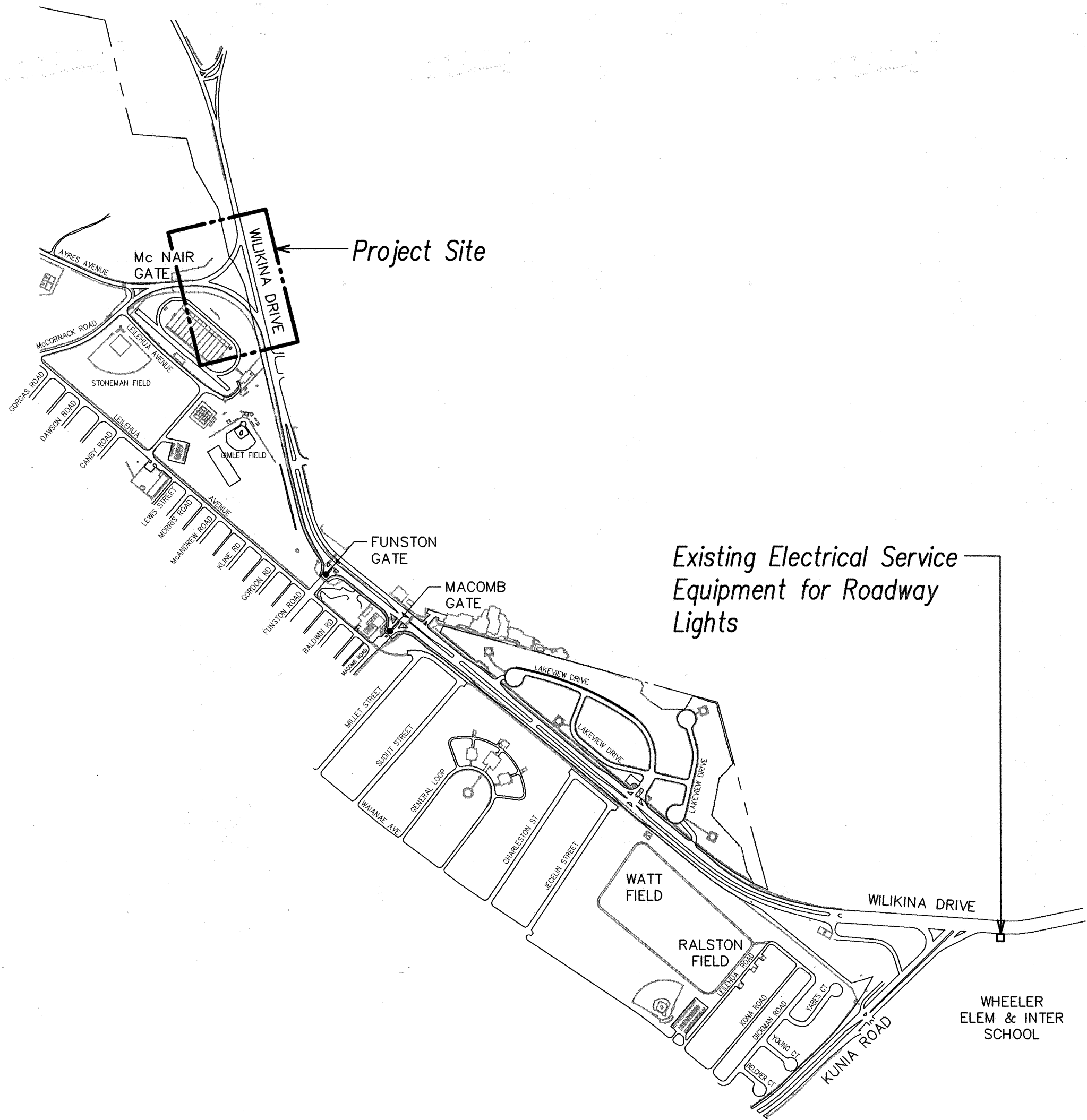


FED.ROAD DIST.NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	37	51

GENERAL NOTES:

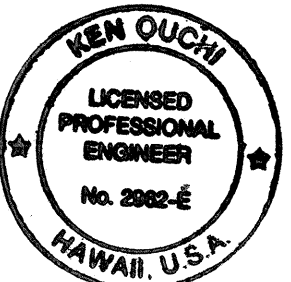
1. All Work shall be done in Accordance with the "Hawaii Standard Specifications for Road, Bridge, and Public Works Construction", 1994, State of Hawaii Department of Transportation, Highways Division, Except as Modified Herein or in the Special Provisions.
2. The Contractor shall verify with the Respective Utility Companies and Government Agencies, the Locations of all Electric, Telephone, Roadway Light, Water, Sewer, Drain, and other Lines Crossing the Excavation Path or in Excavation Areas.
3. The Contractor shall Notify all Affected Utility Companies and Government Agencies of their Intent to Begin Construction on any Intersection or Street at Least Two (2) Weeks prior to the Start of such Construction.
4. The Contractor shall Install all Roadway Lighting Luminaires, Poles, In-grade Roadway Lighting Pole Foundations, Risers from Pullboxes to Foundations, Metering Requirements, and Wiring as Specified In these Plans and the Specifications.
5. The Contractor shall Install Roadway Lighting Conductors and make Connections to Existing Conductors at or Past Project Interfaces as Required.
6. The Contractor shall Coordinate with the State Handling of all Salvageable Materials Indicated to be Removed.
7. The Contractor shall Provide Temporary Lights and Wiring as Required to Maintain Roadway Lighting During Consttruction.
8. Permanent Roadway Lighting Criteria:
 - a. minimum average maintained illumination level:
Collector - Intermediate - 0.8 Fc
 - b. maximum (average to minimum maintained footcandle)
Uniformity Ratio: 4 To 1
 - c. maintenance factor: 0.76
 - d. provide roadway illumination calculations (per aashto Recommendations)
Certifying Conformance With Minimim Average Maintained Illumination Levels And Maximum (average To Minimum Maintained Footcandles) Uniformity Ratio
9. The Contractor Shall Submit Computerized Point To Point Foot-Candle Level For Approval.



LOCATION PLAN
NOT TO SCALE

ELECTRICAL SYMBOLS

SYMBOL	DESCRIPTION
	Roadway Light Pole, Bracket Arm, and 250 Watt HPS Luminaire, See Sheet 7
	Roadway Light Pole, Twin Bracket Arm, and 250 Watt HPS Luminaires, See Sheet 7
	Existing Roadway Light to be Removed
	Existing Roadway Light to Remain
	Temporary Roadway Light, See Sheet 10
	Underground Wiring as Noted
	Existing Underground Duct
	Overhead Cable as Noted
	Existing Overhead Cable as Noted
	Pullbox, Type A, See Sheet 9
	Pullbox
	Duct Section Designator, Section "A" Indicated, See Details on Sheet 8



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SYMBOLS,
GENERAL NOTES

WILIKINA DR INTERSECTION IMPROVEMENTS

AT McNAIR GATE

Project No. 99C-02-00

Scale: None

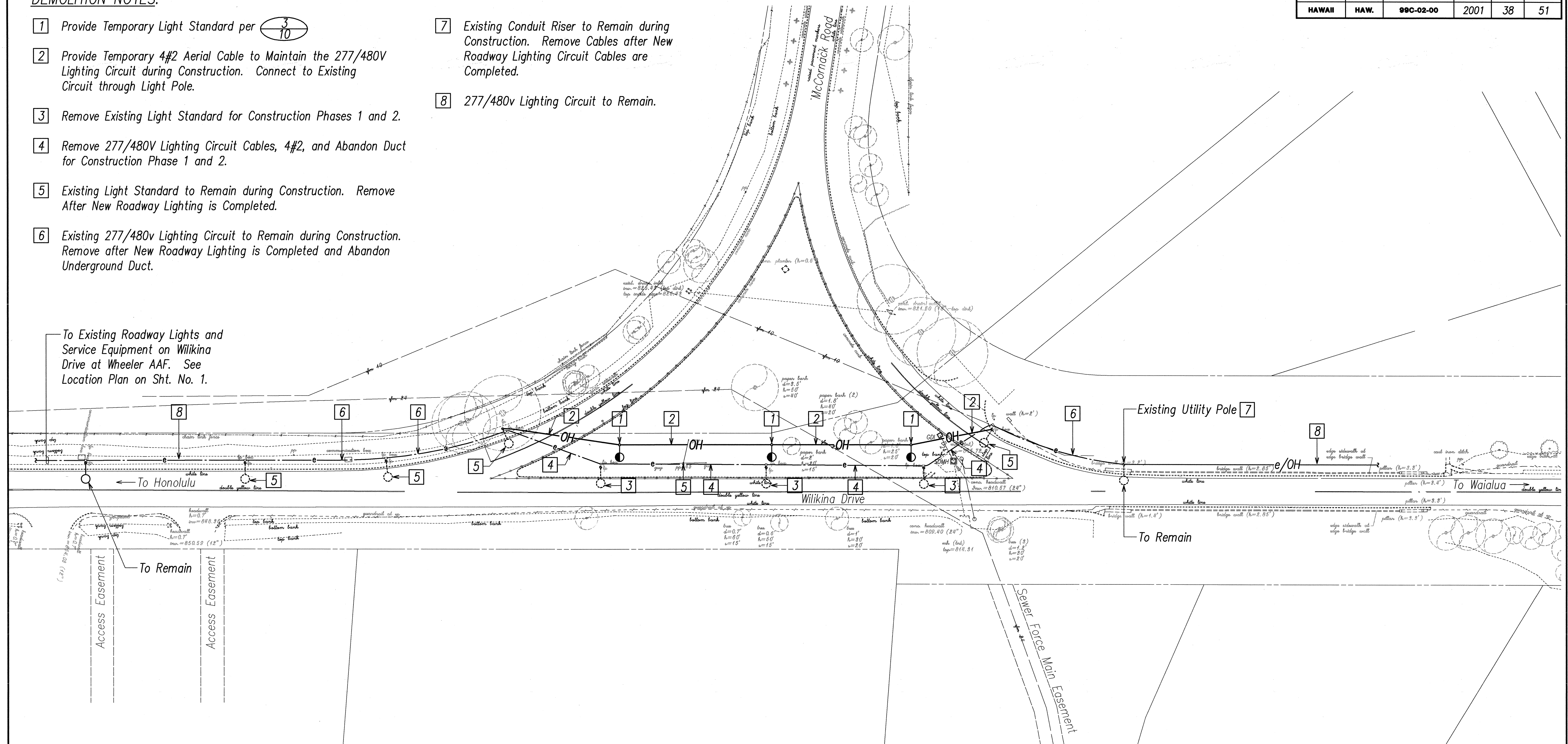
Date: Sep 2000

SHEET No. 1 OF 10 SHEETS

DEMOLITION NOTES:

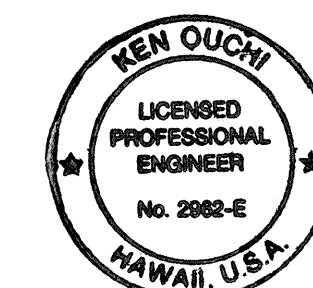
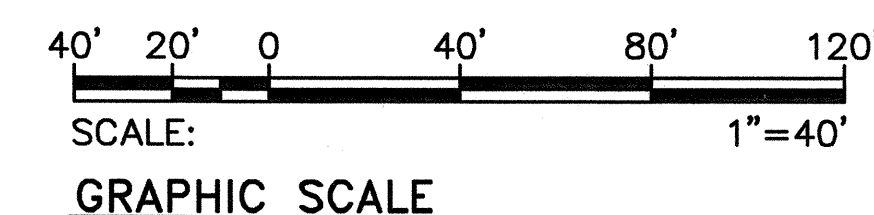
- 1 Provide Temporary Light Standard per $\frac{3}{10}$
- 2 Provide Temporary 4#2 Aerial Cable to Maintain the 277/480V Lighting Circuit during Construction. Connect to Existing Circuit through Light Pole.
- 3 Remove Existing Light Standard for Construction Phases 1 and 2.
- 4 Remove 277/480V Lighting Circuit Cables, 4#2, and Abandon Duct for Construction Phase 1 and 2.
- 5 Existing Light Standard to Remain during Construction. Remove After New Roadway Lighting is Completed.
- 6 Existing 277/480v Lighting Circuit to Remain during Construction. Remove after New Roadway Lighting is Completed and Abandon Underground Duct.
- 7 Existing Conduit Riser to Remain during Construction. Remove Cables after New Roadway Lighting Circuit Cables are Completed.
- 8 277/480v Lighting Circuit to Remain.

To Existing Roadway Lights and Service Equipment on Wilikina Drive at Wheeler AAF. See Location Plan on Sht. No. 1.



