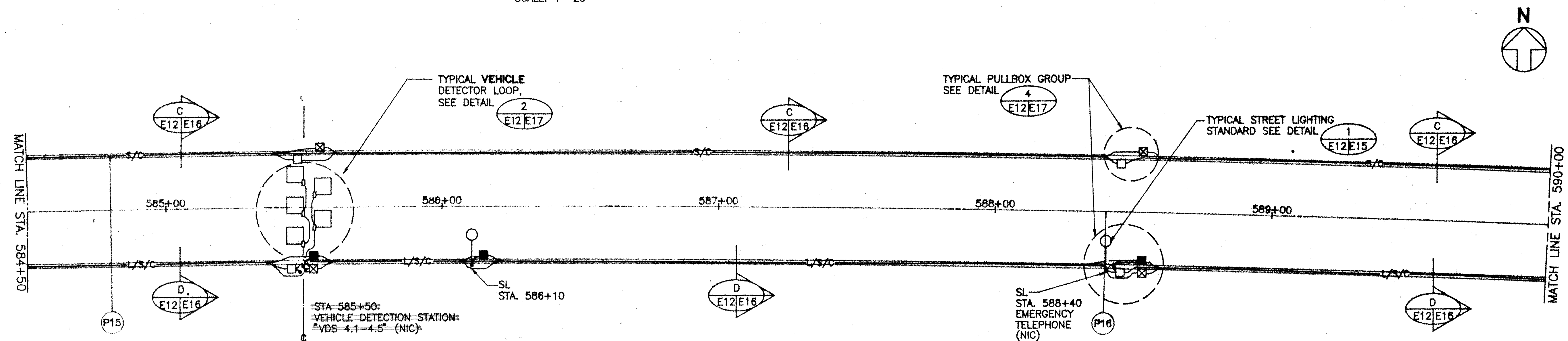
SHEET No. E-11 OF 27 SHEETS

ORIGINAL PLAN	DATE
DESIGNED BY	
TRACED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(71)	1991	803	808



PARTIAL ELECTRICAL PLAN - OUTBOUND



PARTIAL ELECTRICAL PLAN - OUTBOUND

DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ELECTRICAL PLAN
STA. 579+00 TO 590+00
INTERSTATE ROUTE H-3
E.A.L. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=20' DATE: APRIL 1991

SHEET No. E-12 OF 27 SHEETS



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me or under my supervision.

C. K.
SIGNATURE

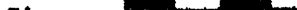
SCALE: 1"=20' DATE: APRIL 1991

SHEET No.E-12 OF 27 SHEETS

GRAPHIC SCALE

0 10' 20' 40' 60'

1" = 20'

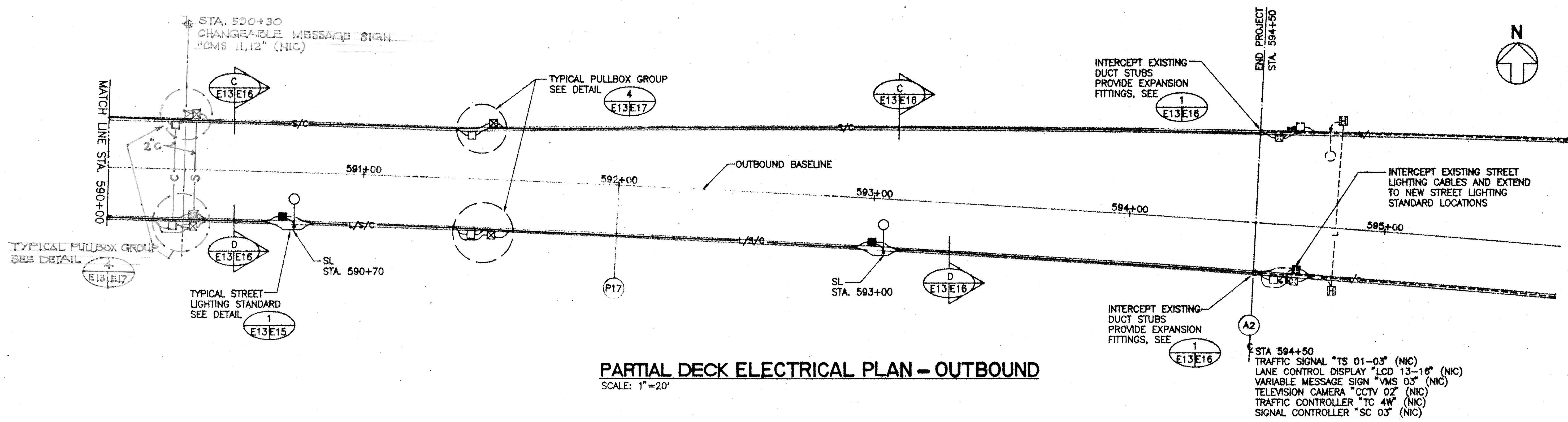


1"=20'

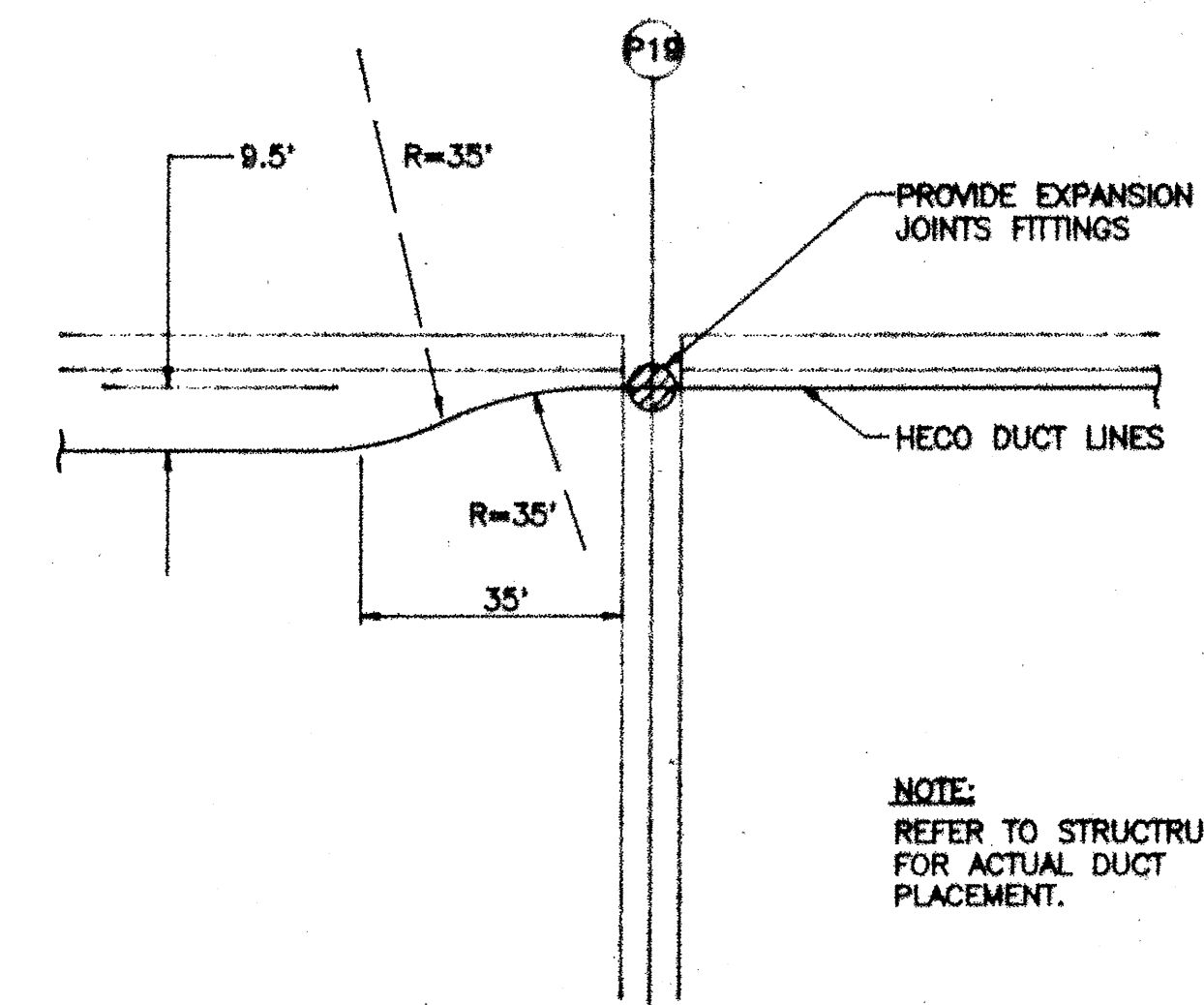
GRAPHIC SCALE

603

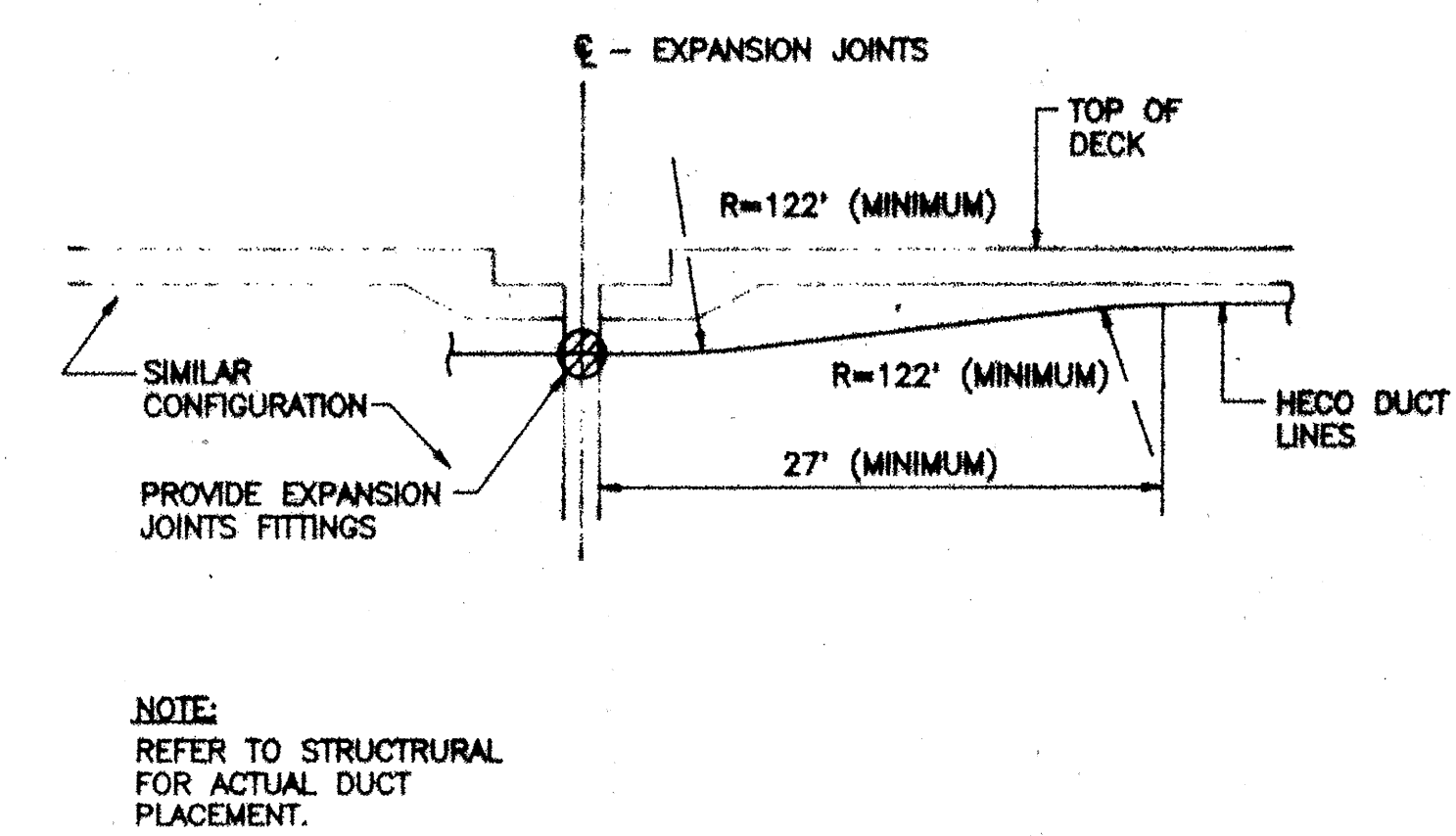
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	604	618



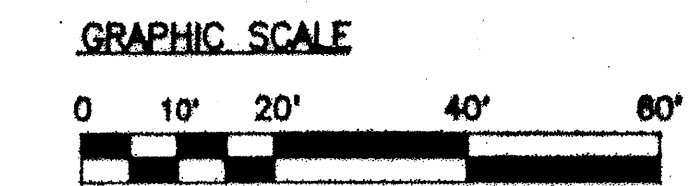
PARTIAL DECK ELECTRICAL PLAN - OUTBOUND
SCALE: 1"=20'



1 HECO DUCT HORIZONTAL TRANSITION AT P19 (I.B.)
NOT TO SCALE (PLAN VIEW)



2 TYPICAL VERTICAL TRANSITION AT EXPANSION JOINTS
NOT TO SCALE (ELEVATION VIEW)



DATE _____

REVISION _____

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN
STA. 590+00 TO 594+50
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I - H3 - 1 (71)

SCALE: 1"=20' DATE: APRIL 1991

SHEET No. E-13 OF 27 SHEETS

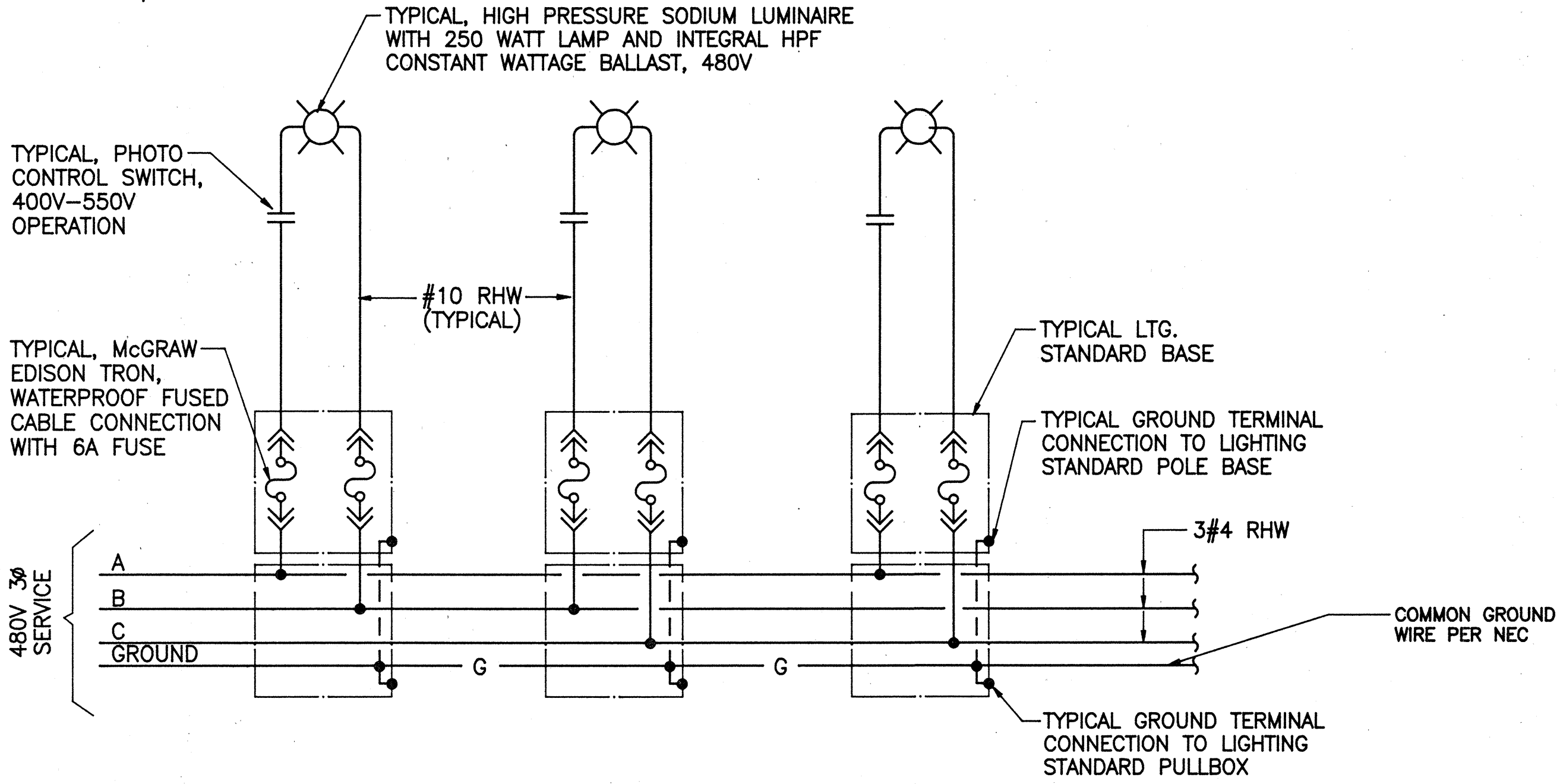
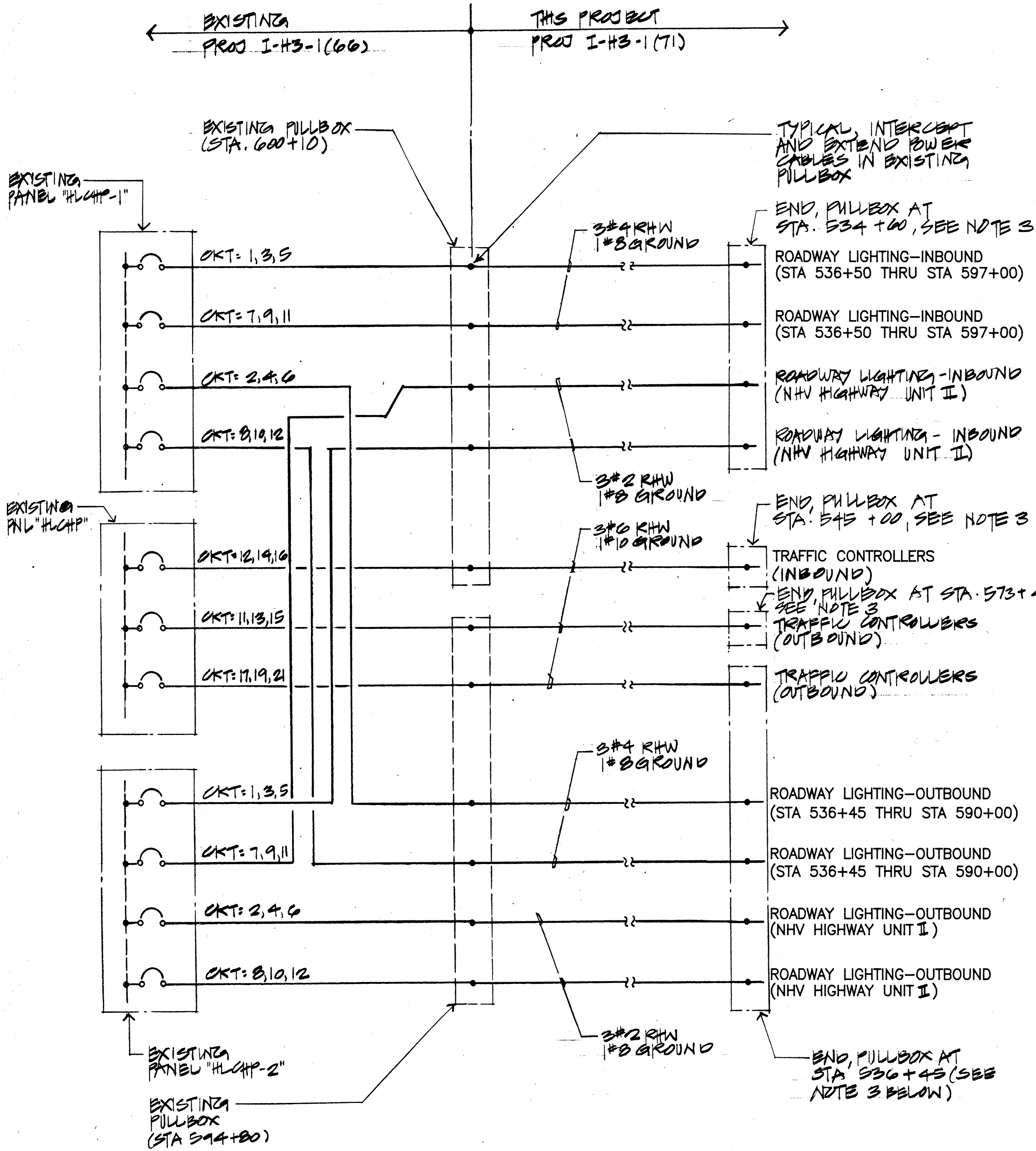
CHANCE C. E. E. INC.
REGISTERED PROFESSIONAL ENGINEER
No. 1706-B
HAWAII, U.S.A.

