



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-K(18)	2003	66	66

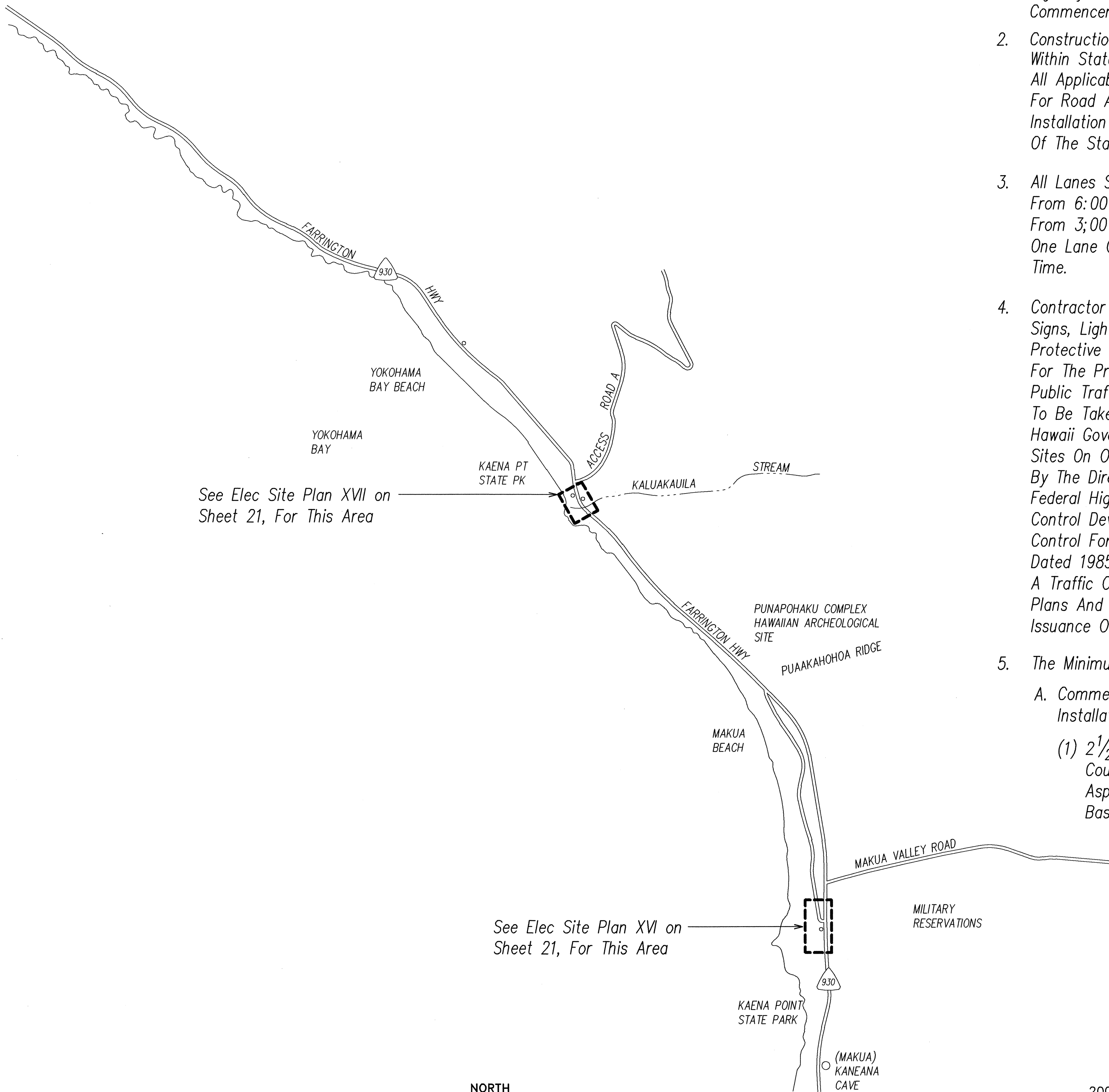
NOTES FOR CONSTRUCTION WITHIN STATE RIGHT-OF-WAY:

- Contractor Shall Obtain A Construction Permit From State's Highway District Engineer At 727 Kokea Street Prior To Commencement Of Work Within The State Right-Of-Way.
- Construction And Restoration Of All Existing Highway Facilities Within State Right-Of-Way Shall Be Done In Accordance With All Applicable Sections Of The Current "Standard Specifications For Road And Bridge Construction", And The "Specification For Installation Of Miscellaneous Improvements Within State Highways", Of The State Highways Division.
- All Lanes Shall Be Open To Traffic During Morning Peak Hours From 6:00 AM To 8:30 AM And During Afternoon Peak Hours From 3:00 PM To 6:00 PM, And During Off-Work Hours. Only One Lane Of Farrington Highway Shall Be Closed At Any Other Time.
- Contractor Shall Provide, Install And Maintain All Necessary Signs, Lights, Flares, Barricades, Markers, Cones And Other Protective Facilities And Shall Take All Necessary Precautions For The Protection And For The Convenience And Safety Of Public Traffic. All Such Protective Facilities And Precautions To Be Taken Shall Conform With The "Administrative Rules Of Hawaii Governing The Use Of Traffic Control Devices At Work Sites On Or Adjacent To Public Streets And Highways" Adopted By The Director Of Transportation, And The Current U.S. Federal Highway Administration "Manual On Uniform Traffic Control Devices For Streets And Highways, Part VI - Traffic Control For Highway Construction And Maintenance Operations", Dated 1985. If Lane Closures Are Required During Construction, A Traffic Control Plan Shall Be Incorporated Into The Construction Plans And Must Be Approved By The Division Prior To The Issuance Of The Permit.
- The Minimum Pavement Structure Shall Consist Of:
  - Commercial Driveways, Side Roads And Utility Installations On Minor Highways.
    - 2 1/2" Asphalt Concrete, 8" Aggregate Base Course And 12" Aggregate Subbase, Or 2 1/2" Asphalt Concrete And 8" Asphalt Concrete Base Course Or Asphalt Concrete.

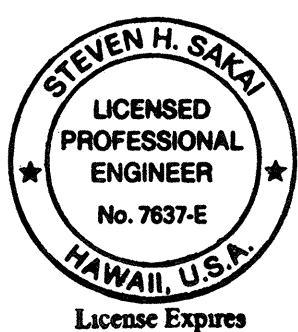
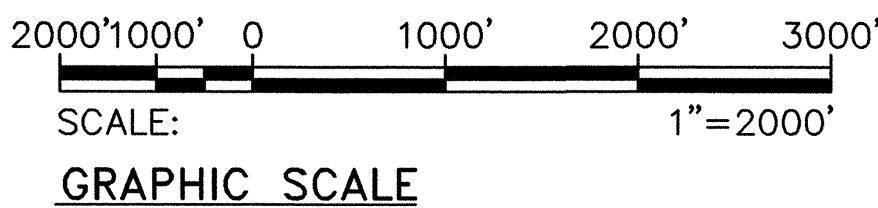
- 6" Of Class "A" Concrete Reinforced With 6" x 6" - 6/6 Wire Mesh On 12" Aggregate Subbase If Deemed Necessary By Engineer.
- Channelized Intersections And Utility Installations On Major Highways.
    - 4" Asphalt Concrete, 8" Aggregate Base Course And 12" Aggregate Subbase, Or 4" Asphalt Concrete And 8" Asphalt Concrete Base Course Or Asphalt Concrete, Or Match Existing Pavement Structure, Whichever Is Greater.
  - No Material And/Or Equipment Shall Be Stockpiled Or Otherwise Stored Within Highway Right-Of-Way Except At Locations Designated In Writing And Approved By The District Engineer.
  - Contractor Shall Be Required To Provide Adequate, Safe, Non-Skid Bridging Material Over Trenches, Including Shoring, When Trenching In Pavement Areas To Handle All Types Of Vehicular Traffic.
  - Longitudinal Drainage Along Highway Shall Be Maintained.
  - Approval Of Permit Construction Plans Shall Be Valid For A Period Of One Year Thereof From The Date Of Notification Of Approval To The Applicant. In The Event Construction Does Not Commence Within This One-Year Period, The Applicant Will Be Required To Resubmit This Construction Plans For Division's Review And Approval.
  - All Regulatory, Guide And Construction Signs And Barricades Shall Be Of High Intensity Reflective Sheeting.

