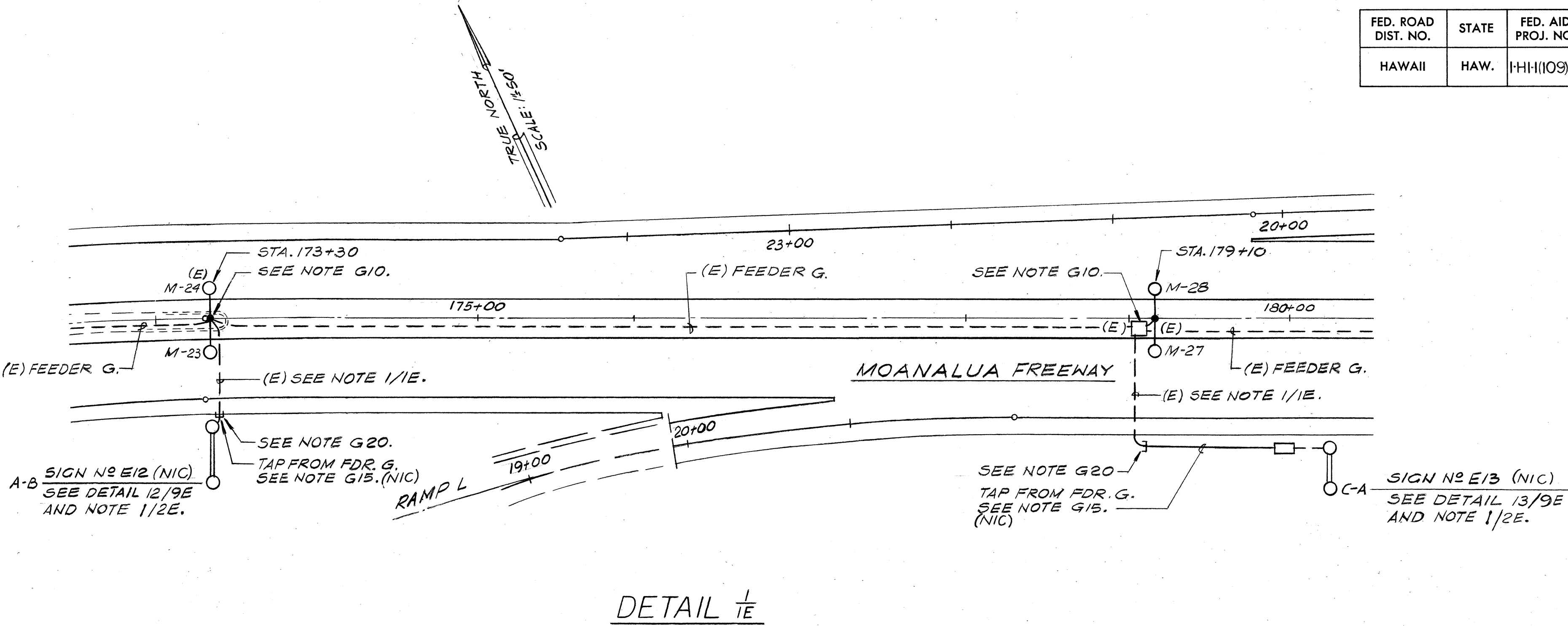


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1-H1(109)13	1975	74	130

PLAN LEGEND			
SYMBOL	REPRESENTS	DETAIL NO.	NOTE NO.
	LTG STD W/250 WATT LUMINAIRE & FND (LAMP # F1; FDR G1A; PHASES A&B; STA. 20+55)	1/5E 9/5E	G1
	LTG STD W/TWO 700 WATT LUMINAIRES & FND.	1/5E 1/8E	G1
	ILLUMINATED SIGN CONNECTED TO PHASES C&A OF THE INDICATED CIRCUIT	8/5E	
	CONDUIT RUN IN CONCRETE STRUCTURE OR ENCASED IN CONCRETE	7/5E	G4, G5 G8
	CONDUIT RUN IN EARTH WITHOUT ENCASEMENT		G3 G8
	CAPPED CONDUIT OR CONDUIT TRANSITION AS PLAN INDICATES		
	CONDUIT TURNING DOWN CONDUIT TURNING UP		
	PULL BOX TYPE B	3/7E	
	PULL BOX TYPE S	1/7E	
	USED IN CONJUNCTION WITH OTHER SYMBOLS TO INDICATE EXISTING CONSTRUCTION		



DETAIL 1E

LIST OF ABBREVIATIONS

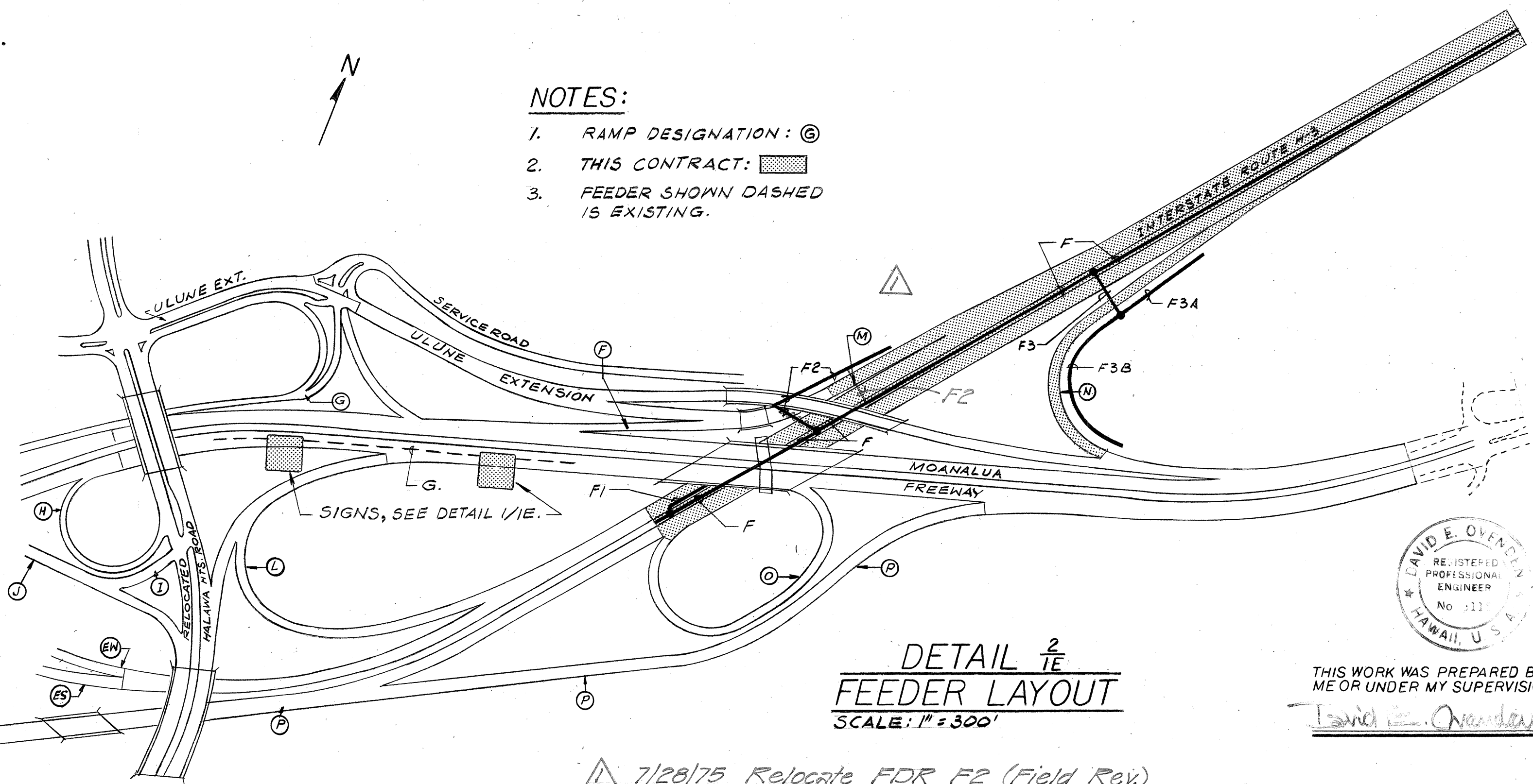
LTG STD	LIGHTING STANDARD
FND	CONCRETE FOUNDATION FOR LTG STD
CONC	CONCRETE
RGS	RIGID GALVANIZED STEEL CONDUIT
NIC	NOT IN CONTRACT
FDR	FEEDER
LTS	LIGHTS
CKT	CIRCUIT
NMC	NON-METALLIC CONDUIT
GND	GROUND
NTS	NOT TO SCALE
LUM	LUMINAIRE
PVC	POLYVINYLCHLORIDE CONDUIT
RAL	RIGID ALUMINUM CONDUIT
FUT	FUTURE

GENERAL NOTES:

- G1. THE INDICATED LOCATIONS OF LIGHTING STANDARDS, CONDUIT AND OTHER ELECTRICAL COMPONENTS MAY BE ADJUSTED AS FIELD CONDITIONS NECESSITATE.
- G2. CONDUIT ONE-INCH AND SMALLER INSTALLED IN STRUCTURES OR EXPOSED SHALL BE RGS OR, WHERE NOTED, RAL.
- G3. CONDUIT RUN IN NON-PAVED AREAS SHALL BE NMC, DIRECTLY BURIED.
- G4. CONDUIT RUN UNDER ROADWAY SHALL BE PVC OR RGS, CONCRETE ENCASED.
- G5. CONDUIT RUN IN MEDIAN BARRIER OR OTHER STRUCTURE SHALL BE NMC UNLESS OTHERWISE NOTED. SEE NOTE G19.
- G7. AS INDICATED ON PLAN SHEETS, ALL THREE PHASE LEGS SHALL BE RUN TO THE INDICATED PULL POINT TO ENABLE FUTURE EXTENSION.
- G8. UNDERGROUND LIGHTING FEEDERS SHALL BE RUN IN TWO-INCH CONDUIT EXCEPT WHERE PLANS INDICATE 3-INCH IS REQUIRED.
- G10. AT LOCATIONS INDICATED CONNECT TO EXISTING CONDUCTORS.
- G15. BRANCH TAPS TO SIGN LIGHTING SYSTEMS SHALL BE ONE-INCH, EITHER NMC DIRECTLY BURIED OR RGS CONCRETE ENCASED TO THE EXTENT INDICATED.
- G19. PROVIDE AT EACH EXPANSION JOINT A CONDUIT EXPANSION/DEFLECTION FITTING IN ALL RUNS EMBEDDED IN MEDIAN BARRIER. SEE DETAILS 4/5E AND 5/5E.
- G20. AT LOCATIONS INDICATED, CONNECT TO EXISTING CAPPED CONDUIT AND EXTEND AS SHOWN.
- G21. CONNECT EXISTING LUMINAIRES TO FEEDER TAP.
- G22. #6 AWG BARE COPPER GROUND WIRE SHALL BE INSTALLED WITH ALL CIRCUITS IN NON-METALLIC CONDUITS.
- G23. NEW LUMINAIRES SHOWN ON THIS SHEET AND SHEET NOS. 75 TO 78 ARE NOT IN CONTRACT. CONTRACTOR SHALL INSTALL LIGHTING STANDARDS ONLY AND SEAL THE ENDS OF THE LUMINAIRE BRACKET ARMS.

NOTES:

1. RAMP DESIGNATION: (C)
2. THIS CONTRACT: (Hatched Pattern)
3. FEEDER SHOWN DASHED IS EXISTING.



DETAIL 2E
FEEDER LAYOUT
SCALE: 1"=300'

DETAIL (& NOTE) NUMBERING

- 1 -> DETAIL (OR NOTE) NUMBERING
- 2E -> SHEET NO ON WHICH DETAIL (OR NOTE) APPEARS.

NOTES:

1. UNDER PAVEMENT RACENAY FOR SIGN TAP WIRING IS EXISTING.

ELECTRICAL SHEET 1E

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL PLAN
SYMBOLS AND NOTES
HALAWA INTERCHANGE

F.A.I. PROJECT NO. 1-H1-1(109):13
SCALE: AS NOTED DATE: DEC. 29, 1975
SHEET No. 1E OF 11 SHEETS

DAVID E. O'NEILL
REGISTERED PROFESSIONAL ENGINEER
No. 513
HAWAII, U.S.A.
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
David E. O'Neill

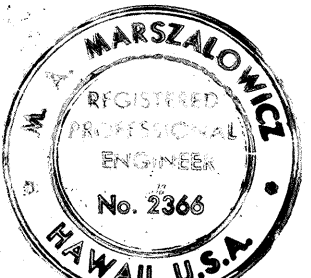
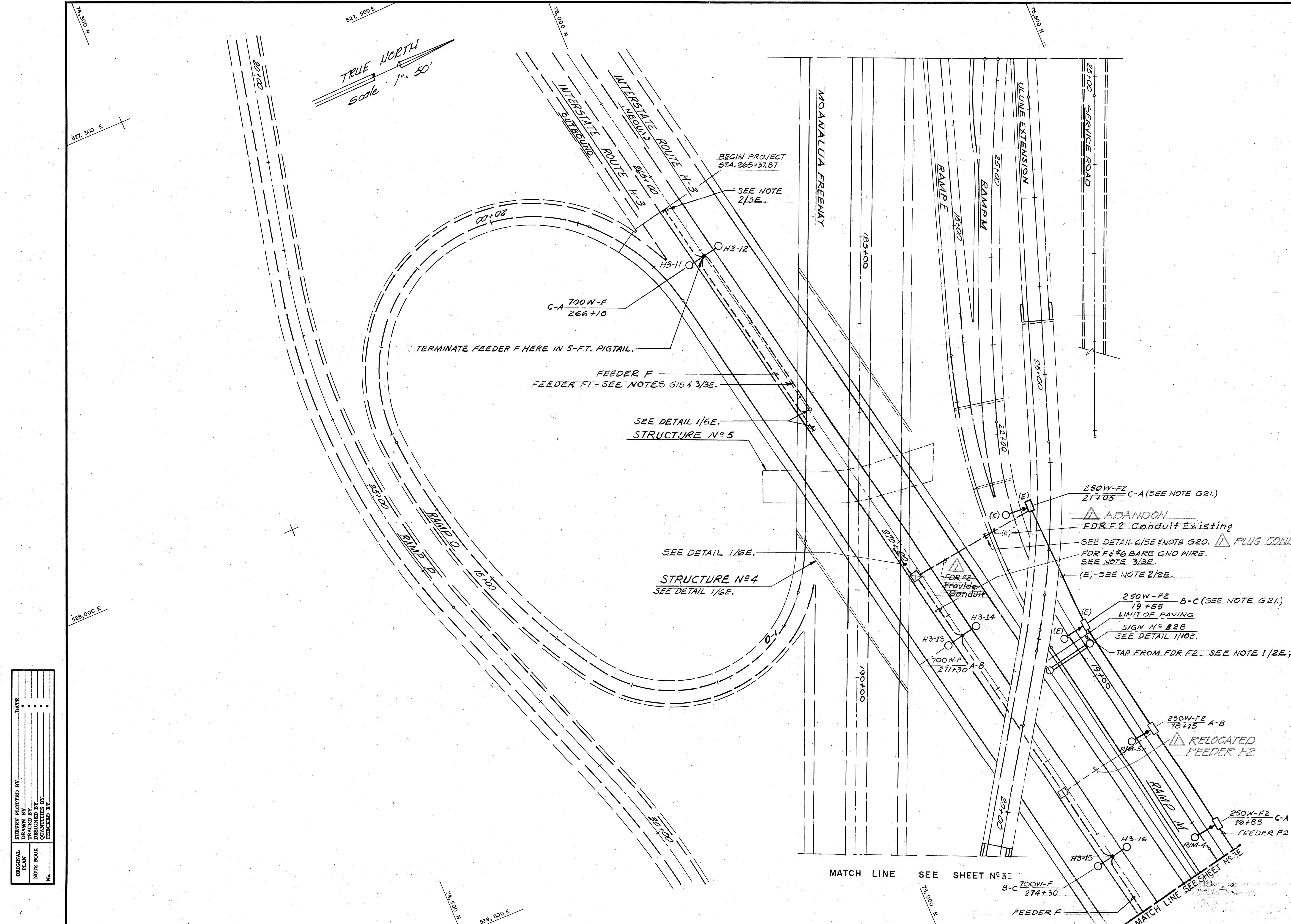
7/28/75 Relocate FDR F2 (Field Rev.)

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	11H(109):13	1975	75	130

NOTES:

- 1 - PROVIDE TAP WIRING FOR SIGN IN ACCORD WITH DETAIL 8/5E AND REMOVE FUSE AT TAP WHEN DIRECTED BY THE ENGINEER.
- 2 - RACEWAY BETWEEN PULL BOXES AT LTG. STD. LOCATIONS RAMP M STA. 21+05 AND RAMP M STA. 19+55 IS EXISTING
- 3 - FOR NOTES G1 TO G21 SEE SHEET NO. 1E

7/28/75 Relocate Feeder F2 (Field Rev)



THE WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Michael A. Marzalone

ELECTRICAL SHEET 2E

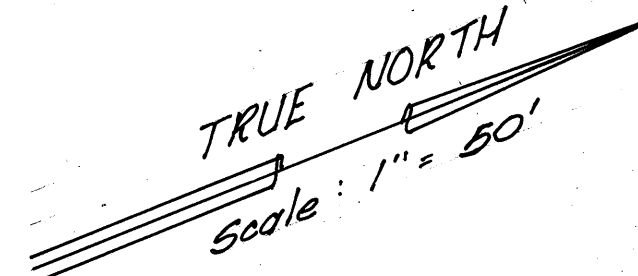
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**LIGHTING PLAN
PART I**

HALAWA INTERCHANGE
PROJECT NO. I-HI-1(109):13
SCALE: 1"=50' DATE: DEC. 29, 1972
SHEET No. 2E OF 11 SHEETS

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
TRACED BY	
ENGINEER'S CHECK	
QUANTITIES BY	
CHECKED BY	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HH1009H3	1975	76	130



- NOTES:
1. FOR NOTES G1 TO G21 SEE SHEET NO. 1E
 2. TERMINATE CONDUIT WITH COUPLING AND PLUG FLUSH WITH FACE OF BARRIER.
 3. BOND METAL CONDUITS TO GND ROD IN LTG STD FND WITH #6 BARE WIRE.

TAP FROM FDR F2. SEE NOTE 1/2E, G15.