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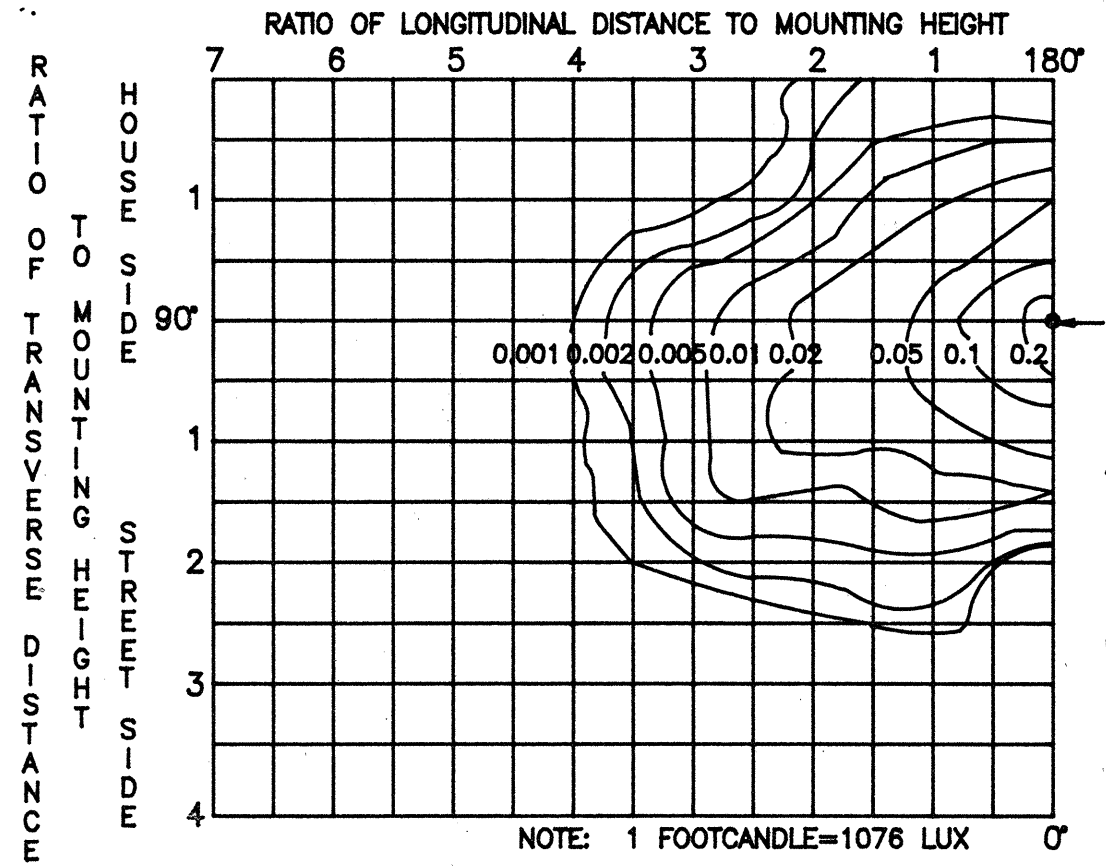
C. E. E.
SIGNATURE

604

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	605	618

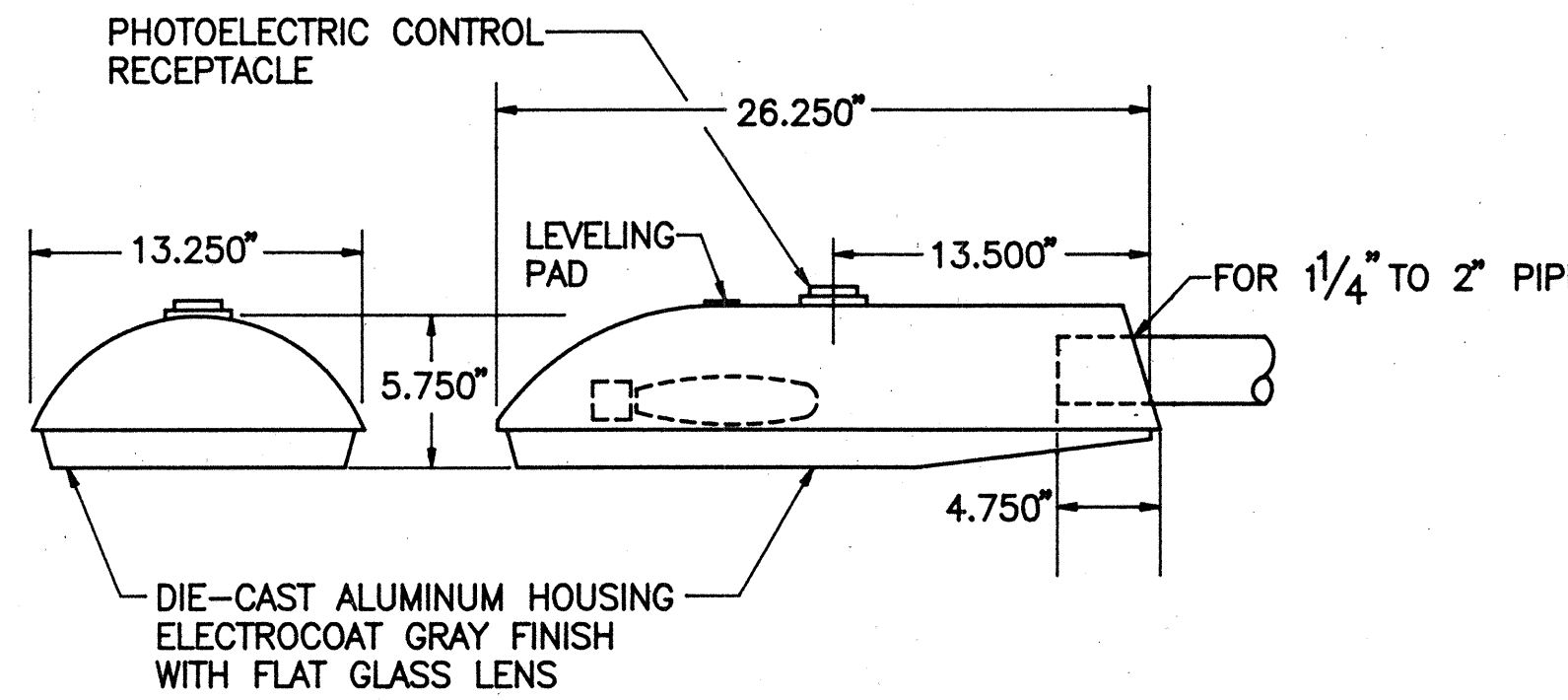


TYPICAL STREET LIGHTING WIRING DIAGRAM
NOT TO SCALE



ANSI/IES TYPE.....CUTOFF
.....MEDIUM/TYPER II
MOUNTING HEIGHT.....30 FT.
MAX CANDELA.....377.8
MAX CONE.....70.0'
MAX VERTICAL PLANE 67.5'/292.5'
MAX CANDELA AT 90°.....1.2
MAX CANDELA AT 80°.....2.3
NADIR FOOTCANDLES.....0.2617
NADIR CANDELA.....235.6

MULTIPLY ALL LUMEN, CANDELA AND FOOTCANDLE VALUES BY THIS RATIO: RATIO=ACTUAL LAMP LUMENS-1000



- NOTES:
- ALL LINES IN DASH ARE EXISTING, SOLID ARE (NEW) TO BE PROVIDED IN THIS CONTRACT.
 - STREET LIGHTING AND TRAFFIC CONTROLLERS CIRCUITS SHALL BE INSTALLED IN COMMON CONDUIT SYSTEM IN EACH VIADUCT.
 - TERMINATE POWER CABLES IN PULLBOX. PROVIDE MINIMUM 3 FEET SLACK AND SEAL ENDS AGAINST MOISTURE.

ONE-LINE DIAGRAM
NOT TO SCALE

ISOFOOTCANDLE CURVES

STREET LIGHT LUMINAIRE DATA
NOT TO SCALE

FIXTURE ELEVATION/SECTION

SURVEY PLOTTED BY	DATE
DESIGNED BY	
TRACED BY	
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
No.	



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C. K.

SIGNATURE

2/21/94	REVISED ONE LINE DIAGRAM
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL PLAN
STA. 590+00 TO 594+50
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I - H3 - 1 (71)

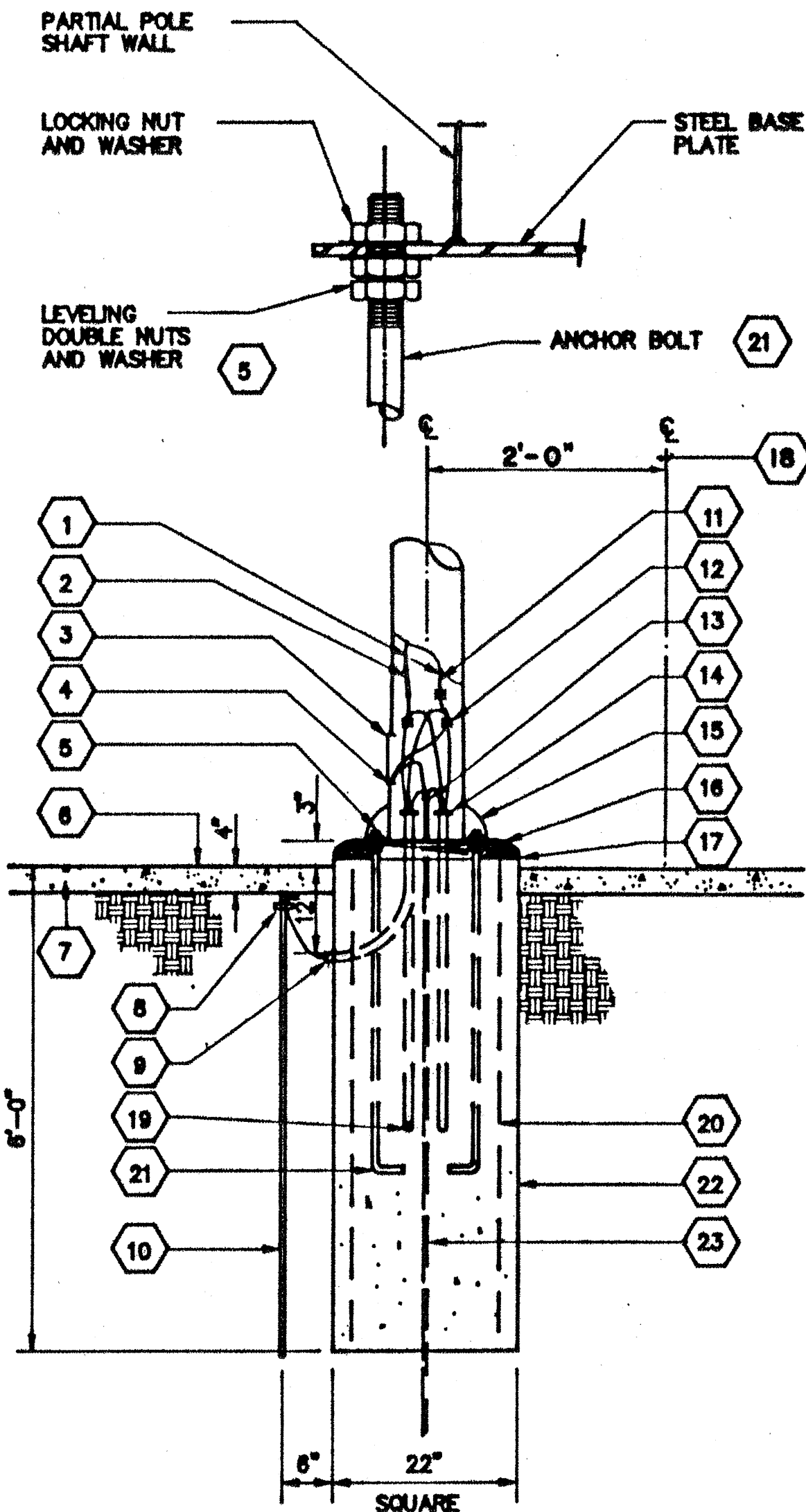
SCALE: NONE DATE: APRIL 1991

SHEET No. E-14 OF 27 SHEETS

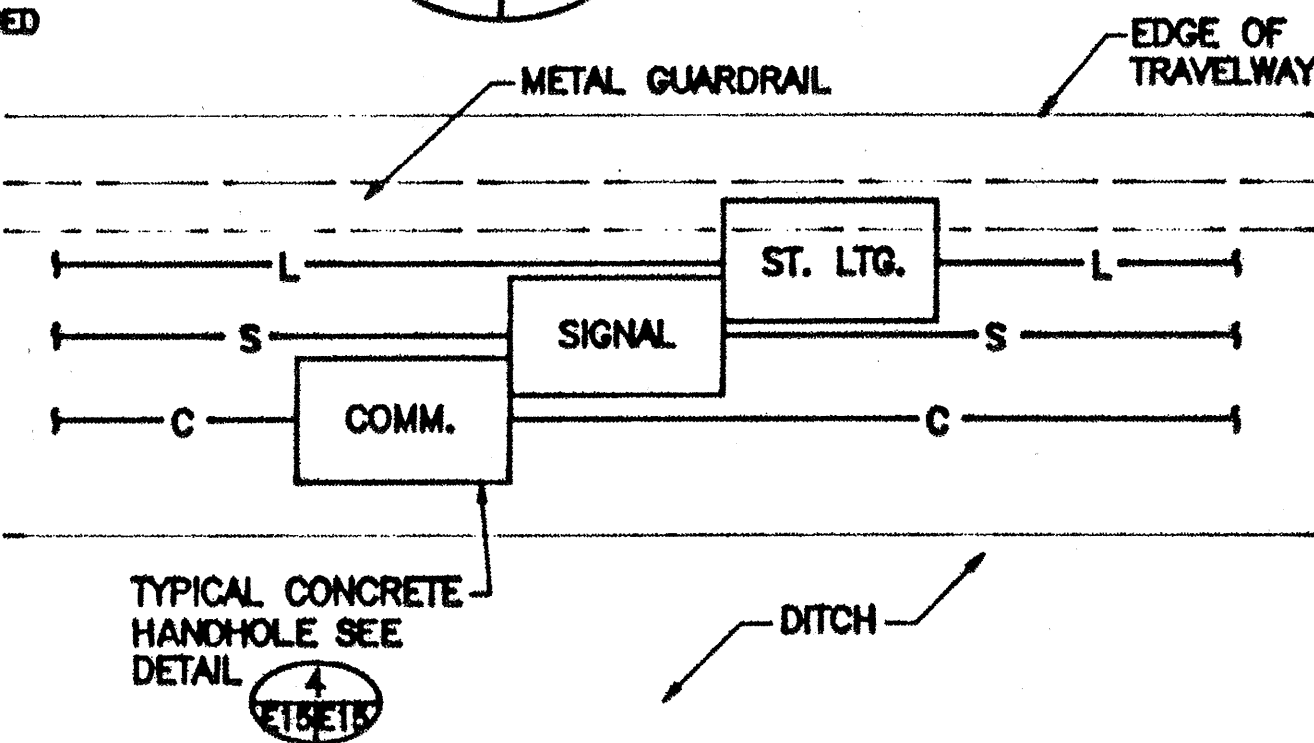
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(71)	1991	606	618

NOTES

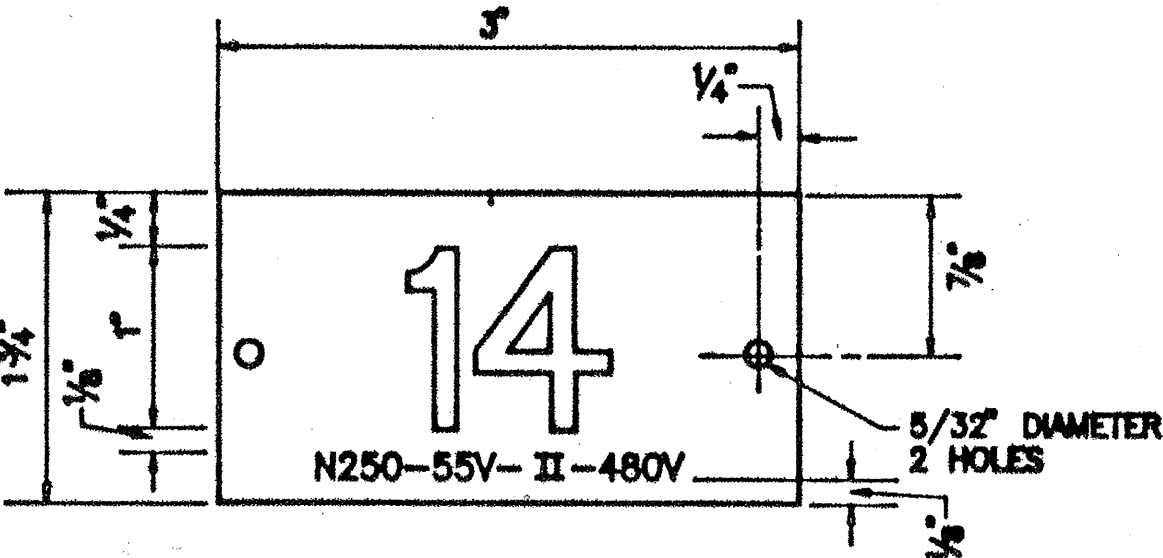
1. PROVIDE 24" SLACK OF CABLE PRIOR TO SPLICING.
2. WATERPROOF FUSED CABLE CONNECTOR KIT WITH 8 AMP FUSE FOR SINGLE LAMP CONDITION.
3. 4" x 8 1/2" HANDHOLE WITH COVER.
4. GROUND LUG WITH 1/2"-20 NUT & BOLT WITH DOUBLE WASHERS.
5. LEVELING & LOCKING NUTS & WASHERS (12 TOTAL EA).
6. FINISHED GRADE
7. CONCRETE
8. THERMOWELD CONNECTION OR EQUAL.
9. #6 B.C. GROUND WIRE INSTALLED IN SLEEVE.
10. GROUND ROD 3/4" x 6'-0" COPPERWELD. PROVIDE ADDITIONAL GROUND ROD AS REQUIRED IF GROUND RESISTANCE EXCEEDS 25 OHMS (MAXIMUM ALLOWED)
11. WHITE INSULATION FOR NEUTRAL CONDUCTOR.
12. SPLIT BOLT CONNECTOR (TYPICAL). TAPE AFTER INSTALLATION (TYPICAL)
13. BUSHING OPENING & GROUND ROD CONNECTION TO BE AT HANDHOLE LEVEL EASILY ACCESSIBLE FOR MAINTENANCE THRU HANDHOLE.
14. GROUNDING TYPE BUSHING OR PLASTIC TYPE BUSHING AS REQUIRED SEAL DUCT AFTER INSTALLING STREET LIGHT CABLES (TYPICAL).
15. POLE BASE COVER.
16. GROUT AND CHAMFER TO FINISH AFTER POLE IS LEVEL AND PLUMB. DIP GROUT FINISH 1/8" PER FT. TOWARD CENTER OF TOP OF BASE.
17. 1/2" DIA. DRAINAGE CHASE.
18. 2" METAL GUARDRAIL SUPPORT
19. 1" PVC SCHED. 80 CONDUIT ELBOW OR 1 1/2" GALV. RIGID STEEL CONDUIT AT ROAD CROSSING.
20. 6"x8"x10/10 GALV. REINF. WIRE MESH, SINGLE WRAP.
21. 1"x40" ANCHOR BOLTS, HOT DIPPED GALV. ENTIRE LENGTH. (TOTAL - 4 EACH)
22. CONC. FOUNDATION. CONC. MIXTURE TO HAVE A MINIMUM COMPRESSION STRENGTH OF 2500 PSI IN 28 DAYS (CLASS "B").
23. 3/4" DIA. X 10'-0" COPPERWELD GROUND ROD.



5 STREET LIGHTING STANDARD BASE
E15 E15 NOT TO SCALE



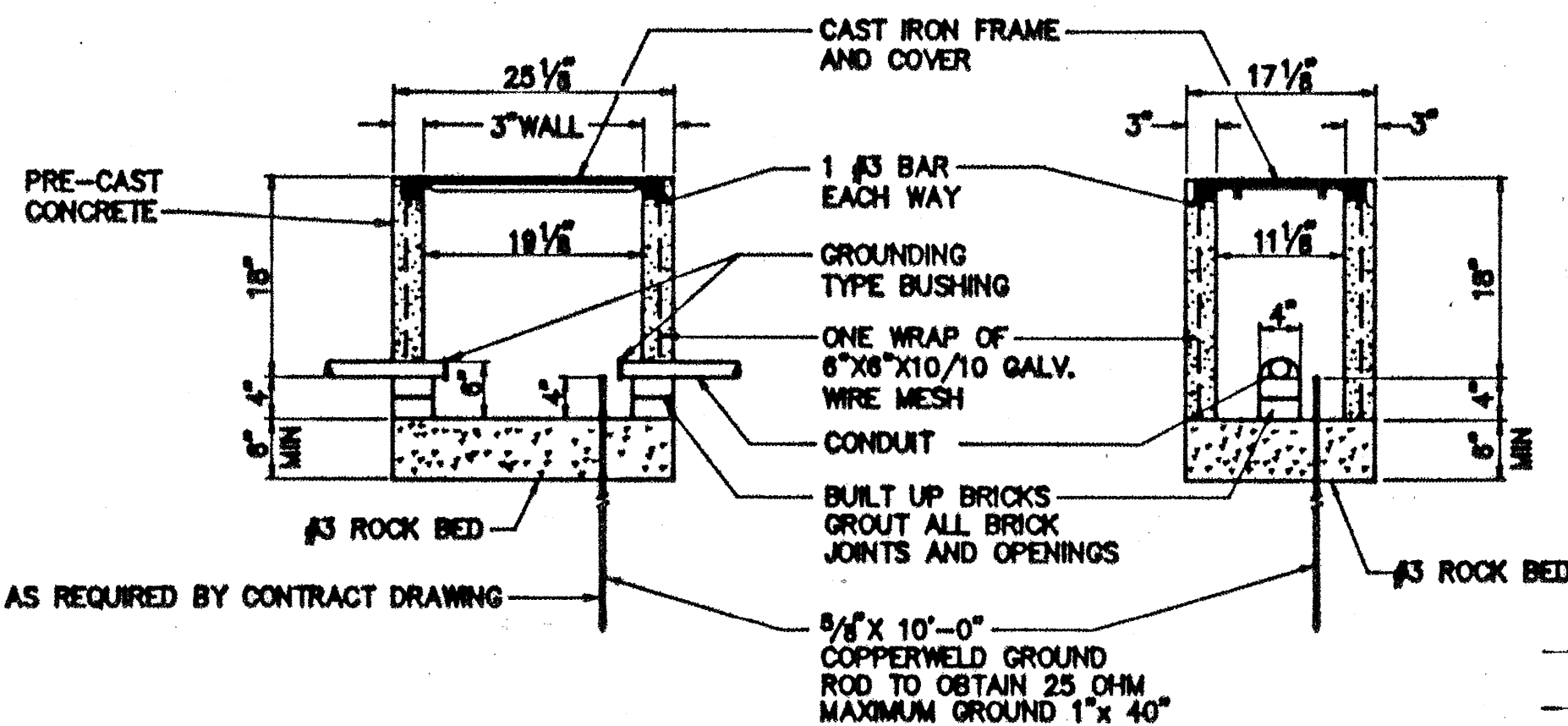
6 HANDHOLE GROUP DETAIL
E15 E15 NOT TO SCALE



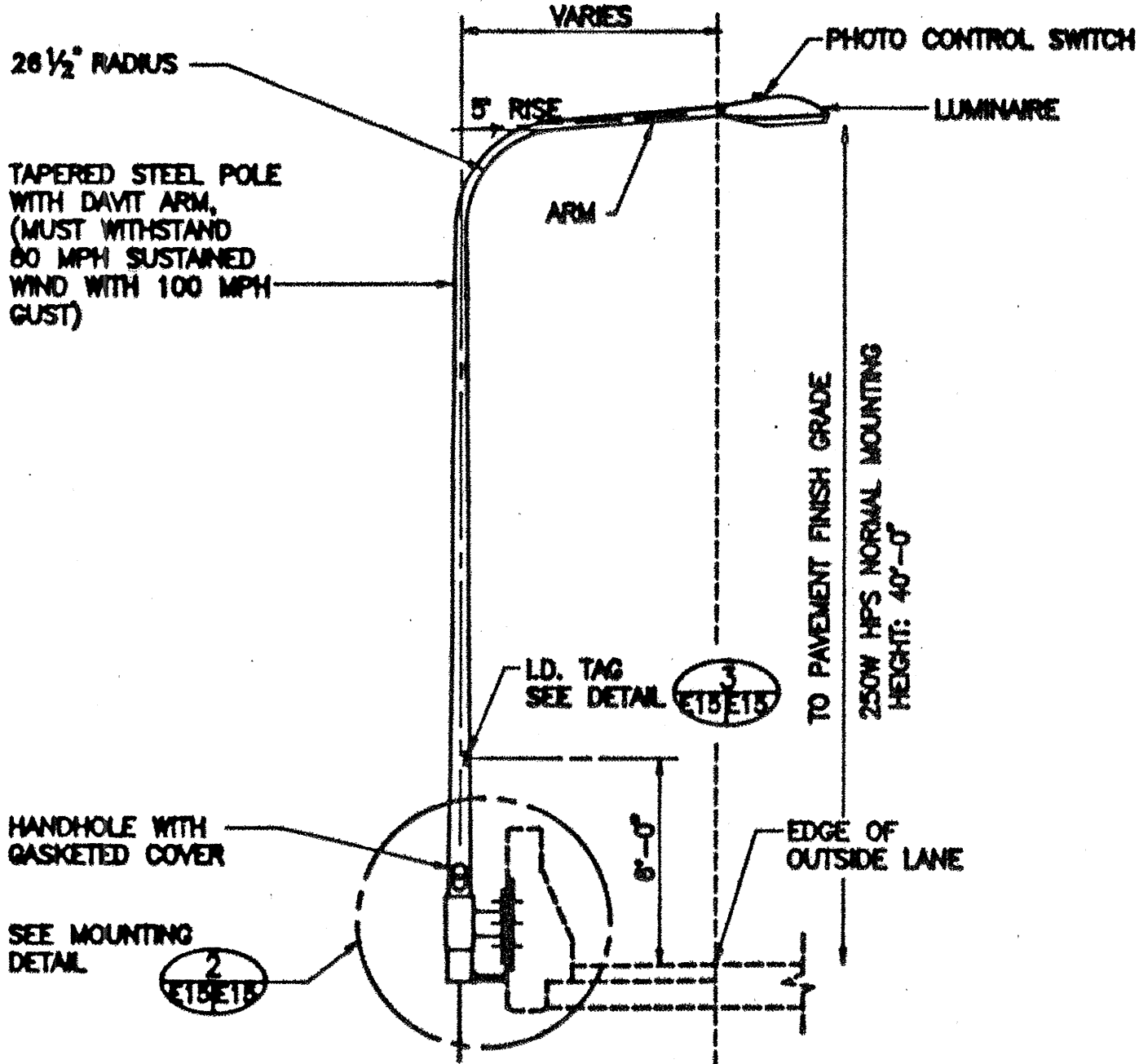
- 14 POLE AND LIGHT NUMBER PER STATE'S REQUIREMENTS
N250 LAMP TYPE AND WATTAGE, N = SODIUM
55V LAMP VOLTAGE
II IES TYPE DISTRIBUTION
480V BALLAST VOLTAGE

1. USE 3-PLY PLASTIC - BLACK, WHITE, BLACK.
2. NUMBER SIZE SHALL BE 1" HIGH AND ENGRAVED 1/8" WIDE, WHITE IN COLOR (NO. AS REQUIRED).
3. NOMENCLATURE SIZE SHALL BE 1/4" HIGH AND ENGRAVED 1/32" WIDE, WHITE IN COLOR (WATTAGE, LAMP VOLTAGES, IES DISTRIBUTION AND BALLAST VOLTAGE).
4. ATTACH SECURELY TO POLE WITH NO. 7 CADMIUM PLATES SCREWS.
5. "N" FOR SODIUM LAMPS.
6. ATTACH TAG 6'-0" ABOVE FINISH GRADE ON STREET SIDE.