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CHECKED BY	
NOTE BOOK	
No.	

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LOCATION PLAN - KAENA POINT AREA  
SCALE: 1"=2000'



4/30/04  
ON EXPIRATION DATE, THE ENGINEER SHALL BE RE-EVALUATED BY THE BOARD OF ENGINEERS AND SURVEYORS.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**LOCATION PLAN - KAENA PT  
AREA & NOTES**  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 2 OF 34 SHEETS



1. Electrical Work Shall Be New Unless Indicated Otherwise.
2. Existing Electrical Equipment Shall Remain Unless Indicated Otherwise.
3. The Location Of Existing Underground Utilities Shown On Plans Are From Existing Records And Are Approximations Only. Contractor Shall Exercise Caution When Construction Crosses Or Is In The Proximity Of Existing Underground Utilities. Damages To The City's And Utility Companies' Existing Facilities Shall Be Repaired By The Respective Agency And Company, And Shall Be Repaired By The Contractor At No Additional Cost To The State.
4. Both Horizontal Directional Drilling And Conventional Excavation And Backfill Methods Are Acceptable Construction Methods. For Installing Underground Ductlines, For Either Method Of Construction, The Contractor Should Be Aware That The Preservation Of The Uniform Appearance Of The Existing And Patched Sidewalk Will Be Required. The Existing Sidewalk Shall Be Restored To Its Original Condition Or Better. Work Shall Be Performed So That The Finished Appearance Is Neat And Uniform. Sawcutting Of The Sidewalk Shall Be From Back Of Curb, Or Edge Of Sidewalk, To Highway Right-Of-Way. Minimum Width Shall Be From Back Of Curb To Right-Of-Way Line. New Pavement Shall Match Existing. Any Existing Sidewalks, Driveways, Curbs, Gutters Or Ramps Altered, Modified, Reconstructed Or Relocated, Shall Be Constructed In Compliance With Current Federal ADA (Americans With Disabilities Act) Standards And Requirements and in Compliance With State Department of Transportation ADA Policy. Contractor Shall Be Responsible For Obtaining All Required Approvals and Certifications From All Agencies Having Jurisdiction, At No Additional Cost To The State. Costs for Additional Traffic Control Necessitated By The Use of Conventional Trenching Methods Shall be Considered Incidental To The Installation And Shall Be Provided At No Additional Cost to the State.
5. At Locations Designated On The Drawings, Only Conventional Excavation And Backfill Methods Shall Be Used.
6. These Plans Were Reviewed And Discussed With C.S.M. Division, City Environmental Services Department For Effect On Existing Sewers. Plans Were Acceptable With The Understanding That The State D.O.T. Will Assist The City Should There Be A Problem With The Sewer Line (See State D.O.T. Letter To The City, Environmental Department, Dated March 27, 2003)
7. Contractor Shall Ensure That Ductline, Handholes, Pullboxes And Highway Light Standards Are Installed Within The State Highway Right-Of-Way. Highway Light Standard Encroaching Upon Property Outside The Highway Right-Of-Way Shall Be Relocated By The Contractor At No Additional Cost To The State.

1. All Work Shall Be Done In Accordance With The "Standard Specifications For Public Works Construction", September 1986, Of The Department Of Public Works, City And County Of Honolulu, 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, Traffic Signal, Street Light, Fire Alarm, Gas, Water, Sewer, Drain, And Other Lines Crossing The Excavation Path Or In Excavation Areas.
3. The Locations Of All Traffic Signal Standards On The Drawings Are Approximate. Exact Locations Shall Be Verified By The Contractor.
4. 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.
5. The Contractor Shall Notify The Traffic Control Branch, Department Of Transportation Services, Three (3) Working Days Prior To Commencing Work On The Traffic Signal System (Phone: 523-4589).
6. The Contractor Shall Be Responsible For Any Damages To The Existing Traffic Signal Facilities, Including The Traffic Signal Interconnect System. Any And All Damages To These Facilities Shall Be Repaired By The Contractor At His Cost In Accordance With The Requirements Of The City And County Of Honolulu.
7. The Contractor Shall Be Responsible For Any Damages To The Existing Traffic Signal Fiber Optic Cable System. Any And All Damages To These Facilities Shall Be Repaired By The Contractor At His Cost In Accordance With The Requirements Of The City And County Of Honolulu.