SIGN NO. E29
SEE DETAIL 2/10E. B-C

ELECTRICAL SHEET 3E

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

LIGHTING PLAN
PART II

HALAWA INTERCHANGE
PROJECT NO. I-HI-1(109): 13

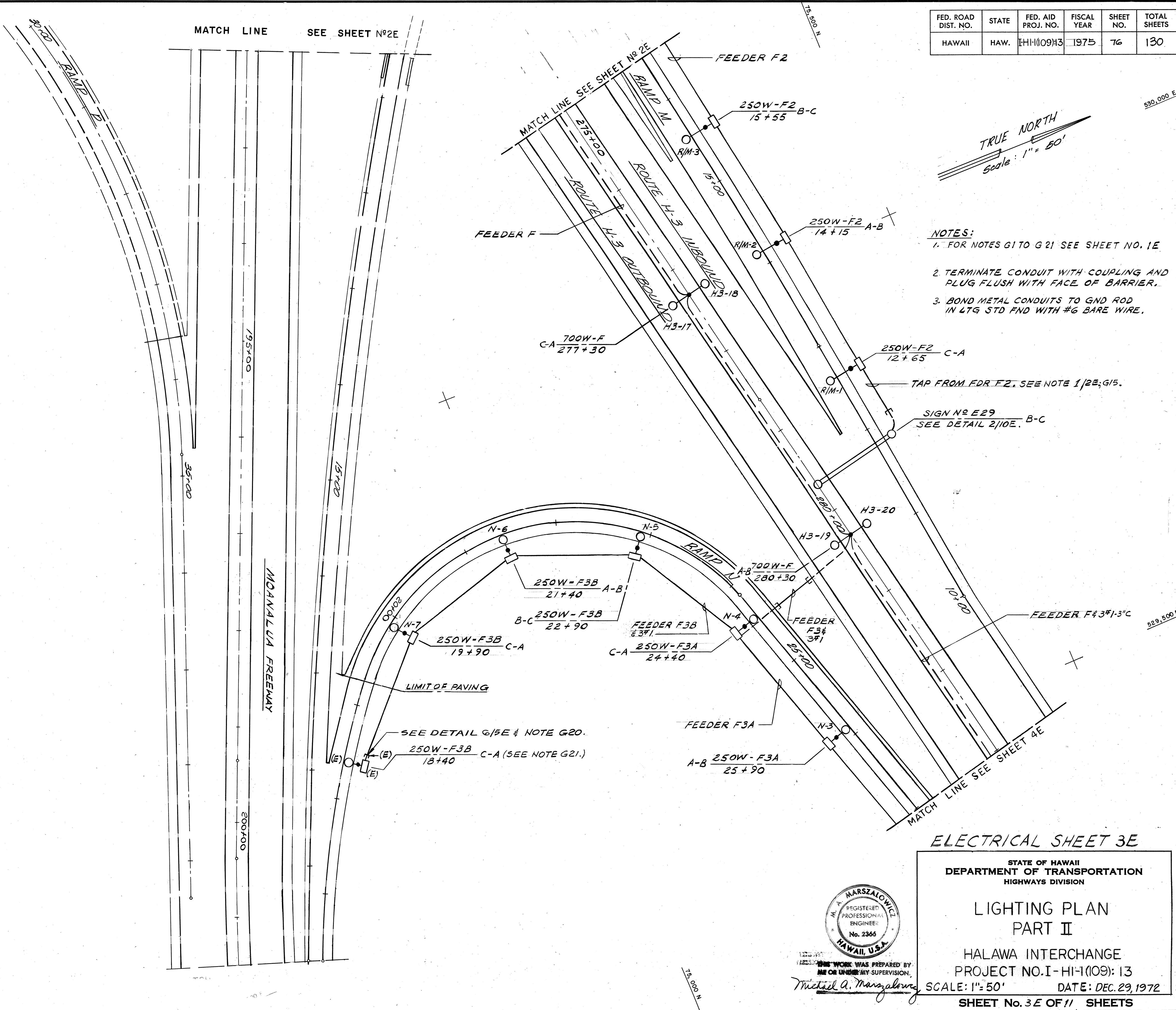
SCALE: 1"= 50' DATE: DEC. 29, 1972

SHEET No. 3E OF 11 SHEETS

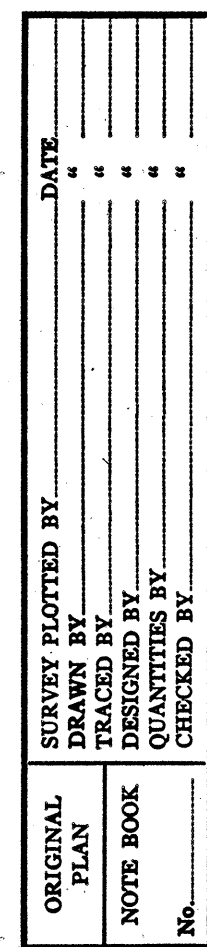


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Mitchell A. Marszalowicz

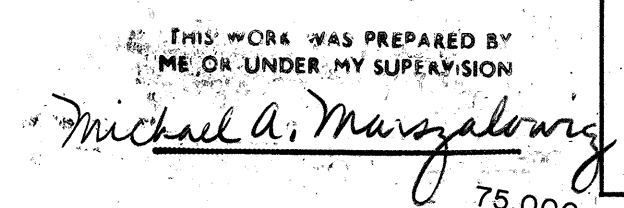
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NOTED BY	DRAWN BY	
CHECKED BY	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	



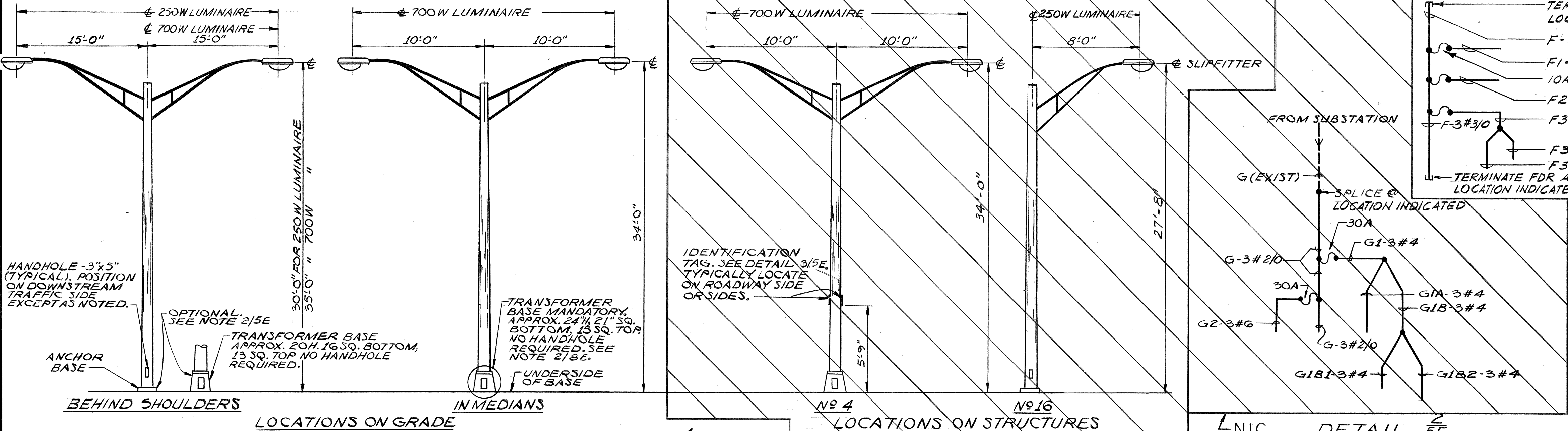
531,000 E | 76,000 N



SHEET No. 4E OF 11 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HH(109)13	1975	78	130



TERMINATE FDR AT LOCATION INDICATED.

F-3#3/0

F1-3#10

10A FUSE (TYP)

F2-3#6

F3-3#6

F3A-3#6

F3B-3#6

TERMINATE FDR AT LOCATION INDICATED

FROM SUBSTATION

G (EXIST)

SPLICE @ LOCATION INDICATED

30A

G1-3#4

G2-3#6

G3-3#2/0

G1A-3#4

G1B-3#4

G1B2-3#4

G1B2-3#4

LEGEND

A=CONTRACT NO.:

B=LUMINAIRE NO.: SEE PLANS

C=LAMP CODE: (SEE PLANS FOR LAMP SIZE)

D=IES DISTRIBUTION: (SEE PLANS FOR LAMP SIZE)

250W: H-27-5 KB

700W: H-25-18 NA

250W: M-C-II

700W: M-C-III

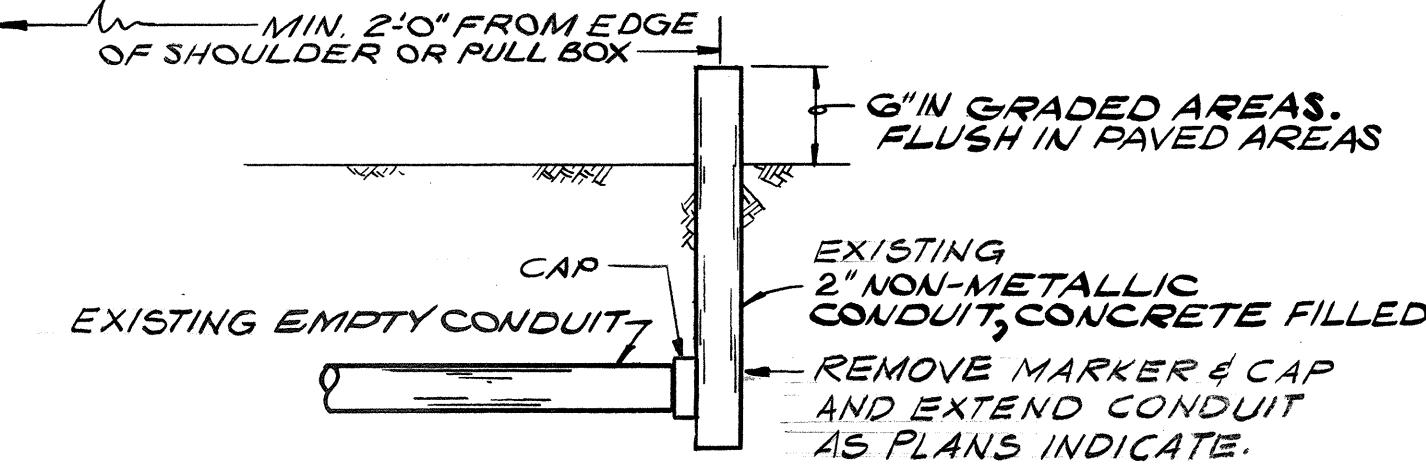
DETAIL 5E

LUMINAIRE IDENTIFICATION TAG

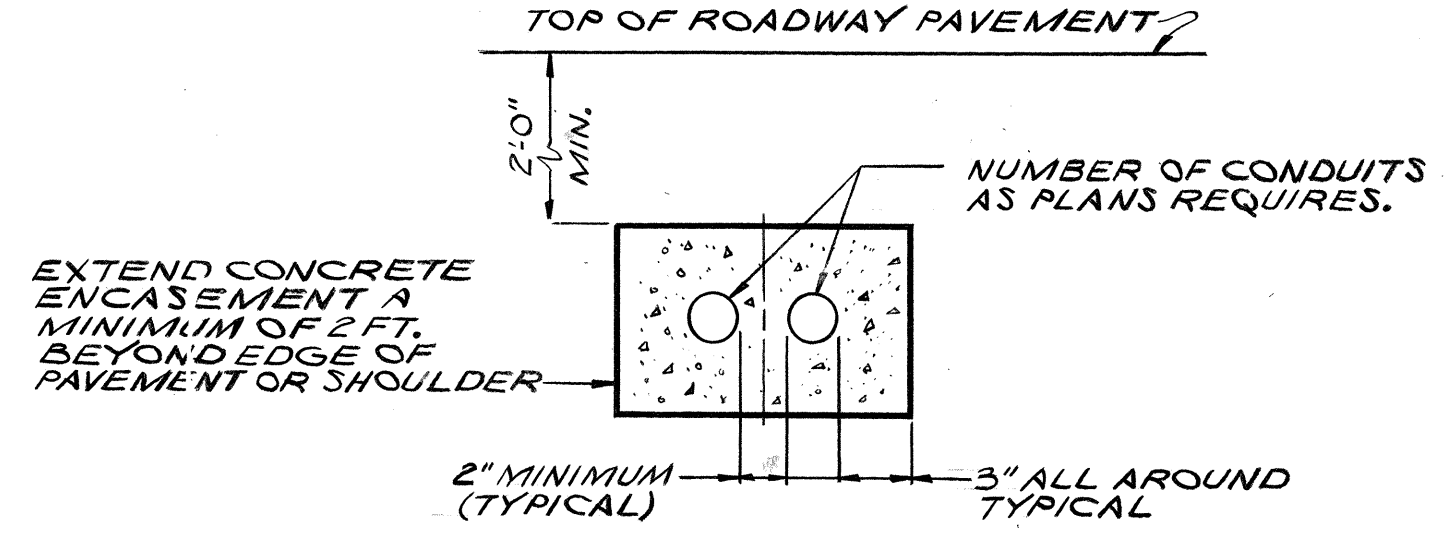
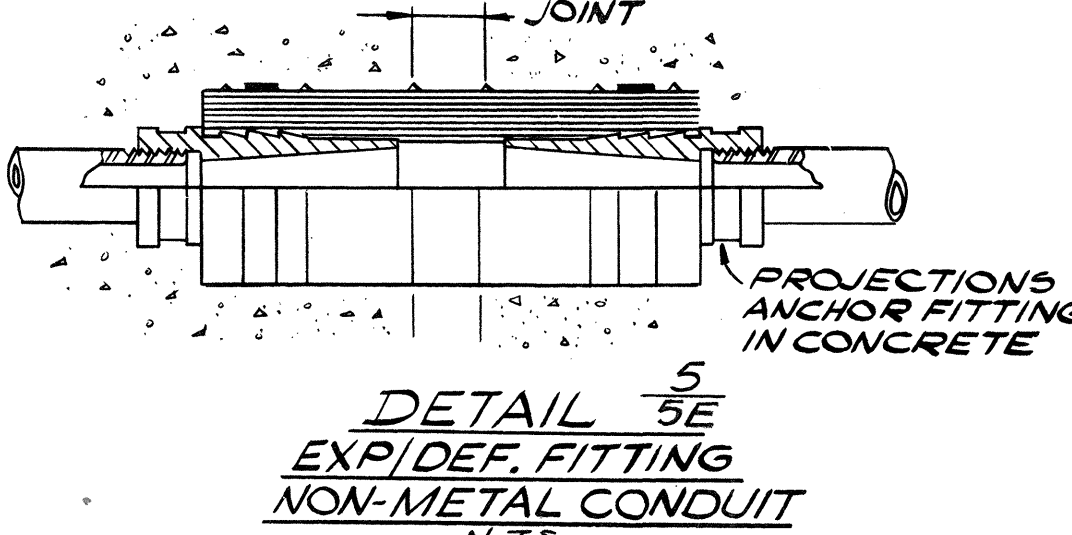
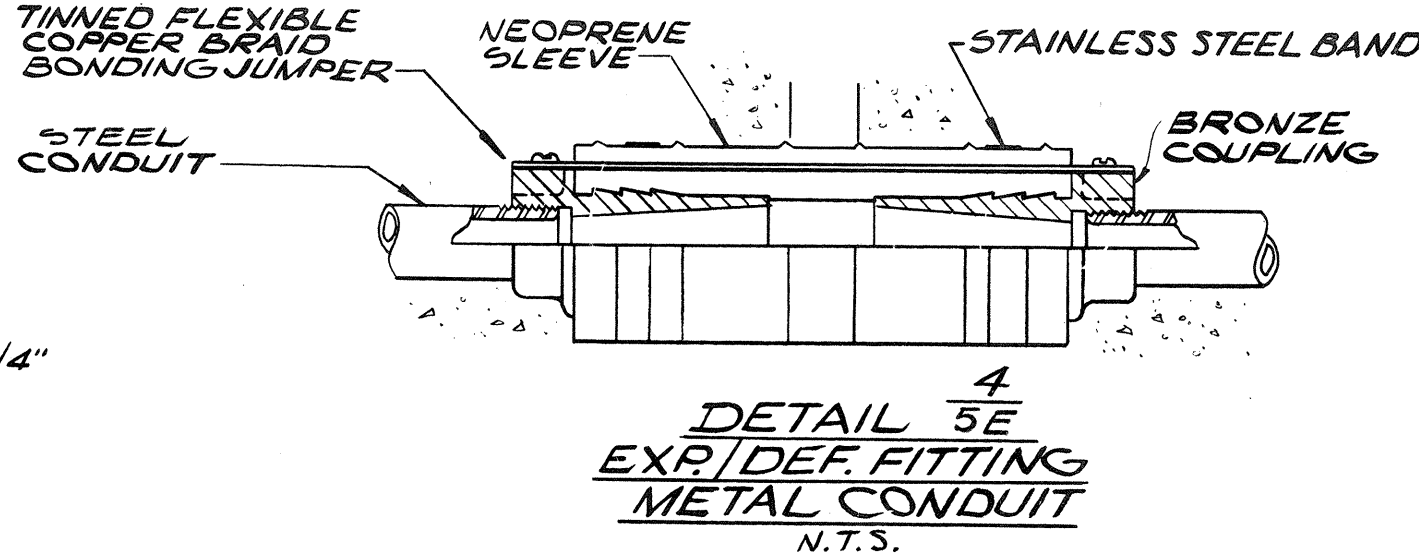
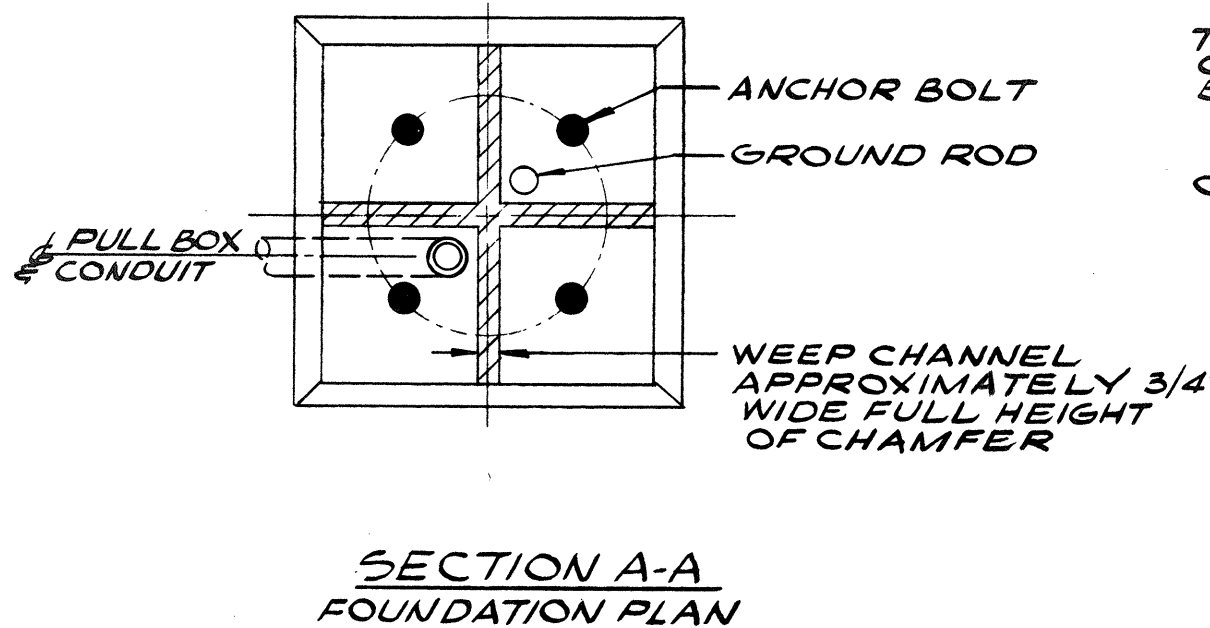
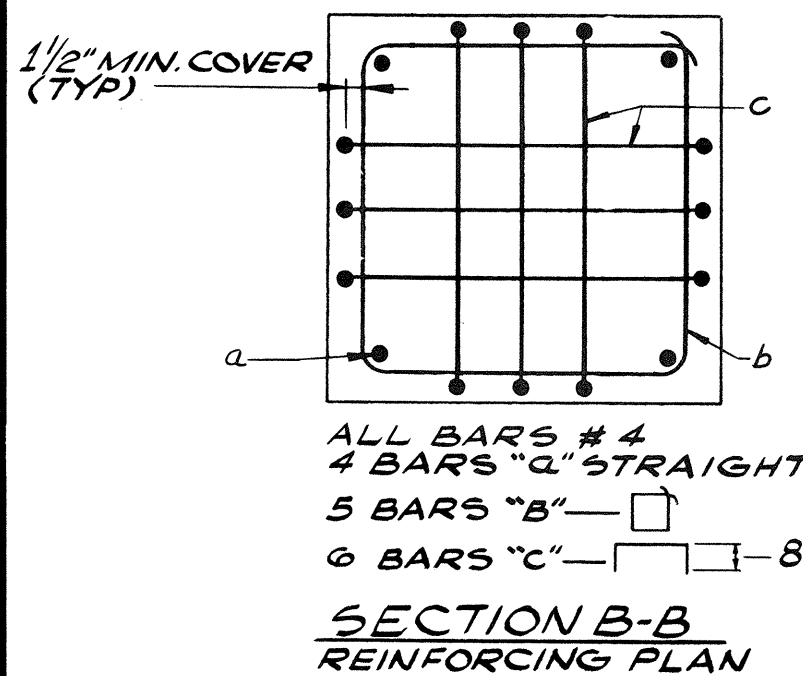
N.T.S.