ELECTRICAL DEMOLITION PLAN

SCALE: 1"=40'



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STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION ELECTRICAL DEMOLITION PLAN

WILIKINA DR INTERSECTION IMPROVEMENTS

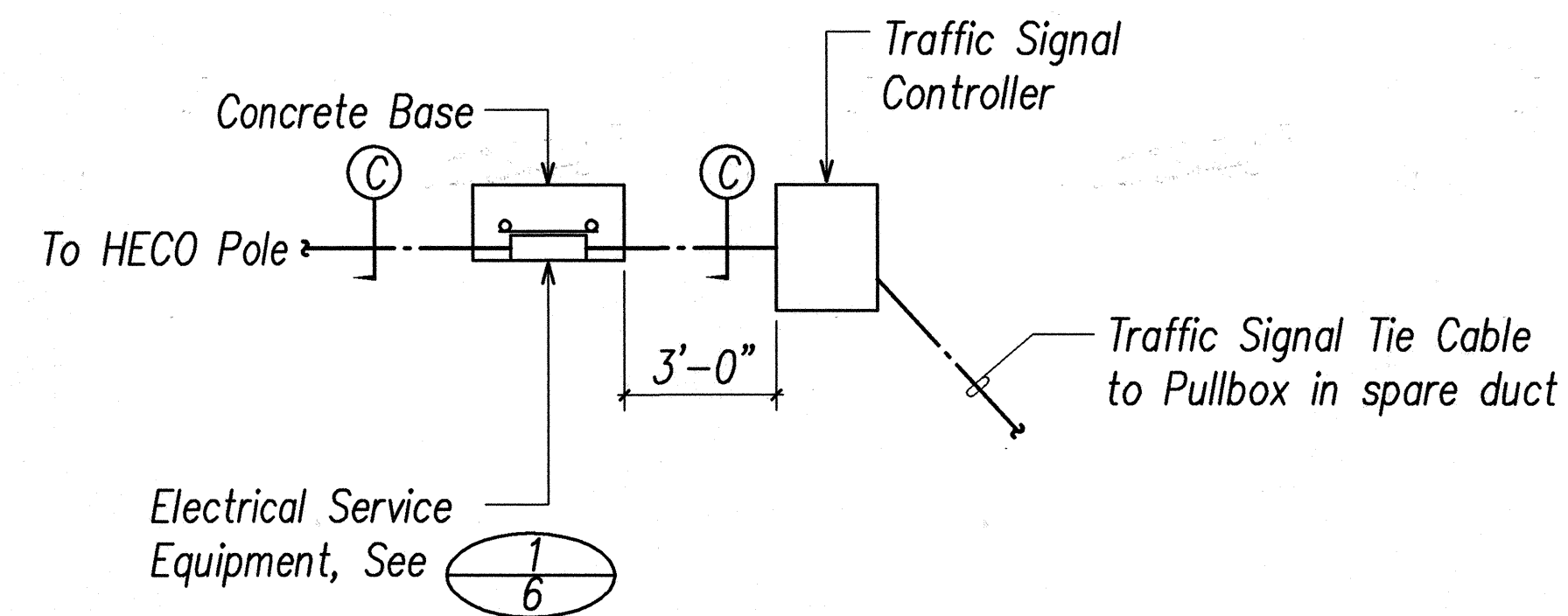
AT McNAIR GATE

Project No. 99C-02-00

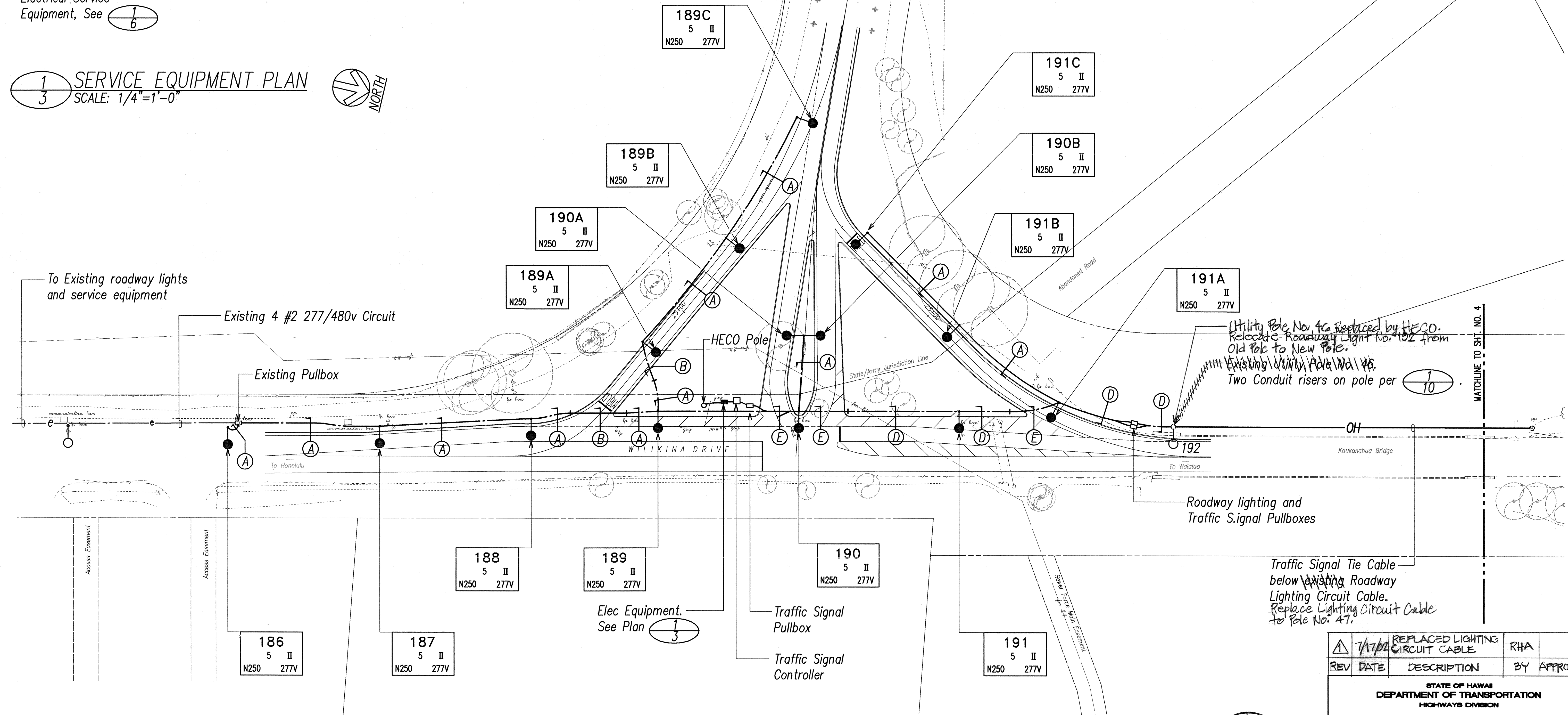
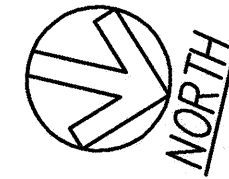
Scale: As Noted Date: Sep 2000

SHEET No. 2 OF 10 SHEETS

FED.ROAD DIST.NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	39	51




1
3 SERVICE EQUIPMENT PLAN
SCALE: 1/4"=1'-0"



ty Pole No. 46 Reduced by HESCO.
 State Roadway Light No. 192 from
 pole to New Pole.
 ng Utility Pole No. 46.
 Conduit risers on pole per $\frac{1}{10}$

—Roadway lighting and
Traffic S.ignal Pullboxes

Traffic Signal Tie Cable
below Existing Roadway
Lighting Circuit Cable.
Replace Lighting Circuit Cable
to Pole No. 47.

	7/17/02	REPLACED LIGHTING CIRCUIT CABLE	RHA	
REV	DATE	DESCRIPTION	BY	APPROVED

**STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION**

ELECTRICAL PLAN

WILIKINA DR INTERSECTION IMPROVEMENTS
AT McNAIR GATE

Project No. 99C-02-00

Scale: As Noted Date: Sep 2000

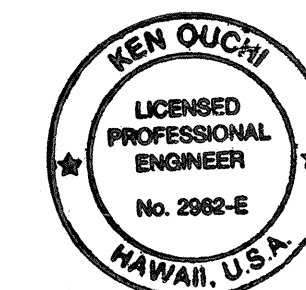
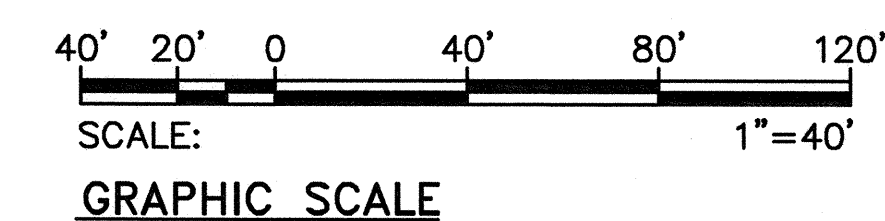
SHEET No. 3 OF 10 SHEETS

C.O. 39

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

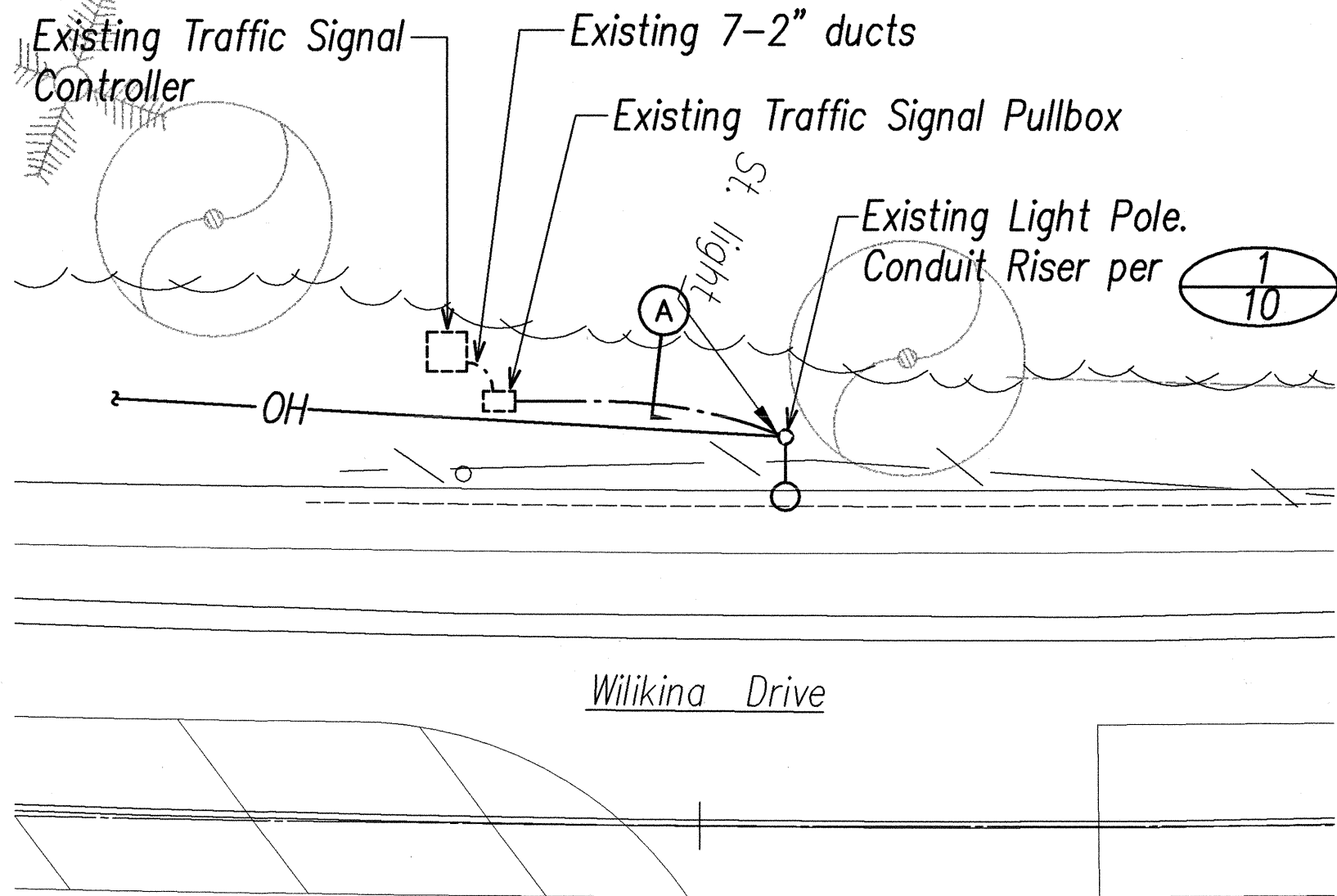
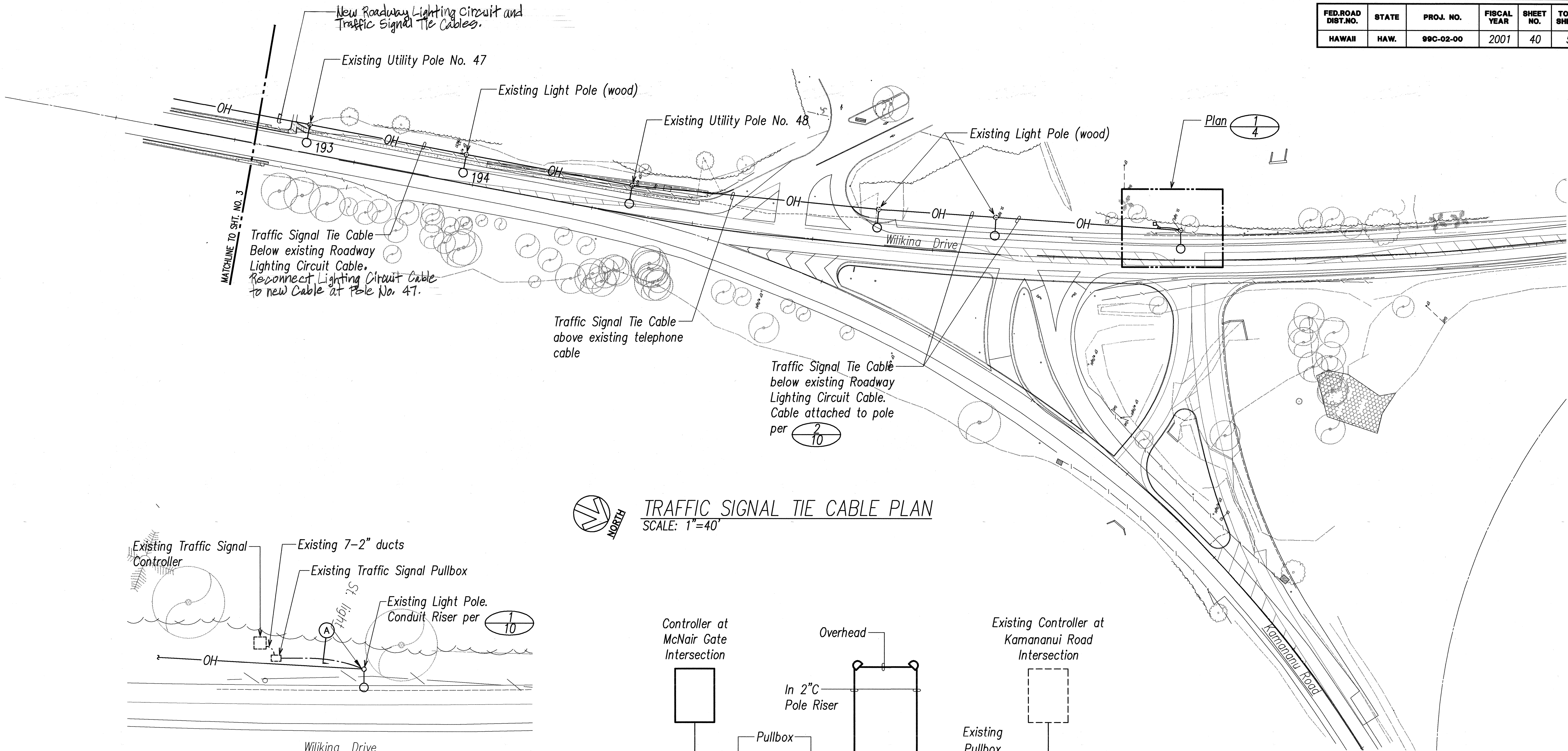
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ELECTRICAL PLAN
SCALE: 1"=40'