3 I.D. TAG DETAIL
E15 E15 NOT TO SCALE

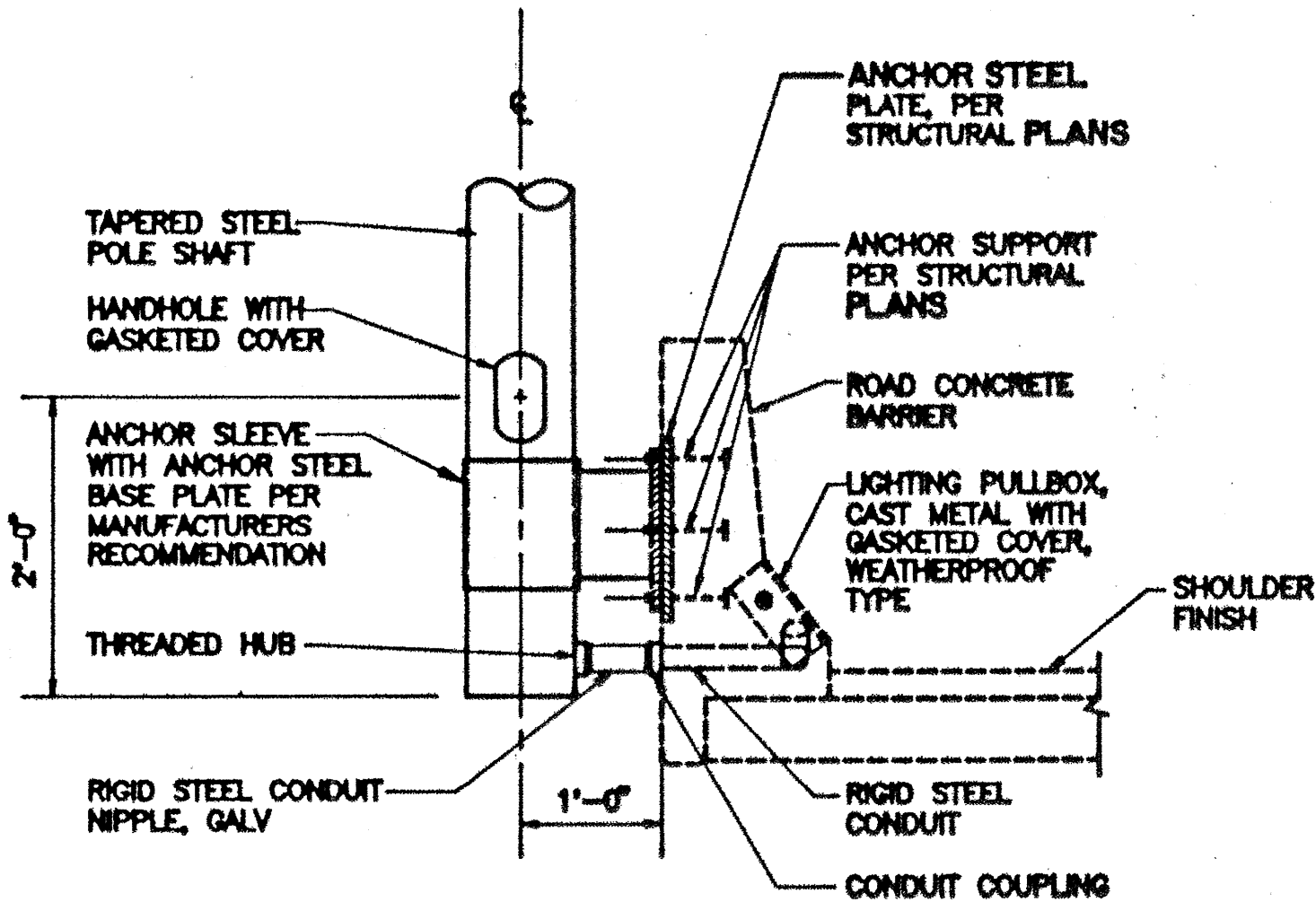


4 CONCRETE HANDHOLE DETAIL
E15 E15 NOT TO SCALE



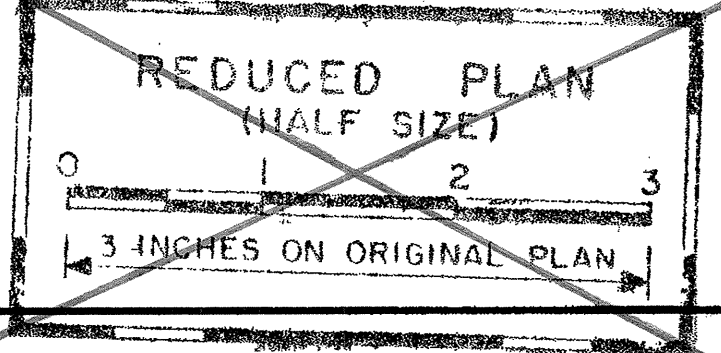
1 HIGHWAY LIGHTING STANDARD
E15 E15 NOT TO SCALE

E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13



NOTE: REFER TO STRUCTURAL DRAWING FOR ANCHOR STEEL PLATE INSTALLATION REQUIREMENT.

2 LIGHTING STANDARD MOUNTING DETAIL
E15 E15 NOT TO SCALE

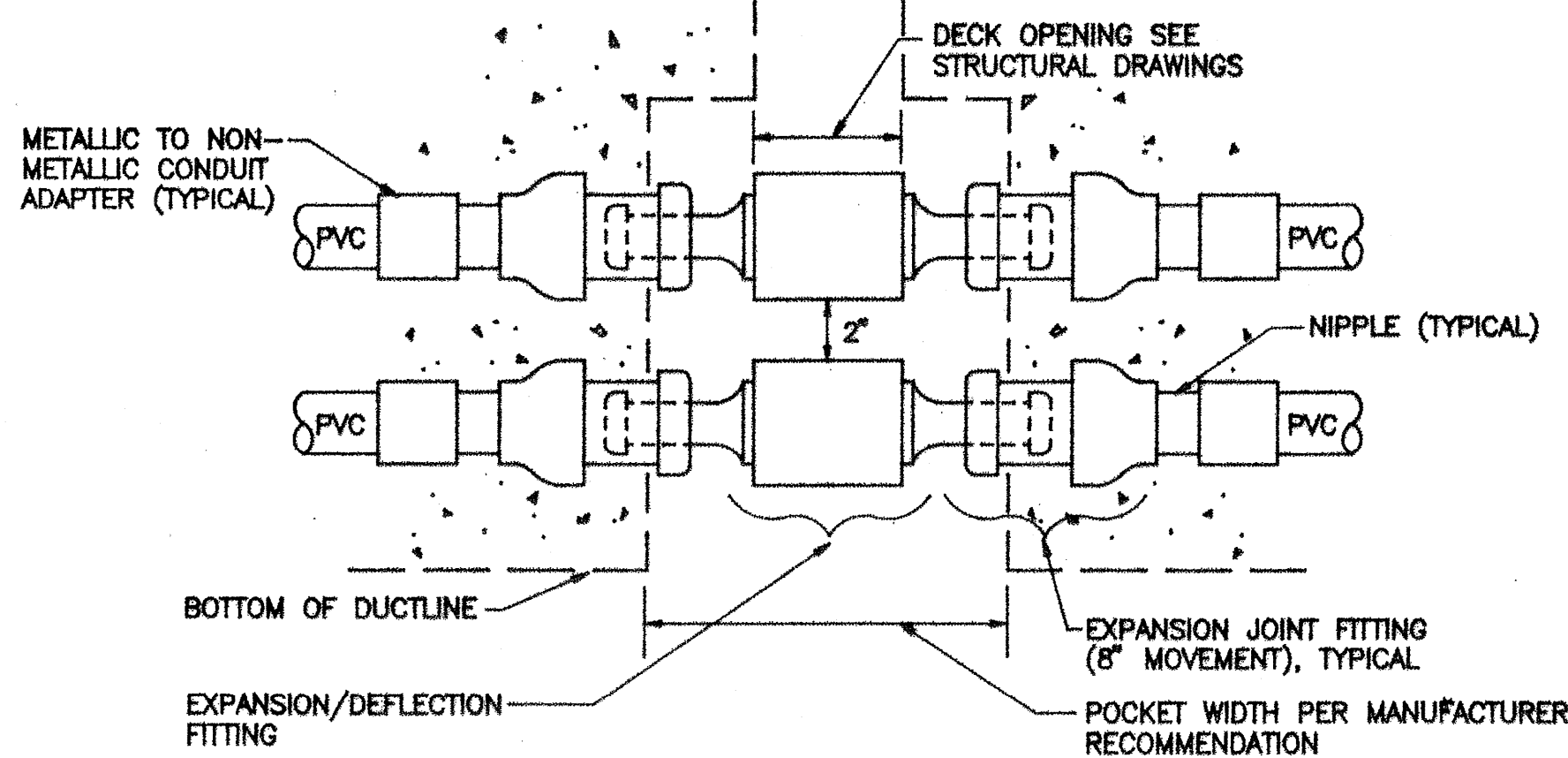


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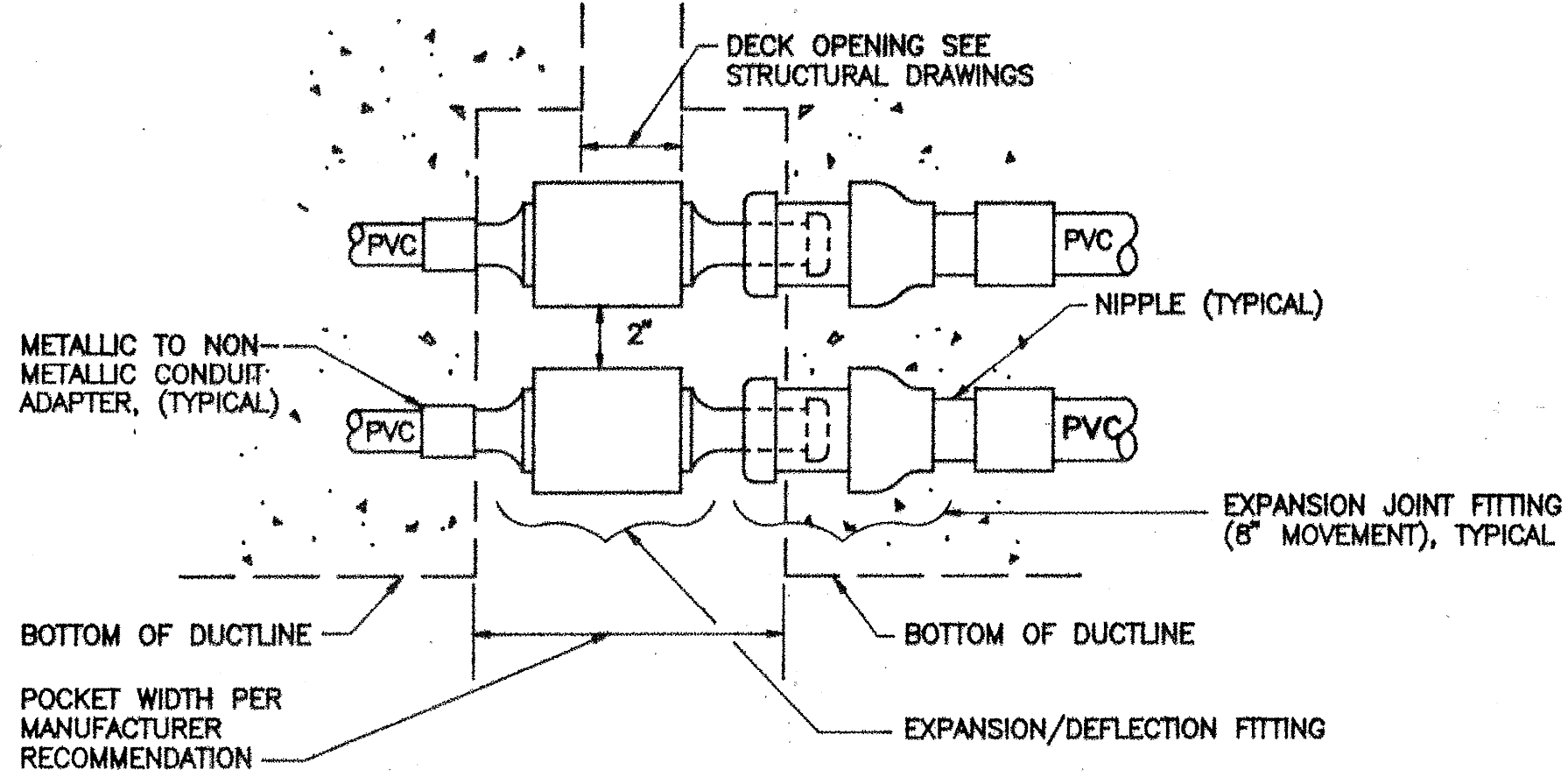
Signature

8/01/91	ADDED L.T.G. STD. BASE HANDHOLE AND HANDHOLE GROUP DETAILS
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DETAILS	
INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. 1 - H3 - 1 (71)	
SCALE: NONE	DATE: APRIL 1991
SHEET No. E-15 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	807.	618



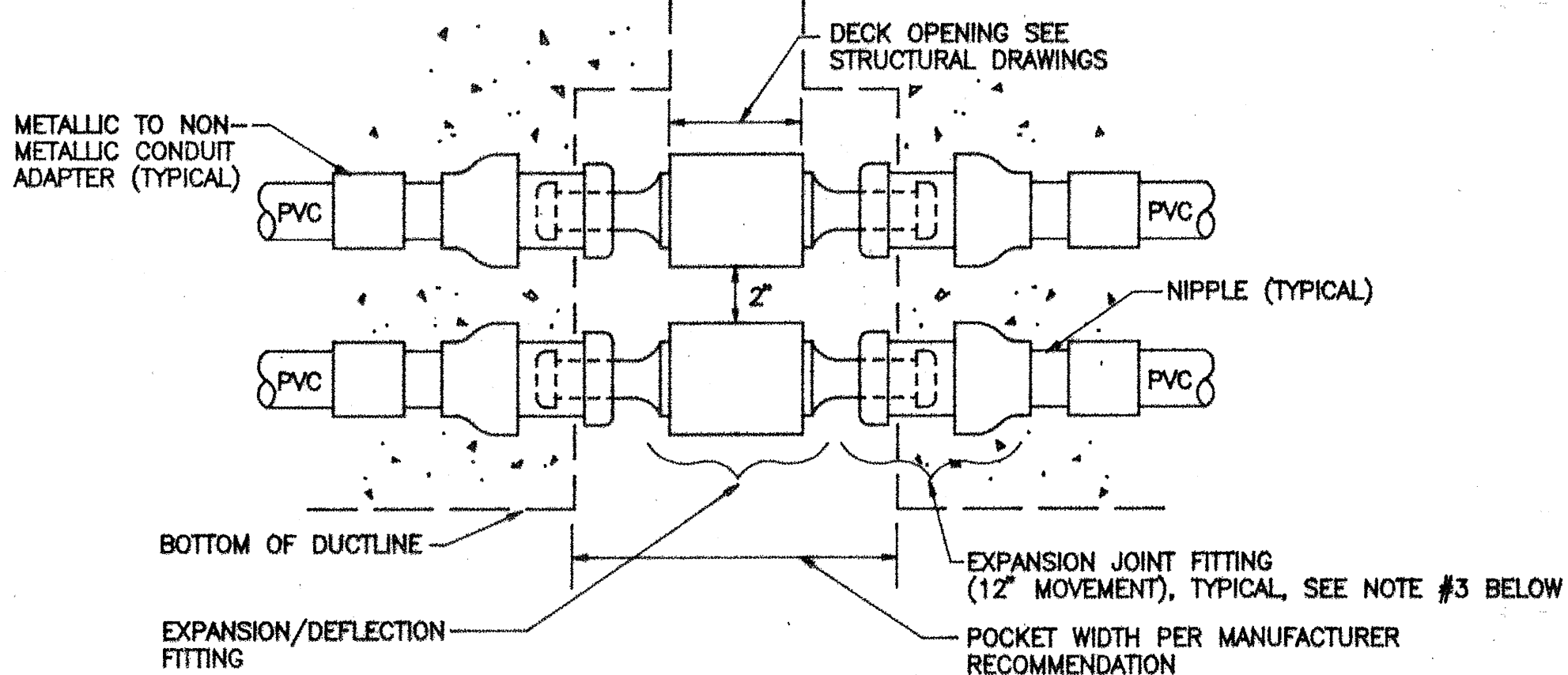
 **46KV DUCTLINE - TYPICAL EXPANSION / DEFLECTION**
FITTING DETAIL (2" AND 14" MOVEMENTS)
NOT TO SCALE