1. *Basic Wind Speed: 105 M.P.H. Design Speed. The Design Wind Pressure Shall Be Increased By Using A Higher Wind Importance Factor (AASHTO Table 3-2) Corresponding To A Recurrence Interval Of At Least One Level Greater Than Recommended.*
2. *Wind Importance Factor – Ramps And Other Highways With "High" ADT Shall Be Based On A Recurrence Interval Of 100 Years Unless Otherwise Directed.*
3. *Fatigue Importance Factors (AASHTO Article 11.6) As Noted In Table 11-1 For Traffic Signal and Luminaire Support Structures Shall Be Based on Fatigue Category I.*
4. *Galloping (AASHTO Article 11.7.1) – Overhead Cantilevered Sign And Traffic Signal Support Structures Shall Be Designed For Galloping-Induced Cyclic Loads Unless Approved Vibration Mitigation Devices Are Installed.*
5. *Vortex Shedding (AASHTO Article 11.7.2) – Lighting Structures Having Tapers Less Than 0.14 in./ft. Shall Be Designed To Resist Vortex Shedding-Induced Loads.*
6. *Natural Wind Gust (AASHTO Article 11.7.3) – Overhead Traffic Signal And Lighting Support Structures Shall Be Designed To Resist An Equivalent Static Natural Wind Gust Pressure Using The Reference Noted In The Specifications.*
7. *Truck-Induced Gust (AASHTO Article 11.7.4) – Overhead Traffic Signal Support Structures Shall Be Designed To Resist An Equivalent Static Truck Gust Pressure Based On A Truck Speed of 65 M.P.H.*

ORIGINAL PLAN	SURVEY PLOTTED BY _____ DATE _____
NOTE BOOK	DRAWN BY _____ *
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	DESIGNED BY _____ *
	QUANTITIES BY _____ *
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**License Expires**

4/30/04  
THIS WORK WAS PREPARED BY A  
OR UNDER MY SUPERVISION.  
*Steven H. Hale*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

UTILITY & GENERAL NOTES

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 3 OF 34 SHEETS



Hawaiian Electric Company Notes:

- The Location Of Overhead 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 When The Excavation And Construction Crosses Or Is In Close Proximity Of Underground Lines And Shall Maintain Adequate Clearance When Operating Equipment Within Or Under Any Overhead Lines.
- The Contractor Shall Comply With The State Of Hawaii's Occupational Safety And Health Law (OSH).
- The Contractor Shall Obtain An Excavation Permit From HECO's Mapping and Records Division Located At 820 Ward Avenue, Fourth Floor, Two Weeks Prior To Starting Construction. Refer To HECO's Service Request Number At That Time.
- For Verification Of Underground Lines Or For Assistance In Supporting And Protecting These Lines. The Contractor Shall Call HECO's Underground Division At 543-7345 A Minimum Of 72 Hours In Advance.
- When Trench Excavation Is Adjacent To Or Beneath HECO's Existing Structures Or Facilities, The Contractor Is Responsible For:
  - Sheeting And Bracing The Excavation To Prevent Slides, Cave-Ins, and Settlements.
  - Protecting Existing Structures Or Facilities With Beams, Struts, Or Underpinnings.
- For Pole Bracing Instructions, The Contractor Shall Call The HECO District Superintendent At Waiau (543-4223) A Minimum Of 72 Hours In Advance.
- Any Work Required To Relocate HECO Facilities Shall Be Done By HECO. The Contractor Shall Be Responsible For All Coordination, And For Possible Costs If Applicable.
- Should It Become Necessary To Temporarily Relocate Any Of HECO's Facilities To Enable The Contractor To Perform His Work In A Safe And Expeditious Manner In Fulfilling His Contract Obligations. These Temporary Relocations Will Be Done By HECO, Or By The Contractor Under HECO's Supervision, With All Costs Borne By The Contractor.
- Any Unforeseen Conflict That Would Result In The Redesign Or Relocation (Either Temporary Or Permanent) Of HECO's Electrical Facilities May Be Cause For Lengthy Delays. To Avoid Such Delays, The Contractor Must Notify HECO Of The Conflict A Minimum Of 30 Days Prior To The Start Of Construction.
- Any Damage To HECO's Facilities Shall Be Reported Immediately To HECO's Trouble Dispatcher At 543-7874.
- All HECO Overhead And Underground Facilities Shall Be Protected At All Times By The Contractor During Construction. Costs For Damages To HECO Facilities Shall Be Borne By The Contractor. This Repair Work Shall Be Done by HECO, Or By The Contractor Under HECO's Supervision.
- The Contractor Shall Indemnify, Defend And Hold Harmless HECO From And Against All Losses, Damages, Claims And Actions, All Expenses Incidental To Such Losses, Damages, Claims Or Action, Based Upon Or Arising Out Of Damage To Property Or Injuries To Persons, Or Other Tortious Acts Caused Or Contributed To By Contractor Or Anyone Acting Under Its Direction Or Control Or On Its Behalf; Provided Contractor's Indemnity Shall Not Be Applicable To Any Liability Upon The Sole Negligence Of HECO.