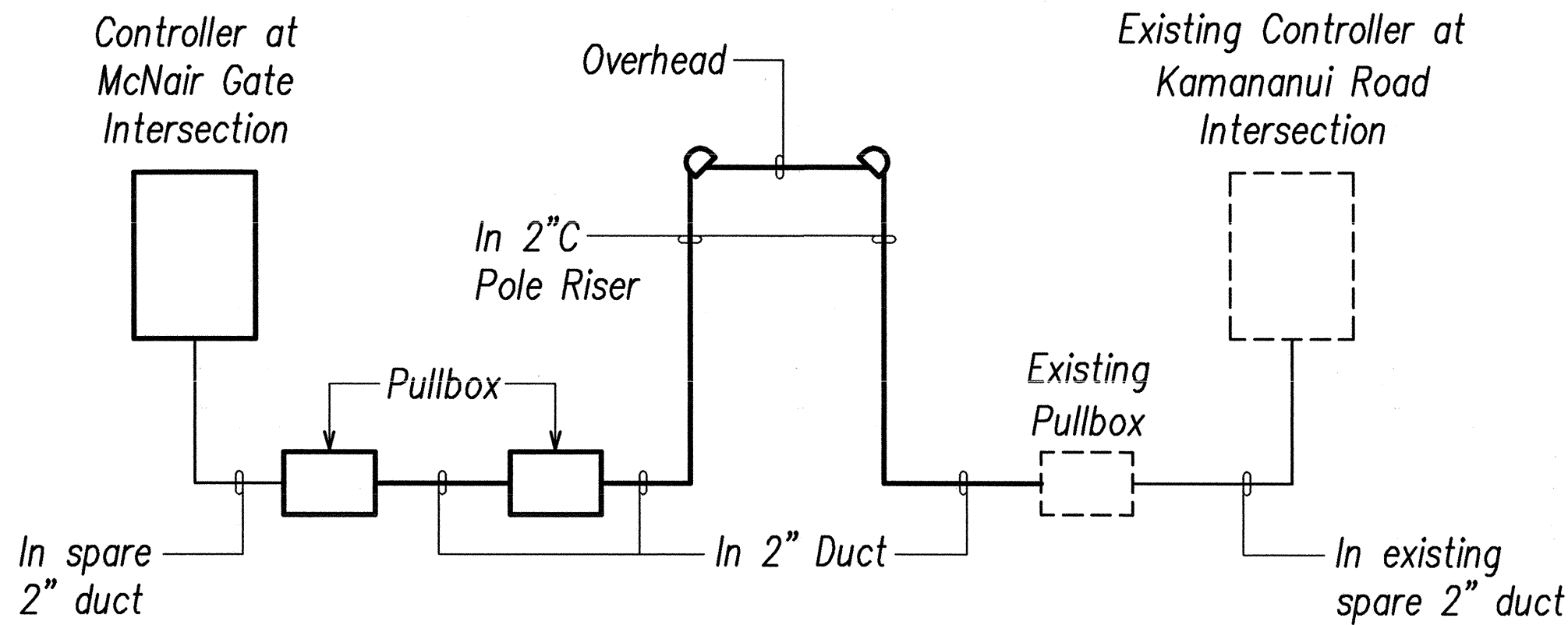


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FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	40	51



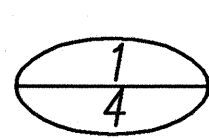
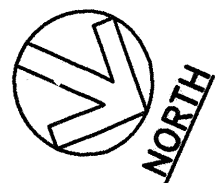
TRAFFIC SIGNAL TIE CABLE PLAN
SCALE: 1"=40'



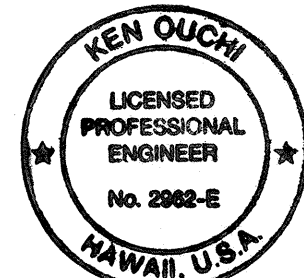
NOTES:

1. Tie cable specified in section 623 of specifications.
2. Connection of Cable Controllers by the Traffic Signal System installer.

TRAFFIC SIGNAL TIE CABLE DIAGRAM



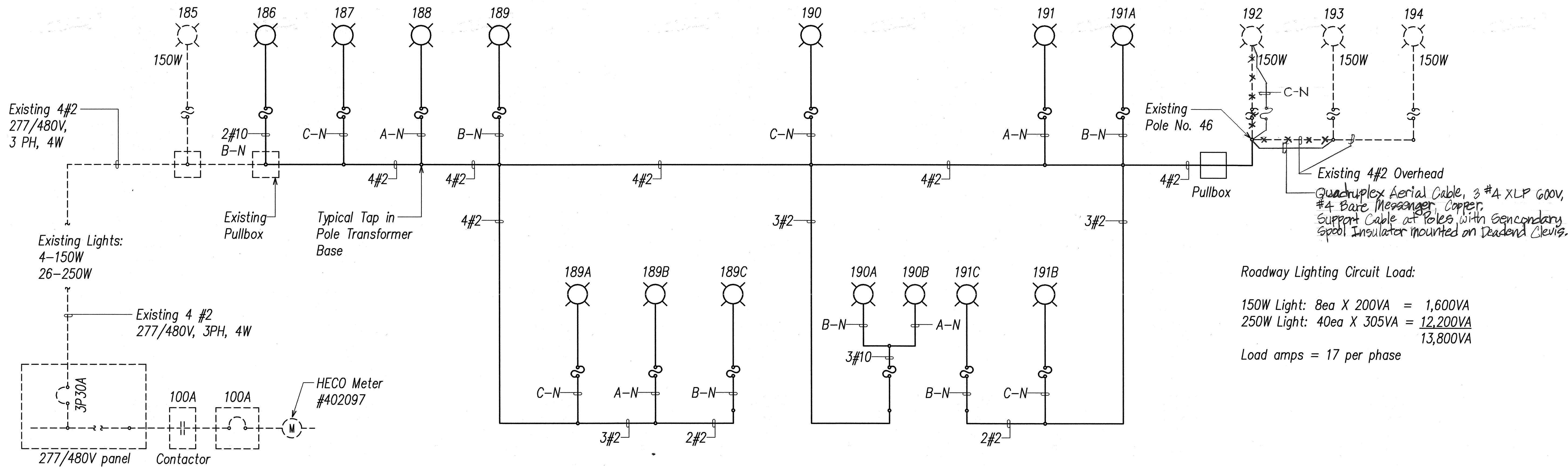
EXISTING TRAFFIC SIGNAL CONTROLLER PLAN
SCALE: 1"=10'



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K. Ouchi

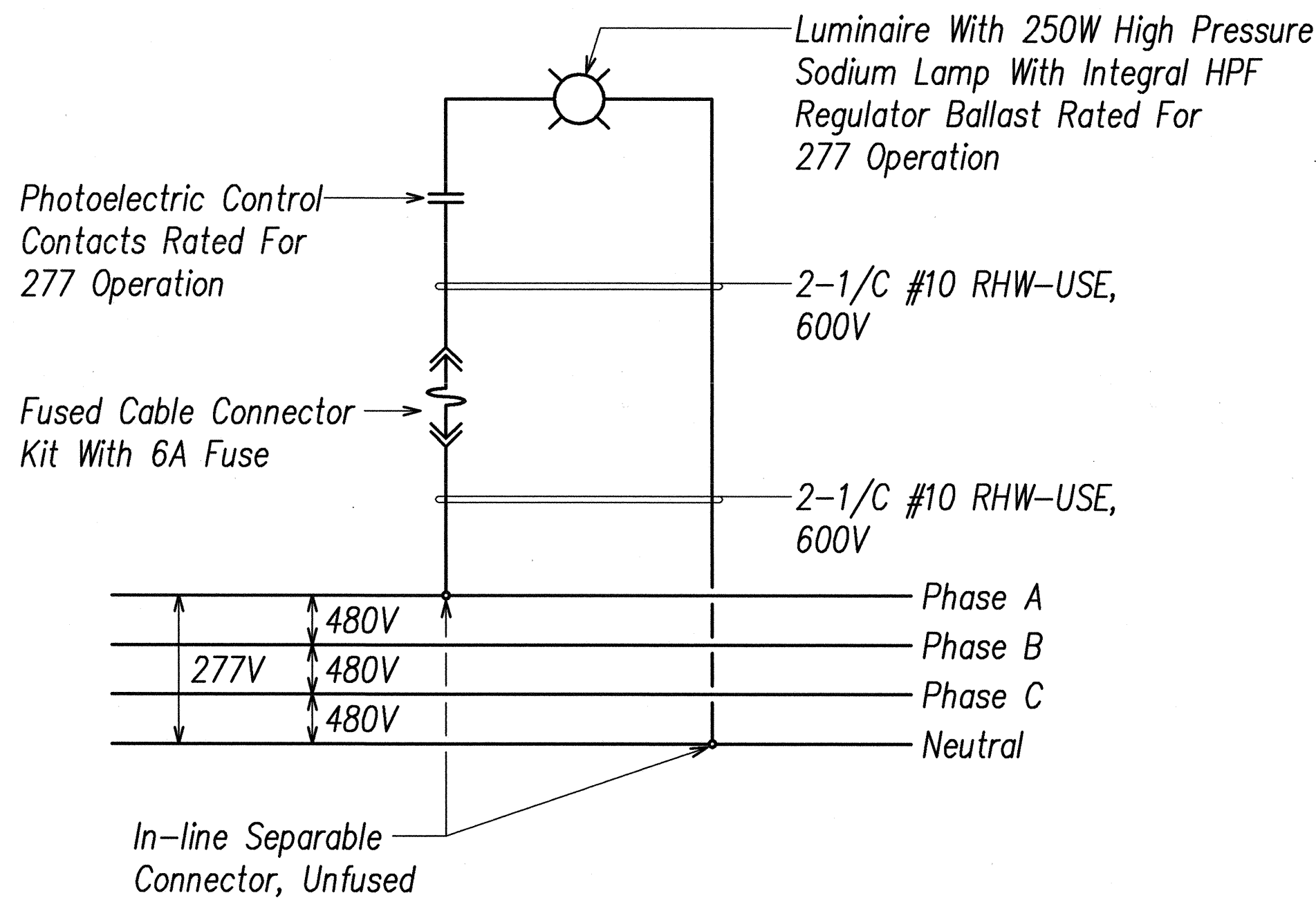
REV	DATE	DESCRIPTION	BY	APPROVED
1	7/17/02	REPLACED LIGHTING CIRCUIT CABLE	RHA	
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION TRAFFIC SIGNAL TIE CABLE PLAN WILIKINA DR INTERSECTION IMPROVEMENTS AT MCNAIR GATE Project No. 99C-02-00 Scale: As Noted Date: Sep 2000 SHEET No. 4 OF 10 SHEETS				