2
E7 | E16
E8

**46KV DUCTLINE - TYPICAL EXPANSION/DEFLECTION
FITTINGS DETAIL (2" AND 6" MOVEMENTS)**

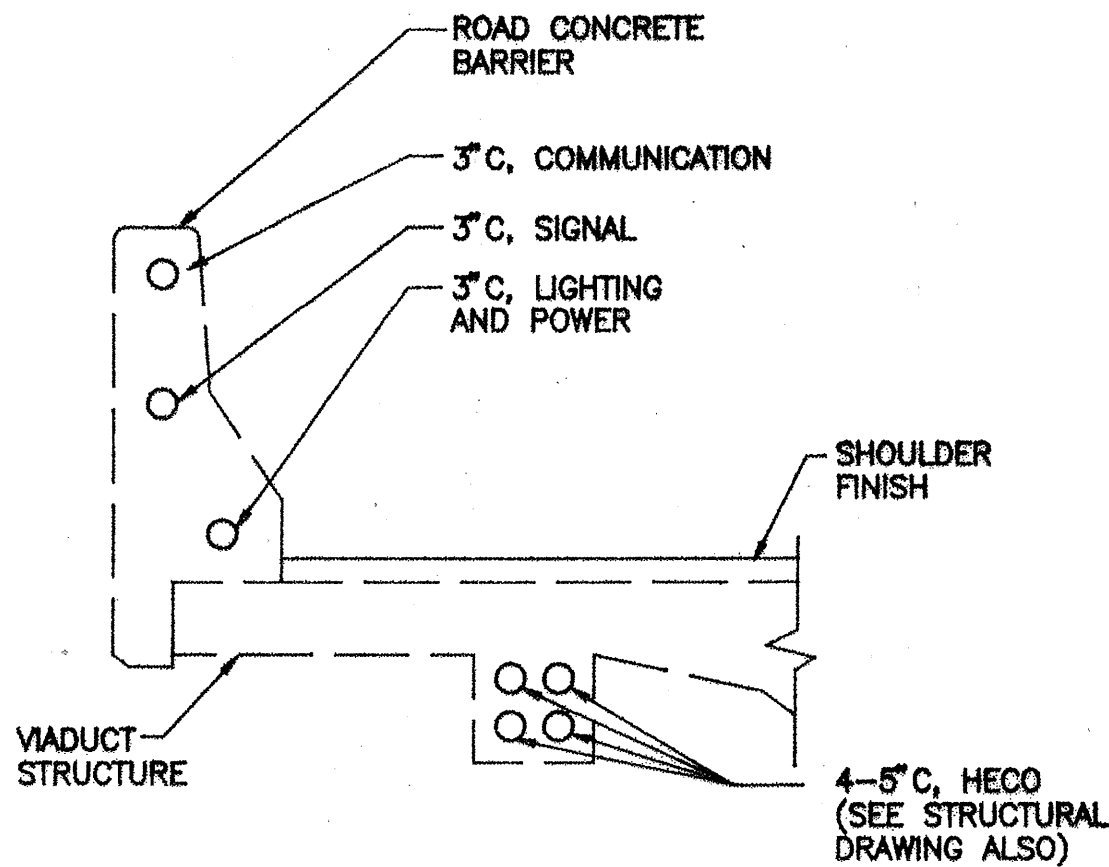
NOT TO SCALE



3
E5 | E16

**46KV DUCTLINE - TYPICAL EXPANSION / DEFLECTION
FITTING DETAIL (3' AND 21' MOVEMENTS)**

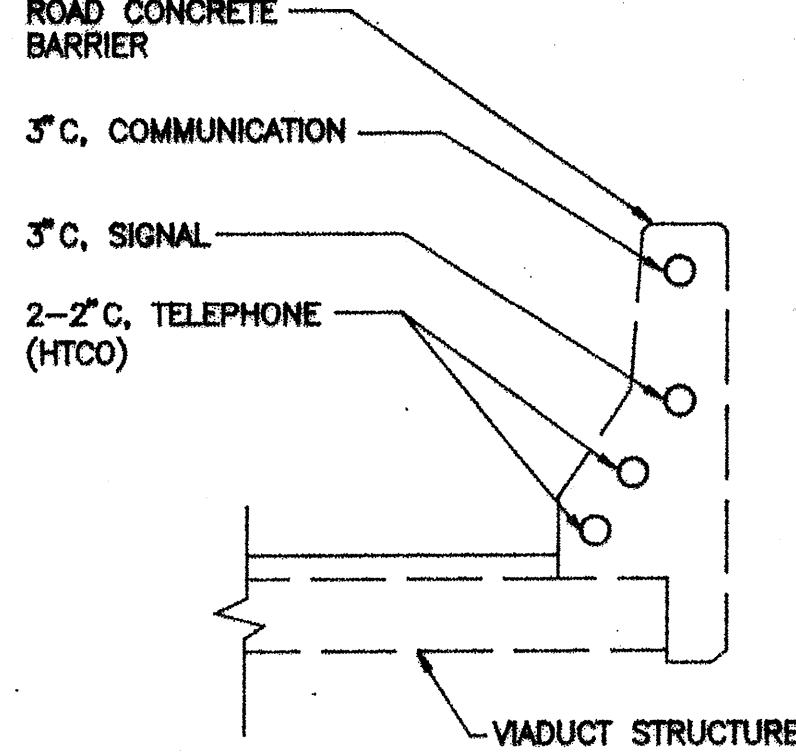
NOT TO SCALE



SECTION
NOT TO SCALE

E3, E4, E5
E6, E7

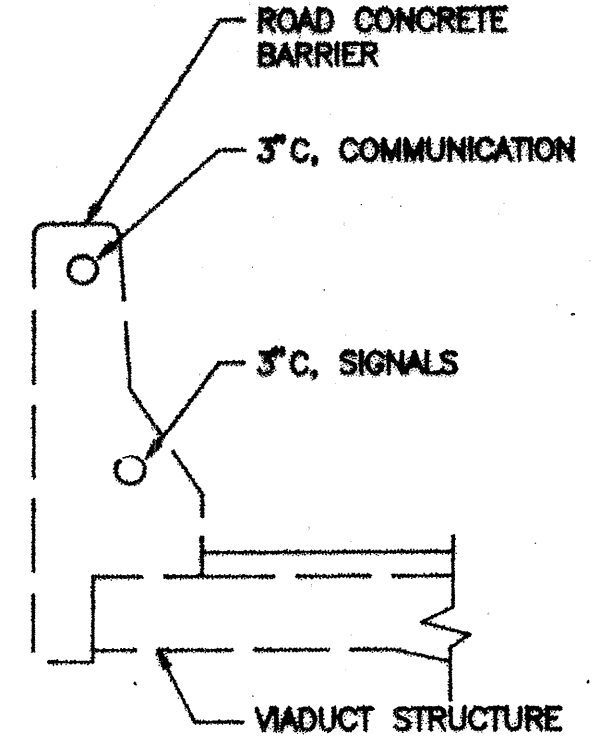
A
E2 | E16



SECTION
NOT TO SCALE

E3, E4, E5
E6, E7

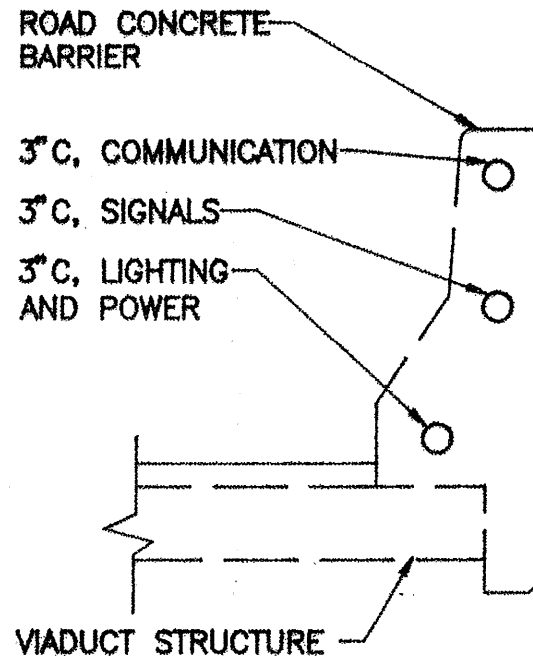
B
E2 E16



SECTION
NOT TO SCALE

E9, E10, E11
E12, E13

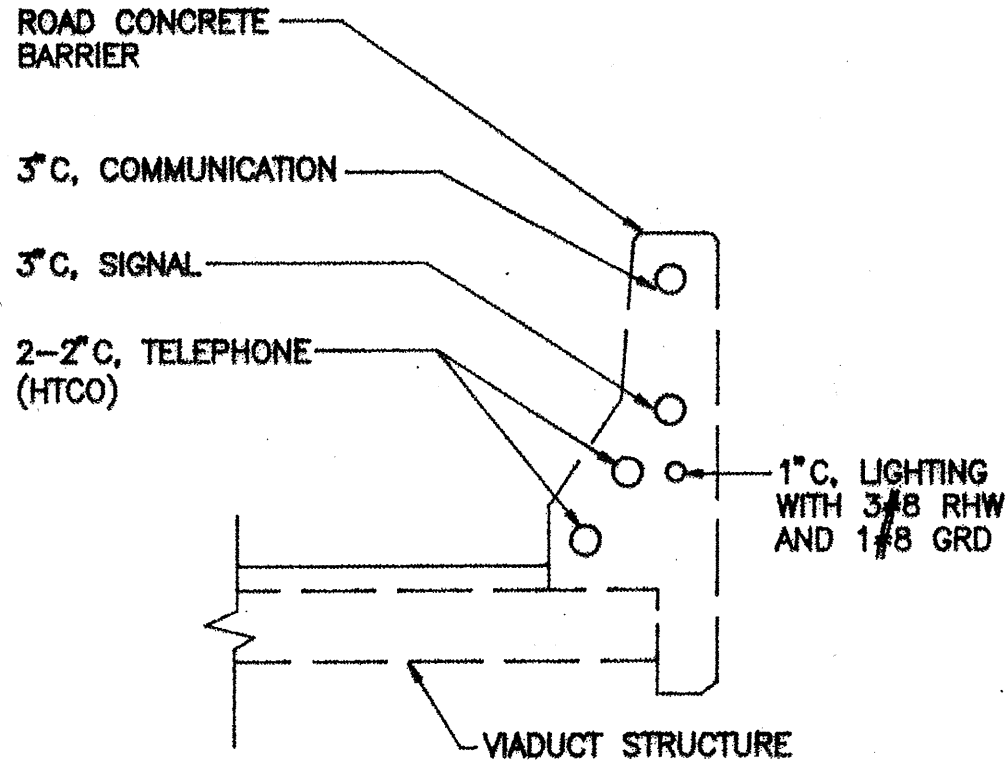
C
E8 | E16



SECTION
NOT TO SCALE

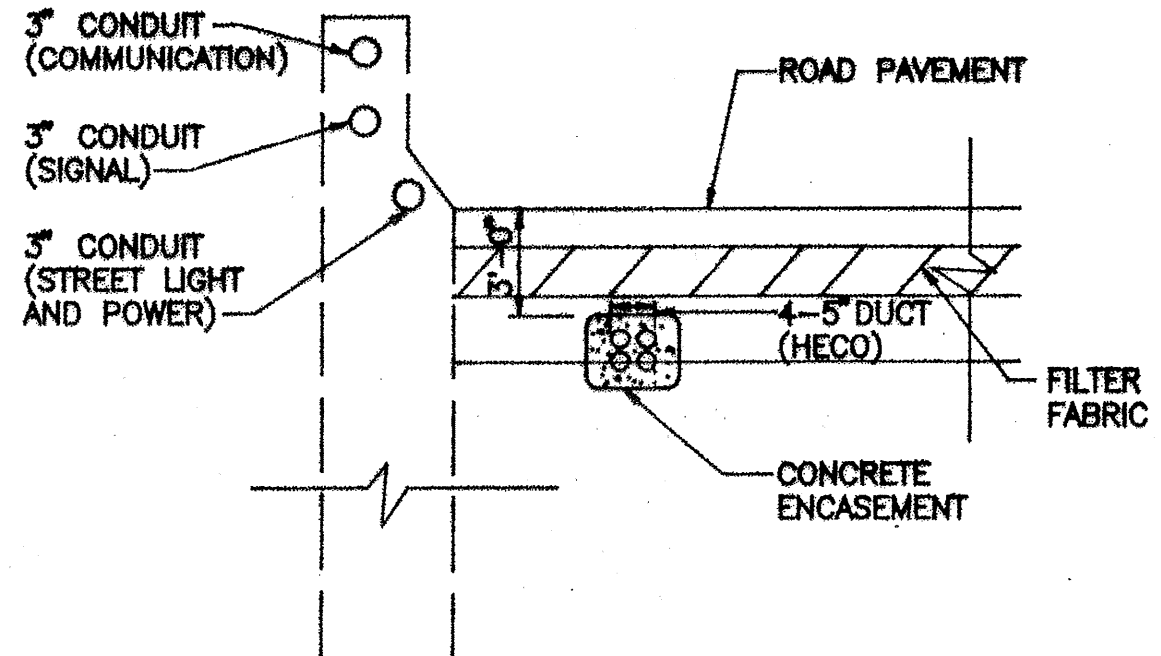
E9, E10, E11
E12, E13

D
E8 E16



SECTION
NOT TO SCALE

E
E7 E16



SECTION
NOT TO SCALE

F

E2 E16

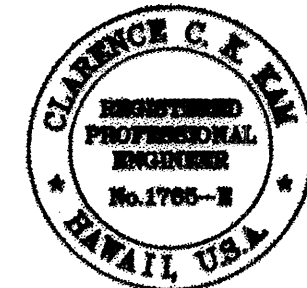
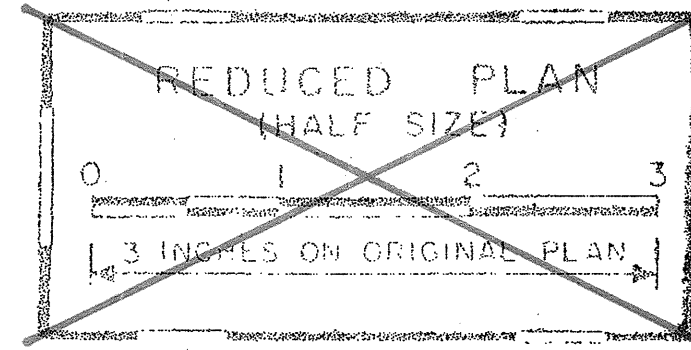
NOTE:

1. ALL CONDUITS SHALL BE PVC SCHEDULE 40 EXCEPT FOR GALVANIZED RIGID STEEL CONDUIT STUBS TO EQUIPMENT/DEVICES.
2. COORDINATE WITH STRUCTURAL FOR CONDUIT INSTALLATION.

4 **DUCT SECTIONS**
E16 | E16 NOT TO SCALE

GENERAL NOTES FOR EXPANSION/DEFLECTION REQUIREMENTS:

1. EXPANSION/DEFLECTION FITTING DETAIL FOR SIGNAL, POWER, LIGHTING AND COMMUNICATION DUCTLINE SHALL BE SIMILAR.
2. SEE STRUCTURAL DRAWINGS FOR LOCATION OF DECK EXPANSION JOINTS.
3. 12" MOVEMENT EXPANSION JOINT FITTING, TO BE SPECIAL ORDER FACTORY ITEM.



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SIGNATURE

DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

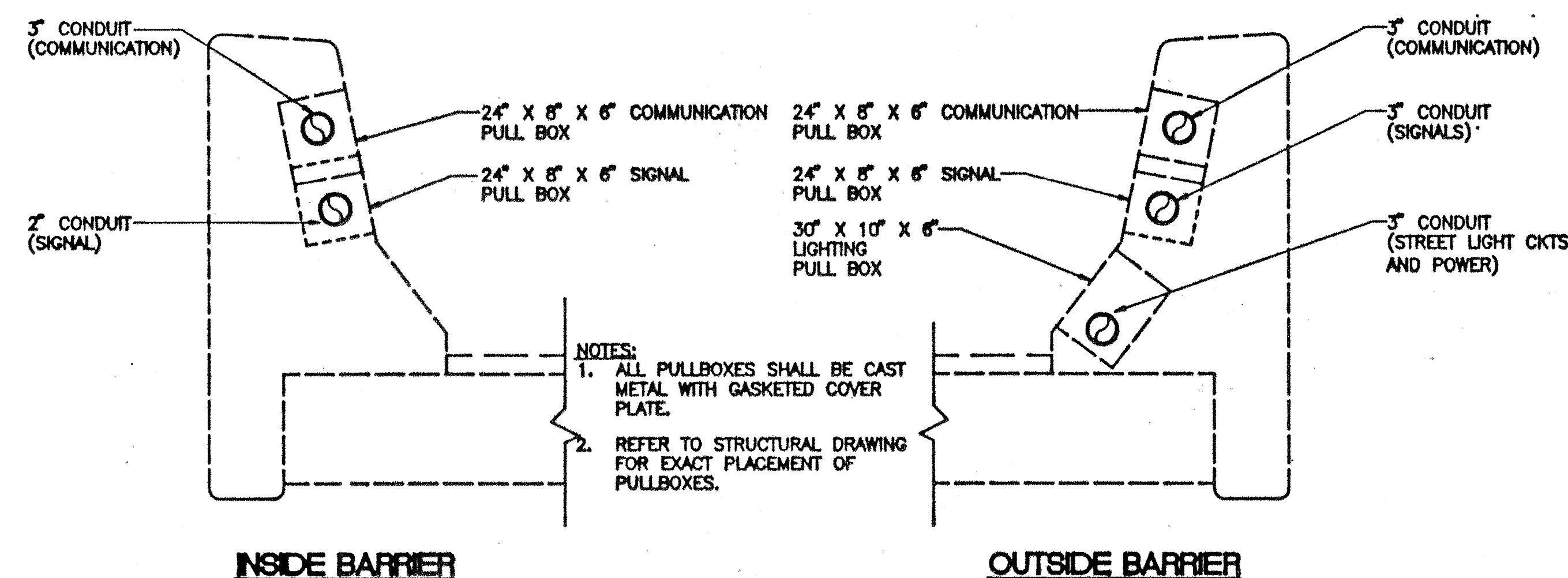
DETAILS AND SECTIONS

INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. 1 - H3 - 1 (71)

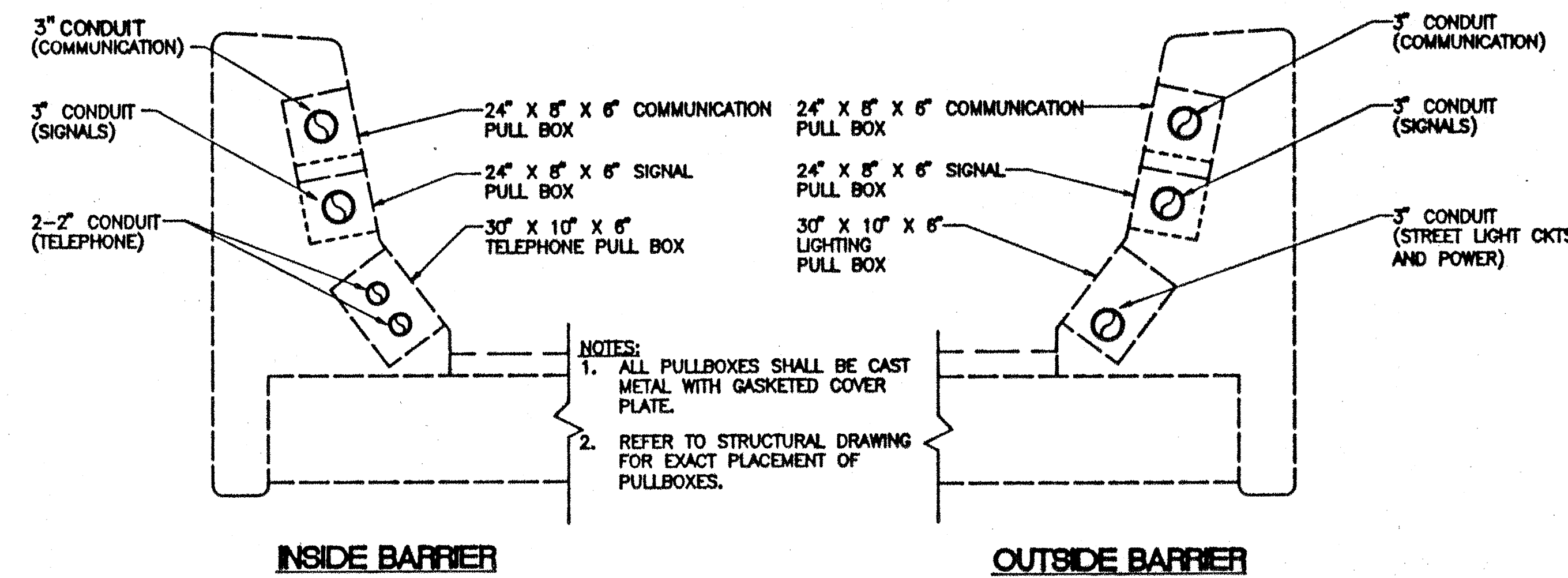
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SHEET No. E-16 OF 27 SHEETS

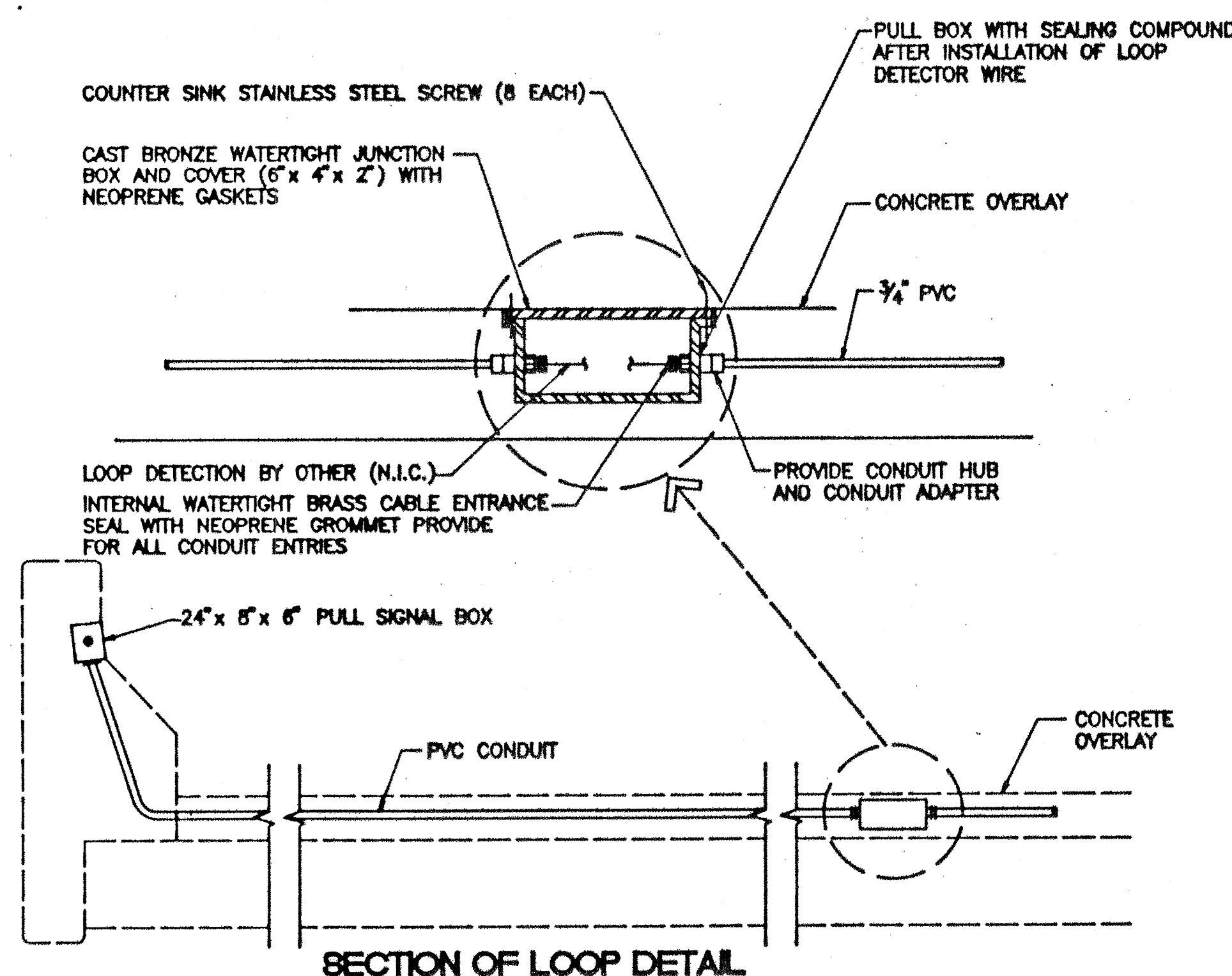
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	608	618



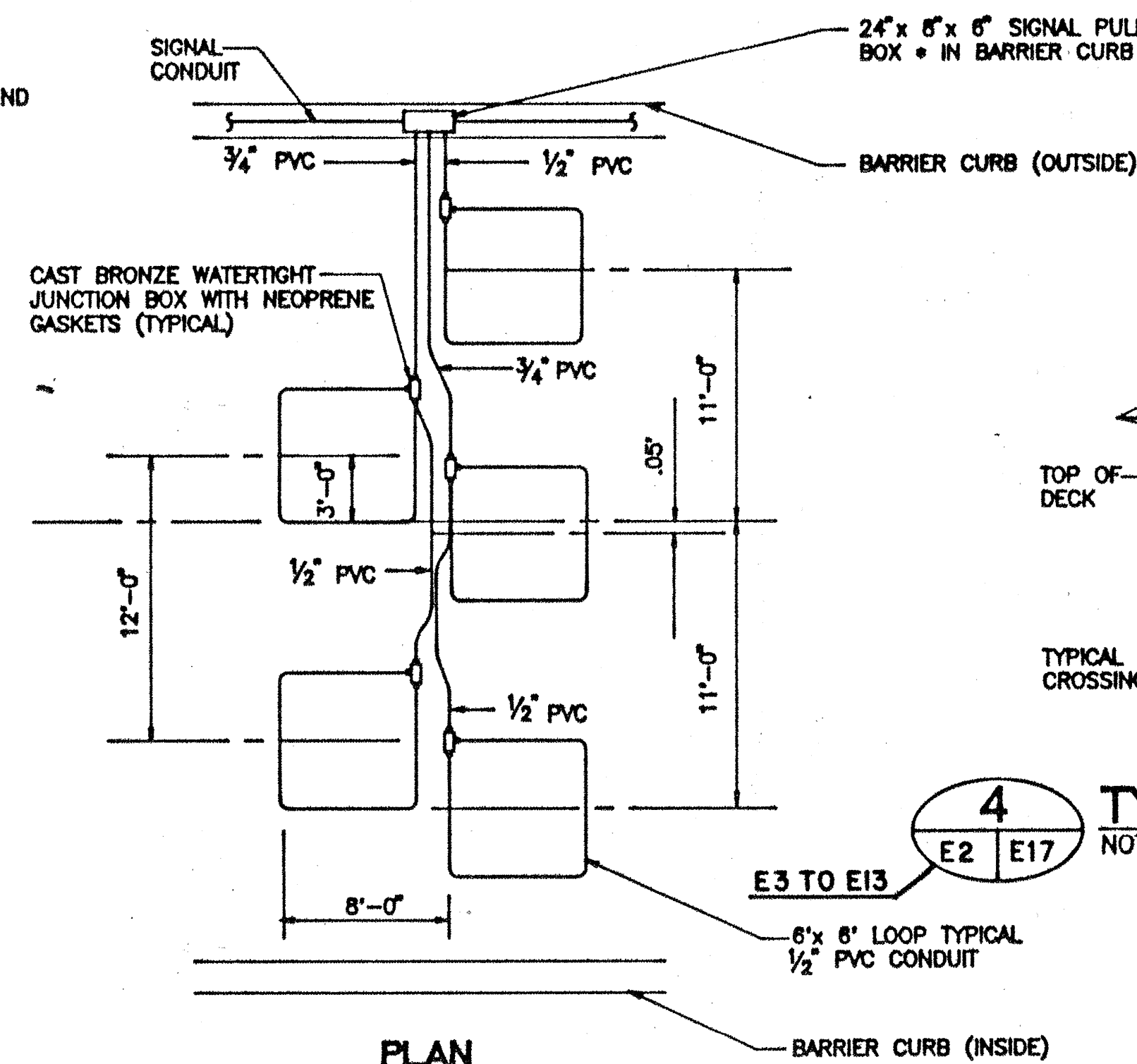
1 TYPICAL SYSTEMS CONDUIT AND PULL BOX INSTALLATION
OUTBOUND ROADWAY HALAWA VIADUCT
NOT TO SCALE