Verizon Hawaii Notes:

- The Location Of Verizon Hawaii's Existing Facilities Are Approximate Only. The Contractor Shall Exercise Extreme Caution And Shall Maintain Proper Clearances Whenever Construction Crosses Or Is In Close Proximity To Verizon Hawaii's Facilities. The Contractor Shall Verify Their Locations And Shall Be Liable For All Damages To Verizon Hawaii Facilities. Any Damages Shall Be Reported Immediately To Verizon Hawaii's Repair Section At 840-1444 During Normal Work Day Hours, Monday Thru Friday, Except Holidays.
- For Underground Cable Locating And Marking, Five Working Days Advance Notice Is Required. Three Working Days Advance Notice Is Required For Any Inspection By A Designated Representative.
- The Contractor Shall Take Necessay Precautions Not To Damage Existing Cables Or Ducts. Any Work Involving Existing Verizon Hawaii Cables Or Ducts Shall Be Done In The Presence Of A Verizon Hawaii Inspector Or Designated Representative.
- The Contractor Shall Obtain An Excavation Permit And Toning Request From Verizon Hawaii's Excavation Permit Section, Located At 3239 Ualena Street, Third Floor, Two Weeks Prior To The Start Of Construction. Hours Of Business Are 7:00 AM to 10:45 AM And 11:30 AM To 2:45 PM, Monday Thru Friday, Except Holidays.
- The Contractor Shall Notify Verizon Hawaii's Inspector Or Designated Representative 72 Hours Prior To Excavation, Bracing Or Backfilling Of Verizon Hawaii's Structures Or Facilities. Minimum Of 72 Hours In Advance.
- When Trench Excavation Is Adjacent To Or Beneath Verizon Hawaii's Existing Structures Or Facilities, The Contractor Shall:
  - Sheet And/Or Brace The Excavation To Prevent Slides, Cave-Ins, Or Settlements To Ensure No Movement To Verizon Hawaii's Structures Or Facilities
  - Protect Existing Structures And/Or Facilities With Beams, Struts, Or Underpinning While Excavating Beneath Them To Ensure No Movement To Verizon Hawaii's Structures Or Facilities
- Should It Become Necessary To Relocate Any Verizon Hawaii Facilities, The Work Shall be Done By Verizon Hawaii. The Contractor Shall Be Responsible For All Coordination And Costs Associated With The Relocation.
- 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:  
Calvin Choy - Verizon Hawaii Area Construction Supervisor, At 840-5822.

AT&T Fiber-Optic Communication Notes:

- This Project Involves Work That Will Occur Near AT&T's Fiber Optic Communications Cable. Please Call (800) 642-6444 Prior To The Start Of Work To Arrange For Exact Cable Location. There Is No Charge For This Service. Seventy-Two (72) Hours Advance Notification Is Required.
- Due To The Limited Separation Of The Construction, And To Limit The Contractor's Liability, It Is Recommended That A Representative Of AT&T Be Present During All Phases Of Construction Where The Separation Between The AT&T Fiber And The Project Is Less Than Seven (7) Feet.
- The AT&T Representative With Approval From The Engineer Shall Have The Right To Direct And Control All Construction Within Two (2) Feet Of The Fiber Easement. Failure To Comply With AT&T's Request Or Dlrrection Can Result In A Claim Against The Construction Company And Their Insurance Company For Any Damages That May Occur To The Fiber Or The Jacket.
- All Crossings Must Provide One (1) Foot Clearance To The AT&T Jacket.
- The AT&T Representative With Approval From The Engineer Shall Have The Right To Stop All Work Within Two (2) Feet Of Their Jacket If They Believe There Is A Danger To The Fiber Or Jacket. Work Will Resume Only When All Of The Concerns Of The AT&T Representative Have Been Satisfied. The Engineer And The Engineer For AT&T Will Be The Final Authority In Case Of Disputes.
- The Contractor Shall Keep The AT&T Line Exposure To A Minimum To Prevent Possible Damage.
- The Jacket Must Be Adequately Supported When More Than Four (4) Linear Feet Is Exposed. The Method Of Support Shall Be Approved By AT&T.
- AT&T's Primary Responsibility Is To Protect The Communications Facility. AT&T Will Use Any Method They Deem Prudent And Necessary To Do So.
- The Jacket Must Have A Minimum Of Thirty (30) Inches Of Dirt Cover After Construction Is Complete. Less Cover Will Be Permitted If The Covering Is Other Than Dirt (I.E. Asphalt Or Concrete). The AT&T Representative Will Have The Right To Determine The Appropriate Cover And Depth.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	07	08

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
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No.	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

LAST DATE OF JOB 11/13/03 BY 11/13/03  
2. VACAD PROJECTS 2007/3/20/2007



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION.  
Date: 11/13/03

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
UTILITY NOTES	
FARRINGTON HIGHWAY IMPROVEMENTS NANAKULI TO MAKAHA F.A.I. Proj. No. STP-093-1(18)	
Scale: As Noted	Date:
SHEET No. 4 OF 34 SHEETS	



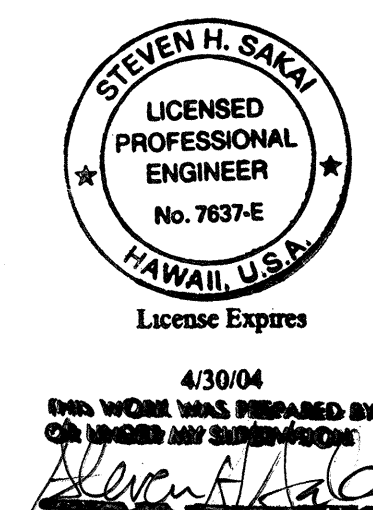
1. The Location Of Overhead And Underground Facilities Shown On The Plans Are From Existing Records With Varying Degrees Of Accuracy And Are For Information Only And Are Not Guaranteed To Be Located As Shown. The Contractor Shall Exercise Caution Whenever Construction Crosses Or Is In Proximity Of Underground Lines And Shall Maintain Adequate Clearance When Operating Equipment Under Any Overhead Lines.
2. The Contractor Is To Comply With The Directions Of The State Of Hawaii Occupational Safety And Health Law (DOSH).
3. When Trench Excavation Is Adjacent To Existing Structures Or Facilities, The Contractor Is Responsible For Properly Sheet Piling 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.
4. When Appropriate, As Required By The City And County Of Honolulu, The Contractor Shall Provide Off-Duty Police Officers To Control The Flow Of Traffic.
5. Where Pedestrian Walkways Exist, Such Walkways Shall Be Maintained In Passable Condition Or Other Facilities For Pedestrians Shall Be Provided. Passage Between Walkways At Intersections Shall Likewise Be Provided.
6. Driveways Shall Be Kept Open Unless The Owners Of The Property Using These Right-Of-Ways Are Otherwise Provided For Satisfactorily.
7. The Contractor Shall Verify With The Respective Utility Companies And Government Agencies, The Locations Of All Electric, Telephone, Traffic Signals, Street Light, Fire Alarm, Gas, Water, Sewer, Drain, And Other Lines Crossing The Excavation Path Or In Excavation Areas.
8. 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.
9. The Contractor Shall Notify The Traffic Signals And Technology Division, Department Of Transportation Services, Three (3) Working Days Prior To Commencing Work On The Traffic Signal System (Phone: 523-4599)
10. Where Necessary, Reconstruction Of Sidewalk, Gutter, And Driveway Areas Shall Conform To The Standard Details Of The Governmental Agency Having Jurisdiction Over The Work. New Installation Shall Be In Conformance With Current ADA Requirements.