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	41	51



EXISTING ROADWAY LIGHTING SERVICE EQUIPMENT

ROADWAY LIGHTING CIRCUIT ONE-LINE DIAGRAM



TYPICAL ROADWAY LIGHT WIRING CONNECTION DIAGRAM

△	7/17/02	REPLACED LIGHTING CIRCUIT CABLE	RHA	
REV	DATE	DESCRIPTION	BY	APPROVED

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

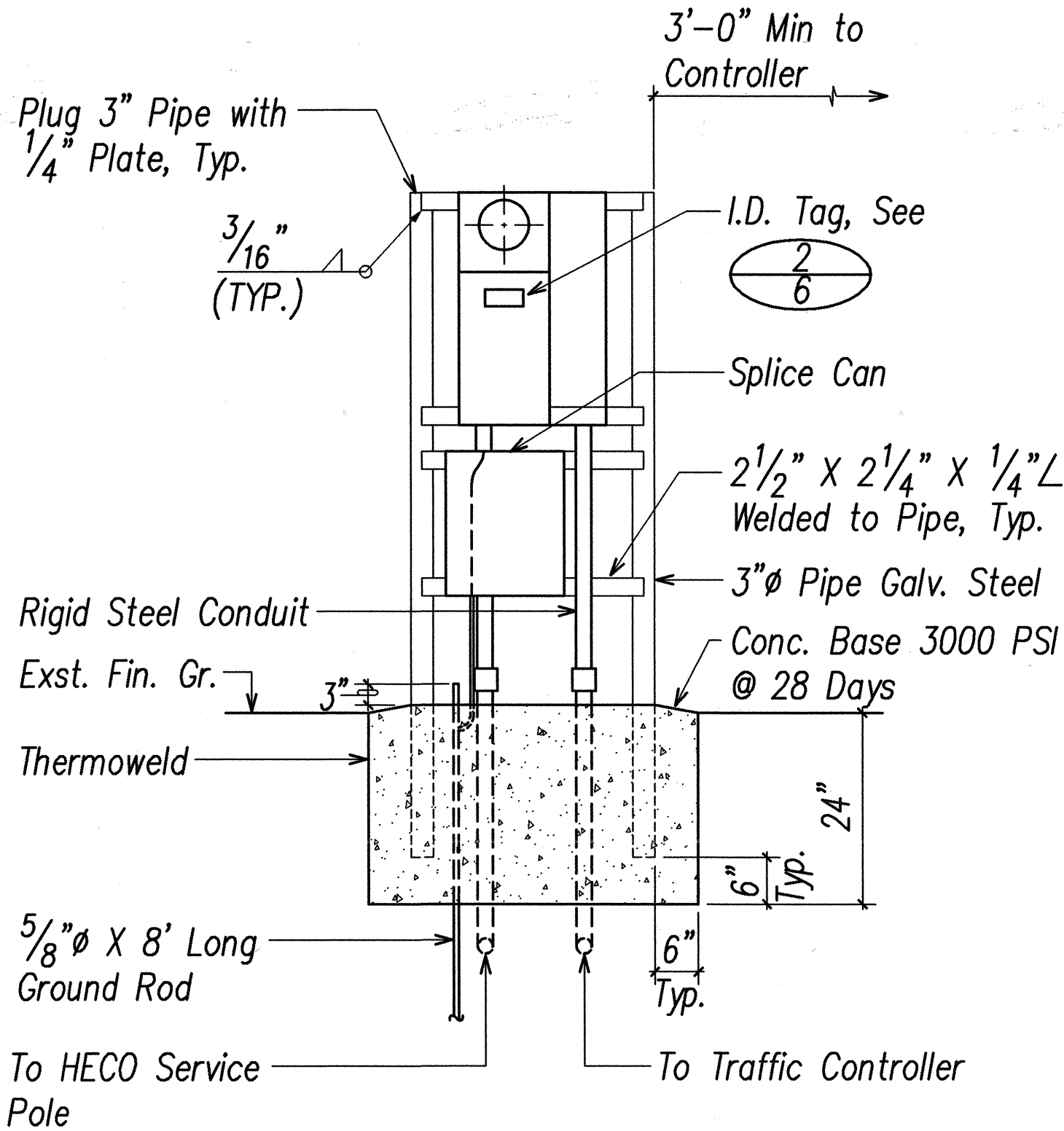
ROADWAY LIGHTING CIRCUIT ONE-LINE
& WIRING CONNECTION DIAGRAMS

WILIKINA DR INTERSECTION IMPROVEMENTS
AT McNAIR GATE
Project No. 99C-02-00

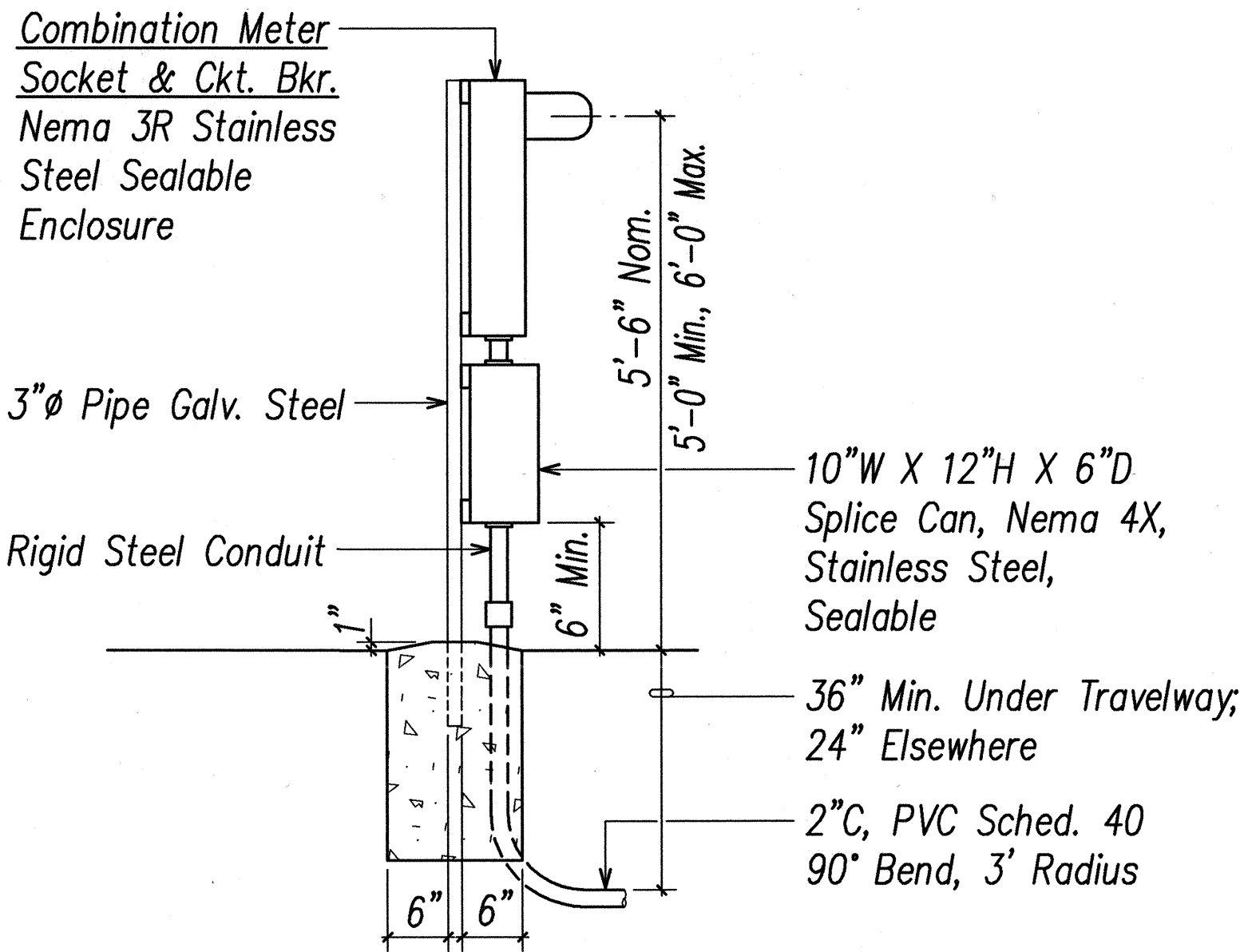
Scale: None Date: Sep 2000

SHEET No. 5 OF 10 SHEETS

FED.ROAD DIST.NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	42	51



FRONT ELEVATION

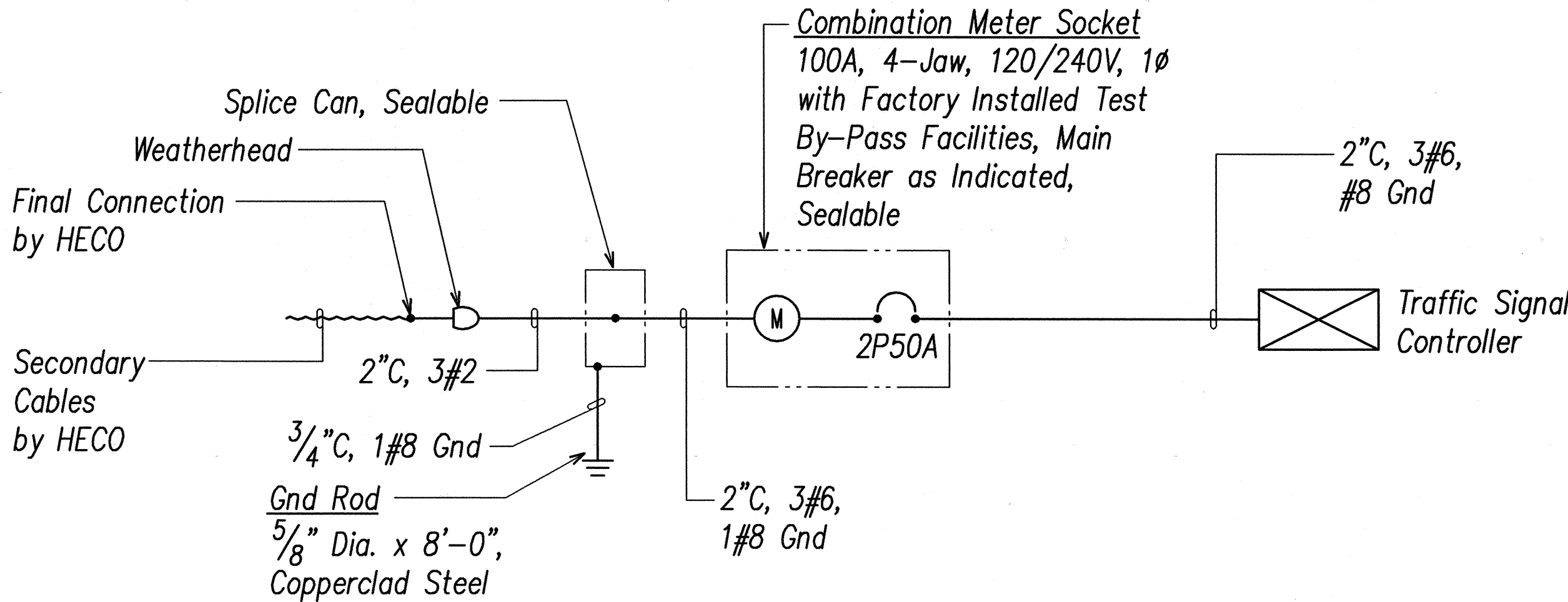


SIDE ELEVATION

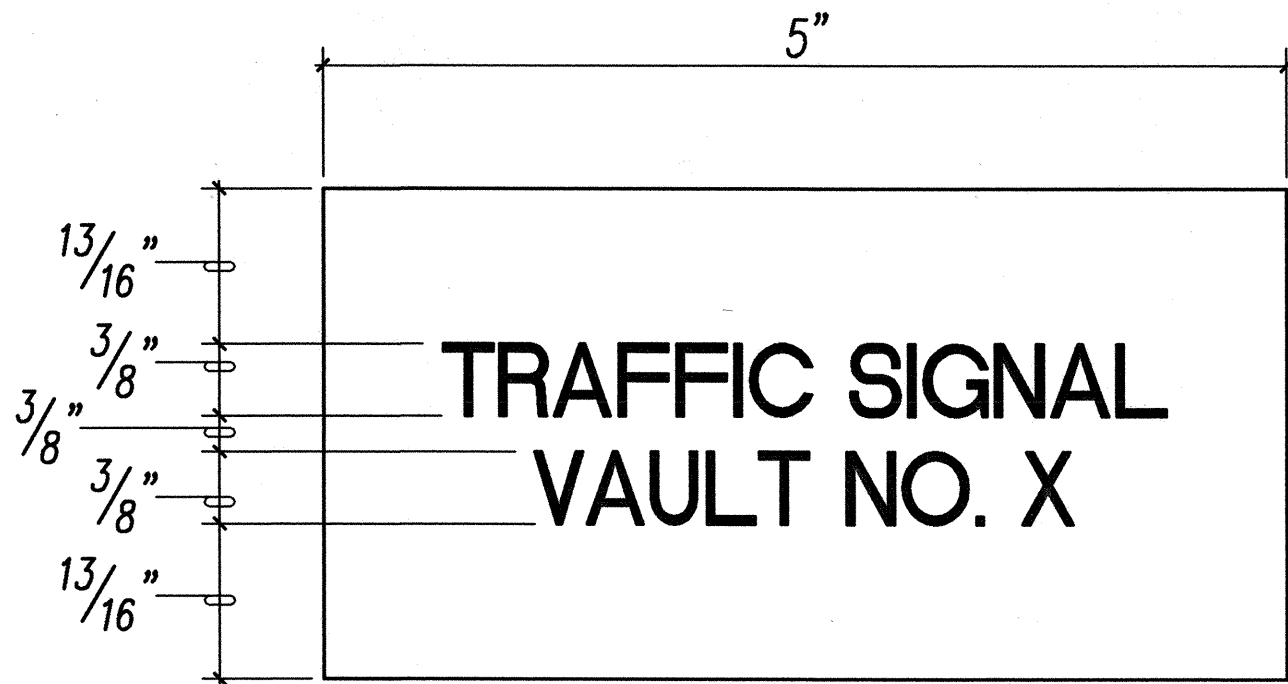
NOTES:

- Contractor shall make all Electrical Connection to Controller, Provide 2-1P50A Breakers, Ground and 2" Conduit.
- All Conduits to Contain a Polyolefin Pull Line. (Jet Line Cat. #232 rr Equiv.)
- Pedestal shall be Hot-dipped Galvanized after Fabrication.
- All Fastening Bolts, Nuts & Washers shall be Stainless Steel. Provide One Coat Shop Primer & Two Coats Of Acrylic Enamel Finish, Color to Match Controller Cabinet.