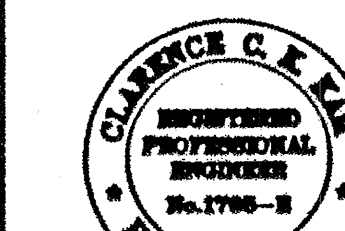
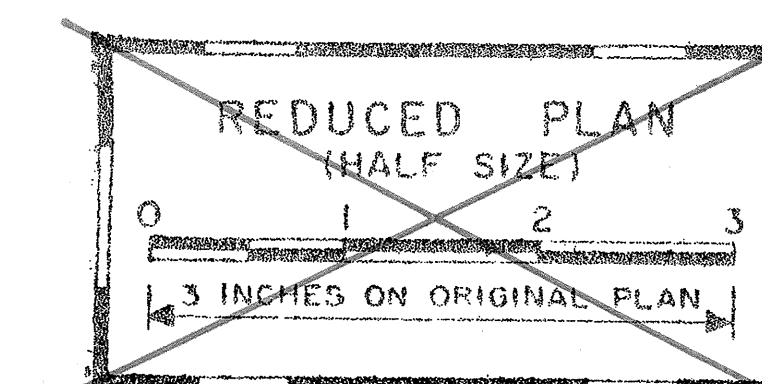
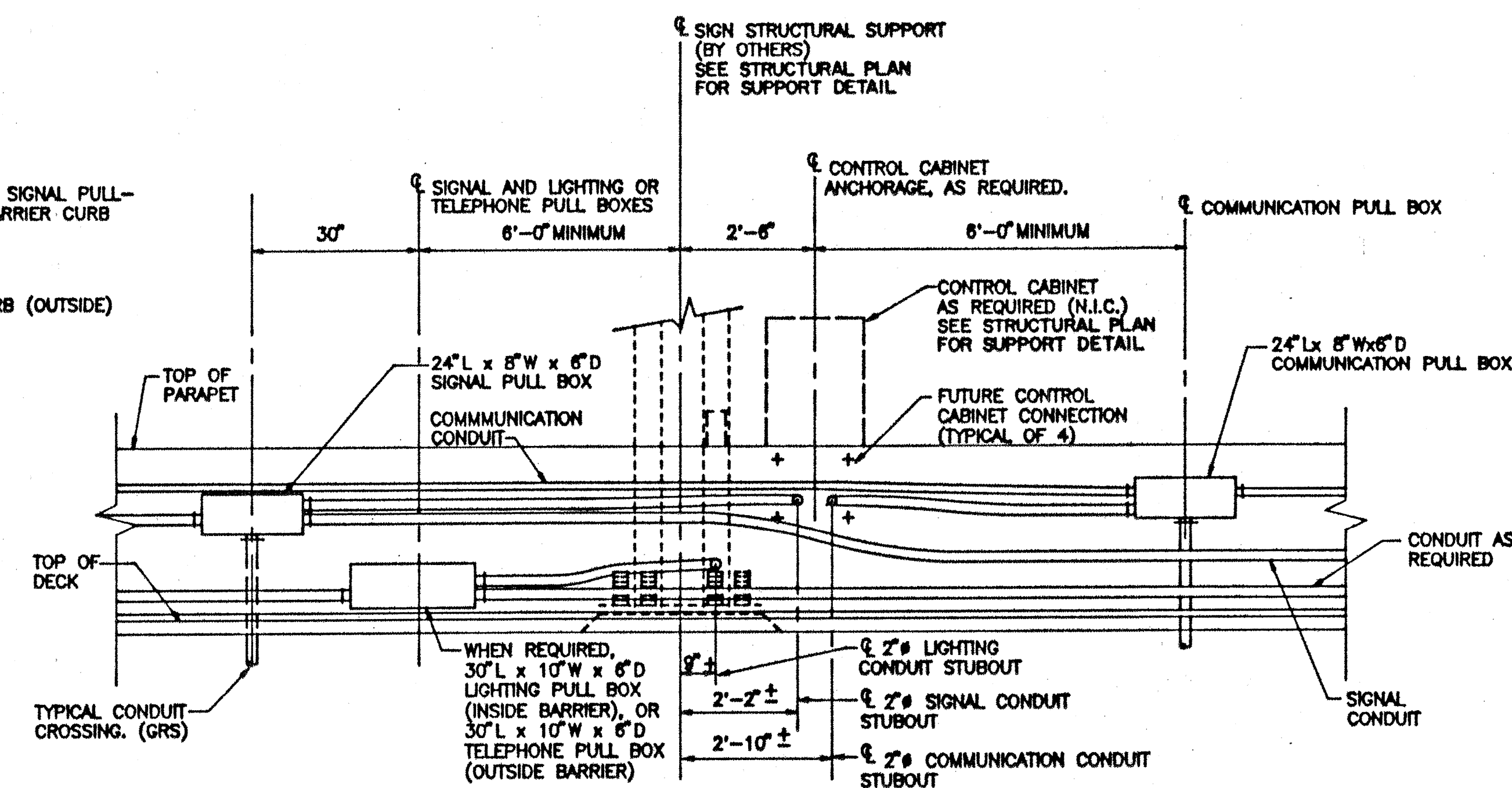
3 TYPICAL SYSTEMS CONDUIT AND PULL BOX INSTALLATION
INBOUND ROADWAY HALAWA VIADUCT
NOT TO SCALE



2 TYPICAL DETECTOR LOOP DETAIL
NOT TO SCALE



4 TYPICAL CONDUIT AND PULL BOX PLACEMENT DETAILS - FRONT ELEVATIONS
NOT TO SCALE



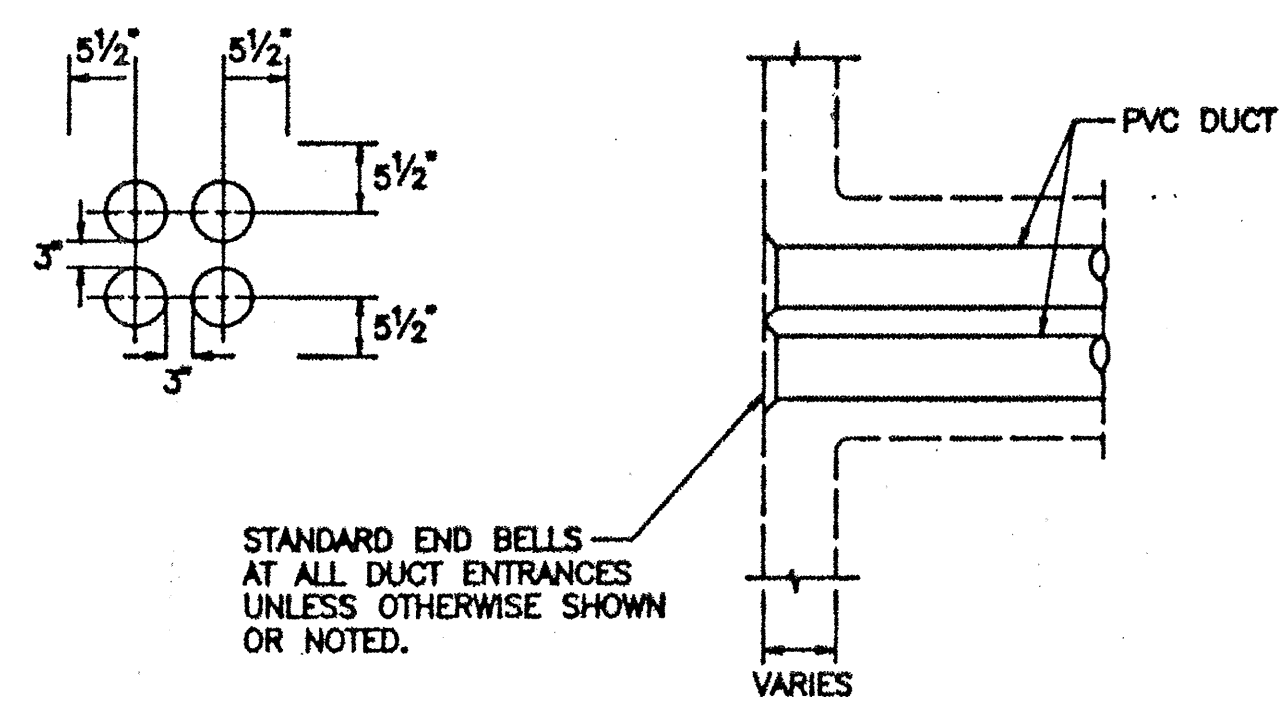
This work was prepared by me or under my supervision.
C. E. E.
SIGNATURE

8/01/91	REVISED COMM. CONDUIT SIZE, ADDED STRUCTURAL REFERENCE NOTE
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SECTIONS & DETAILS	
INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. 1 - H3 - 1 (71)	
SCALE: NONE	DATE: APRIL 1991

SHEET No. E-17 OF 27 SHEETS

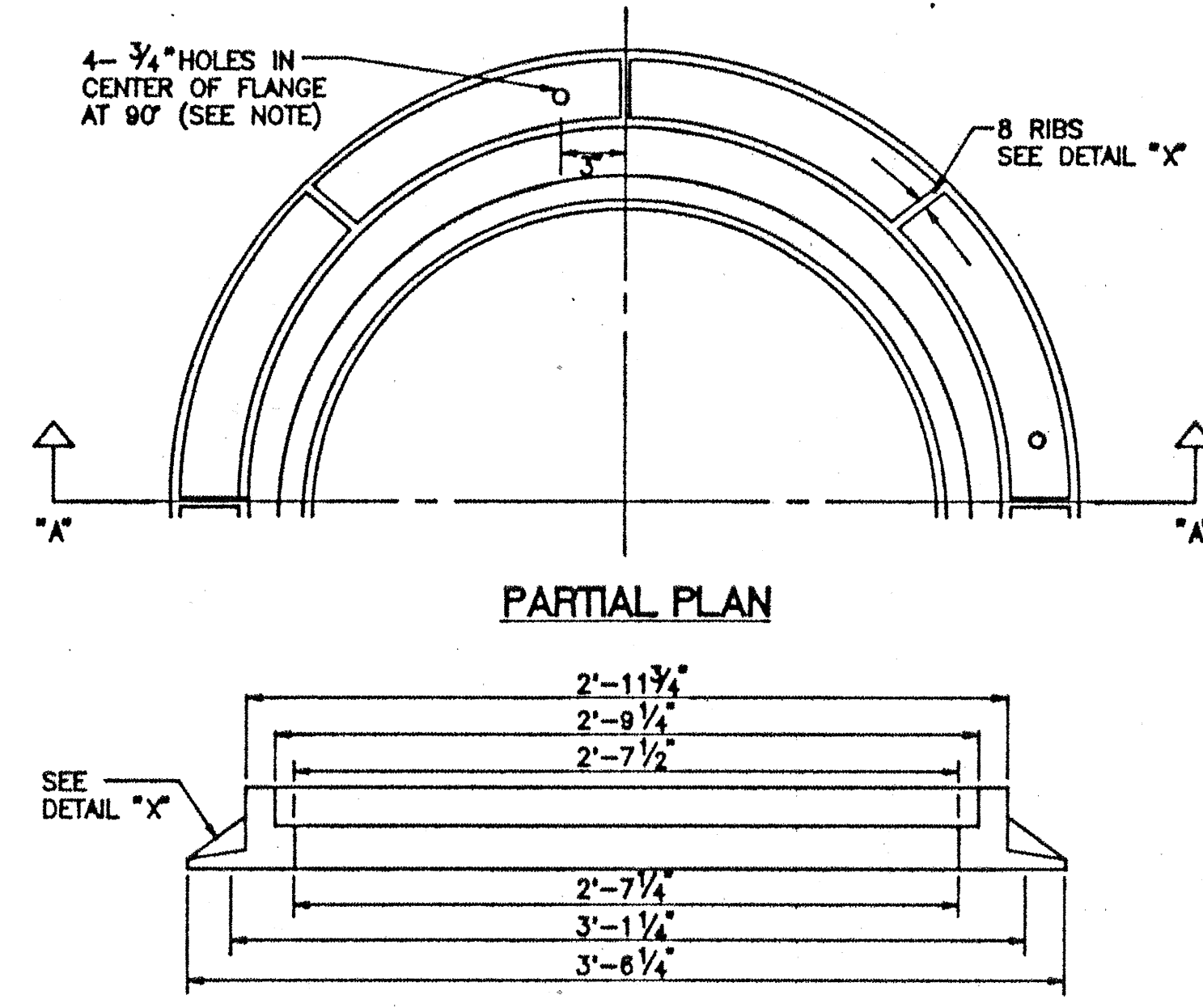
ADD 608

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	808	618



FRONT SECTION

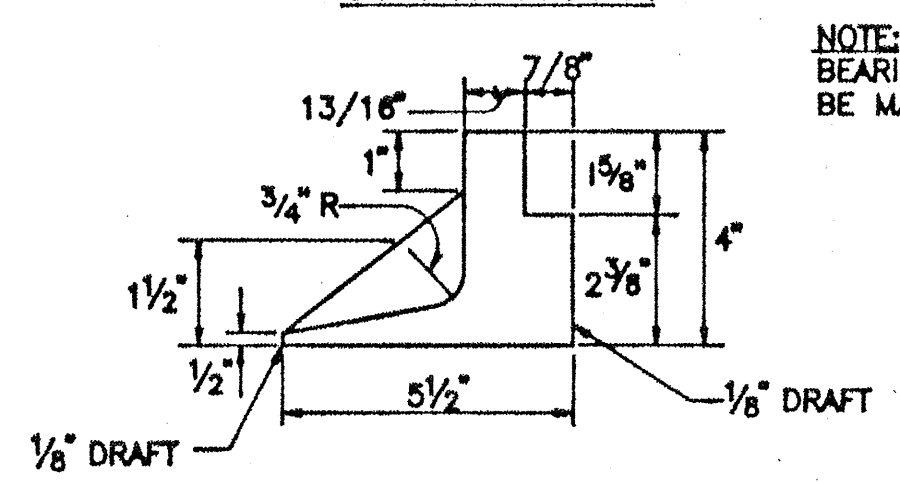
1 TYPICAL CONDUIT ENTRANCE INTO MANHOLE
(4 WAY DUCT LINE SHOWN)
NOT TO SCALE



PARTIAL PLAN

SEE DETAIL "X"

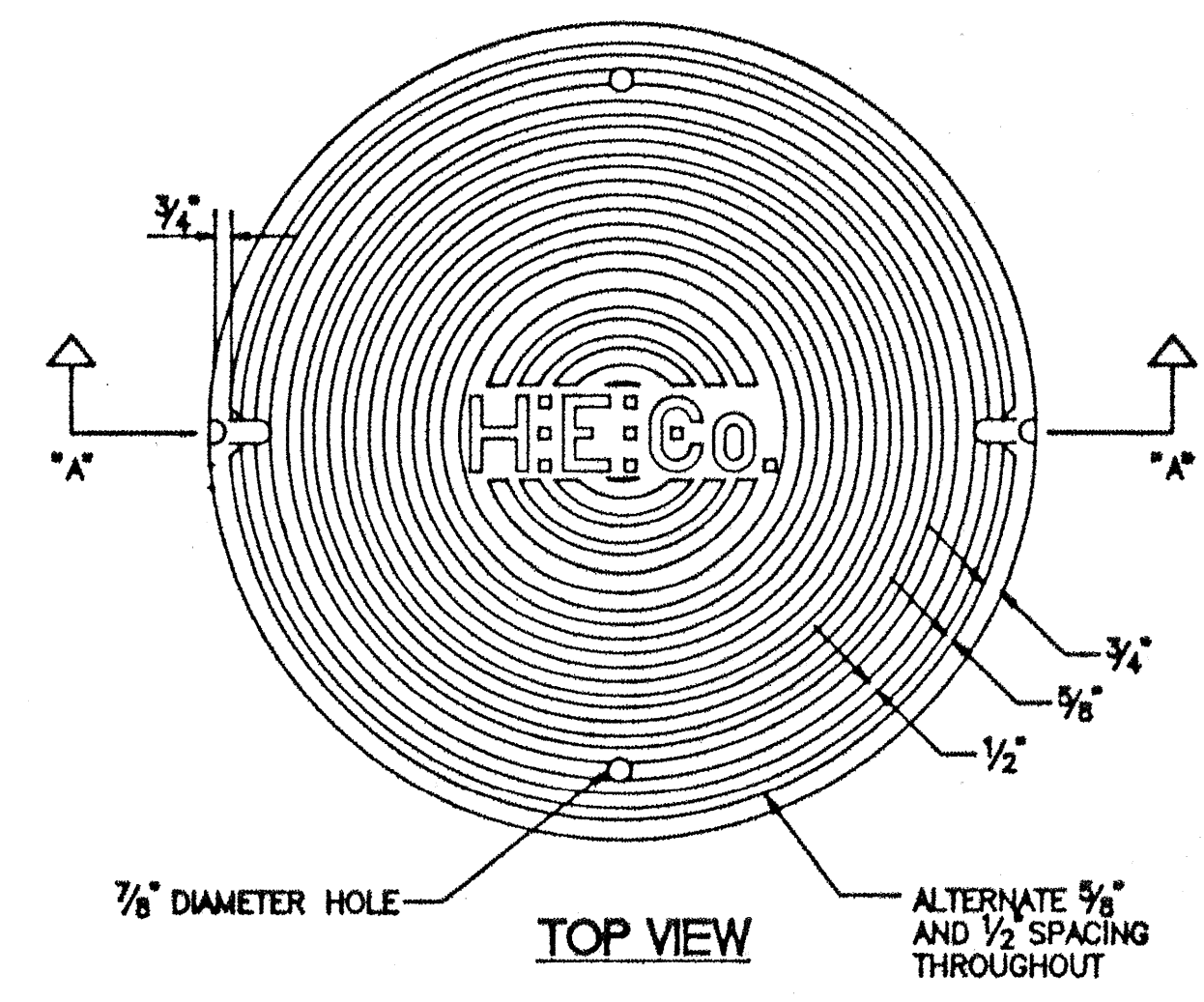
SECTION A-A



DETAIL "X"

INSTALLATION NOTE:
INSERT 3/4" Ø BOLTS THRU HOLES IN FLANGE INTO CONCRETE.
MATERIAL: CAST IRON PER ASTM A40, CLASS 30
WEIGHT: APPROXIMATE 300 LBS.
REFERENCE: 31" MANHOLE COVER-DRAWING 011327

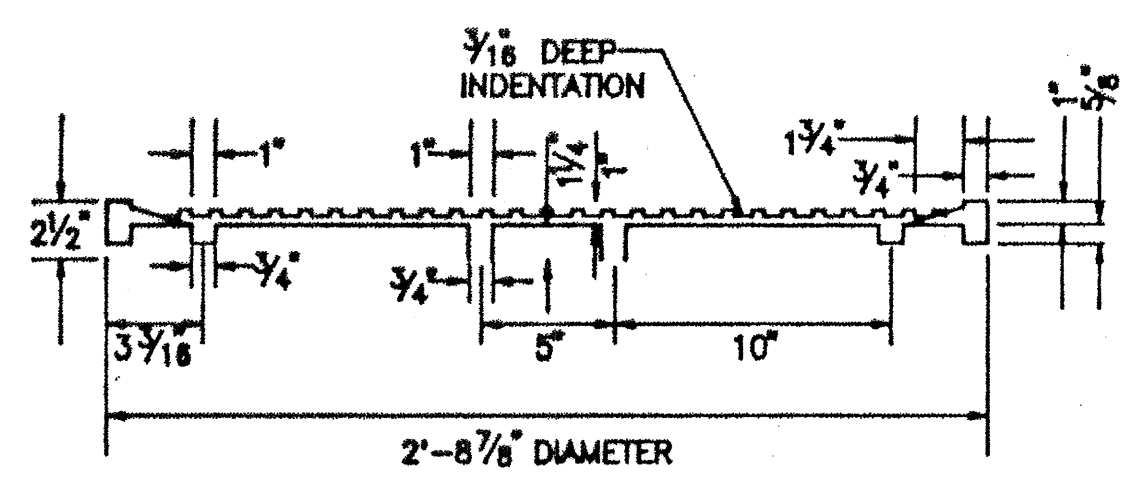
FRAME DETAIL



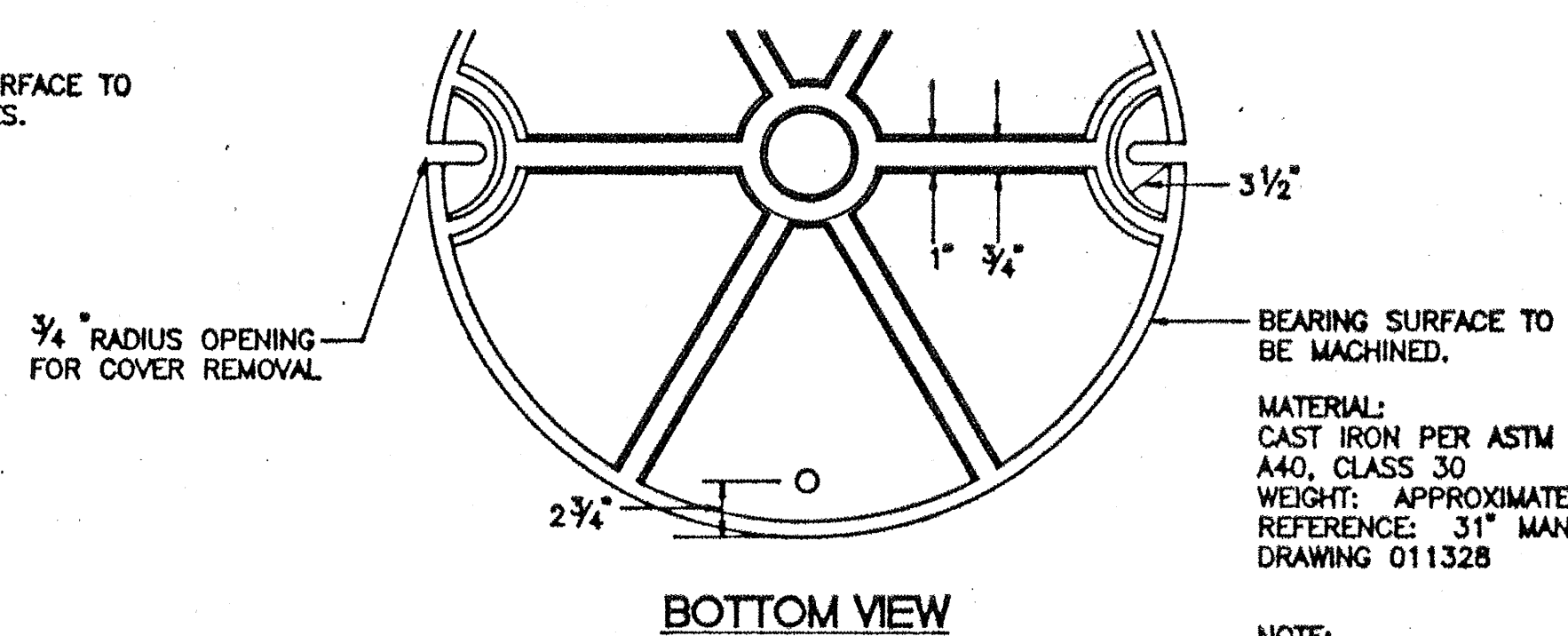
TOP VIEW

7/8" DIAMETER HOLE

ALTERNATE 5/8" AND 1/2" SPACING THROUGHOUT



SECTION A-A

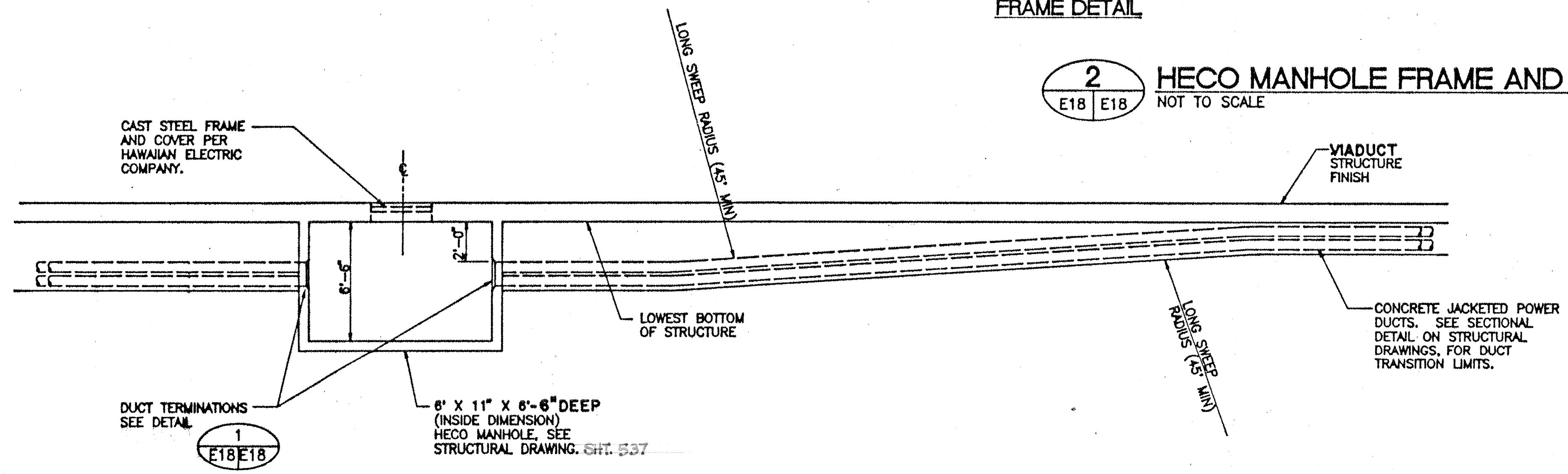


BOTTOM VIEW

BEARING SURFACE TO BE MACHINED.
MATERIAL: CAST IRON PER ASTM A40, CLASS 30
WEIGHT: APPROXIMATE 282 LBS.
REFERENCE: 31" MANHOLE FRAME DRAWING 011328
NOTE: PRIOR TO THIS ISSUE, 31" MANHOLE COVER WAS DESIGNATED AS 28" (NOM.) DRAWING U-10082