1
 DETAIL 5E
 LIGHTING STANDARD TYPES
 NOTE: MOUNTING HEIGHTS & BRACKET ARM LENGTHS ARE APPROX. $\pm$ 3"

2
 DETAIL 5E
 ONE LINE DIAGRAM OF FDRS



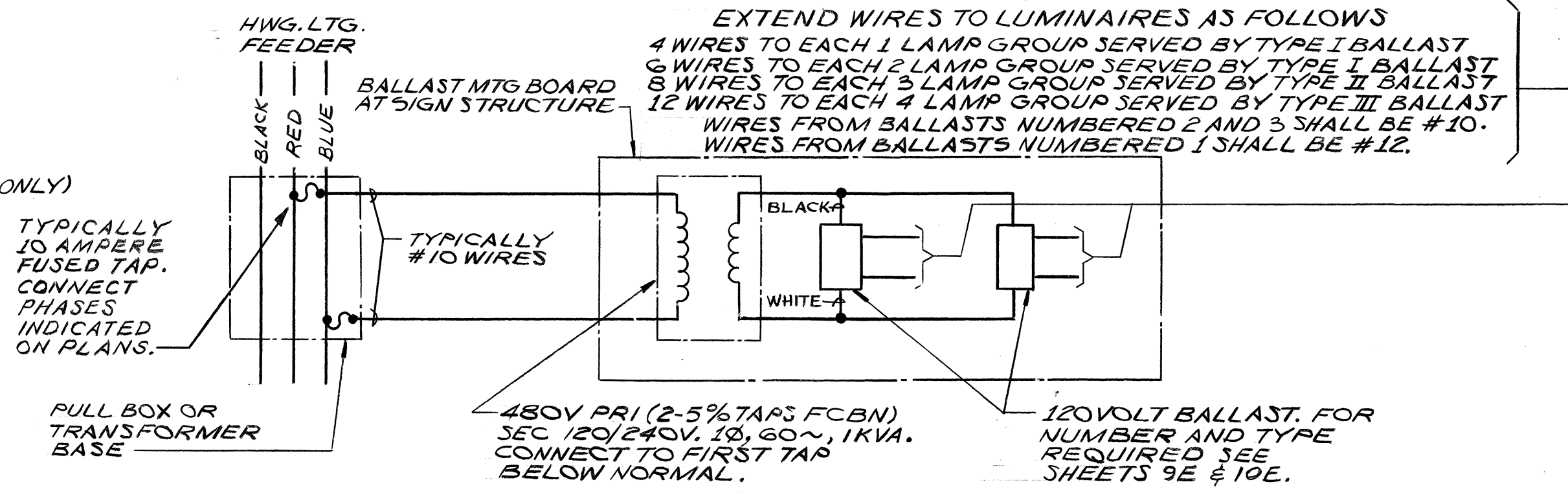
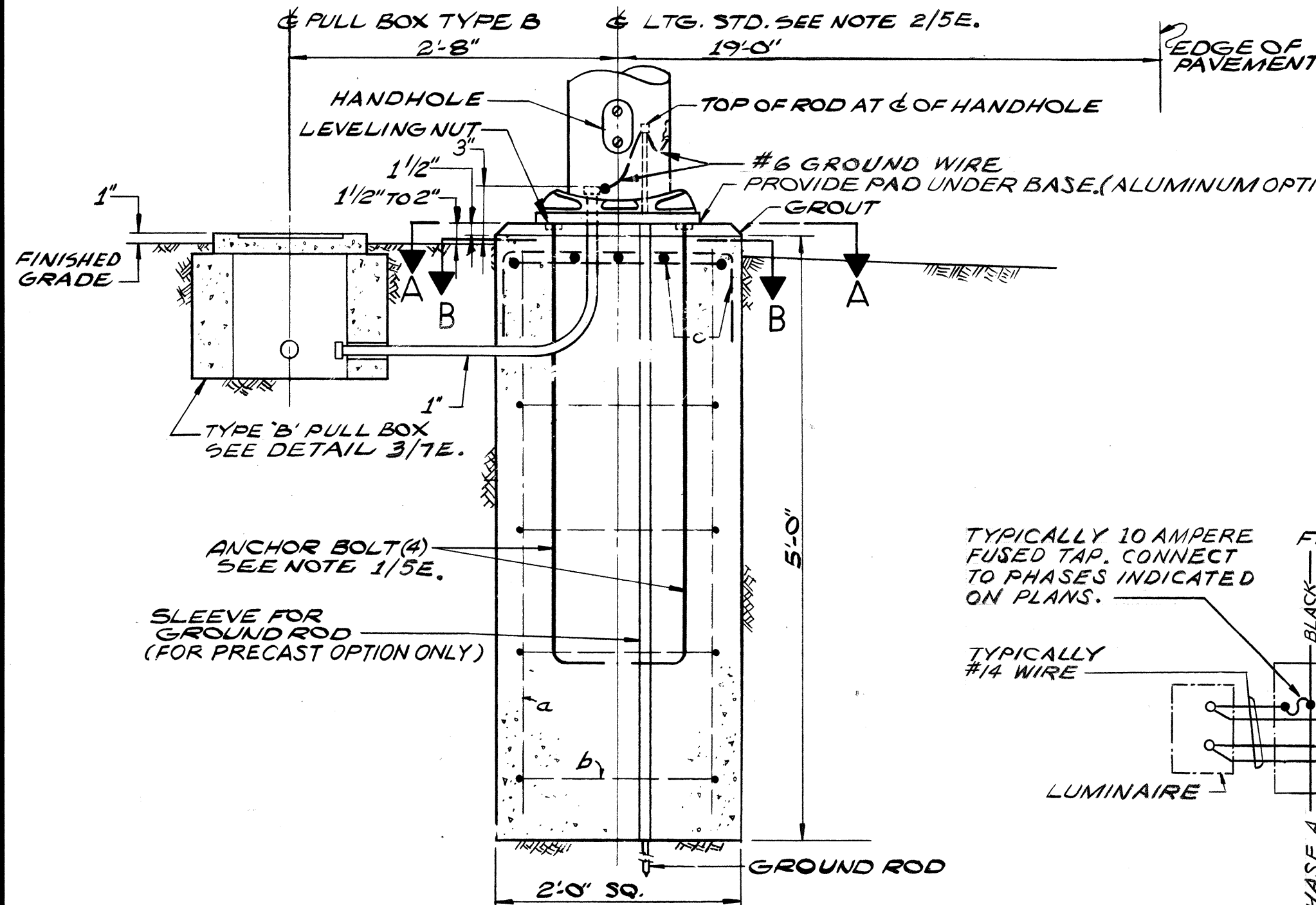
6
 DETAIL 5E
 CONDUIT CAP & MARK



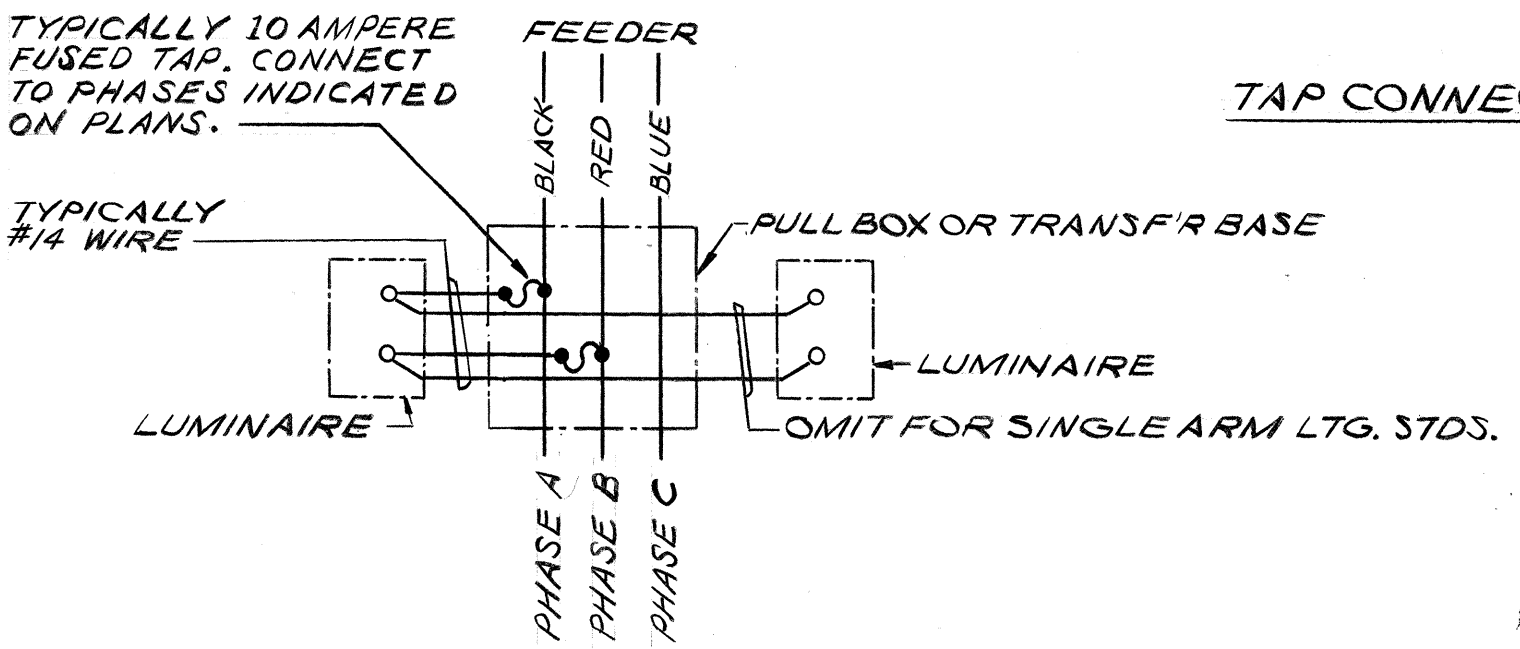
NOTE: EXCEPT THAT THE NUMBER OF CONDUITS RUNS & FEEDERS TO BE INSTALLED SHALL BE AS INDICATED ON PLAN SHEETS, THIS DETAIL IS TYPICAL FOR ALL HWY LTG SYSTEM CONDUITS UNDER ROADWAY.

7
 DETAIL 5E
 N.T.S.

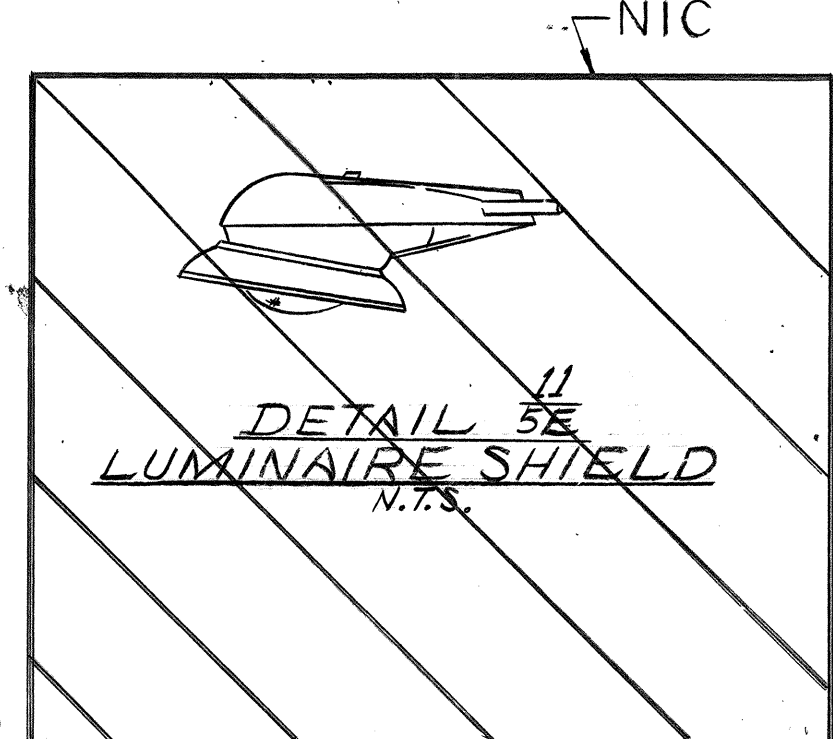
NOTES:
 1- ANCHOR BOLT DIAMETER & LENGTH, LOCATION AND PROJECTION SHALL BE SUITED TO THE LIGHTING STANDARD APPROVED.
 2- ALUMINUM LIGHTING STANDARD WITH SHOE BASE OPTION IS PICTURED. STEEL LIGHTING STANDARD WITH CAST ALUMINUM TRANSFORMER BASE OPTION NOT PICTURED BUT IS SIMILAR. FOUNDATION DETAILS APPLY TO BOTH OPTIONS.



8
 DETAIL 5E
 TAP CONNECTION TO SIGN LUMINAIRE



10
 DETAIL 5E
 TAP CONNECTION HWG. LTG. LUMINAIRE



11
 DETAIL 5E
 LUMINAIRE SHIELD

9
 DETAIL 5E
 LIGHTING STANDARD FOUNDATION
 FOR LOCATIONS BEHIND SHOULDERS
 SCALE: 1"=1'-0"

DATE	*****
DESIGNED BY	*****
CHECKED BY	*****
NO.	*****



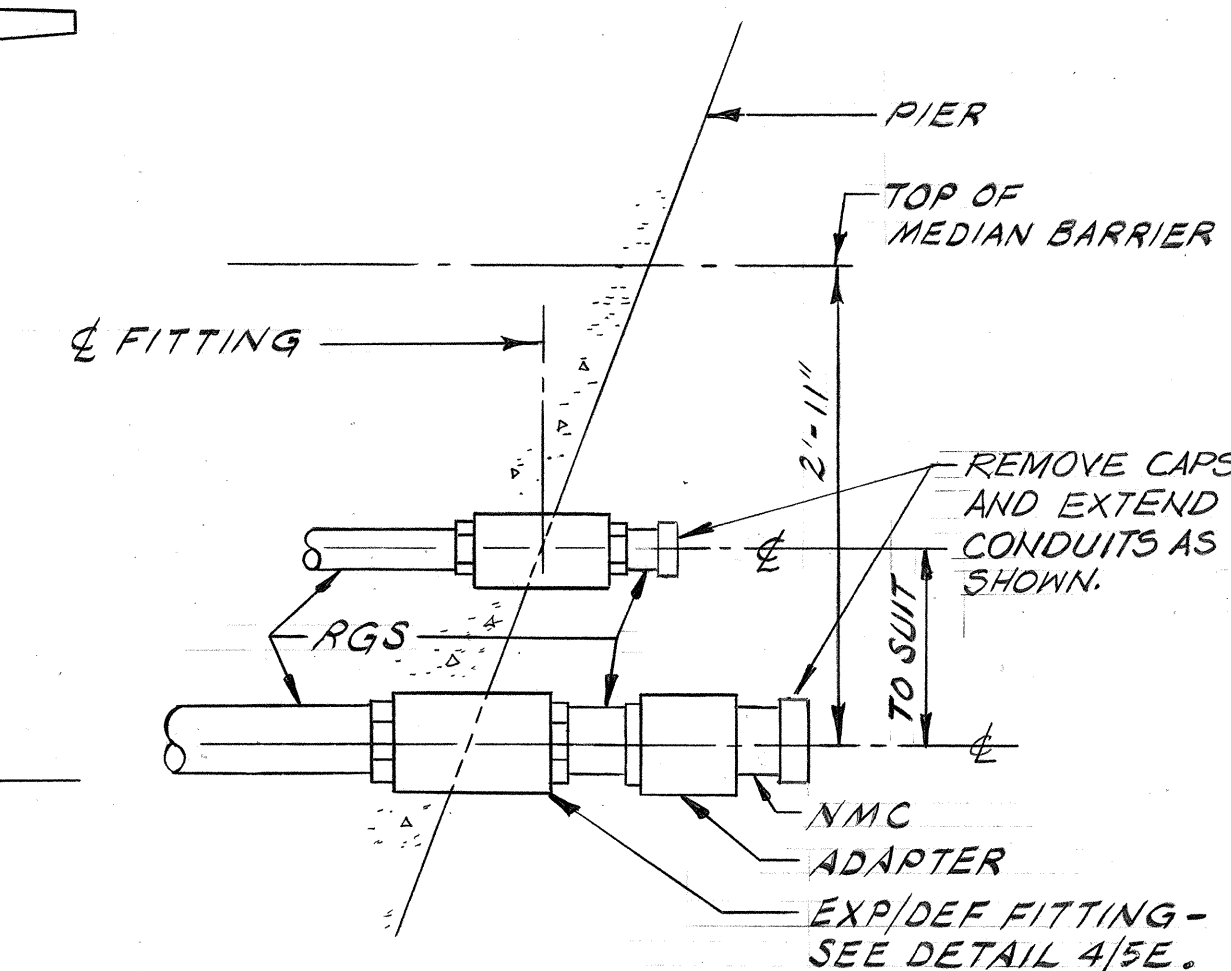
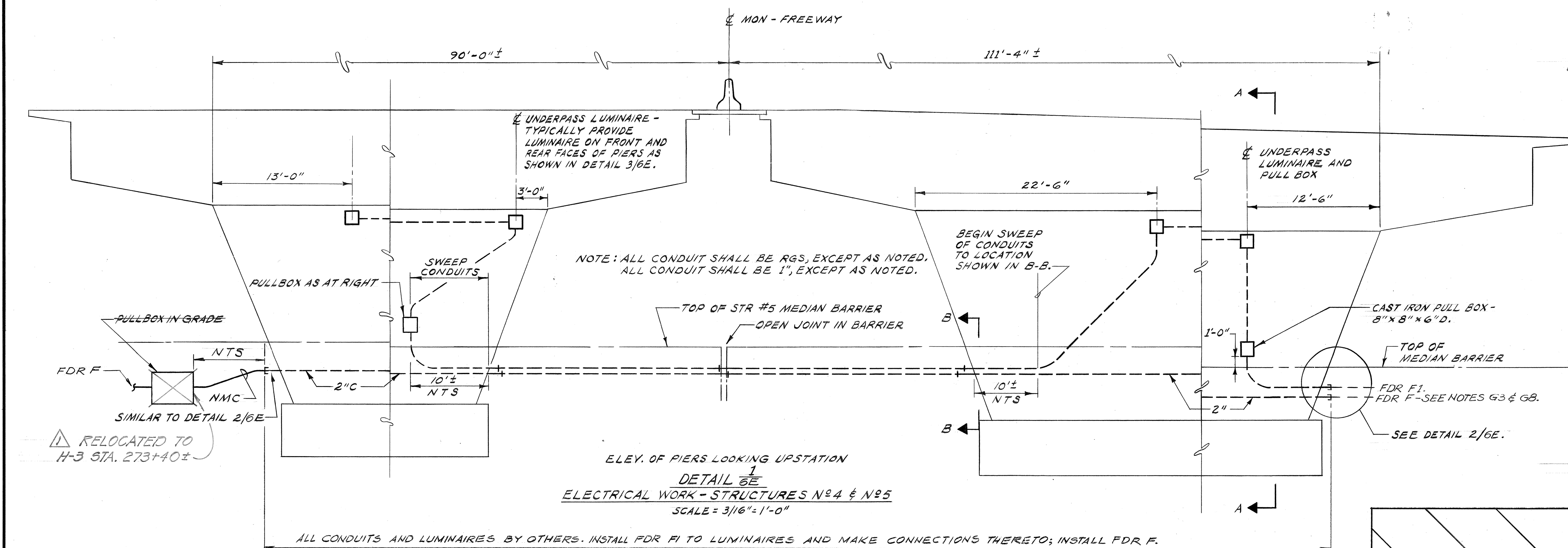
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 ME OR UNDER MY SUPERVISION
 Michael A. Mangalosing