- Provide 4 Ft. Clearance in Front of Meter.

1
6 ELECTRICAL SERVICE EQUIPMENT
NOT TO SCALE



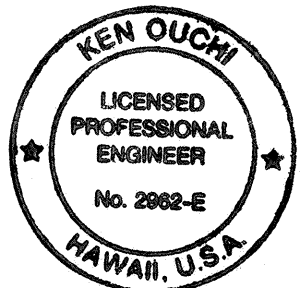
ELECTRICAL SERVICE DIAGRAM



NOTES:

- Use 3 Ply Laminated Flexible Plastic, Black-White-Black. Thickness: Black Cap Sheet-0.010", White Base Sheet-0.052", Black Base Sheet-0.010".
- Attach to Meter Socket using Scotch 3M Brand very High Bond (VHB) Double Coated Acrylic Foam Tape or Equivalent.
- Letters/Numbers shall be 3/8" High, 1/16" Stroke, (White in Color).
- Letters/Numbers are Inscribed by Cutting Through "Black Cap Sheet" to Expose White Letters/Numbers.
- Coordinate Vault No. with the State, Highway Division.

2
6 T. S. METER I.D. TAG DETAIL
NOT TO SCALE



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K. Ouchi

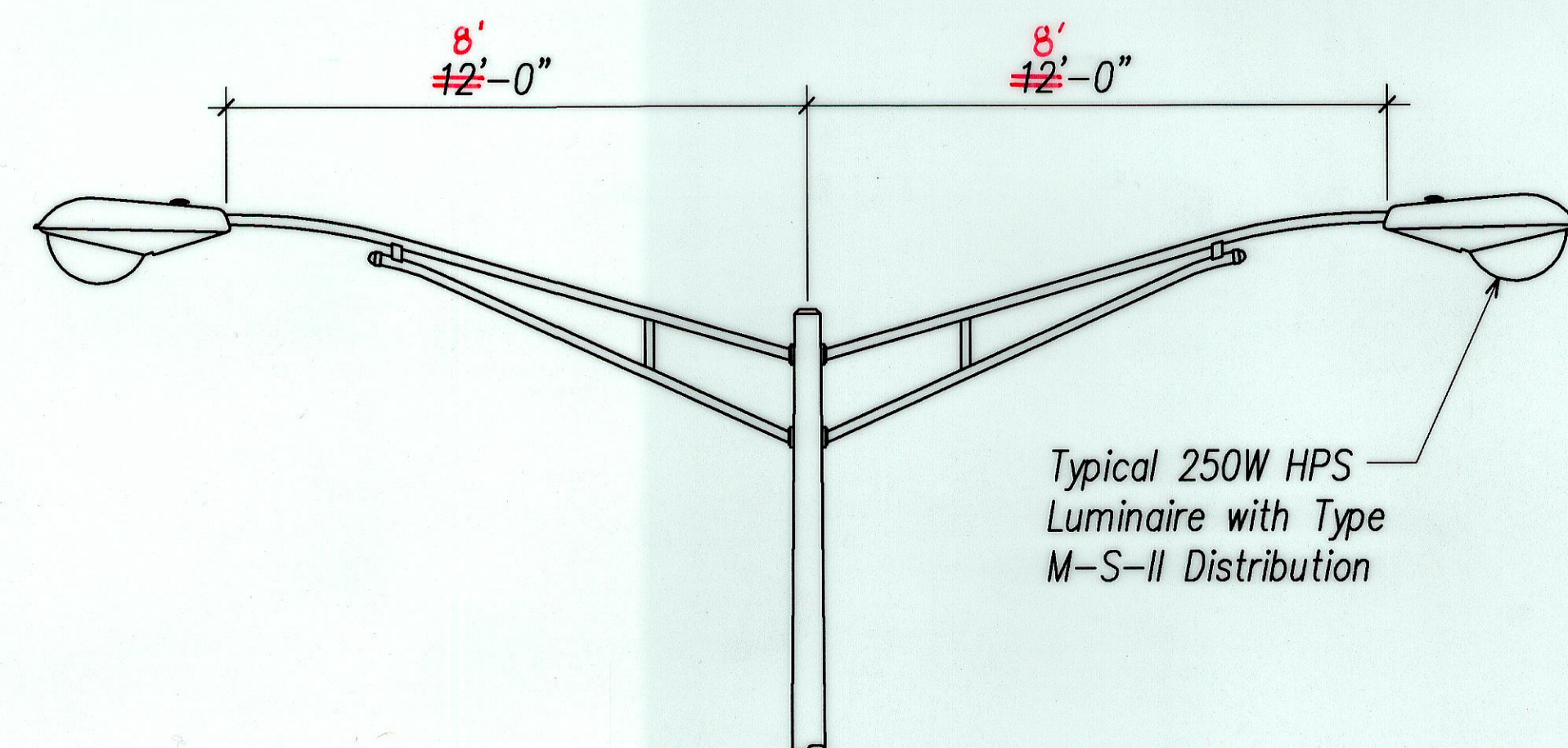
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ELECTRICAL SERVICE EQUIPMENT
ELECTRICAL SERVICE DIAGRAM
WILIKINA DR INTERSECTION IMPROVEMENTS
AT McNAIR GATE
Project No. 99C-02-00
Scale: As Noted Date: Sep 2000
SHEET No. 6 OF 10 SHEETS

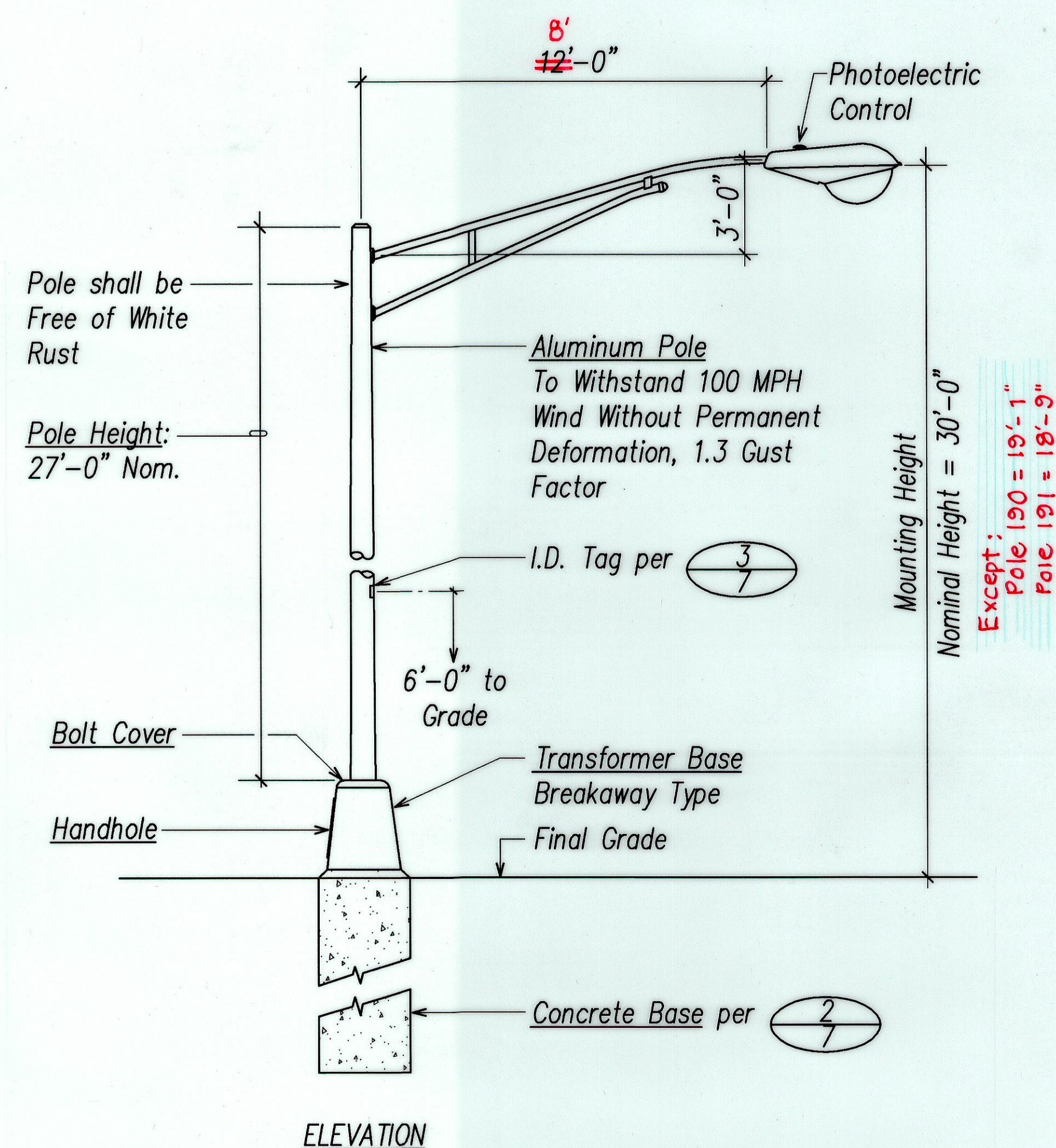
SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	
No.	