COVER DETAIL

2 HECO MANHOLE FRAME AND COVER DETAIL
NOT TO SCALE

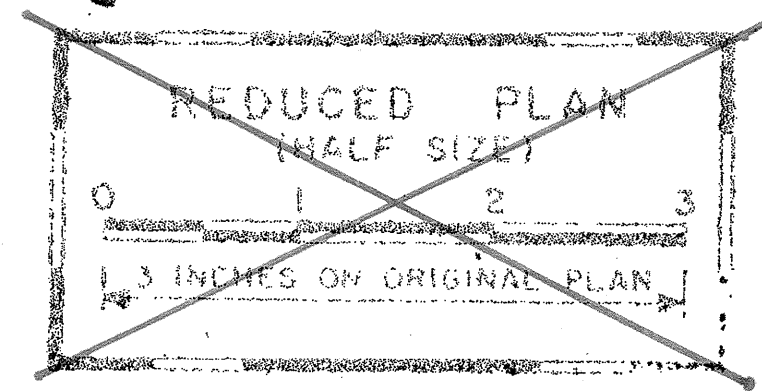


DUCT TERMINATIONS SEE DETAIL

1 E18 E18

3 POWER DUCT SYSTEM PROFILE AT MANHOLE TERMINATION
NOT TO SCALE

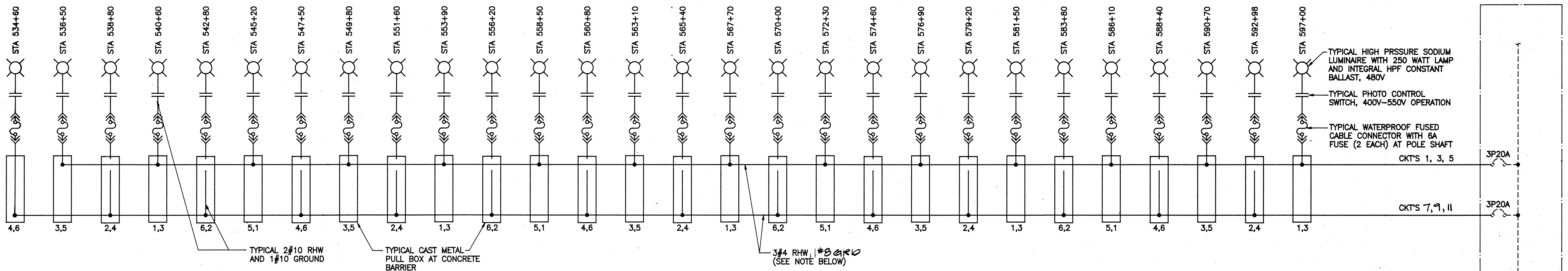
E3, E4, E5, E6, E7



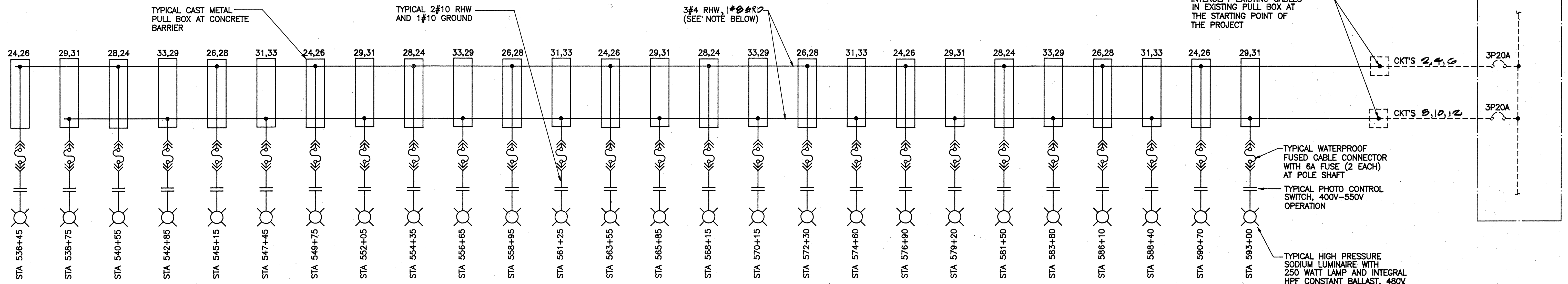
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C. Fik
SIGNATURE

7/8/91	REVISE DET. "X" DIMENSION. DELETED 3/2-1/8" NOTE
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SECTIONS & DETAILS	
INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. 1 - H3 - 1 (71)	
SCALE: NONE	DATE: APRIL 1991
SHEET No. E-18 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	610	618



STREET LIGHTING ONE-LINE DIAGRAM
(INBOUND ROADWAY)



STREET LIGHTING ONE-LINE DIAGRAM
(OUTBOUND ROADWAY)

NOTE: STREET LIGHTING CIRCUITS WILL BE INSTALLED TOGETHER WITH COMMUNICATION POWER CIRCUITS IN ONE COMMON CONDUIT SYSTEM.

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	

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C. Mak
SIGNATURE

2/2/94	REVISION CIRCUIT ASSIGNMENT, PANEL NAME
DATE	REVISION

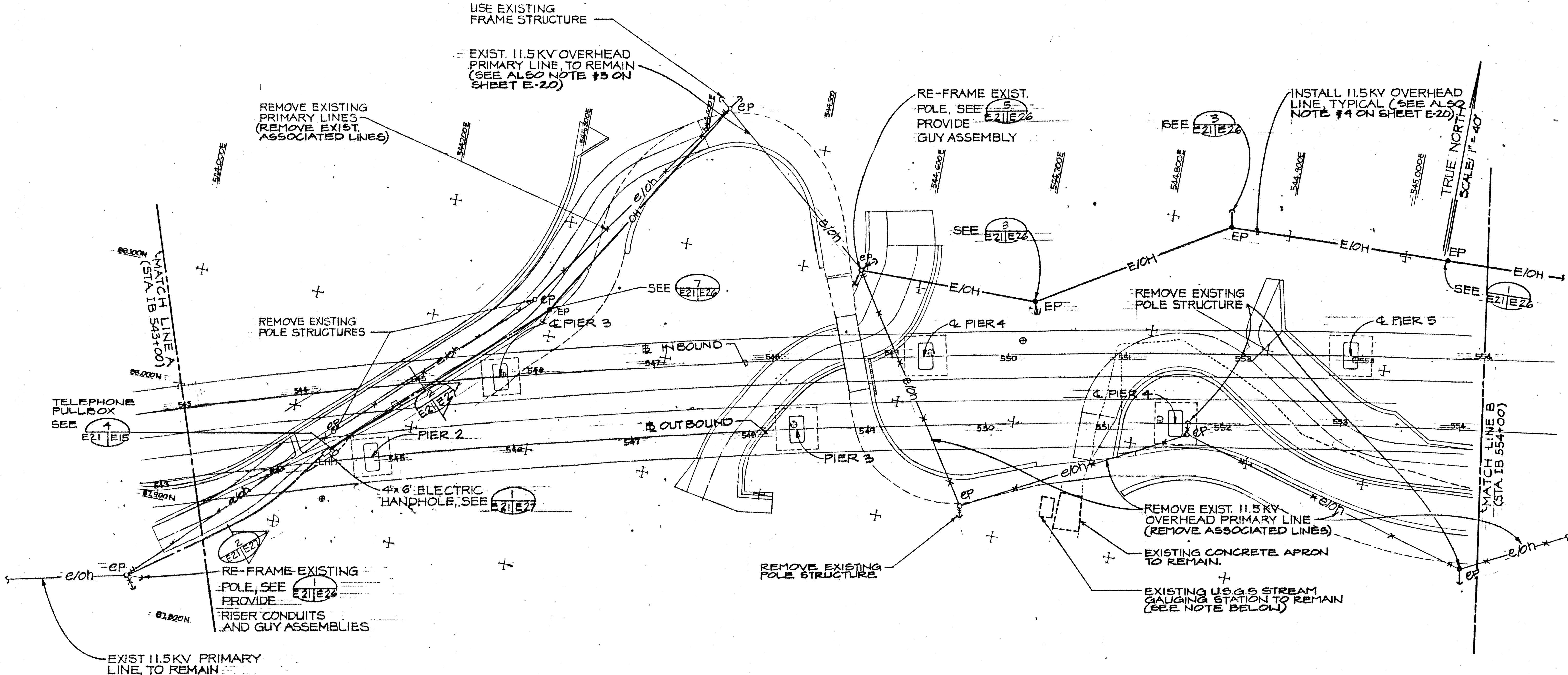
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

STREET LIGHTING
ONE-LINE DIAGRAMS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I - H3 - 1 (44)

SCALE: NONE DATE: APRIL 1991

SHEET No. E19 OF 27 SHEETS

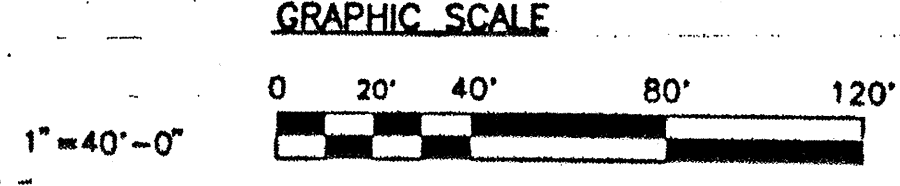
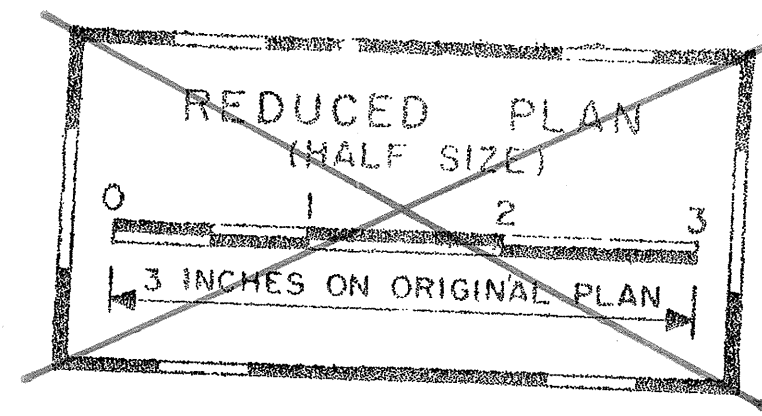
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	612	618



DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
NO.	_____

PARTIAL RELOCATION PLAN - II
 SCALE: 1"=40'

NOTE: EXISTING ELECTRICAL SERVICE TO U.S.G.S STREAM GAUGING STATION SHALL BE KEPT OPERATIONAL AT ALL TIMES DURING AND AFTER DEMOLITION WORK.

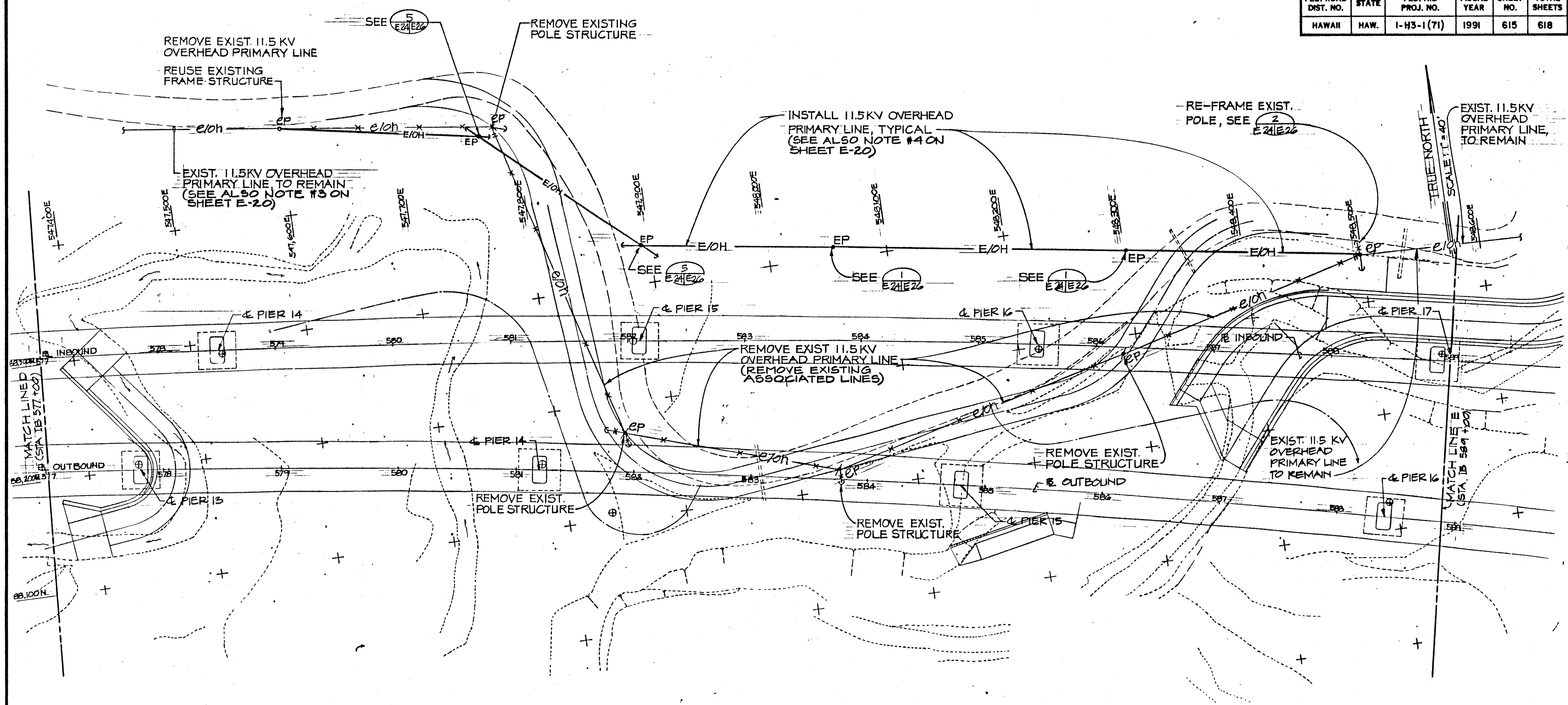


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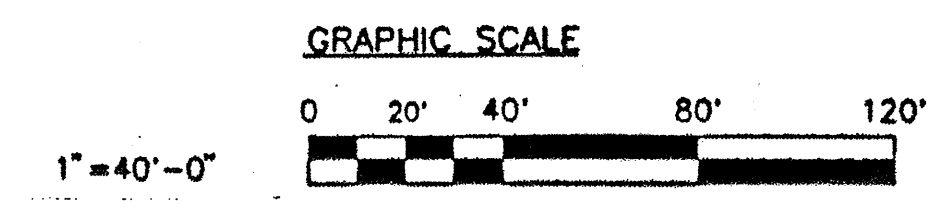
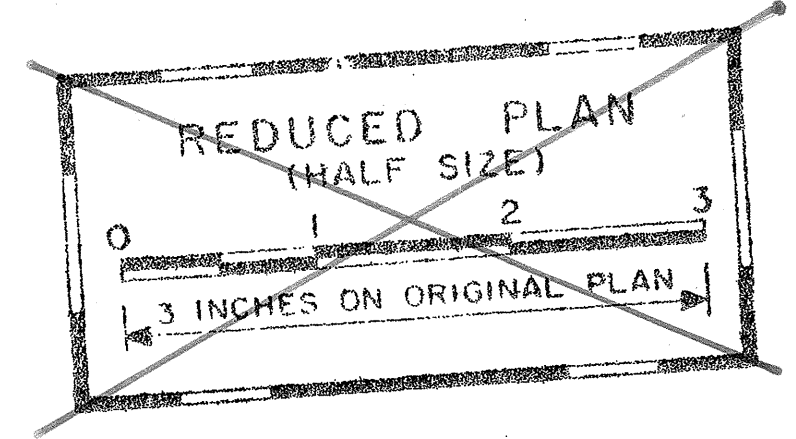
(Signature)

8/01/91	REVISED PLAN FOR ADDITIONAL TELEPHONE LINES
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION EXISTING 11.5KV OVERHEAD PRIMARY LINE RELOCATION PLAN INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. 1 - H3 - 1 (71) SCALE: 1"=40' DATE: APRIL 1991 SHEET No. E-21 OF 27 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(71)	1991	615	618



PARTIAL RELOCATION PLAN-V
SCALE: 1"=40'



CLARENCE C. K. M.
REGISTERED PROFESSIONAL ENGINEER
No. 1763-E
HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

8/01/91	REVISED PLAN FOR ADDITIONAL TELEPHONE LINES
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

EXISTING 11.5KV OVERHEAD PRIMARY LINE RELOCATION PLAN
INTERSTATE ROUTE H-3
F.A.J. PROJ. NO. 1 - H3 - 1 (71)

SCALE: 1"=40' DATE: APRIL 1991

SHEET NO. E24 OF 27 SHEETS

DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTED BY	
ORIGINAL PLAN	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H3-1(71)	1991	616	618

RE-USE EXISTING FRAMING STRUCTURE

EXIST. 11.5KV OVERHEAD PRIMARY LINE, TO REMAIN (SEE ALSO NOTE #3 ON SHEET E-20)

REMOVE EXISTING POLE STRUCTURE

INSTALL 11.5KV OVERHEAD PRIMARY LINE TYPICAL (SEE ALSO NOTE #4 ON SHEET E-20)

RE-FRAME EXIST. POLE, SEE E-25/E-26 PROVIDE GUY ASSEMBLY

EXISTING HECO SUB-STATION

EXIST. 11.5KV OVERHEAD PRIMARY LINE, TO REMAIN

RELOCATE EXIST. POLE, EQUIPMENT AND ACCESSORIES

TRUE NORTH
SCALE: 1"=40'

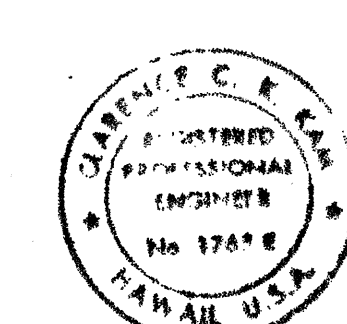
TRANS-KOOLAU TUNNEL SPUR ROAD

REMOVE EXIST. 11.5KV OVERHEAD PRIMARY LINE (REMOVE EXISTING ASSOCIATED LINES)

REDUCED PLAN (HALF SIZE)
0 1 2 3
3 INCHES ON ORIGINAL PLAN

PARTIAL RELOCATION PLAN-VI SCALE: 1"=40'