ELECTRICAL SHEET 5E
 STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

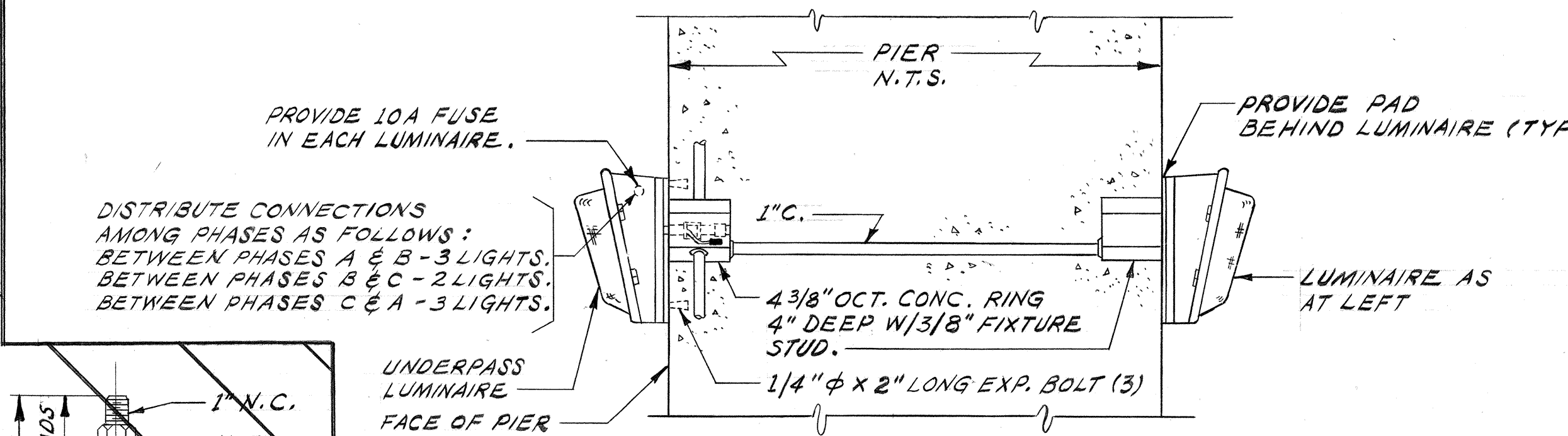
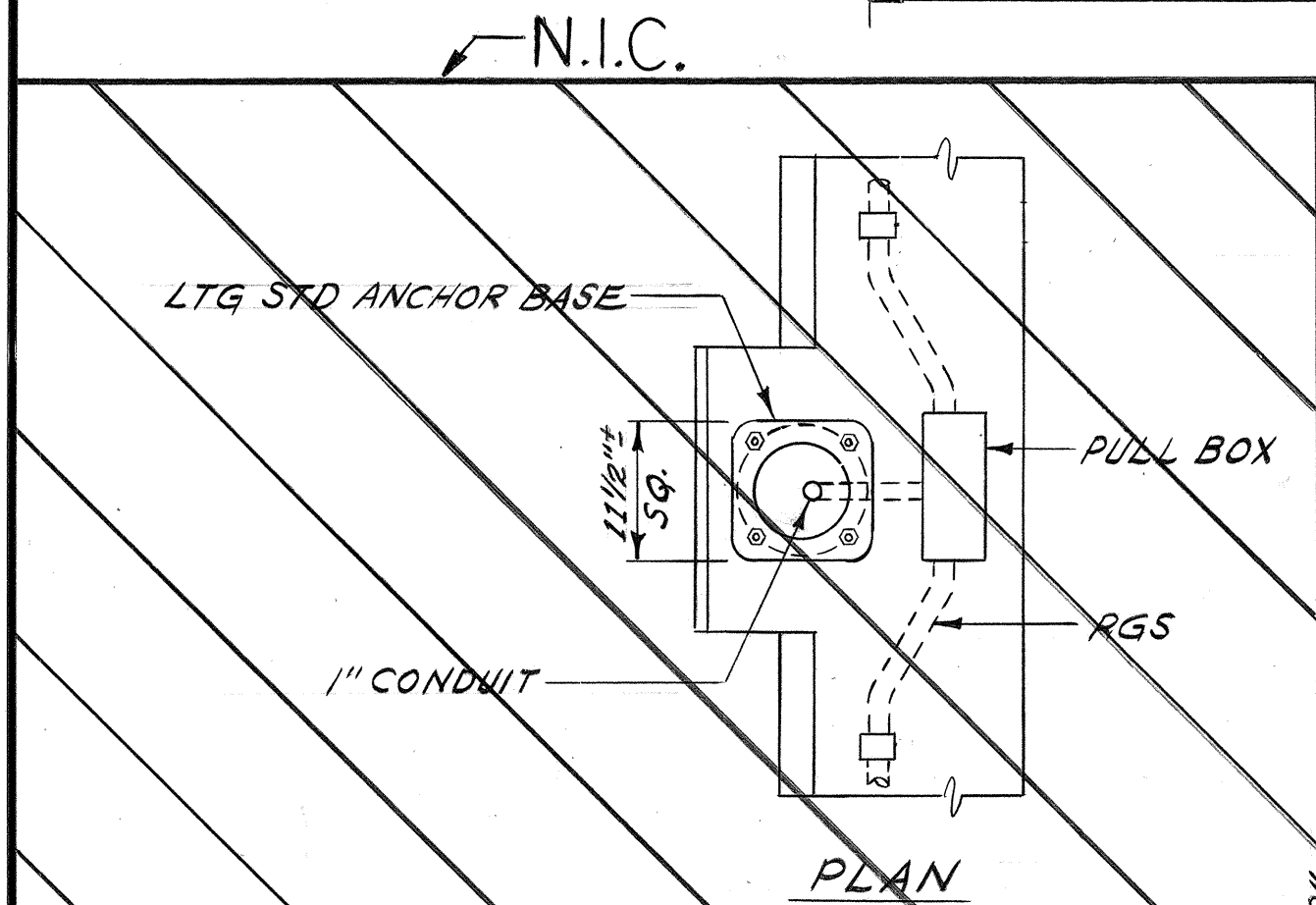
ELECTRICAL DETAILS
 HALAWA INTERCHANGE
 PROJECT NO. I-HI-1(109)13
 SCALE: AS NOTED DATE: DEC. 29, 1972
 SHEET No. 5E OF 11 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HH(109)13	1975	79	130

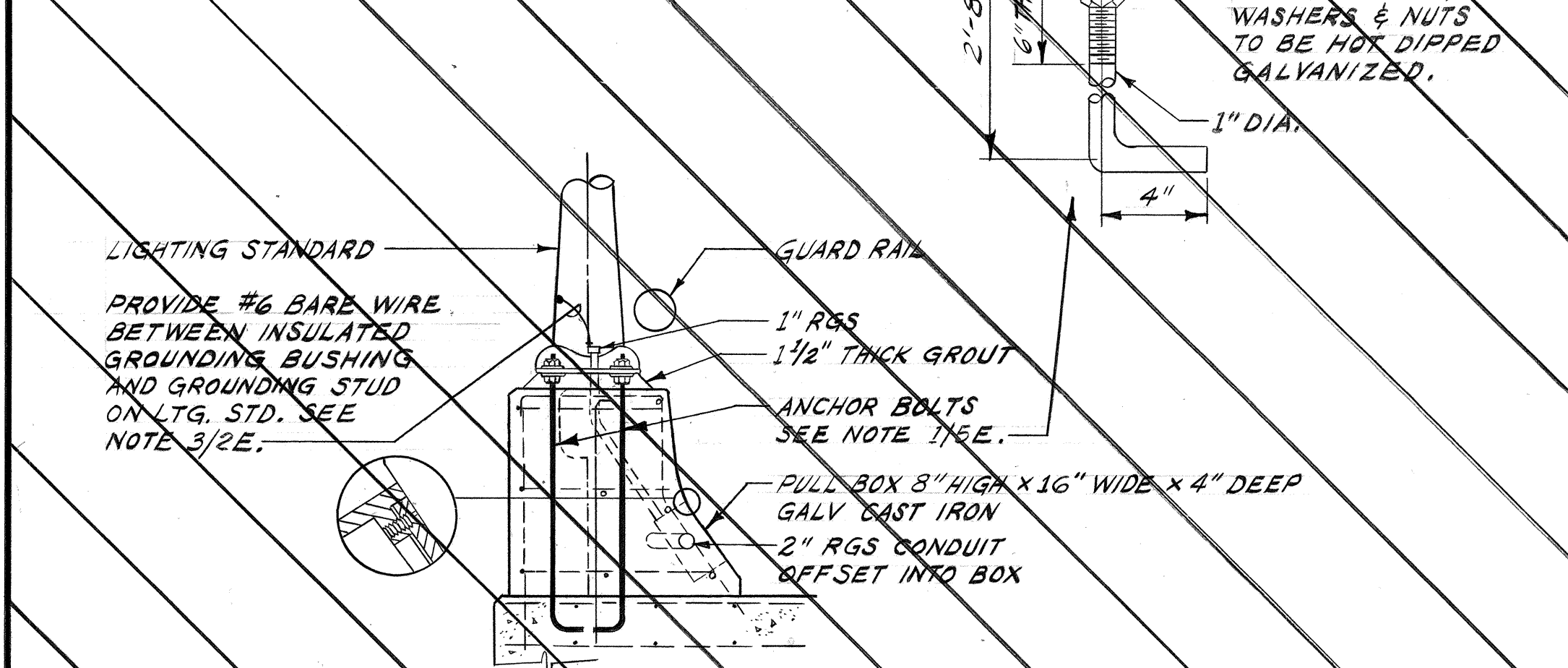
7/28/75 RELOCATE FDR F2 (FIELD REV)



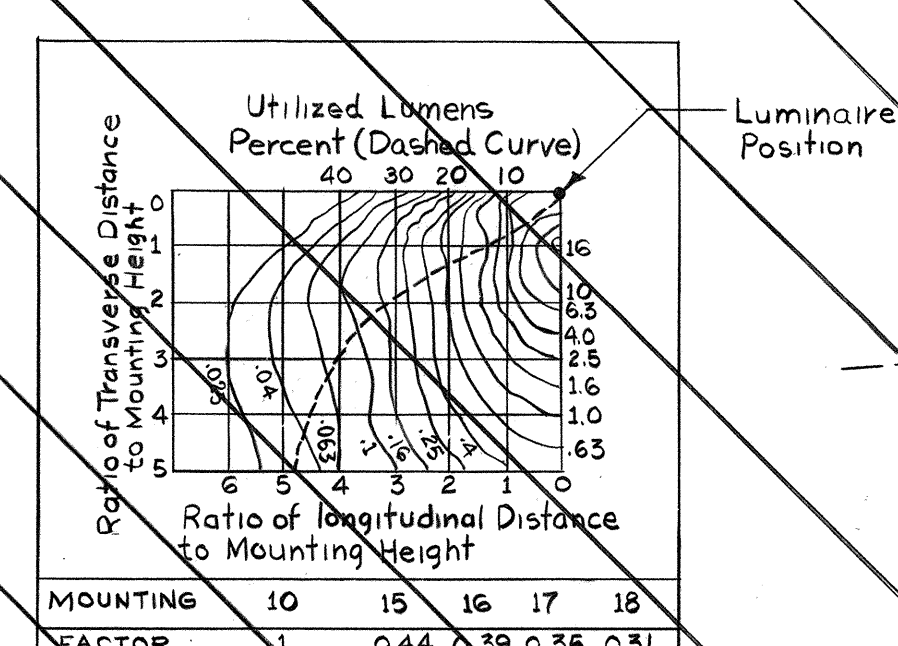
DETAIL 2/6E
EXP/DEF FITTING INSTALLATION
NTS



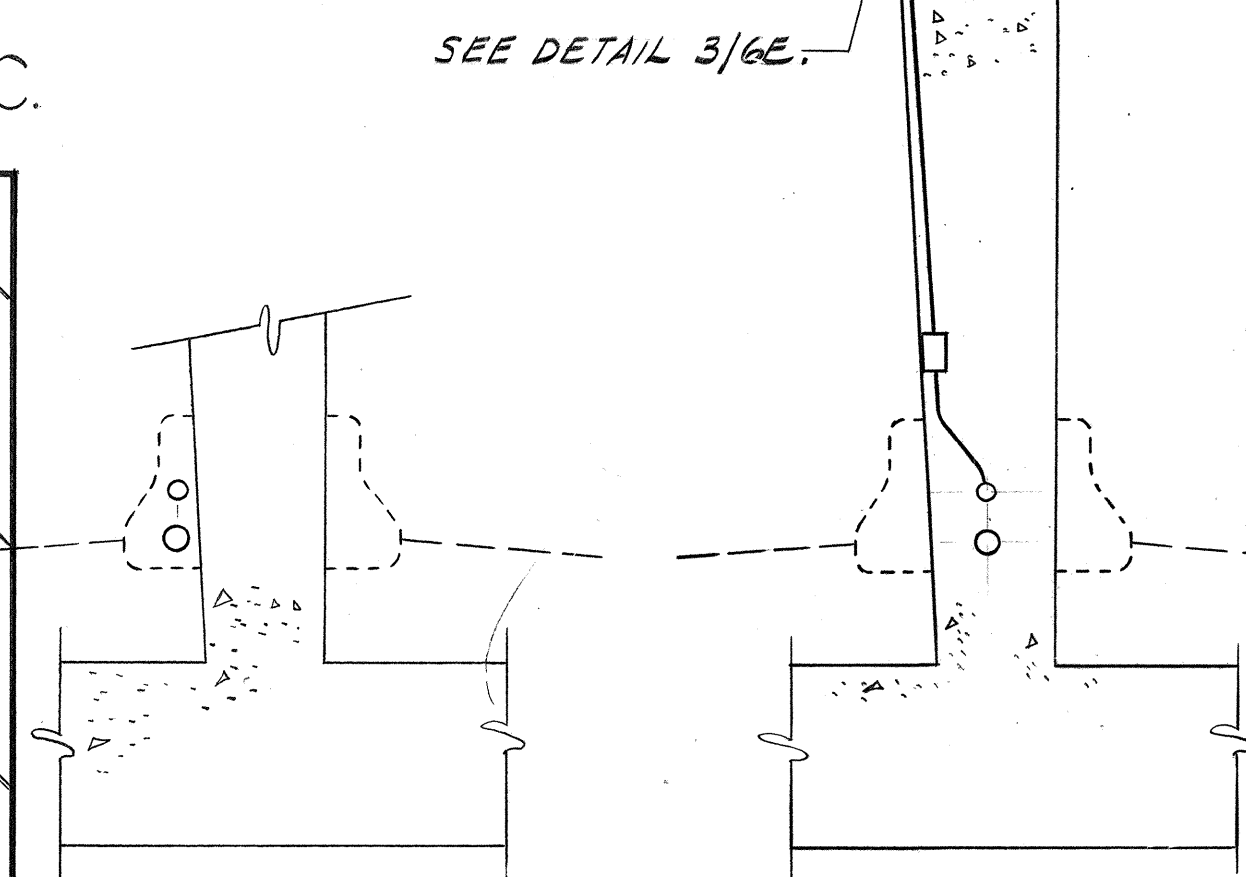
DETAIL 3/6E
UNDERPASS LUMINAIRE
SCALE = 1/4" = 1'-0"
N.I.C. FOR INFORMATION ONLY



DETAIL 4/6E
LTG STD ON STRUCTURE N4
NO SCALE

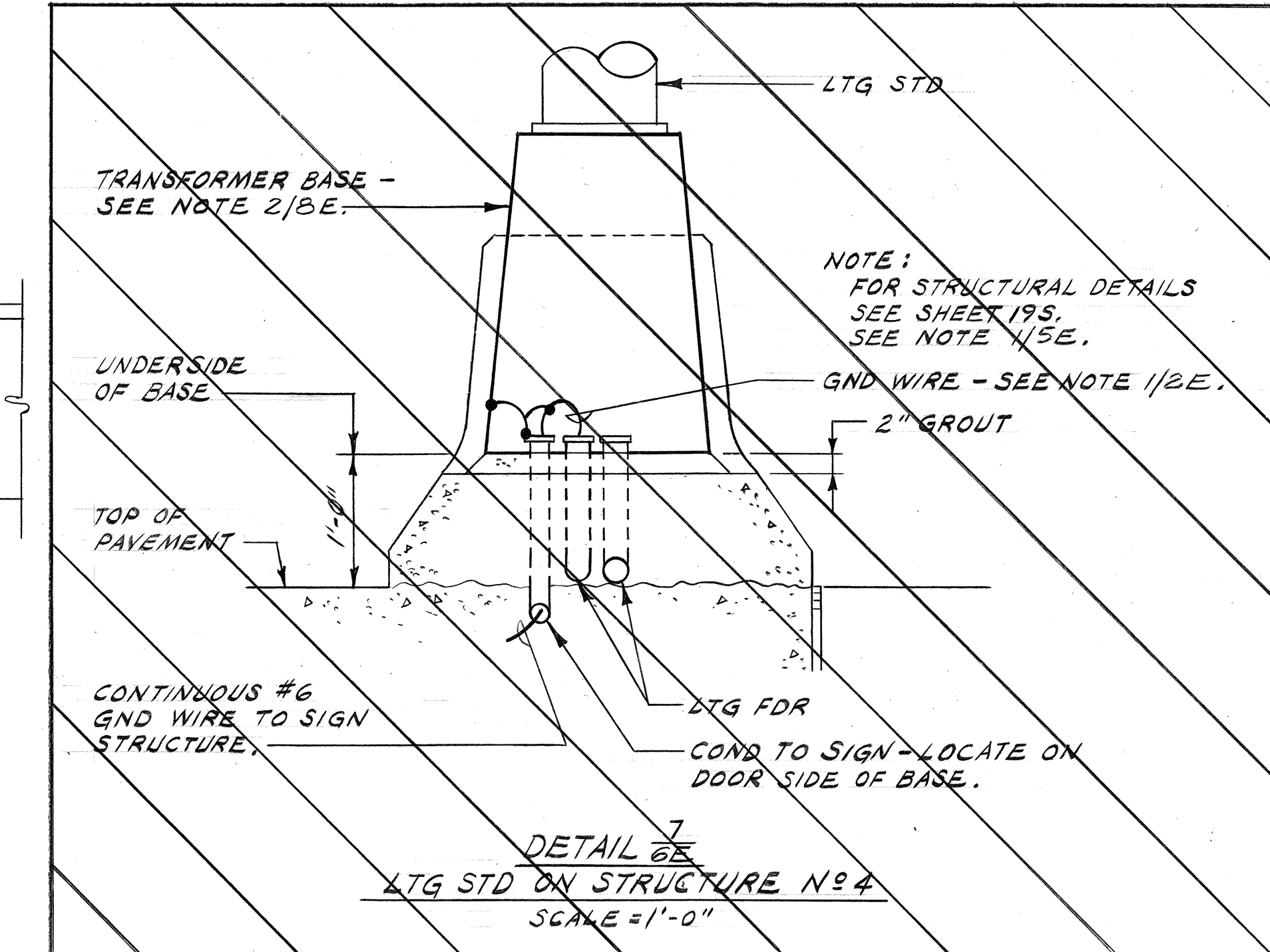


DETAIL 5/6E
PHOTOMETRIC CURVE FOR
UNDERPASS LUMINAIRE



SECTION B-B
DETAIL 6/6E
SCALE = 1/4" = 1'-0"