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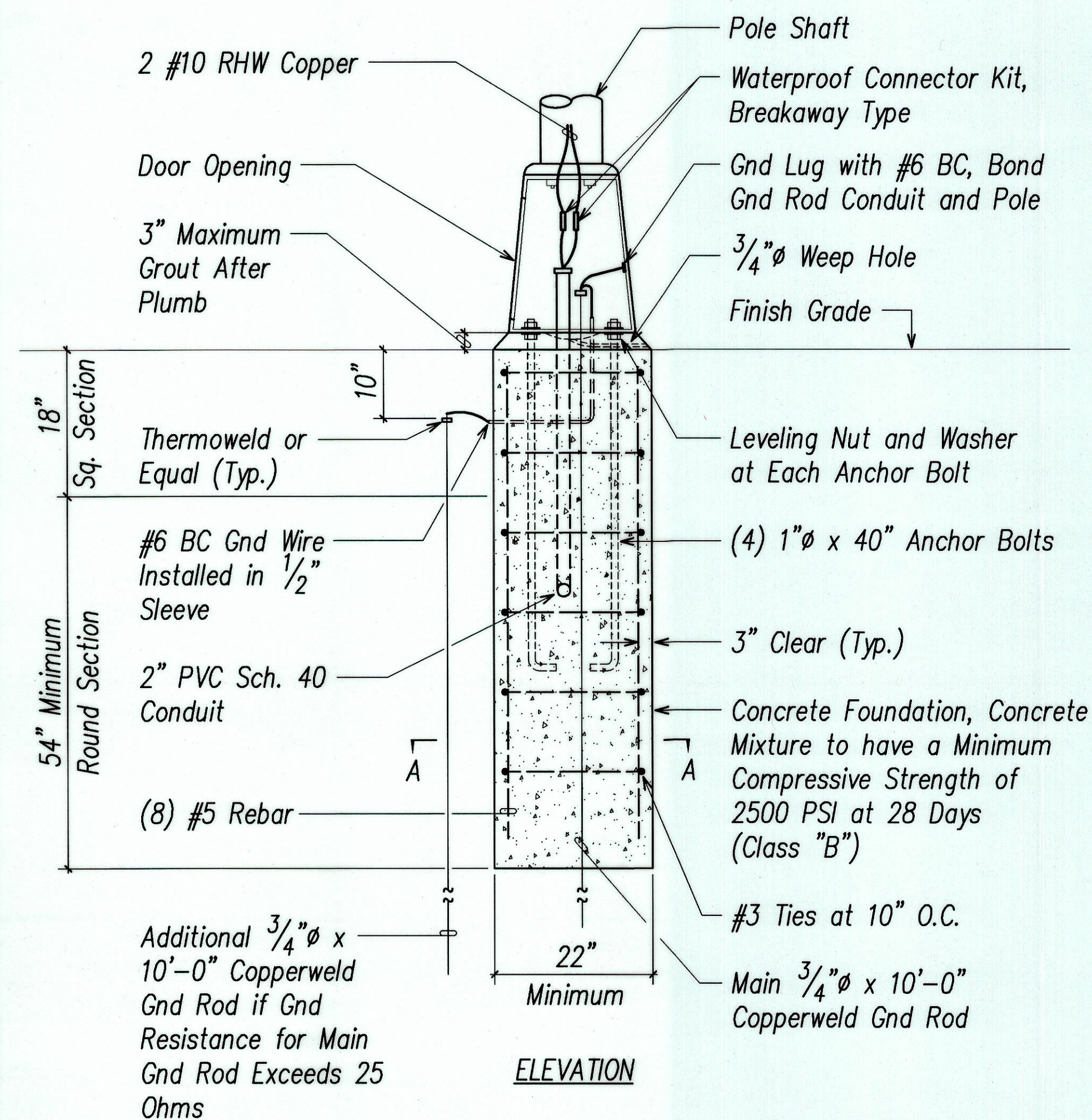
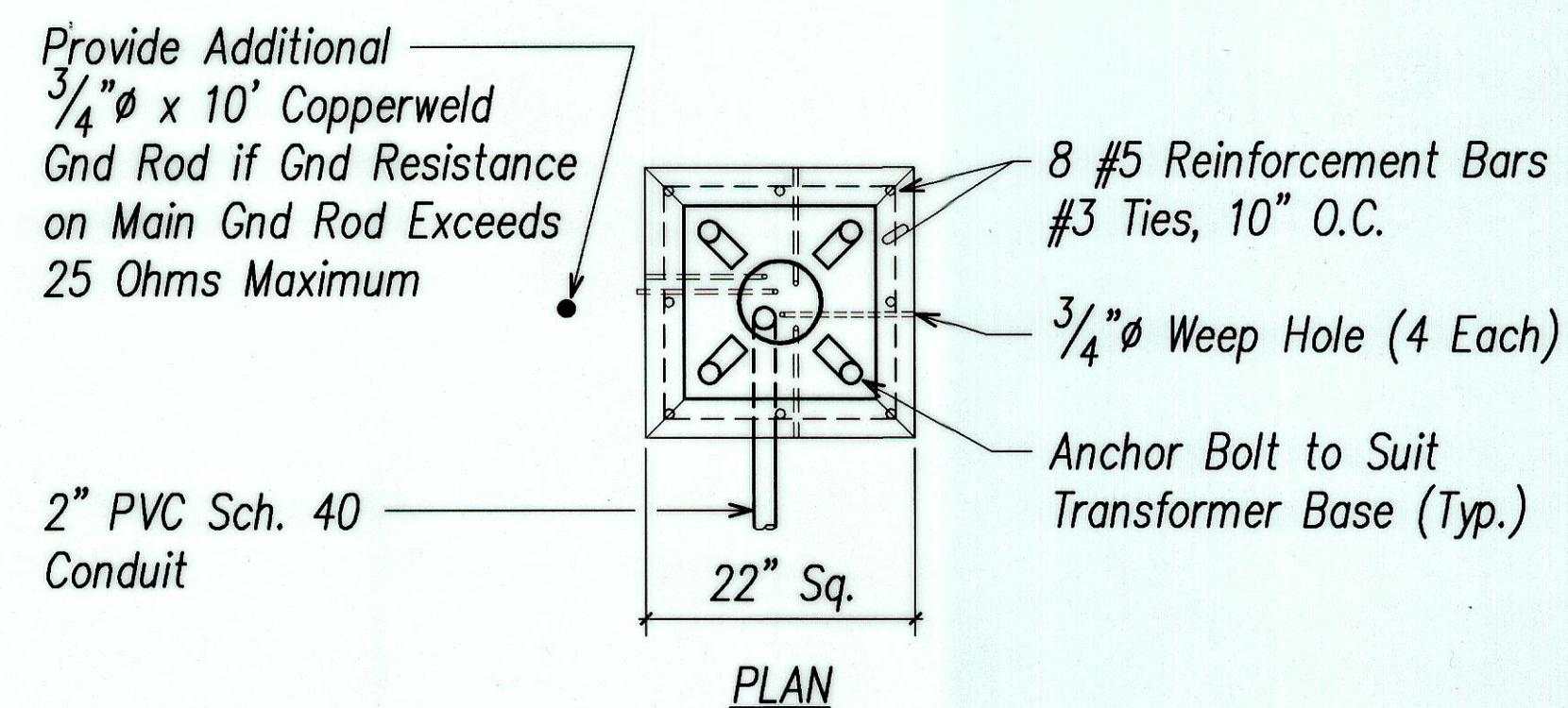
FED.ROAD DIST.NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	43	51



TWIN BRACKET FOR LIGHTS 190A/190B

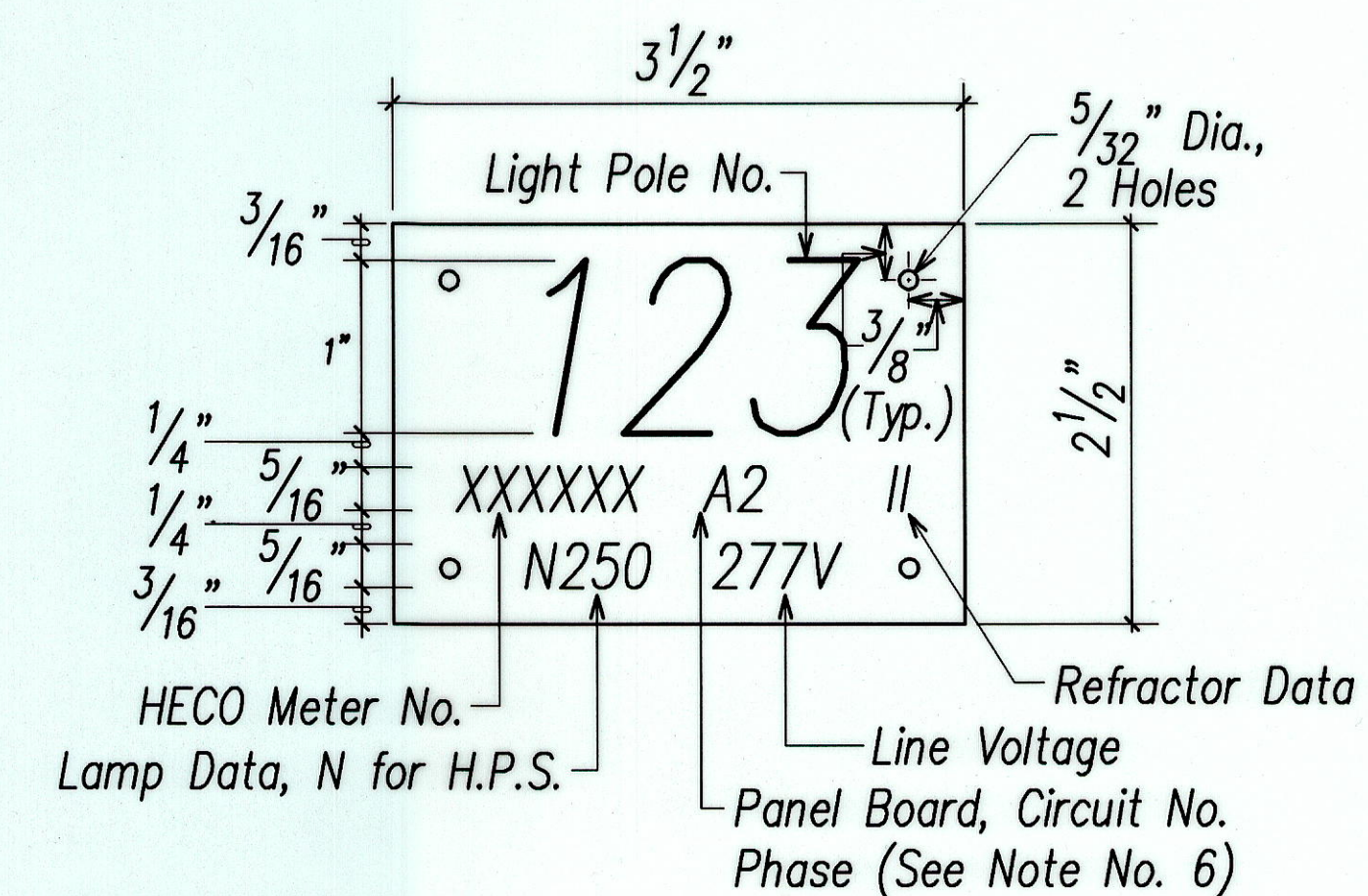
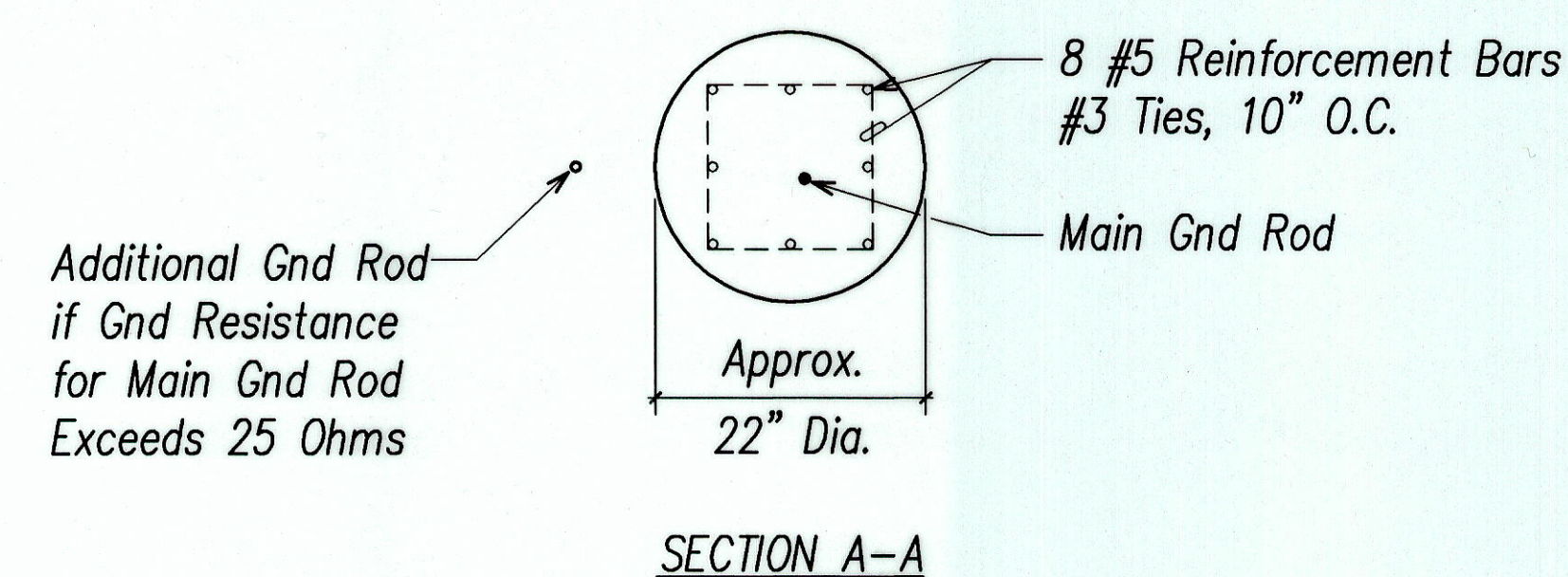


1
7 ROADWAY LIGHT STANDARD
Not to Scale



2
7

TYPICAL CONCRETE FOUNDATION
AND TRANSFORMER BASE DETAIL
Not to Scale




NOTES:

1. Use 3 Ply Laminated Flexible Plastic Black-White-Black Thickness: Black Cap Sheet-0.010", White Base Sheet-0.052", Black Base Sheet-0.010".
2. Light Pole Number Size shall be 1" High and Engraved $\frac{1}{8}$ " Wide, White in Color (Number as Required).
3. Nomenclature Size shall be $\frac{5}{16}$ " High and Engraved $\frac{1}{32}$ " Wide, White in Color (Meter Number, Circuit Number, Line Voltage, Lamp Data and Refractor Data as Required).
4. Attach to Aluminum and Steel Poles with No. 8 Stainless Steel, $\frac{1}{2}$ " Long Drive Screw in $\frac{1}{8}$ " Drill Hole. Attach to Wood Poles with 4D Aluminum Nails.
5. Numbers are Inscribed by Cutting through "Black Cap Sheet" to Expose "White Letters".
6. Nomenclature Required for Systems with Two or More Circuits. First Letter Indicates Panel Board, Number Indicates Circuit.



ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
NOTE BOOK	DRAWN BY _____	" _____
	TRACED BY _____	" _____
	DESIGNED BY _____	" _____
	QUANTITIES BY _____	" _____
Sg. _____	CHECKED BY _____	_____

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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

ROADWAY LIGHT STANDARD

WILIKINA DR INTERSECTION IMPROVEMENTS

AT McNAIR GATE

Project No. 99C-02-00

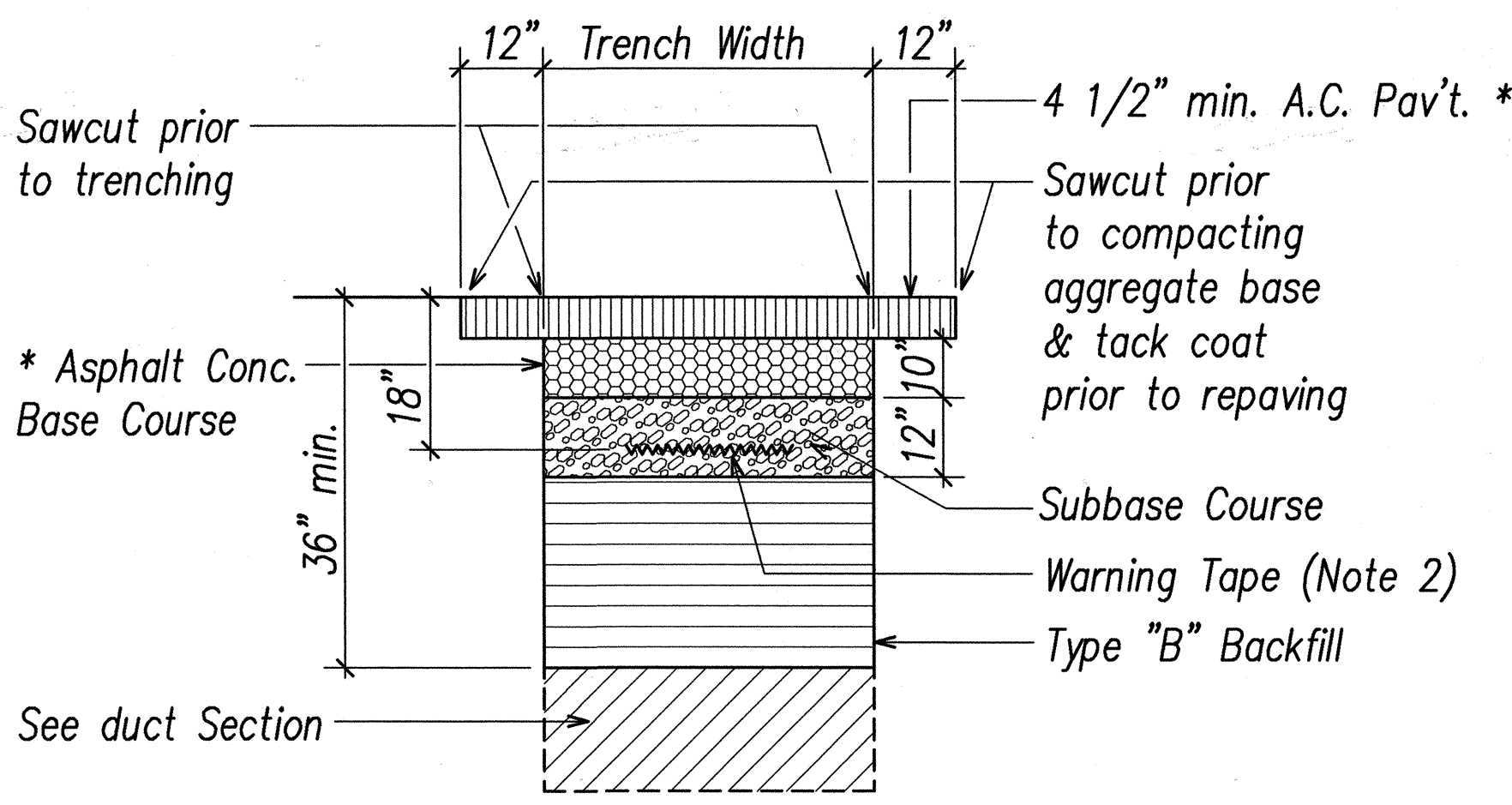
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Date: Sep 2000

SHEET No. 7 OF 10 SHEETS

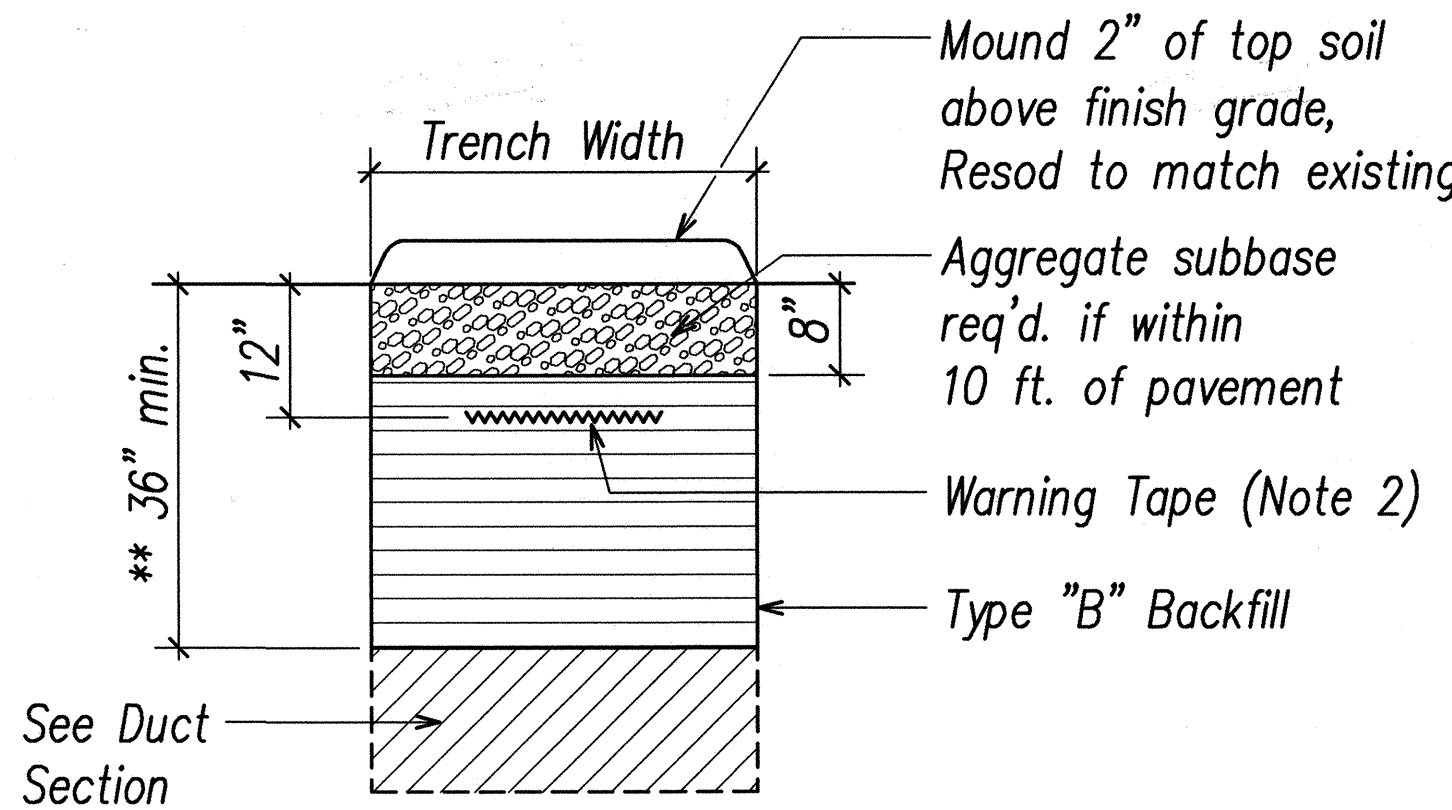
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	44	51



* A.C. and base course to match existing thickness or the minimum thickness shown, whichever is greater.

① EXCAVATION AND BACKFILL SECTION
Within State right-of-way under roadway & paved shoulder



** Exception is where ducts encounter water and drain lines at the same depth. The ducts shall cross over the water and drain lines with a minimum depth of 18".

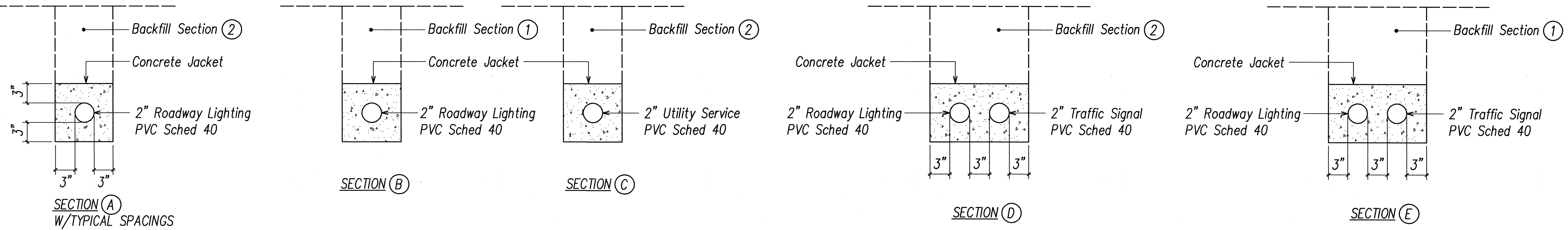
② EXCAVATION AND BACKFILL SECTION
Within State right-of-way under unpaved shoulder

STATE RIGHT-OF-WAY BACKFILL NOTES

Not to Scale

- Trench Backfill Material "B"
1. Sand equivalent ≥ 2
2. 8" max. lift loose
3. 95% compaction
- Trench Backfill Material "A"
1. Sand equivalent ≥ 20
2. 8" max. lift loose
3. 95% compaction
- If Material below duct is not equivalent to backfill material "A", excavate material & provide 3" backfill material "A". See above
- Concrete - 3" Encasement, 2500 PSI compressive strength within 3 days.

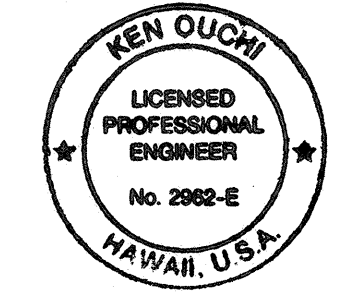
- Notes:
- Base course & sub-base course per 1994 State Standard Specifications for Highway Construction.
 - 3" wide red colored plastic tape. 1-mil continuous metallic backing, corrosion resistant, inscribed with: "CAUTION-ELECTRICAL LINE BURIED BELOW" in black lettering, repeated at thirty-six inch intervals.