GRAPHIC SCALE



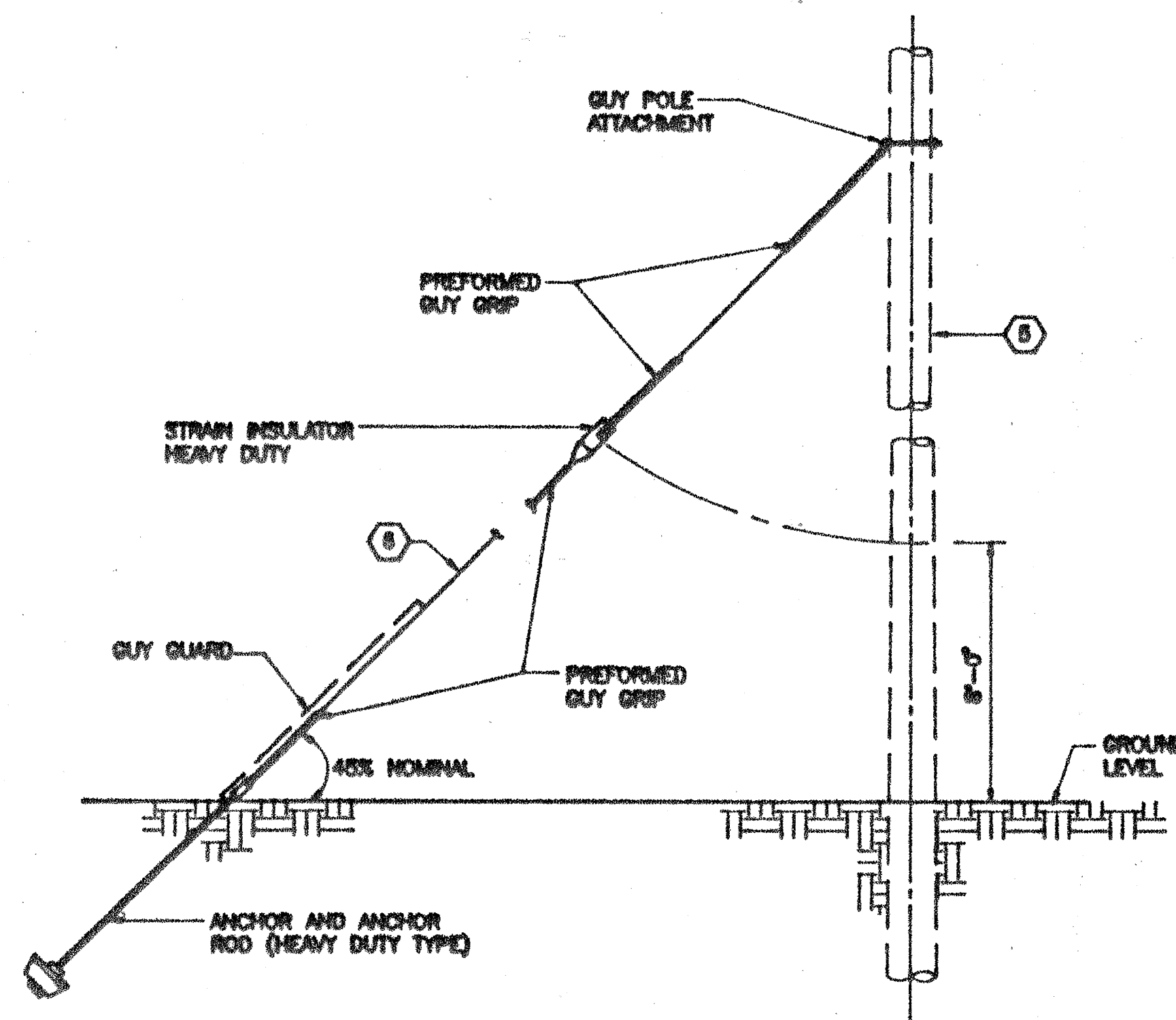
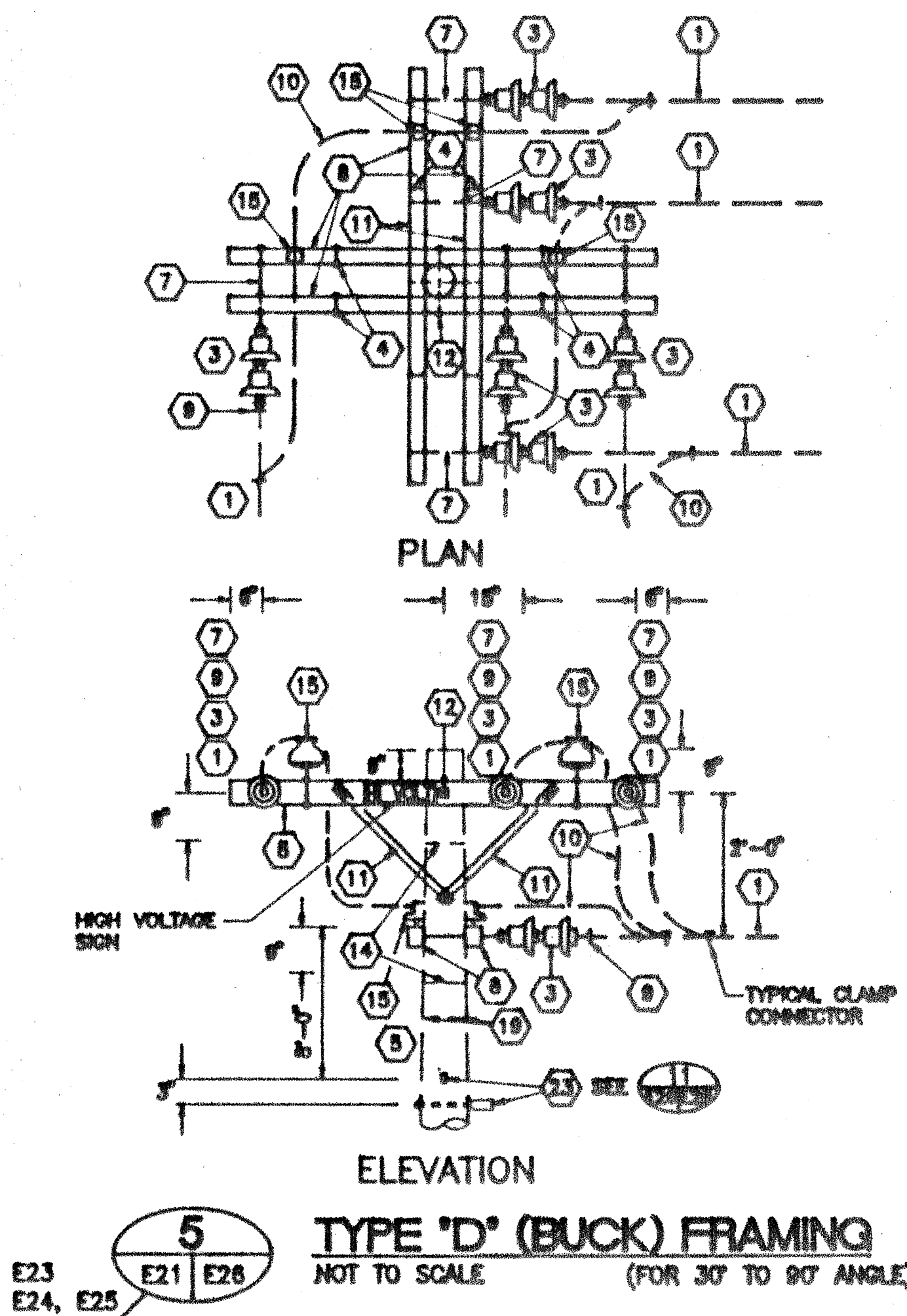
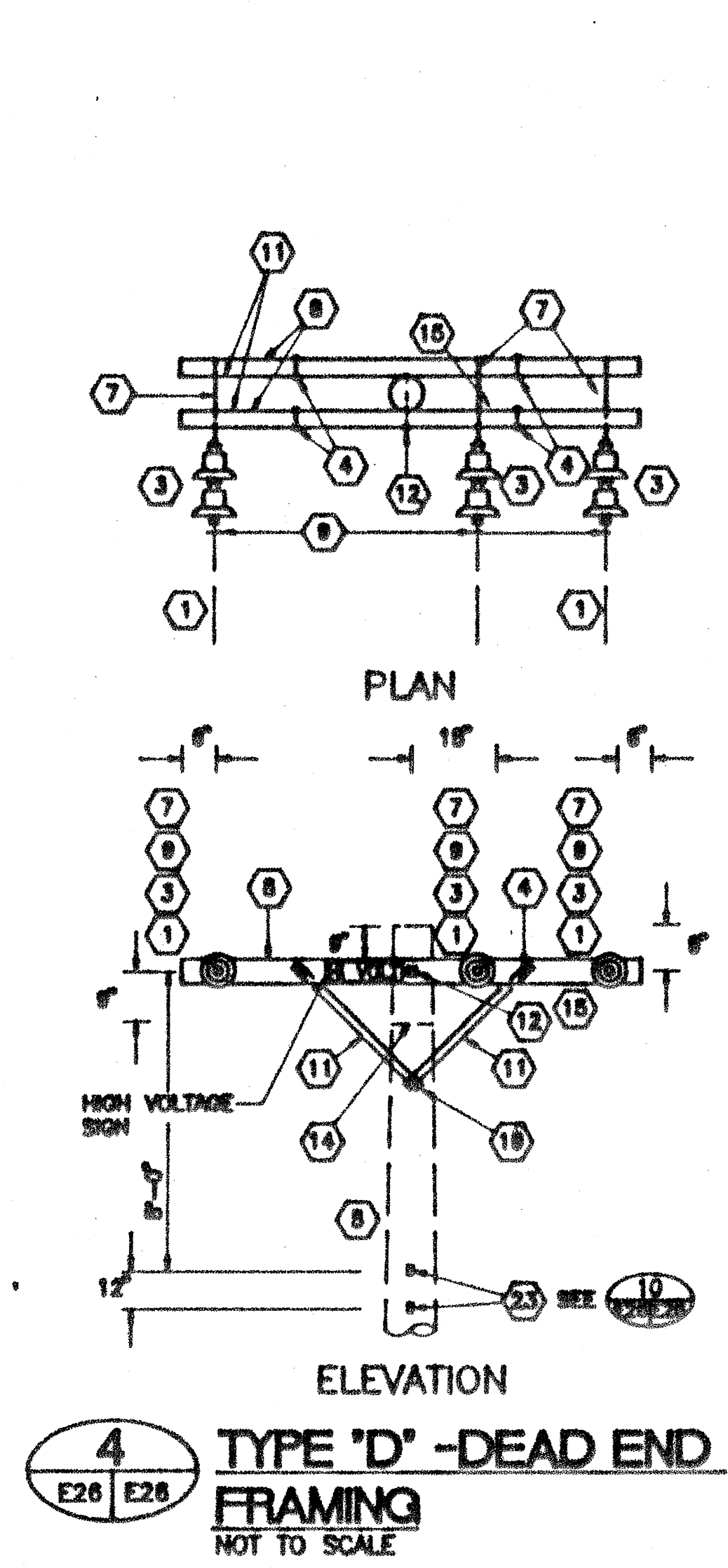
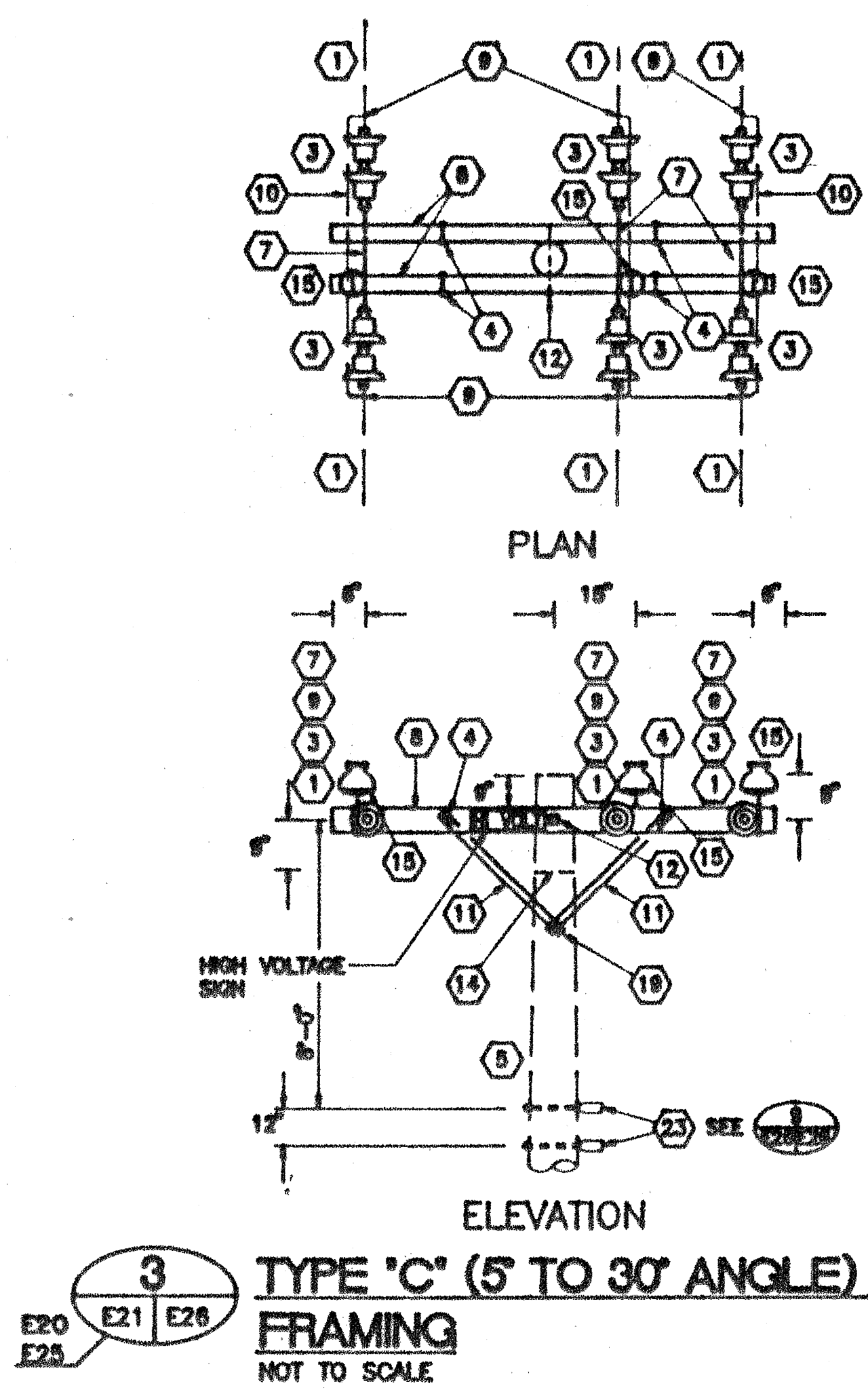
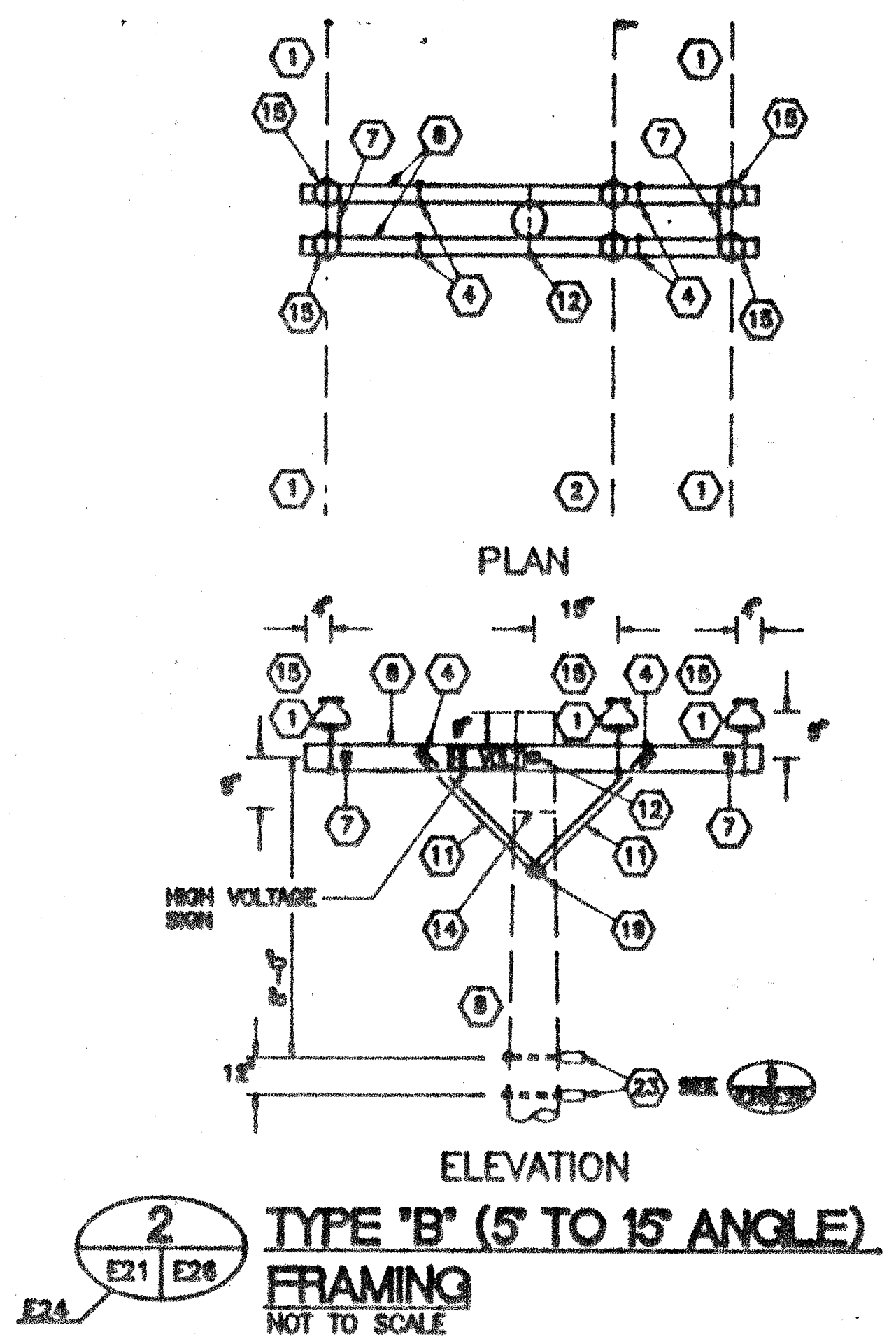
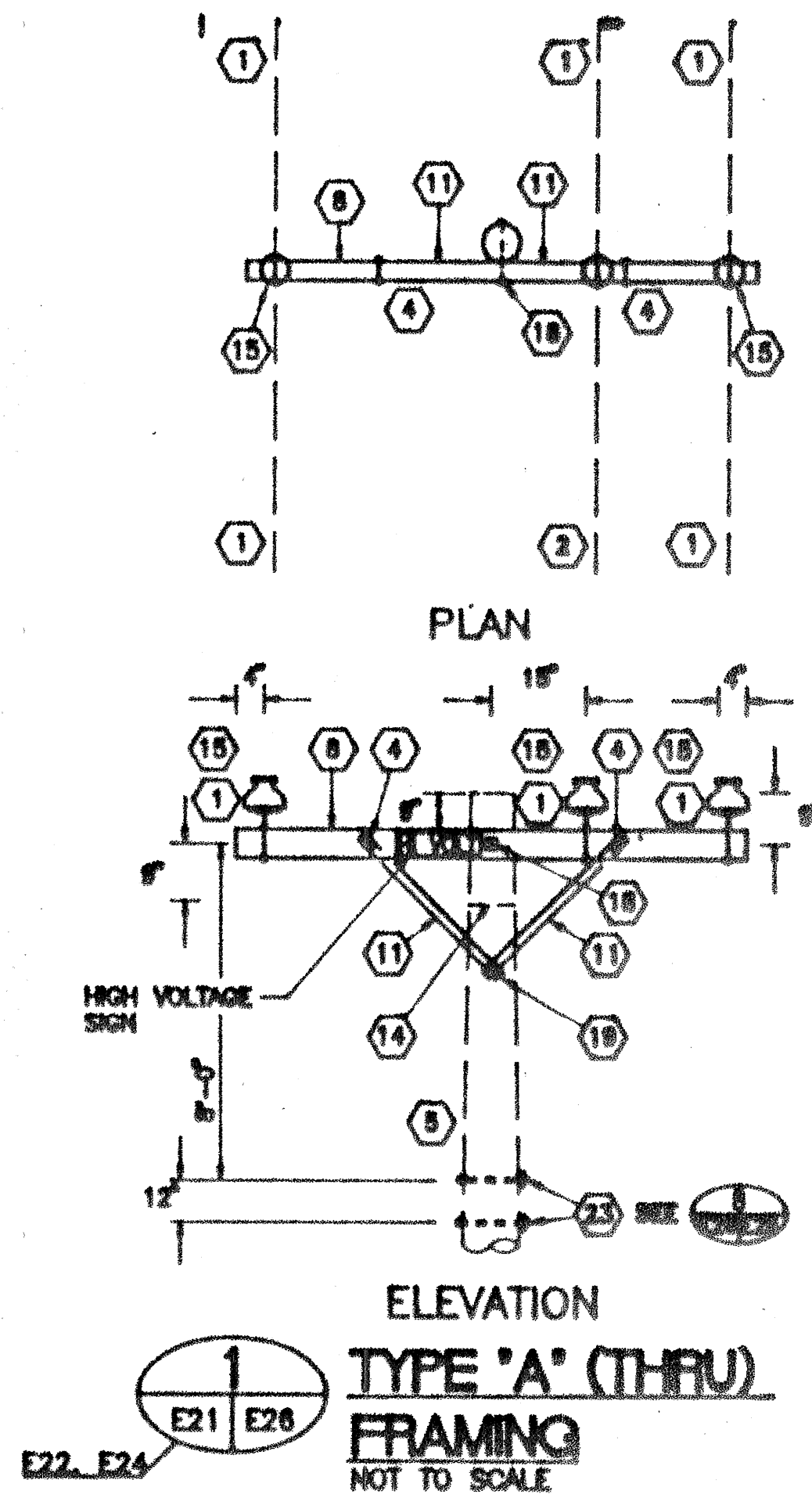
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C. K. K.

DATE	REVISION
8/14/91	REVISED OVERHEAD LINE REMOVAL NOTE
8/01/91	REVISED PLAN FOR ADDITIONAL TELEPHONE LINES
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION EXISTING 11.5KV OVERHEAD PRIMARY LINE RELOCATION PLAN INTERSTATE ROUTE H-3 P.A.J. PROJ. NO. 1 - H3 - 1 (71)	
SCALE: 1"=40' DATE: APRIL 1991 SHEET No. E25 OF 27 SHEETS	

ADD 616

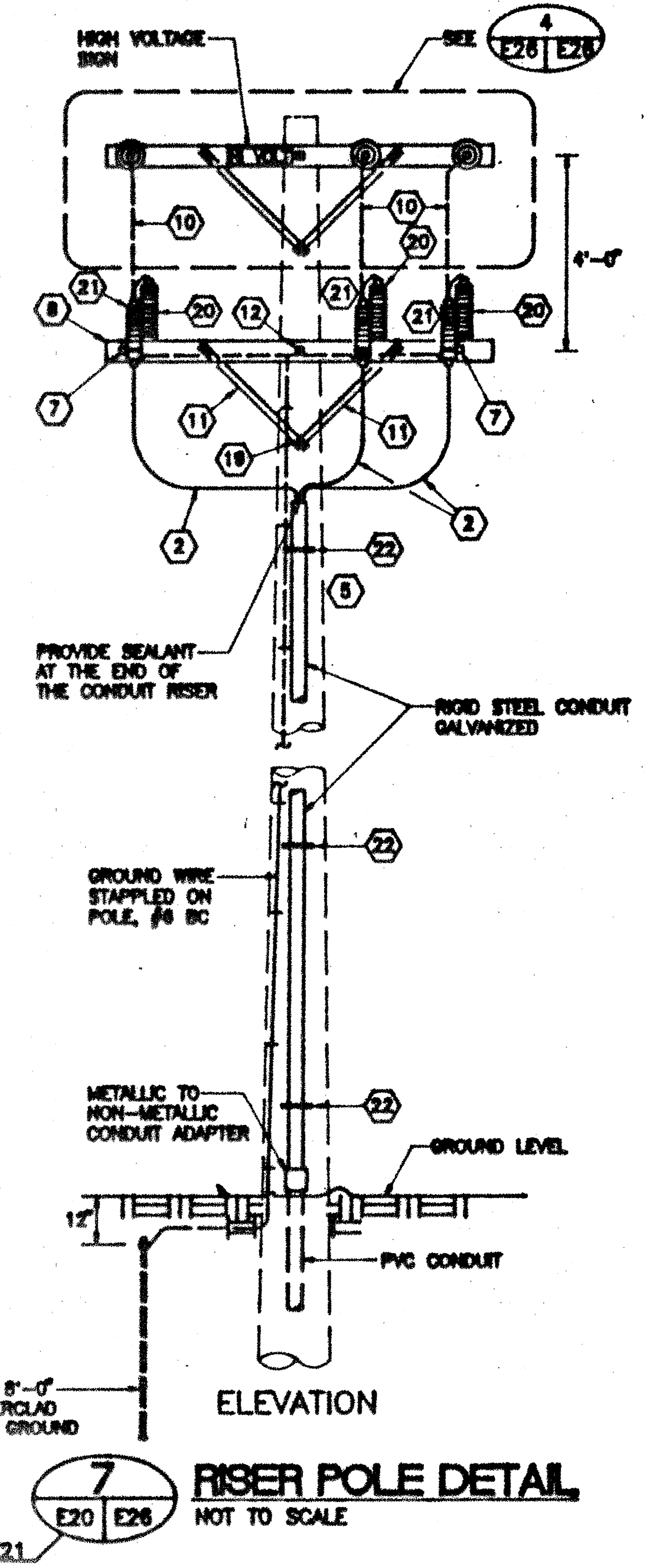
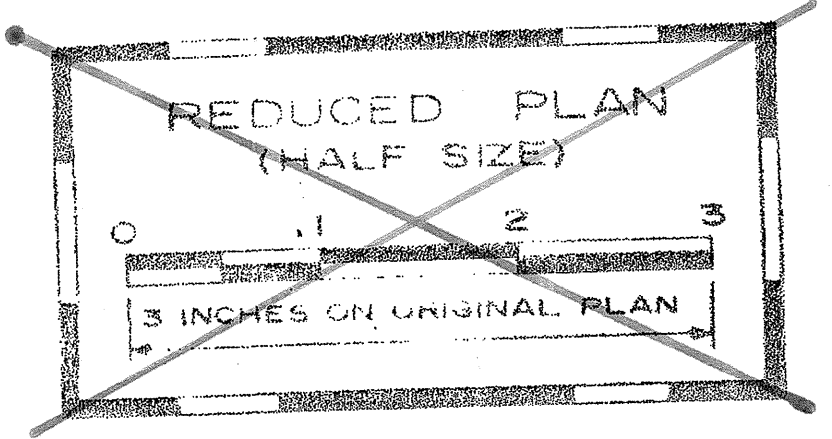
DESIGNED BY	DATE
CHECKED BY	
NOTED BY	
QUANTITY BY	
PLANNED BY	
REVISION	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991	617	618



OVERHEAD FRAMING NOTES

- 1 PRIMARY CONDUCTOR
- 2 PRIMARY CABLE, (#3/0 AAC, VERIFY TO MATCH EXISTING)
- 3 SUSPENSION INSULATOR, COMPLETE WITH MOUNTING ACCESSORIES
- 4 CARRIAGE BOLT
- 5 POLE
- 6 GUY AND ANCHOR ASSEMBLY
- 7 DOUBLE ARMING BOLT
- 8 CROSSARM 3.5" X 4.5" X 8'-0", WITH "HI VOLT" NAMEPLATE
- 9 DEADEND CONDUCTOR ASSEMBLY, PRIMARY
- 10 JUMPER CONDUCTOR
- 11 CROSSARM BRACE, 28" SPAN
- 12 2.5" SQUARE WASHER AND DOUBLE ARMING BOLT
- 13 EYE NUT, 1/2" WITH DOUBLE ARMING BOLT
- 14 POSITION OF GUY WHEN REQUIRED
- 15 PIN INSULATOR
- 16 CROSSARM 3.75" X 4.75" X 10'-0"
- 17 CROSSARM BRACE, 60" SPAN
- 18 MACHINE BOLT
- 19 LAG SCREW
- 20 LIGHTING ARRESTER
- 21 CABLE TERMINATION
- 22 TWO HOLE CONDUIT CLAMP
- 23 TELEPHONE CABLE ATTACHMENT



DATE	
DESIGNED BY	
DRAWN BY	
CHECKED BY	
NOTES BOOK	

CLARENCE C. K. K.
REGISTERED PROFESSIONAL ENGINEER
No. 1798-S
RETAIL U.S.A.