SECTION A-A
DETAIL 6/6E
SCALE = 1/4" = 1'-0"



DETAIL 7/6E
LTG STD ON STRUCTURE N4
SCALE = 1'-0"

FOR NOTES G1 TO G21 SEE SHEET NO. 1E
ELECTRICAL SHEET 6E

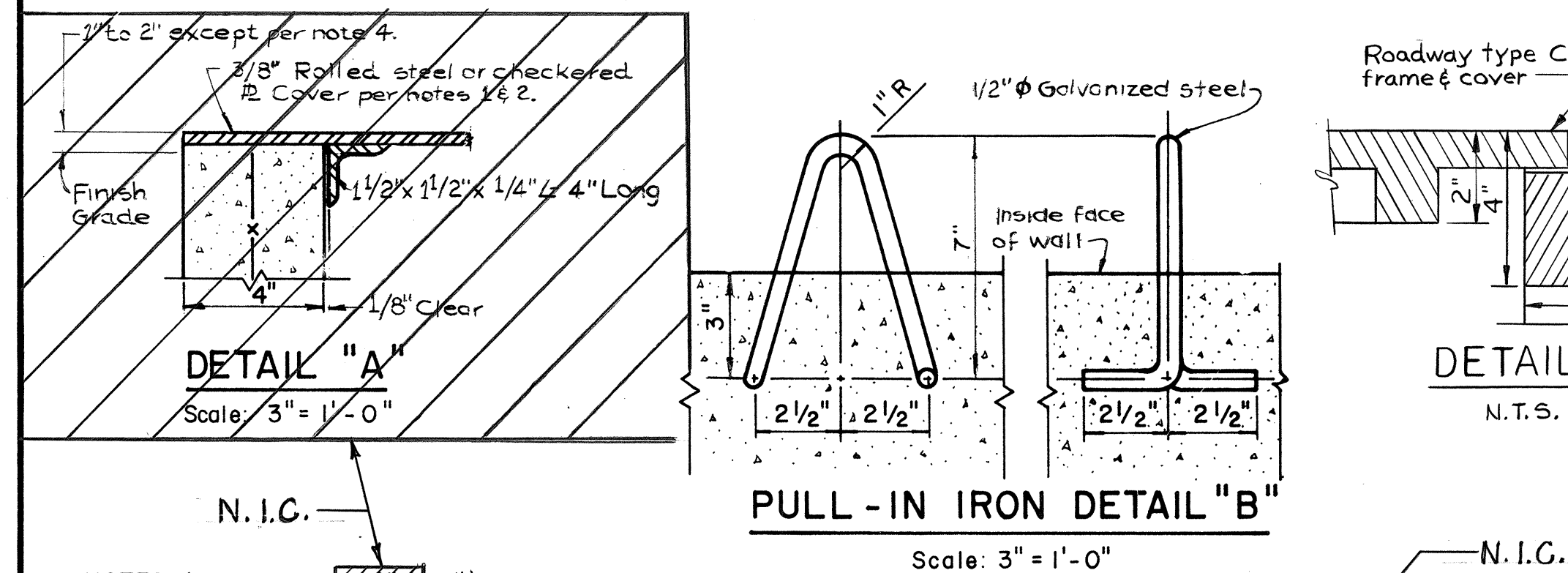
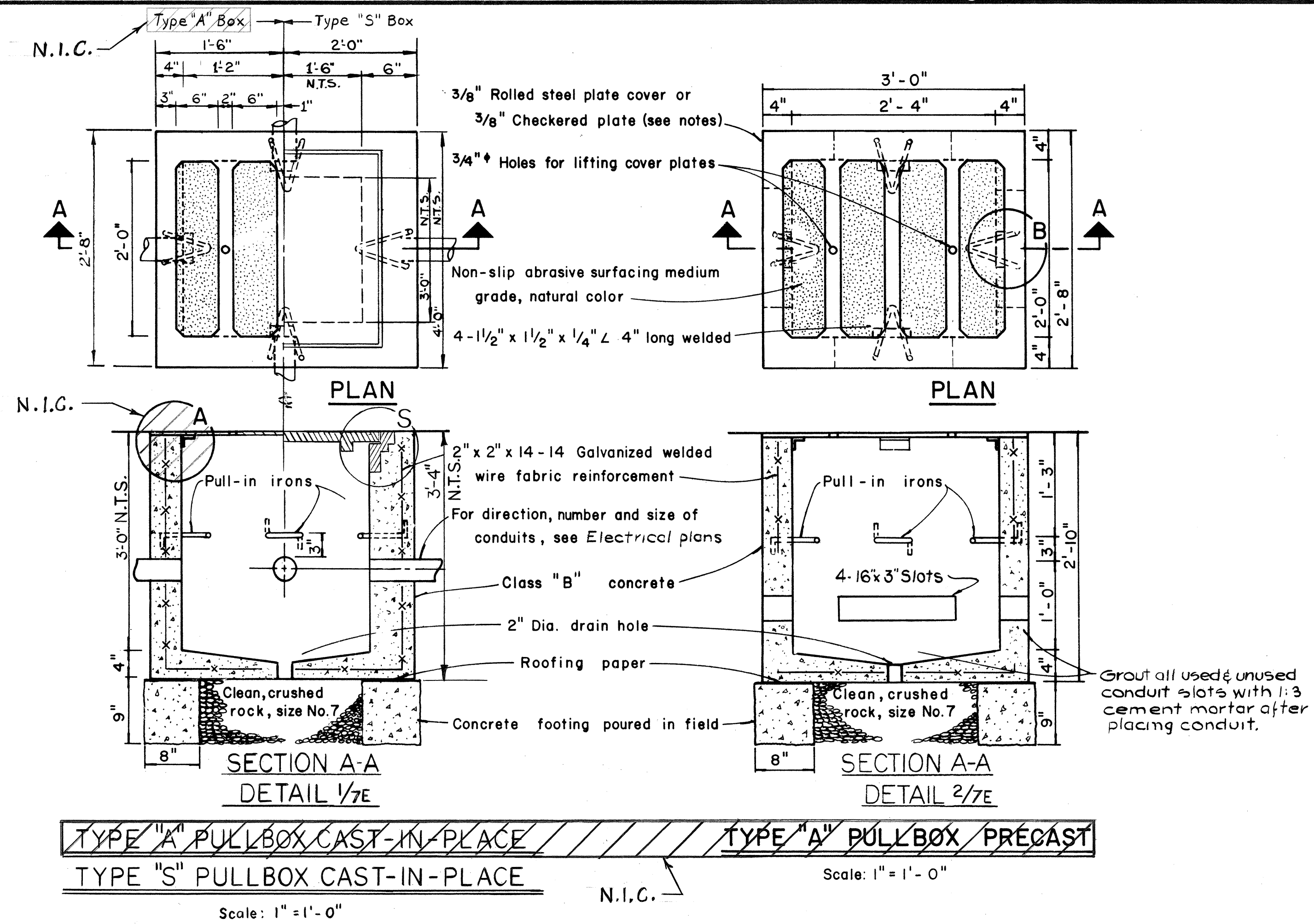


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Michael A. Marziano

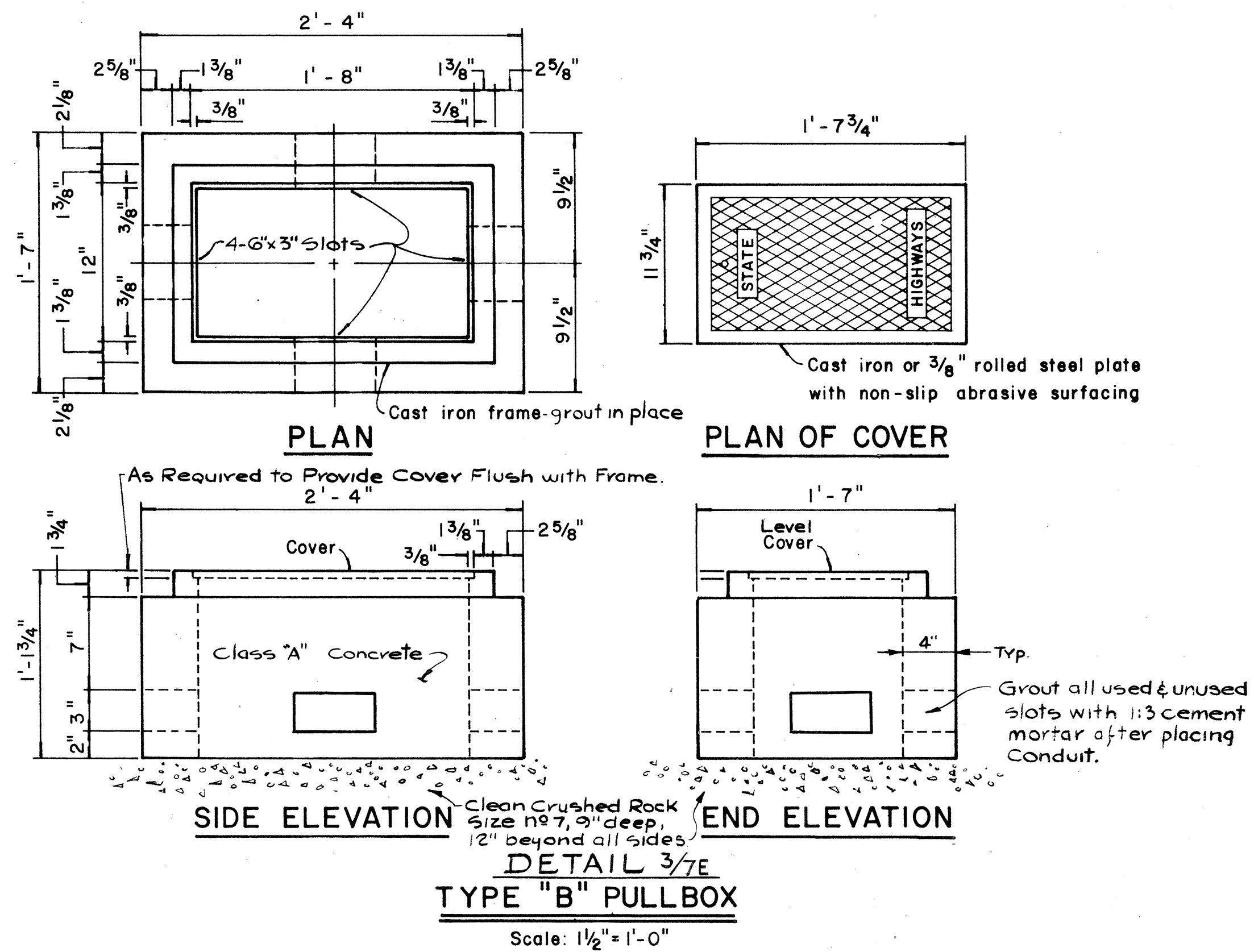
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL DETAILS
STRUCTURES

HALAWA INTERCHANGE
PROJECT NO. I-HI-109)13
SCALE: AS NOTED DATE: DEC. 29, 1972
SHEET No. 6E OF 11 SHEETS



- NOTES: (FOR TYPE "A" & "S")
- 3/8" Rolled steel plate cover with non-slip abrasive surfacing medium grade, natural color shall be used on all pullboxes located on sidewalk areas where pedestrians are walking.
 - 3/8" Checkered plate cover shall be used on all pullboxes located in median areas and other locations where there are no pedestrians walking.
 - Pull irons shall be placed opposite each conduit slot.
 - Covers on all pullboxes located in sidewalk areas shall be set flush with the concrete sidewalk.
 - Each pullbox shall have a pair of pull irons as indicated. These may be used for lifting.



ELECTRICAL SHEET 7E

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

ELECTRICAL DETAILS
 PULLBOXES

HALAWA INTERCHANGE
 PROJECT NO. I-HI-1(109)13

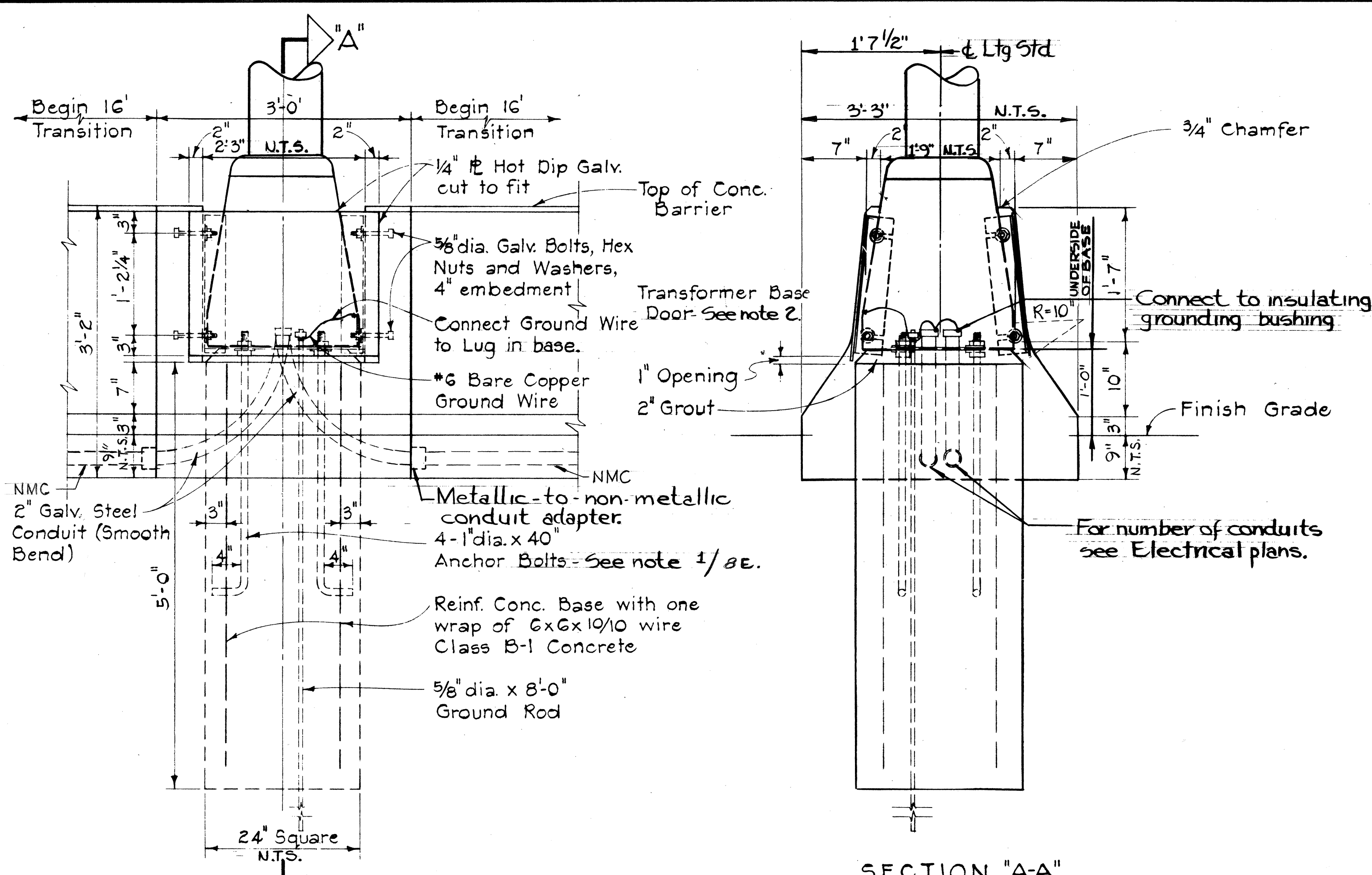
Scale as noted Date: DEC. 29, 1972

SHEET No. 7E OF 11 SHEETS

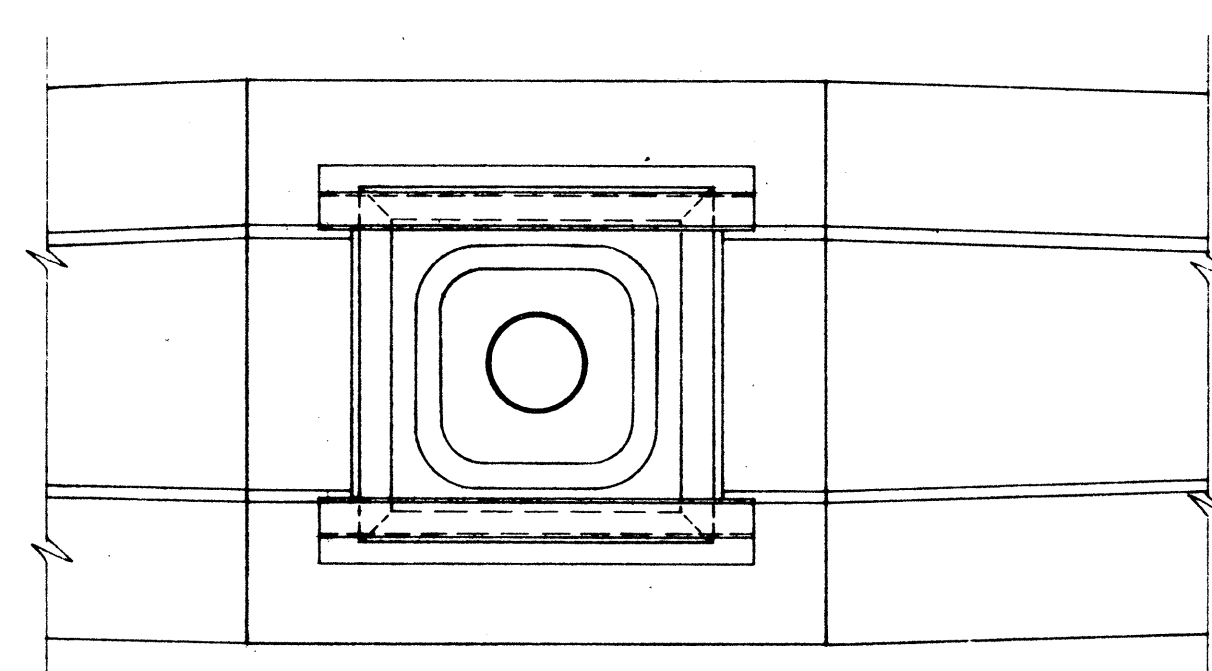


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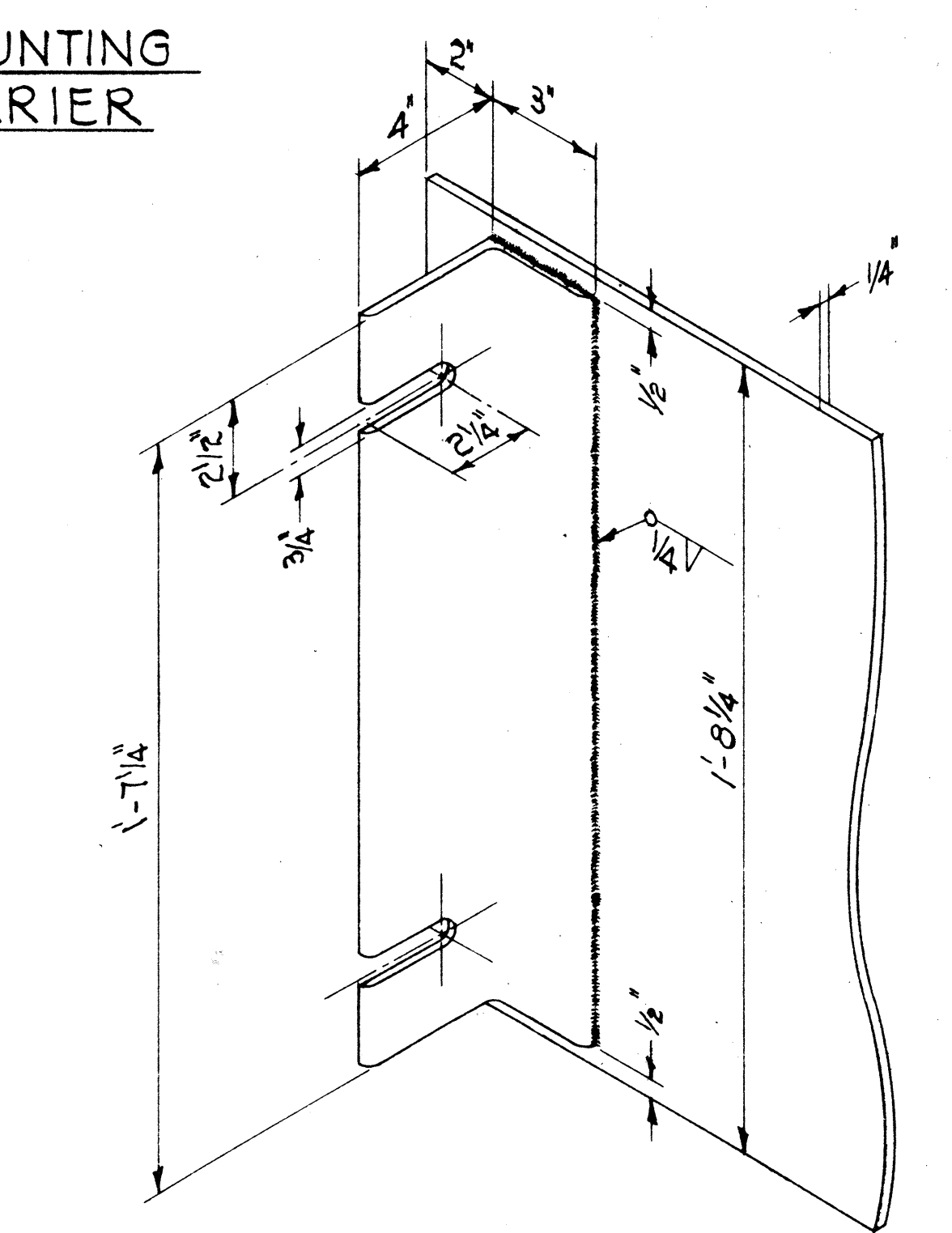
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1H4(109):13	1975	81	130