DUCT SECTIONS
Not to Scale

DATE	11/28/00
SURVEY PLOTTED BY	PLAN
DRAWN BY	DESIGNED BY
NOTE BOOK	QUANTITIES BY
CHECKED BY	

LAST SAVE: 11/28/00 10:08:21 BY: E:\VADO PROJECTS\9900\9900.DWG



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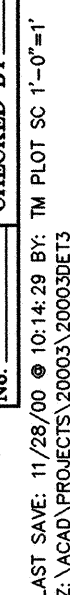
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DUCT SECTIONS

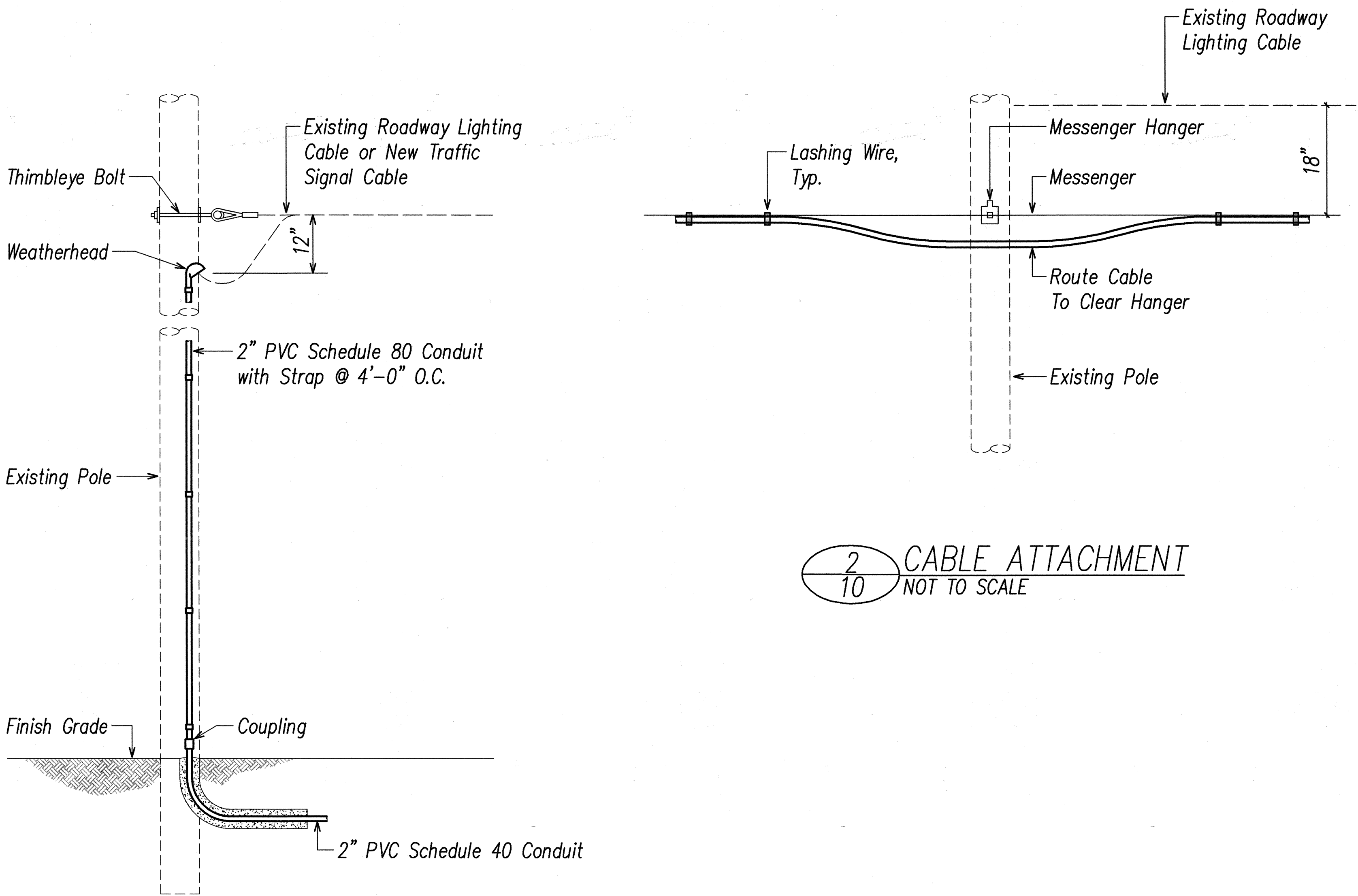
WILIKINA DR INTERSECTION IMPROVEMENTS
AT McNAIR GATE
Project No. 99C-02-00
Scale: As Noted Date: Sep 2000

SHEET No. 8 OF 10 SHEETS

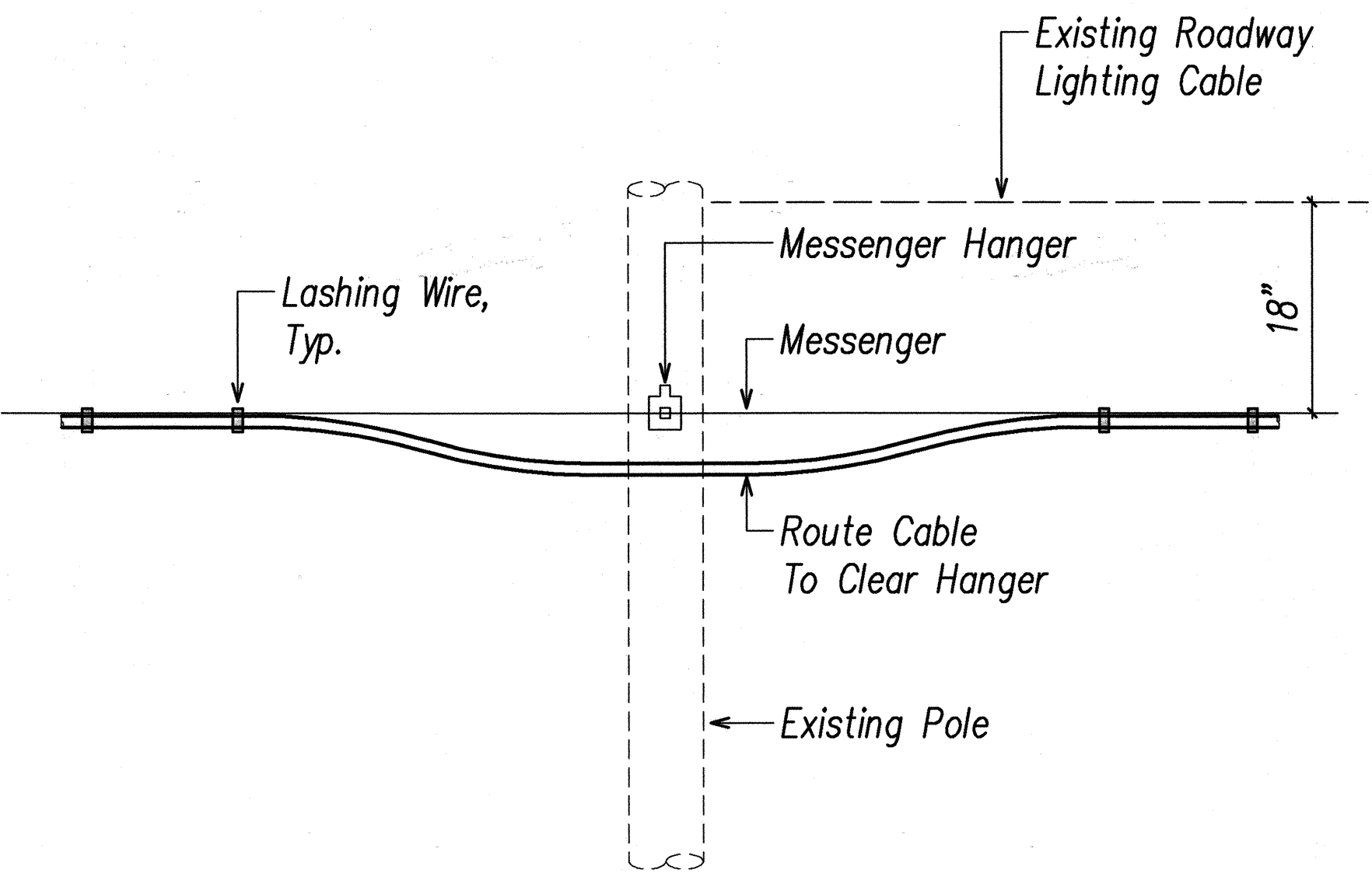
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NOTE BOOK	DRAWN BY _____	" _____
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No. _____	CHECKED BY _____	" _____



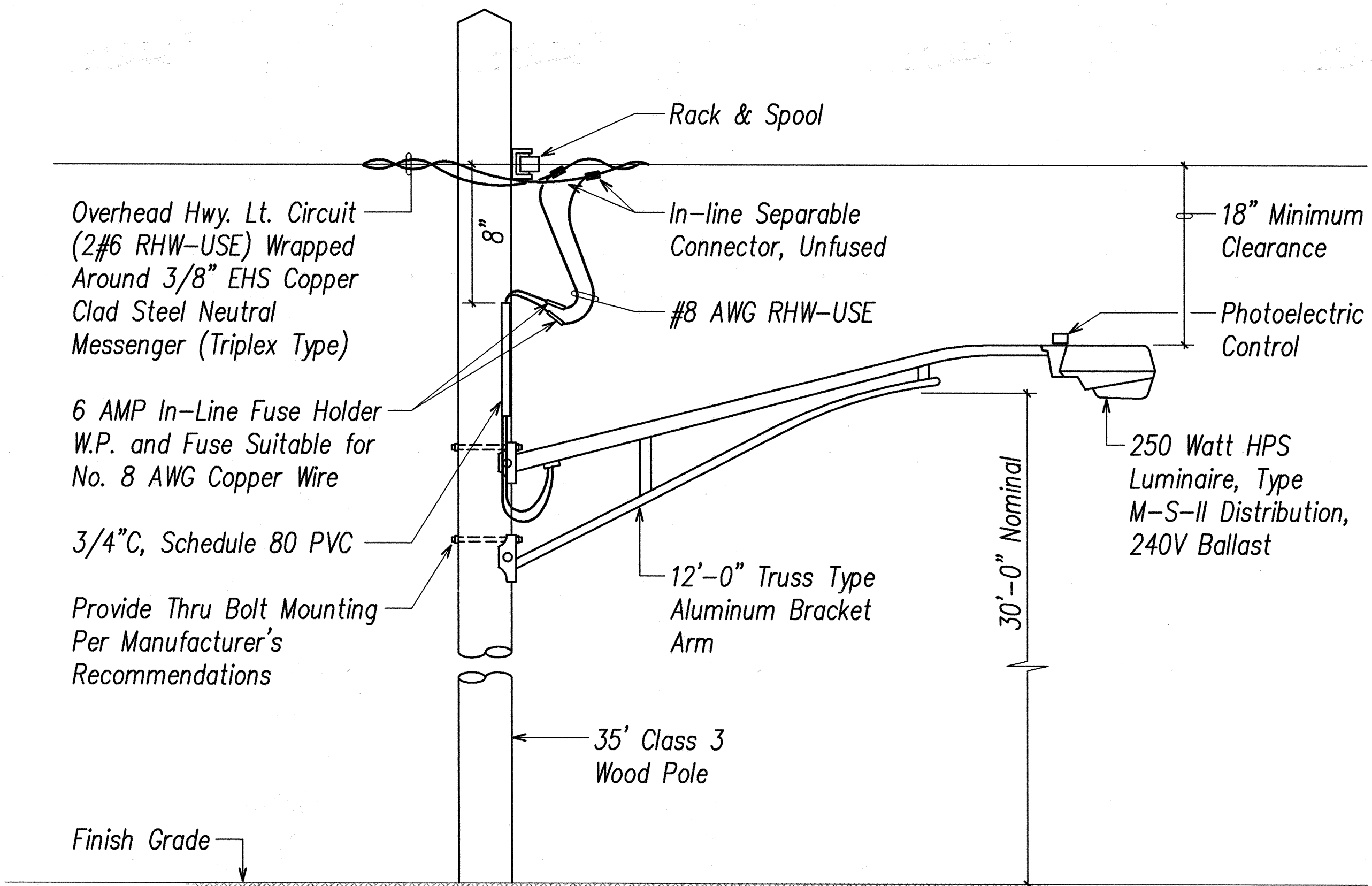
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	99C-02-00	2001	46	51



1
10 RISER POLE DETAIL
NOT TO SCALE



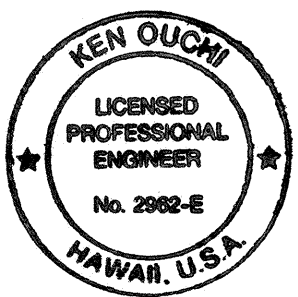
2
10 CABLE ATTACHMENT
NOT TO SCALE



3
10 TEMPORARY ROADWAY LIGHT STANDARD
NOT TO SCALE

SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
IN CHARGE	

LAST SAVE: 11/28/00 10:15:32 BY: TM PLOT SC 1'-0"=1'
 P:\CAD\PROJECTS\9900\9900SET4



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STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

OVERHEAD CABLE DETAILS
TEMPORARY ROADWAY LIGHT STANDARD
WILIKINA DR INTERSECTION IMPROVEMENTS
AT McNAIR GATE
Project No. 99C-02-00
Scale: As Noted Date: Sep 2000
SHEET No. 10 OF 10 SHEETS