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C. K. K.
SIGNATURE

8/14/91	ADDED REFERENCE NOTATION
8/01/91	REVISED DETAILS TO ACCOMMODATE TEL.
DATE	REVISION

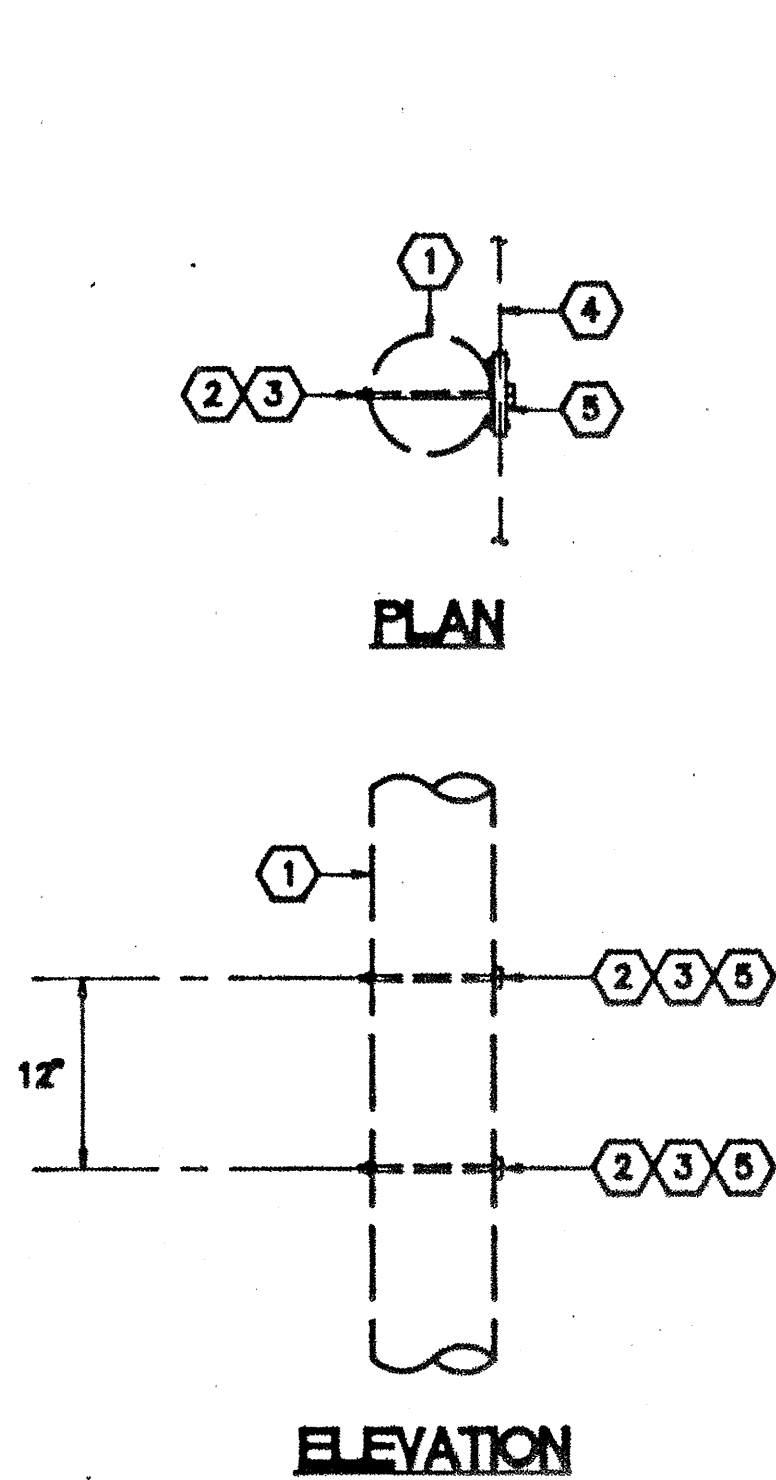
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

POLE LINE FRAMING DETAILS
INTERSTATE ROUTE H-3
F.A.I. PROJ. NO. I - H3 - 1 (71)

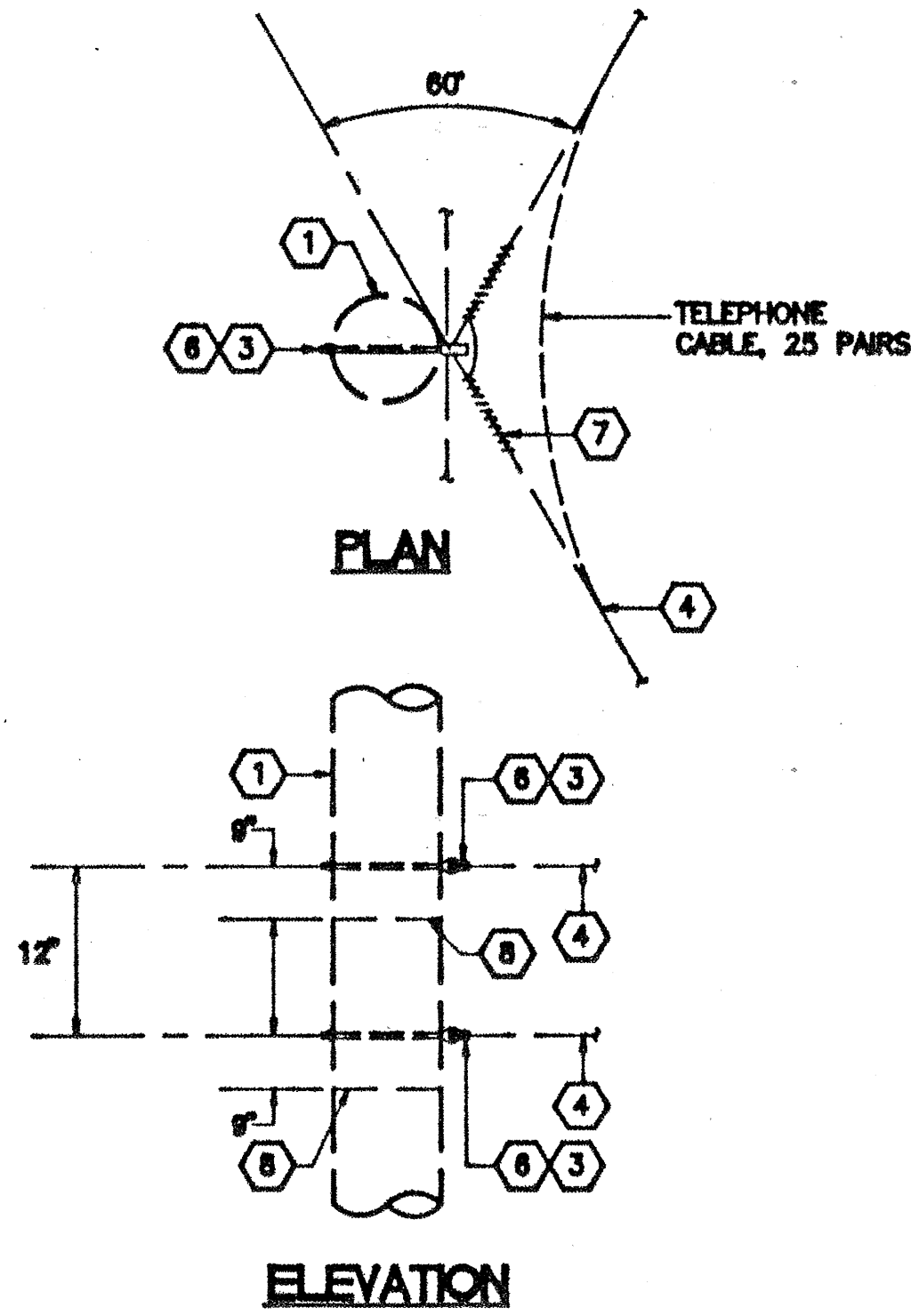
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SHEET No. E26 OF 27 SHEETS

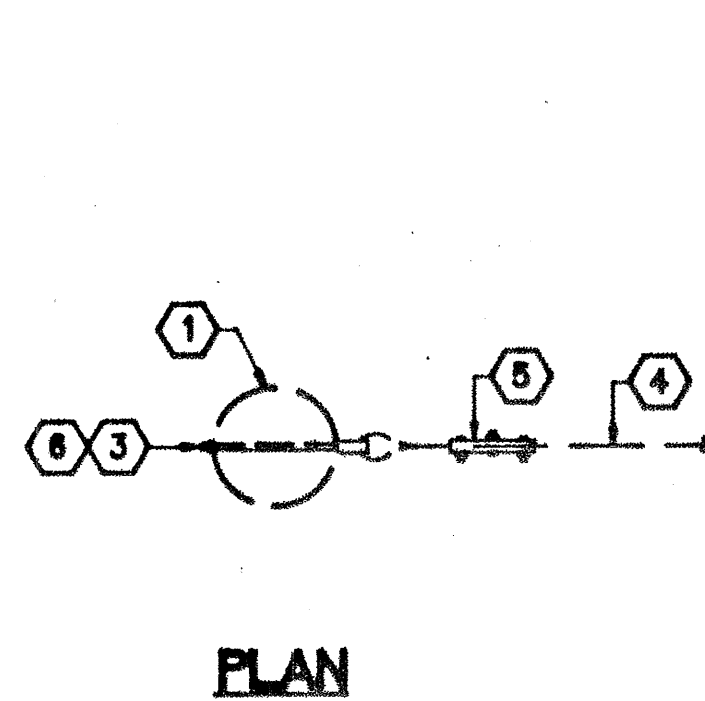
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	I-H3-1(71)	1991		618



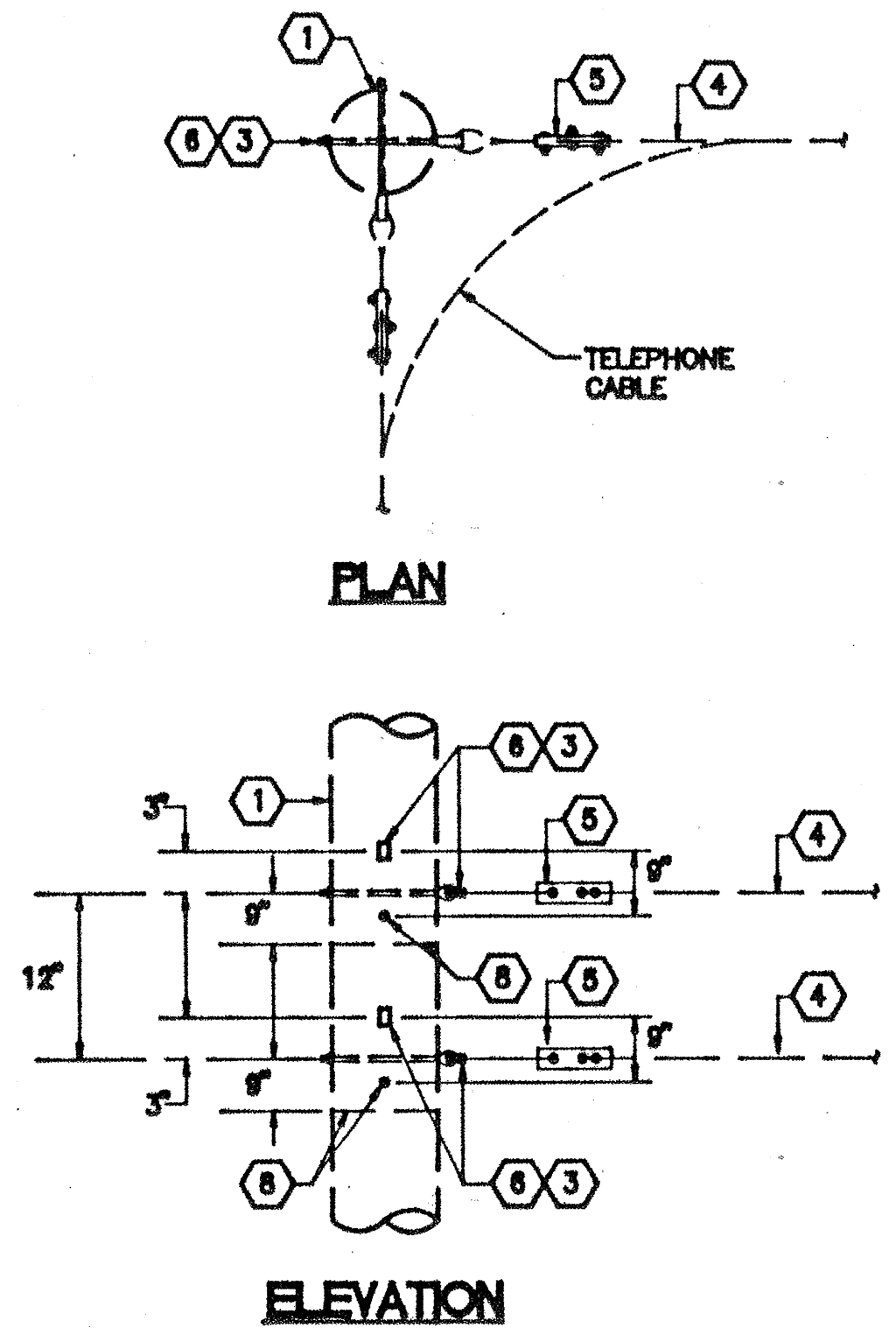
8 MOUNTING DETAIL (IN-LINE)
E26 E26 NOT TO SCALE



9 MOUNTING DETAIL (5' TO 60')
E26 E26 NOT TO SCALE



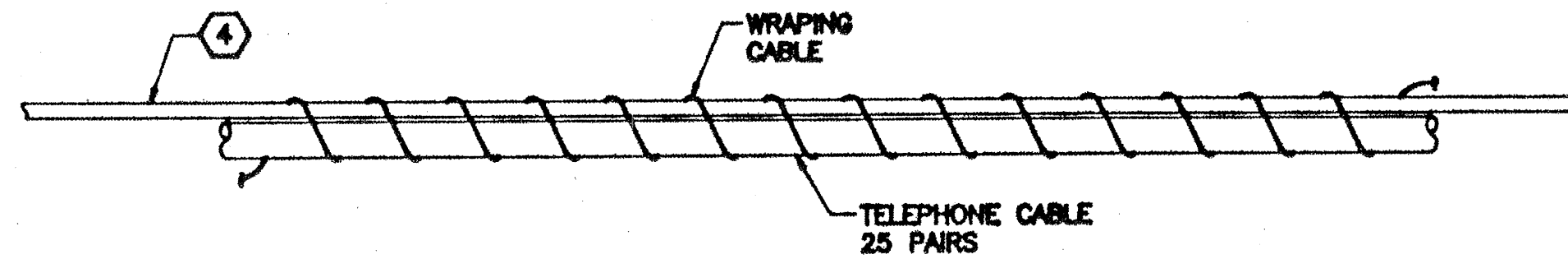
10 MOUNTING DETAIL (DEAD END)
E26 E26 NOT TO SCALE



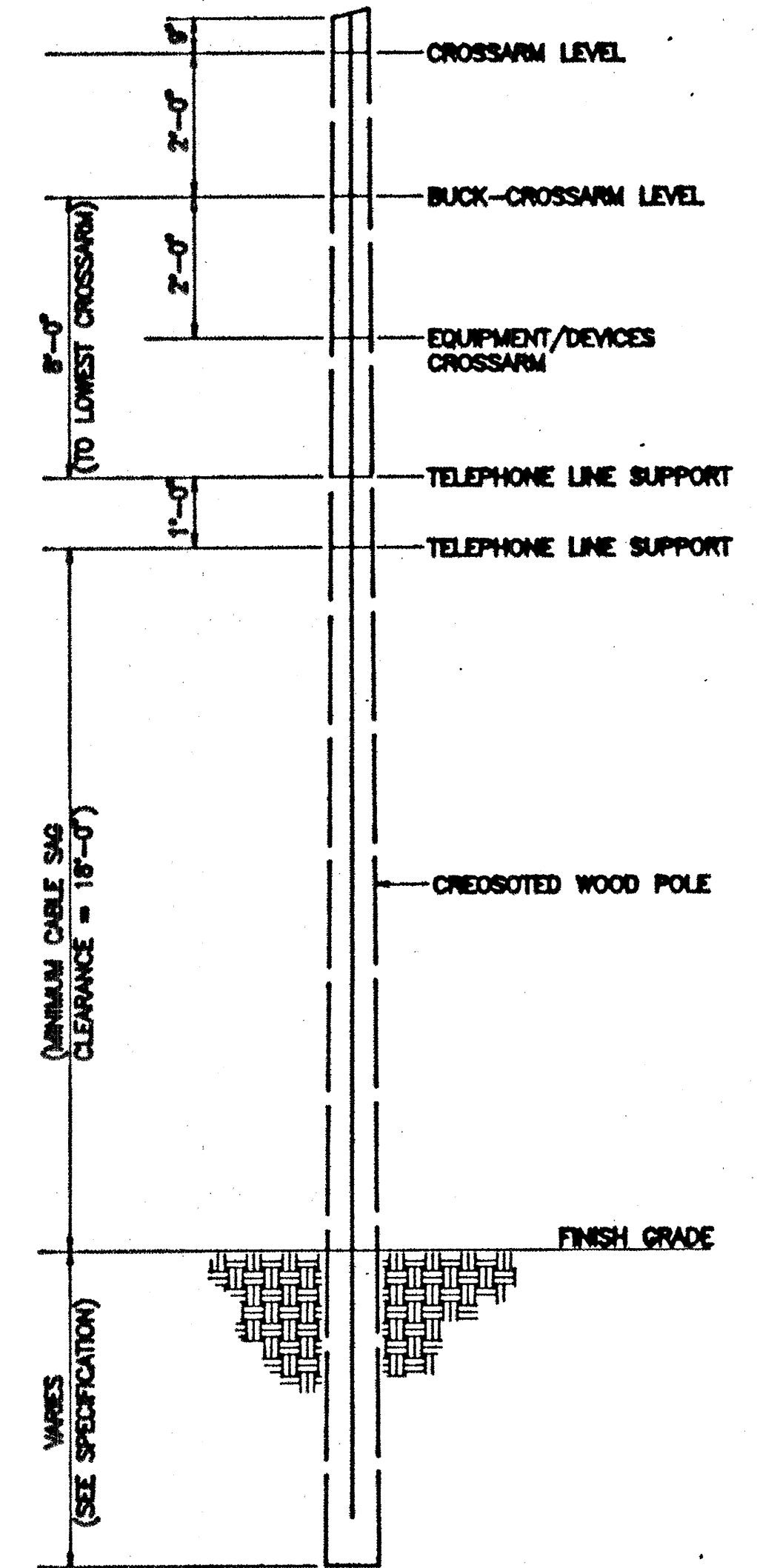
11 MOUNTING DETAIL (DOUBLE DEAD END)
E26 E26 NOT TO SCALE (60' OR MORE)

NOTES:

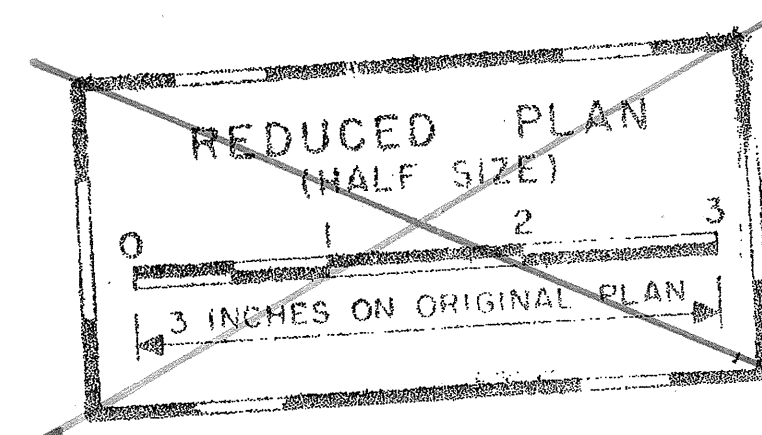
- POWER WOOD POLE
- $\frac{3}{8}$ " x REQUIRED LENGTH MACHINE BOLT, GALVANIZED
- 2" x 2" SQUARE WASHER, GALVANIZED
- STRANDED GALVANIZED STEEL MESSENGER WIRE, (PER CABLE MANUFACTURER'S RECOMMENDATION)
- 3-BOLT GUY CLAMP, GALVANIZED STEEL, HEAVY DUTY TYPE
- $\frac{3}{8}$ " x REQUIRED LENGTH FORGED TIMBLEYE BOLT, STRAIGHT TYPE, GALVANIZED STEEL
- TIE WIRE
- GUY ATTACHMENT



12 TELEPHONE CABLE INSTALLATION
E26 E26 NOT TO SCALE



13 POLE MOUNTING ASSIGNMENT
E26 E26 NOT TO SCALE



This work was prepared by me or under my supervision.

Signature
DATE:

DATE	REVISION
8/01/91	ADDED SHEET
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
SECTIONS & DETAILS	
INTERSTATE ROUTE H-3 F.A.I. PROJ. NO. I - H3 - 1 (71)	
SCALE: NONE	DATE:
SHEET NoE26AOF 27 SHEETS	

ADD 617S-1