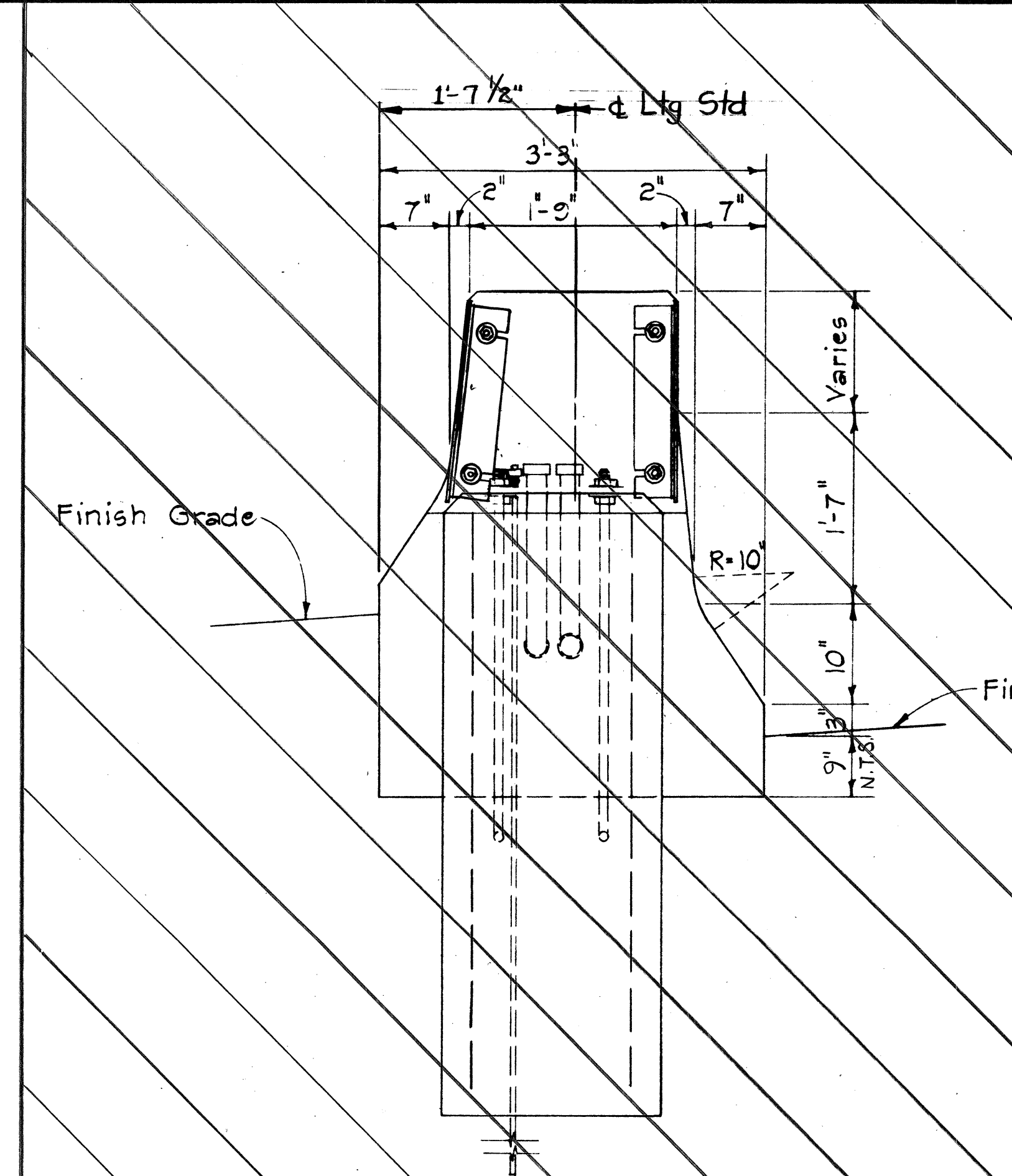
ELEVATION
DETAIL 1/8E
HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE "A" CONCRETE BARRIER
Scale: 1"=1'-0"



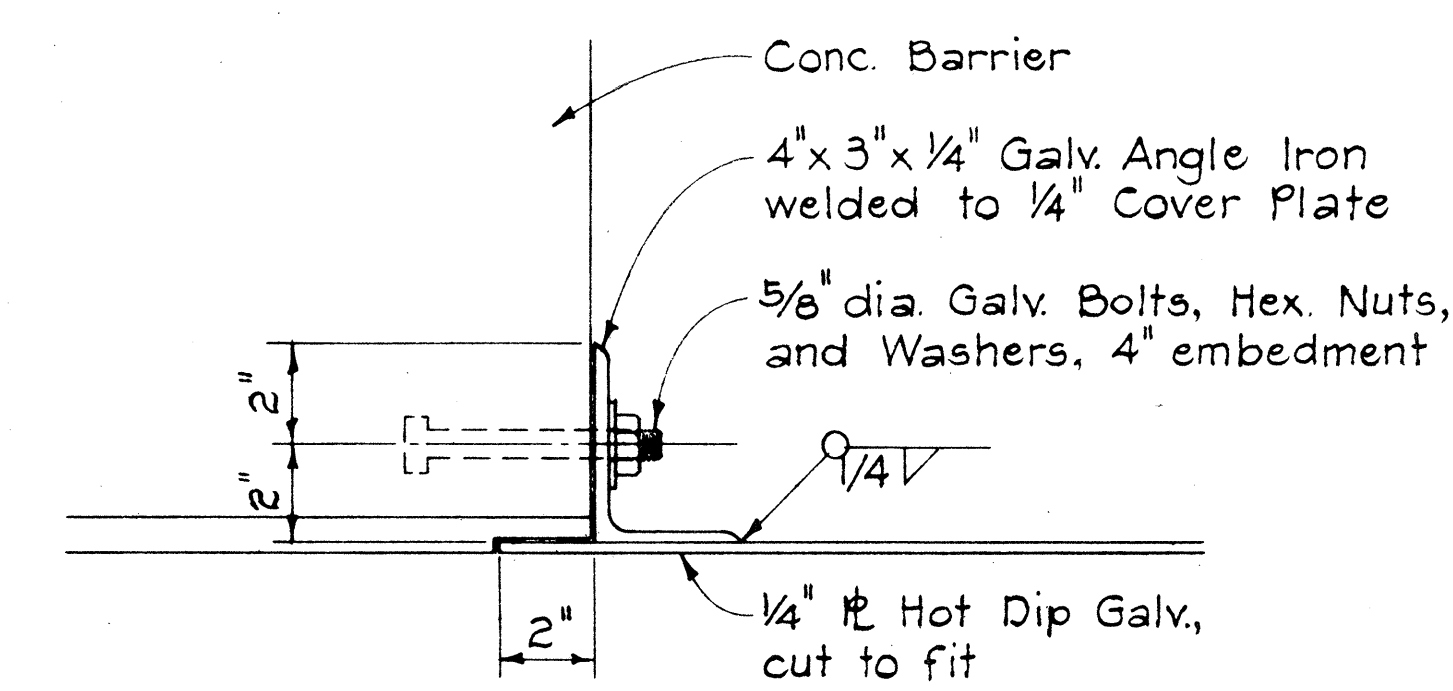
TYPICAL PLAN
Scale: 1"=1'-0"



ANGLE IRON-COVER PLATE DETAIL
Scale: 3"=1'-0"

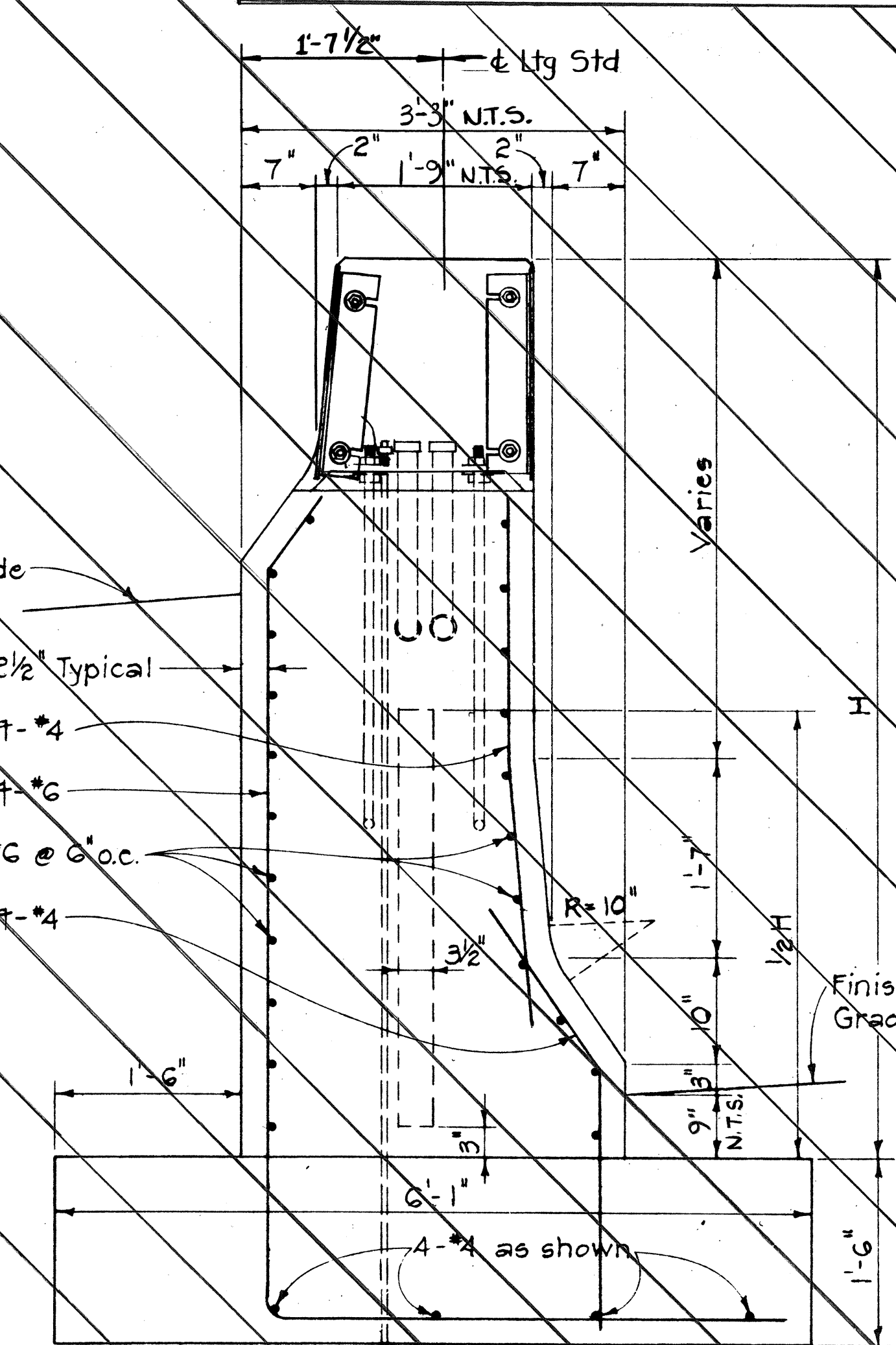


HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE "B" CONCRETE BARRIER
Scale: 1"=1'-0"



COVER PLATE ANCHOR DETAIL
Scale: 3"=1'-0"

- NOTES:
1. Provide 5-foot by 2-foot by 2-foot lighting standard foundation complete including elbows, grounding, anchor rods, reinforcing, concrete, and excavation under lighting standard item. Provide all other indicated construction under barrier item.
 2. Position transformer base so that door is at right hand side of all lighting standards when looking up station.



SECTION "B-B"
Scale: 1"=1'-0"
Normal Barrier Reinf. 3'-0" Normal Barrier Reinf.
ELEVATION
Scale: 1/4"=1'-0"
HIGHWAY LIGHTING STANDARD MOUNTING
DETAIL ON TYPE "C" CONCRETE BARRIER
ELECTRICAL SHEET 8E



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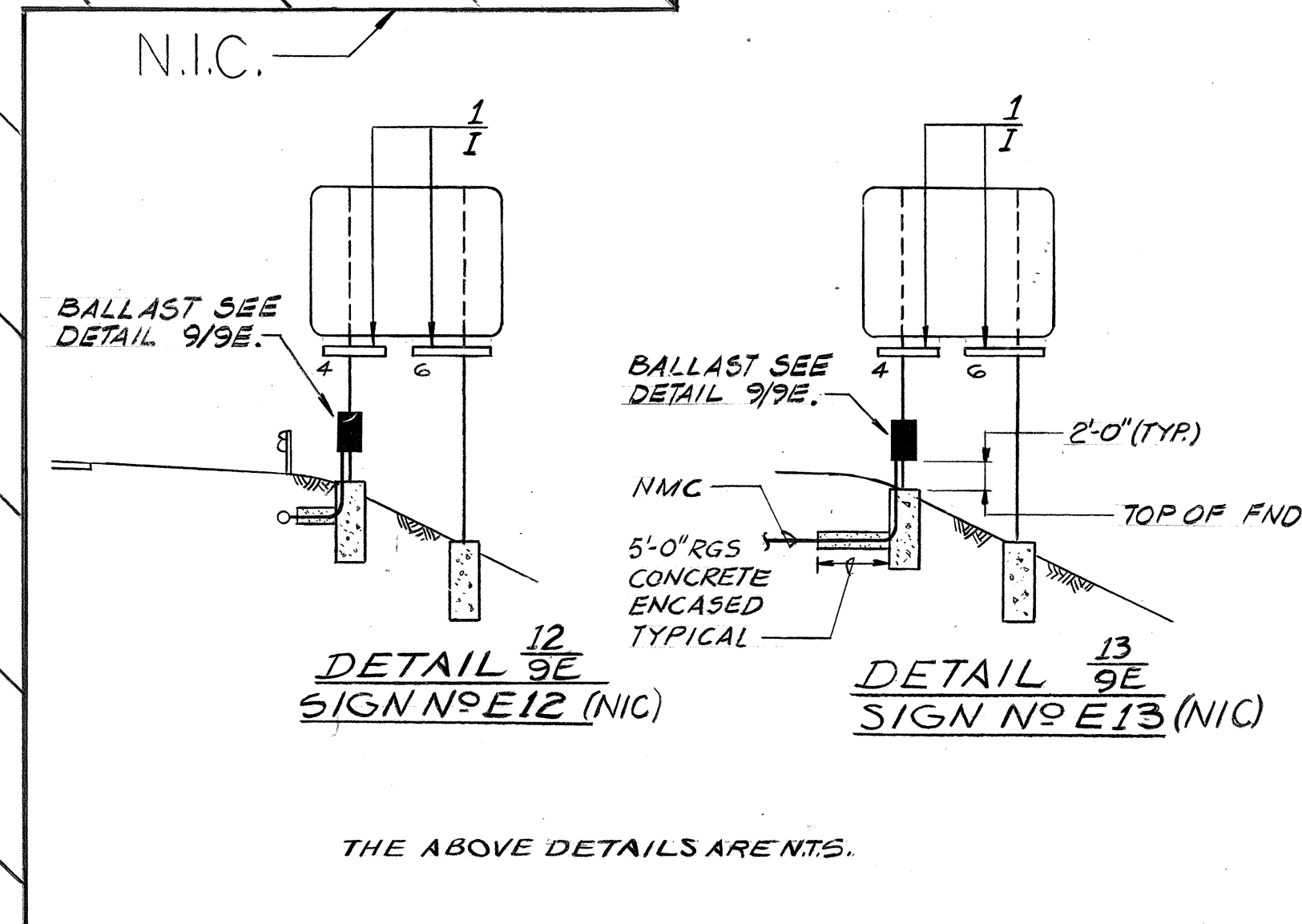
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
ELECTRICAL DETAILS
LTG. STD. ON BARRIER
HALAWA INTERCHANGE
PROJECT NO. I-HI-1(109):13
Scale: As Shown Date: DEC 29 1972
SHEET No. 8E OF 11 SHEETS

NOTES:

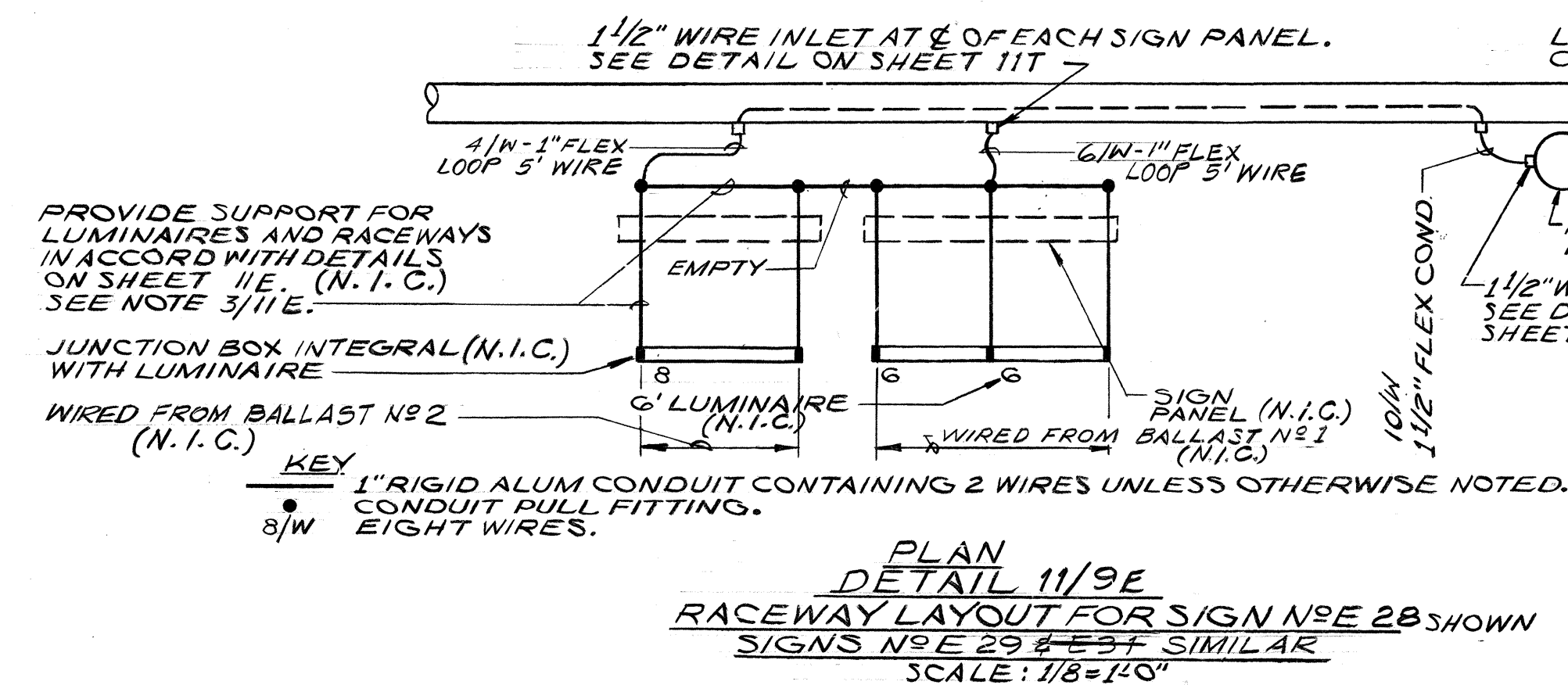
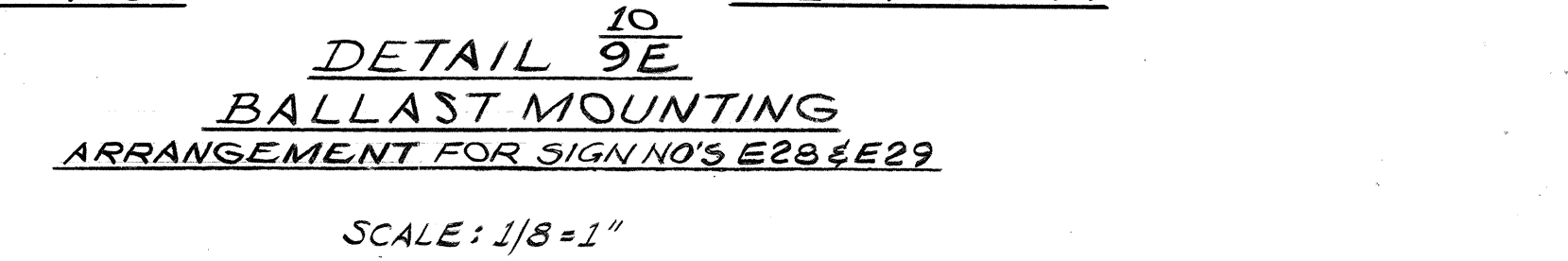
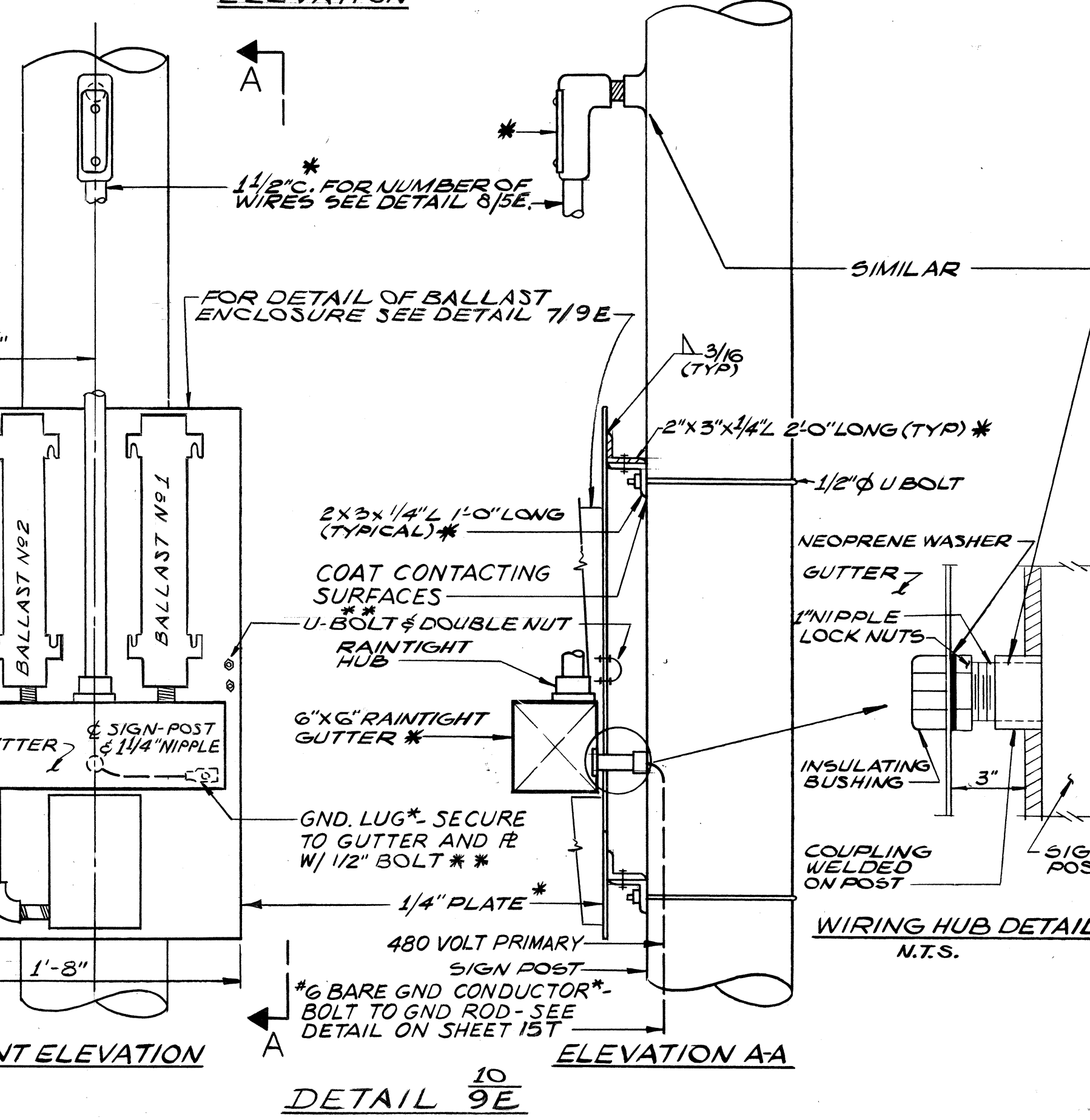
- 1- FOR SCHEMATIC DIAGRAM OF CONNECTION TO SIGN LUMINAIRES SEE DETAIL 6/3E.
- 2- FOR DETAIL OF FOUNDATION FOR OVERHEAD SIGN SEE SHEET 15T.
- 3- FOR DETAIL OF FOUNDATION FOR GROUND SIGN SEE SHEET 16T.

* ITEMS REFERENCED WITH ASTERISK SHALL BE OF ALUMINUM.

** ITEMS REFERENCED WITH DOUBLE ASTERISK SHALL BE OF STAINLESS STEEL.



KEY
LUM-TO-BALLAST
CONNECTION



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL DETAILS
ILLUMINATED SIGNS
PART I
HALAWA INTERCHANGE
PROJECT NO. I-HI-1(109):13

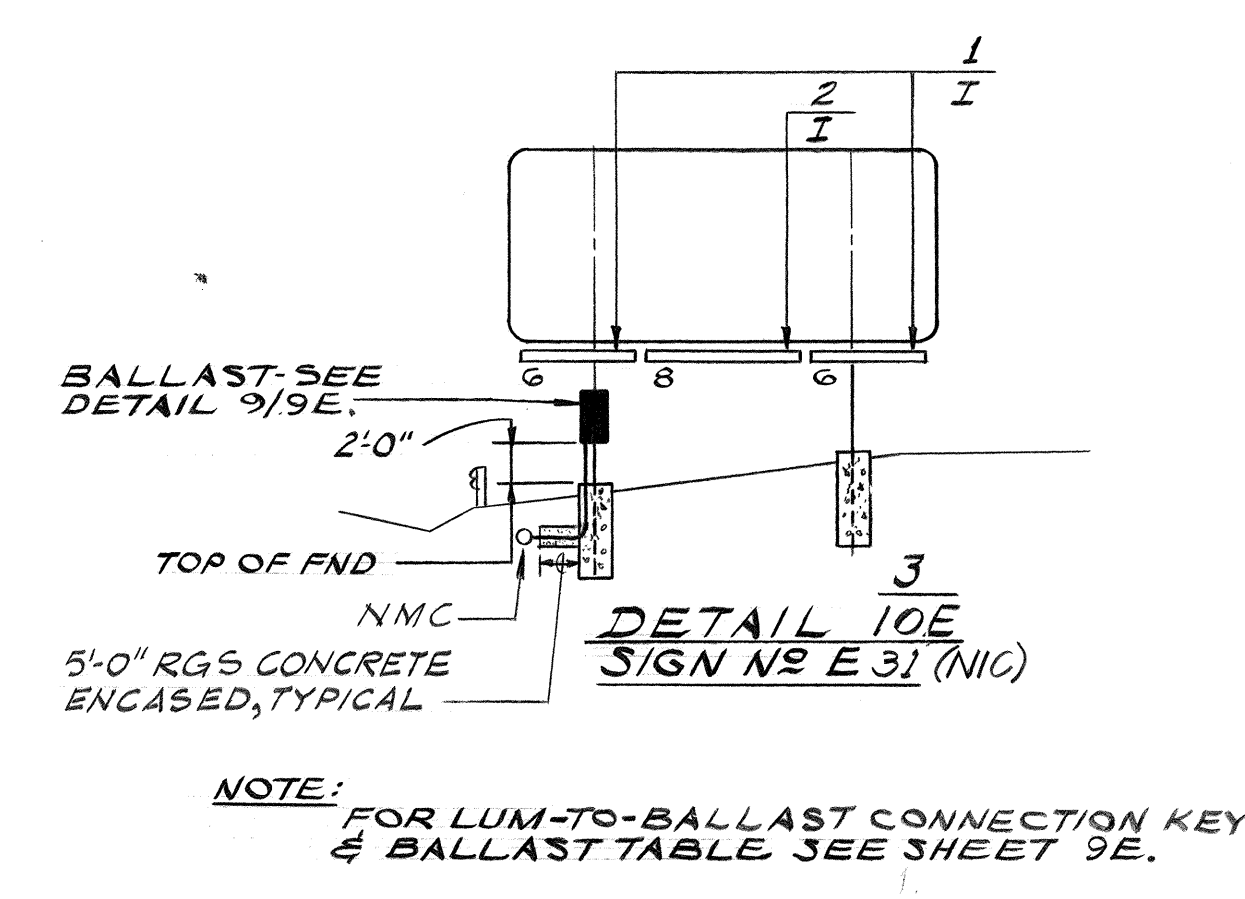
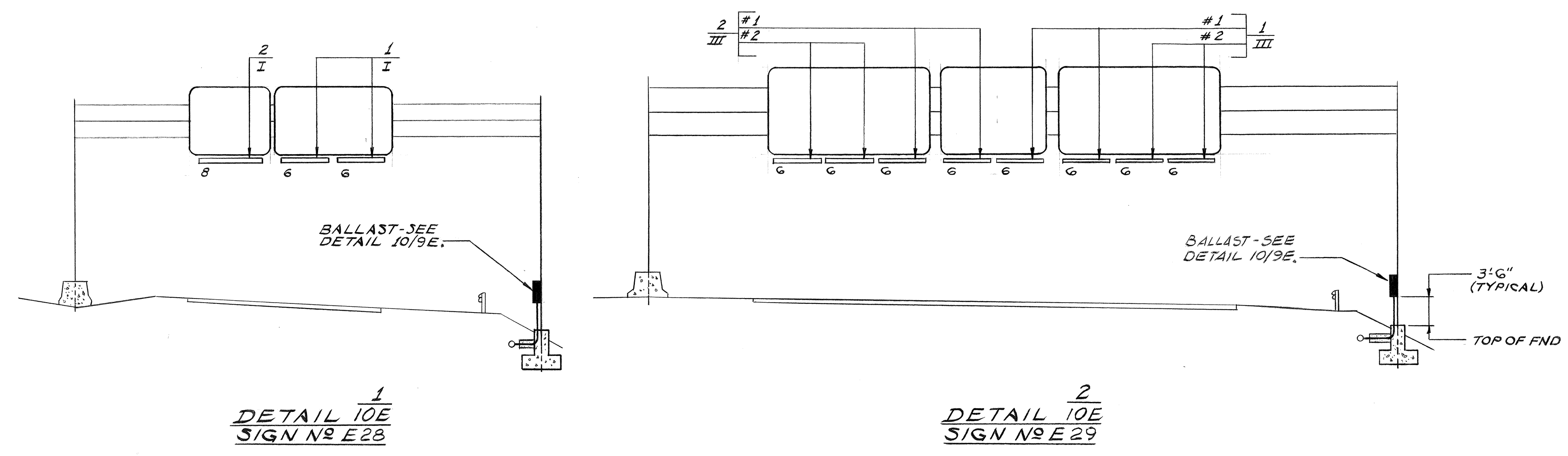
SCALE: AS NOTED DATE: DEC. 29, 1972

SHEET No. 9E OF 11 SHEETS



THIS WORK WAS PREPARED BY
ME OR UNDER MY SUPERVISION.
Michael A. Marzalone

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	HI-1(109):13	1975	83	130



THE ABOVE DETAILS ARE NTS.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

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ME OR UNDER MY SUPERVISION.
Michael A. Marszalowicz

ELECTRICAL SHEET 10E

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

**ELECTRICAL DETAILS
ILLUMINATED SIGNS
PART II
HALAWA INTERCHANGE
PROJECT NO. I-HI-1(109):13**

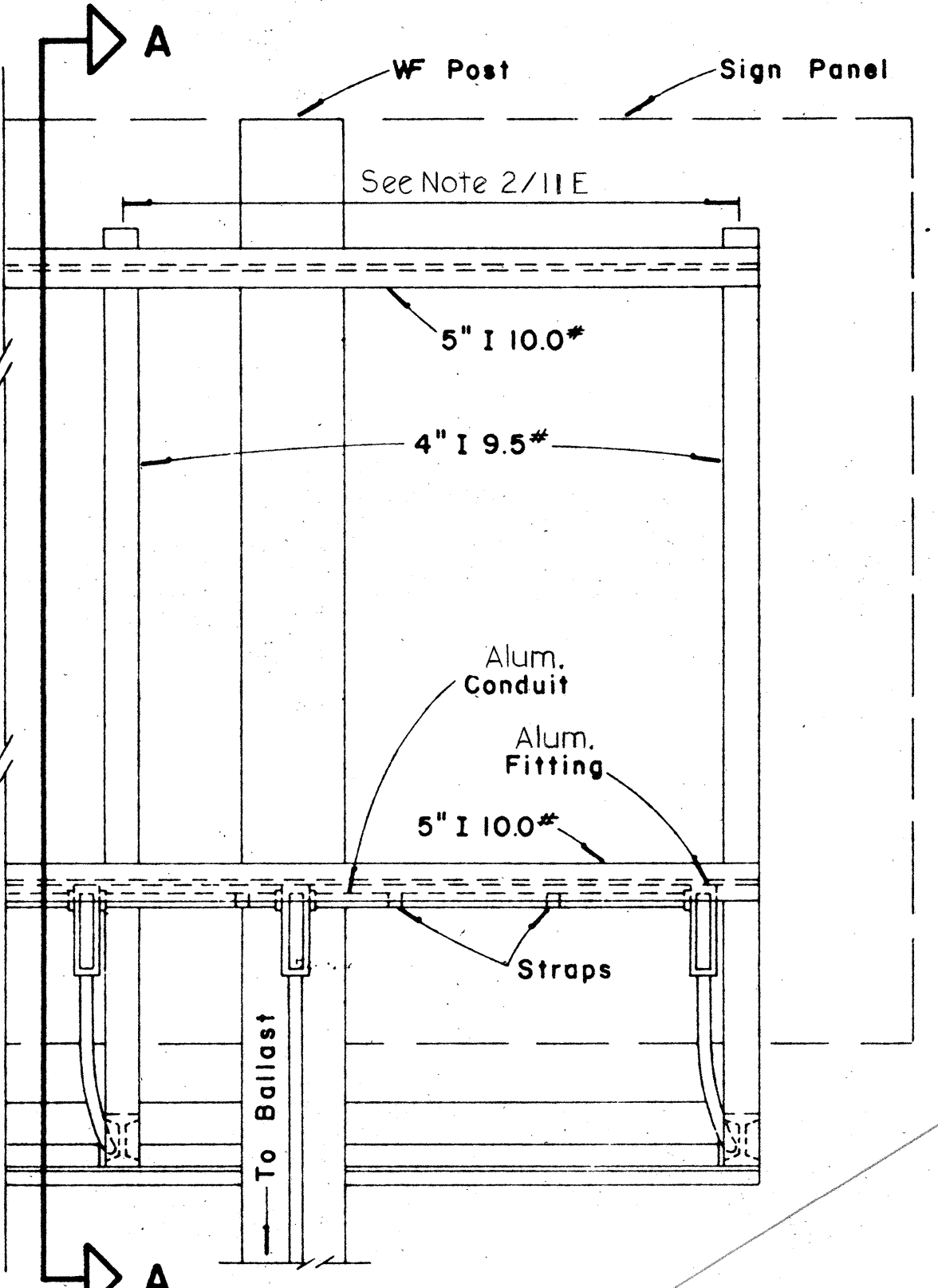
SCALE: AS NOTED DATE: DEC. 29, 1972

SHEET No. 10E OF 11 SHEETS

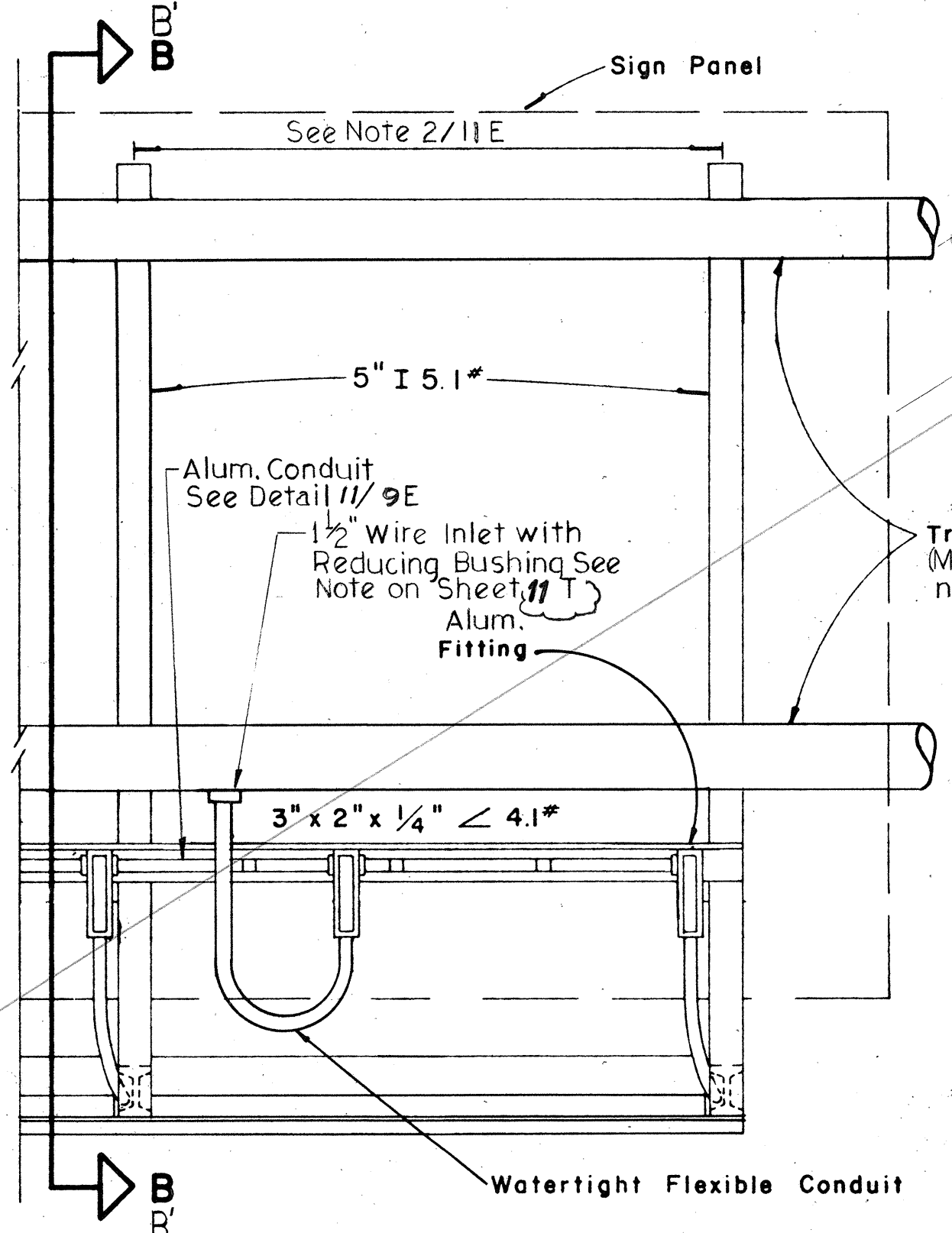
GENERAL NOTES

- TOP VIEW
- LUMINAIRE MOUNTING

Scale: 1" = 1' - 0"



GROUND MOUNTED

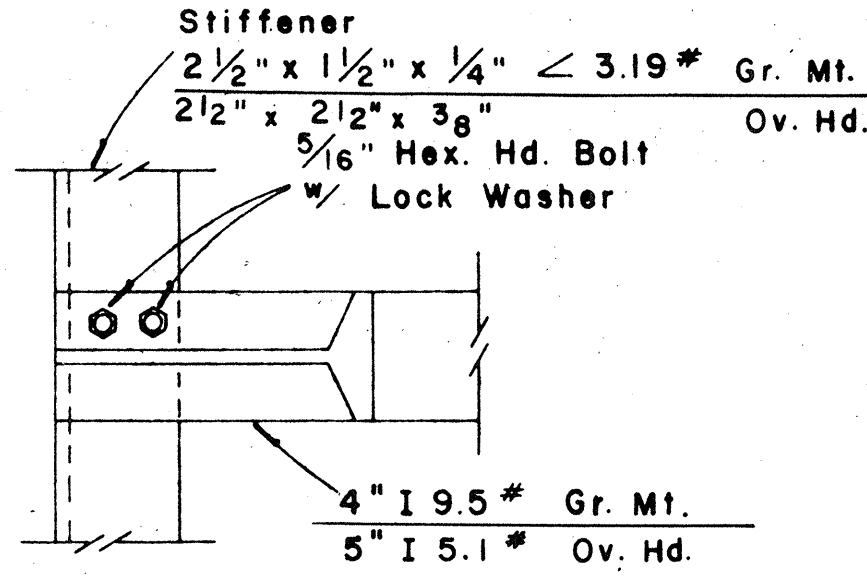


OVERHEAD

REAR VIEW

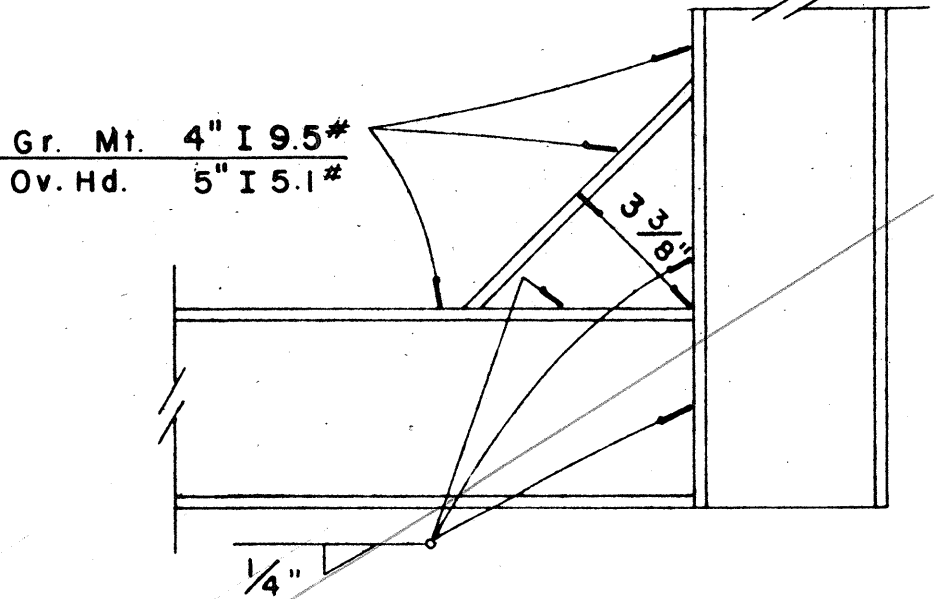
LUMINAIRE MOUNTING

Scale: 1" = 1' - 0"



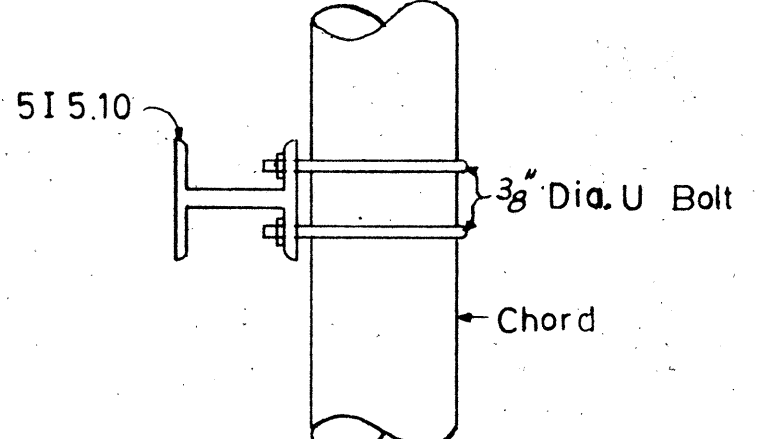
DETAIL "A"

Scale: 3" = 1' - 0"



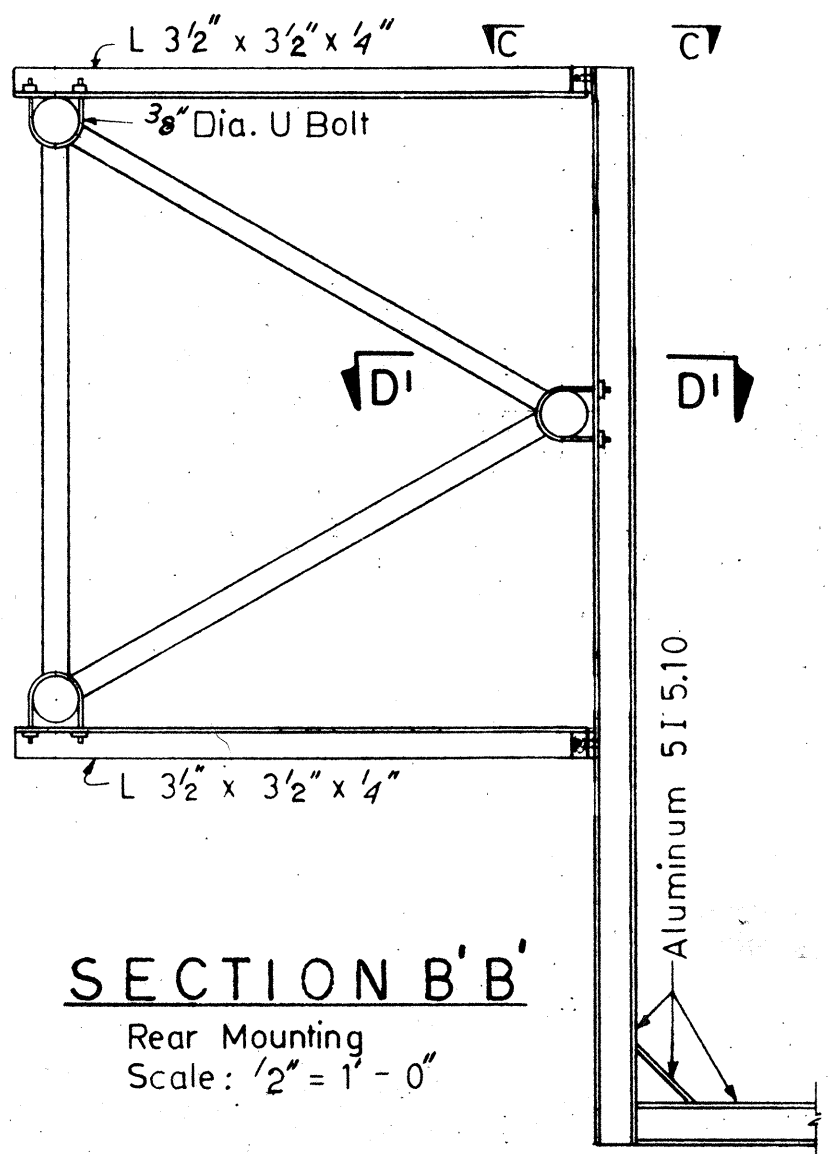
DETAIL "B"

Scale: 3" = 1' - 0"



SECTION D-D
Section D'-D'
opposite hand
Scale: 1 1/2" = 1'-0"

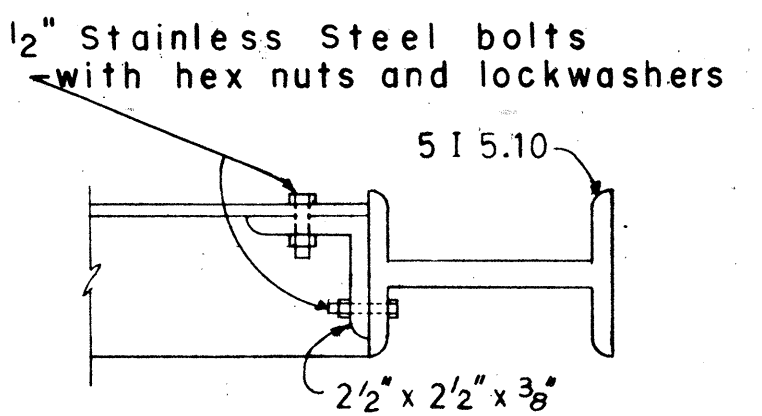
Scale: 1/2" = 1'-0"



SECTION B'B'

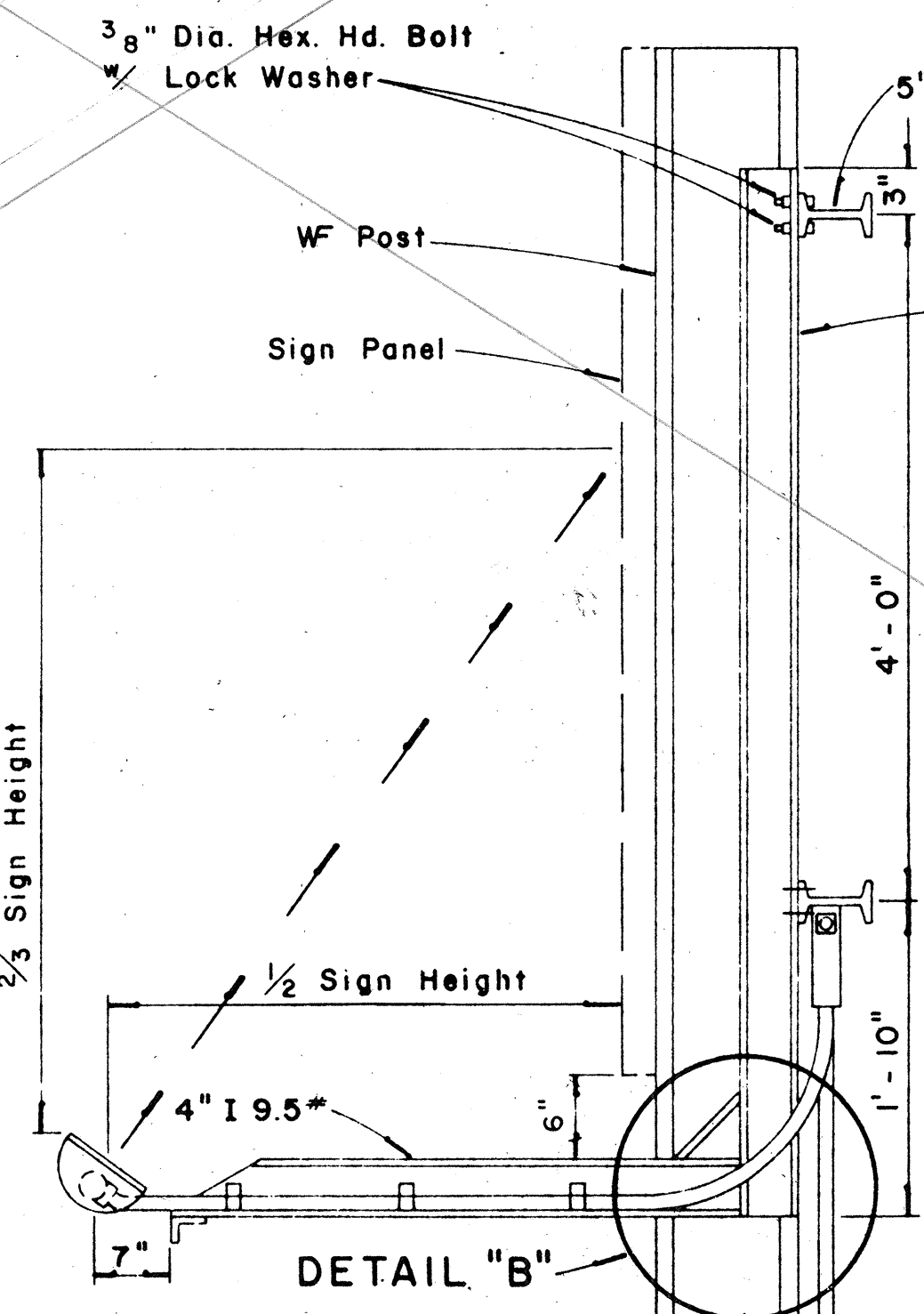
Rear Mounting

Scale : $2'' = 1' - 0''$



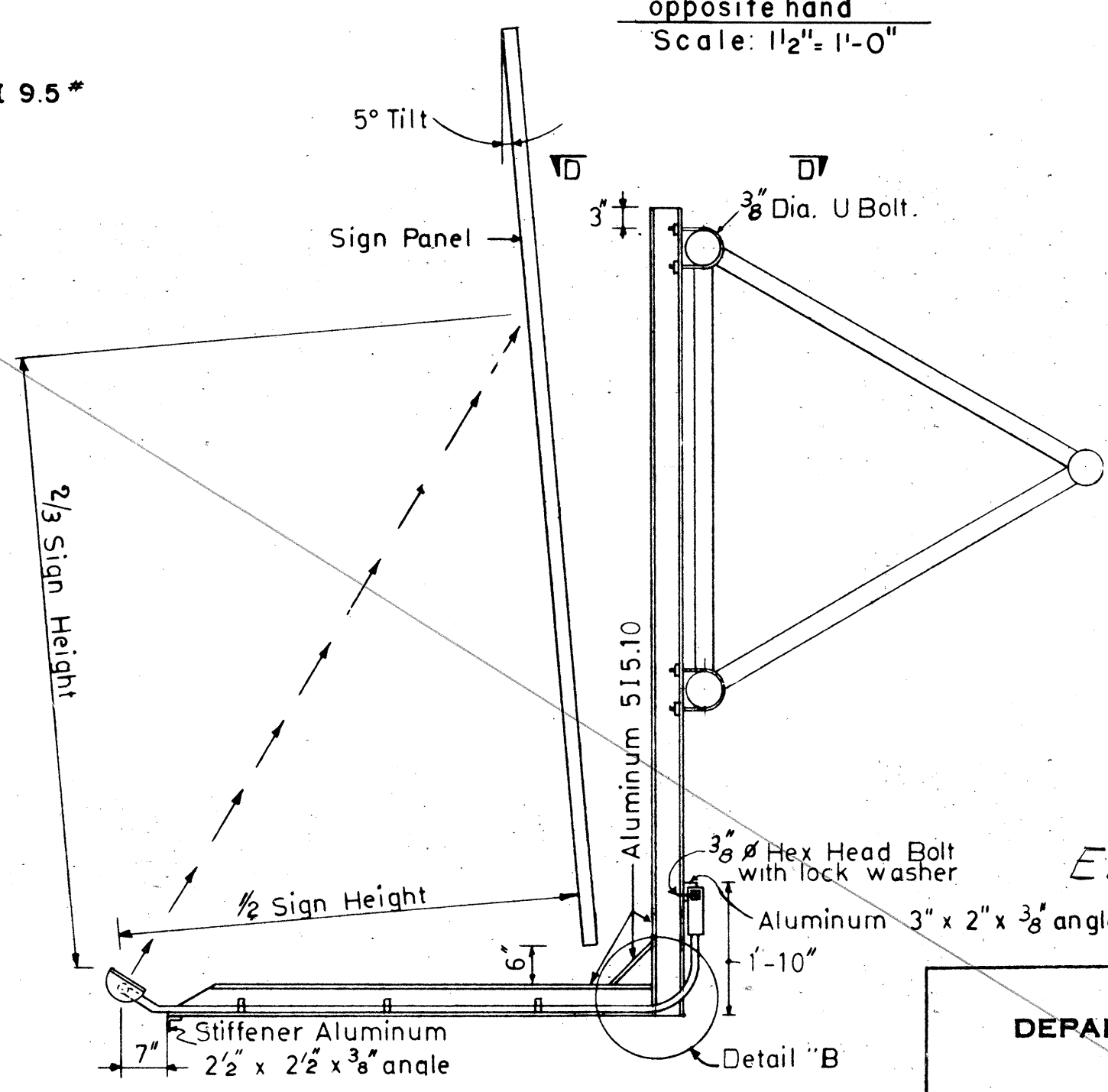
SECTION C-C

Scale: $3'' = 1' - 0''$



SECTION "A-A"

Scale: 1" = 1' - 0"



SECTION B-B

Front Mounting

- 0'

NOTE: 3/8" Dia. "U" bolts to be Stainless Steel
with hex nuts and washers

ELECTRICAL SHEET 11E

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

~~ELECTRICAL DETAILS~~
~~SIGN LUMINAIRE MOUNTINGS~~

~~HALAWA INTERCHANGE~~

PROJECT NO. I - H1-1(109):13

Scale: As Shown DATE: DEC. 29, 1972

SHEET No. // EOF // SHEETS

84

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	_____
	TRACTED BY _____	_____
	DESIGNED BY <u>Lucas</u>	<u>July 69</u>
	QUANTITIES BY _____	_____
No. _____	CHECKED BY <u>L. H. C.</u>	<u>July 69</u>

PRINTED ON NO. 1000H CLEANPRINT



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