- CATV CONSTRUCTION NOTES:

1. The locations of existing utilities are approximate only. The Contractor shall verify their locations and shall be responsible for any damages to these utilities as a result of his operations. Adjustments to the new ductline alignment, if required shall be made to provide the required clearances.
2. The underground pipes, cables, or ductlines known to exist by the Engineer from his search of records are indicated on the plans. The Contractor shall verify the locations and depths of the facilities and exercise proper care in excavating in the areas. Wherever connections of new utilities to existing utilities are shown on the plans, the Contractor shall expose the existing lines at the proposed connections to verify their locations and depths prior to excavation for the new lines.
3. Prior to the excavation of the ductline, the Contractor shall request that Oceanic Cable Company Locate Existing ductline wherever required.
4. The Contractor shall take necessary precaution not to damage existing cables or ducts. Any work involving existing cables or ducts shall be done in the presence of the Oceanic Cable Company Inspector or his Representative.
5. The Contractor shall notify the Oceanic Cable Company Inspector 48 hours prior to the start of work on CATV infrastructure, pouring of concrete or backfilling. Oceanic's Inspector, Moki Place, can be reached at 625-8378.
6. Wherever connections to existing utilities are shown on the plans, the Contractor shall expose the existing lines prior to excavation of the main trenches to verify their locations and depths.
7. The location of CATV facilities shown on plans are from existing records with varying degrees of accuracy as to its actual fixed location. The contractor shall use extreme caution when working in close proximity of CATV facilities.
8. The Contractor shall obtain excavation permit clearance from Oceanic's Engineering Section located at 200 Akamainui St., Mililani Tech Park.
9. For any field assistance or verification of CATV facilities, the Contractor shall call the Technical Operations Center at 625-8378.
10. Any work required to relocate CATV facilities shall be done by Oceanic Cable and the Contractor shall be responsible for all coordinaion requirements and associated costs.
11. Any damage to Oceanic's facilities shall be reported to OCI's Repair Dispatch Department at 625-8437 or 625-8666.

12. *Minimum clearance between street light stand and fire hydrants shall be three feet.*
13. *Underground utilities shown hereon is for information only. No guarantee is made on the accuracy or completeness of said installation.*
14. *For underground cable locating and marking, five working days advance notice is required. Three working days advance notice is required for any inspection by a Designate Representative. Contractor shall take necessary precaution not to damage any existing cables or ducts. Oceanic's Inspector or Designated Representative is required to be at any job site whenever there will be a breakage into or entry into any structure that contain Oceanic's facilities.*

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FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

**SHEET No. 5 OF 34 SHEETS**



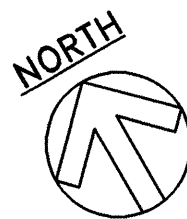
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	70	88

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
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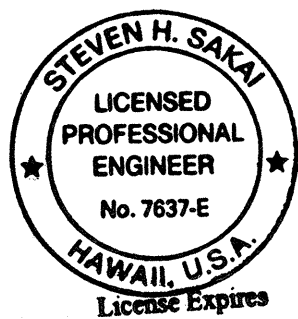
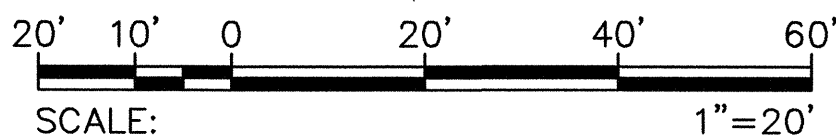
### NOTES:

- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling An/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- 5 Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Concrete In Accordance With BWS Stds.
- 6 Conduits To Be Installed Using Conventional Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Restored Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34.
- 7 See General Electrical Note No. 6, On Sheet 3 of 34.



### ELECTRICAL PLAN I

SCALE: 1"=20'-0"



4/30/04  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Steven H. Sakai*

APPROVED BY:  
*Dennis M. Nakamura* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP *mn* DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ELECTRICAL PLAN I**  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 6 OF 34 SHEETS







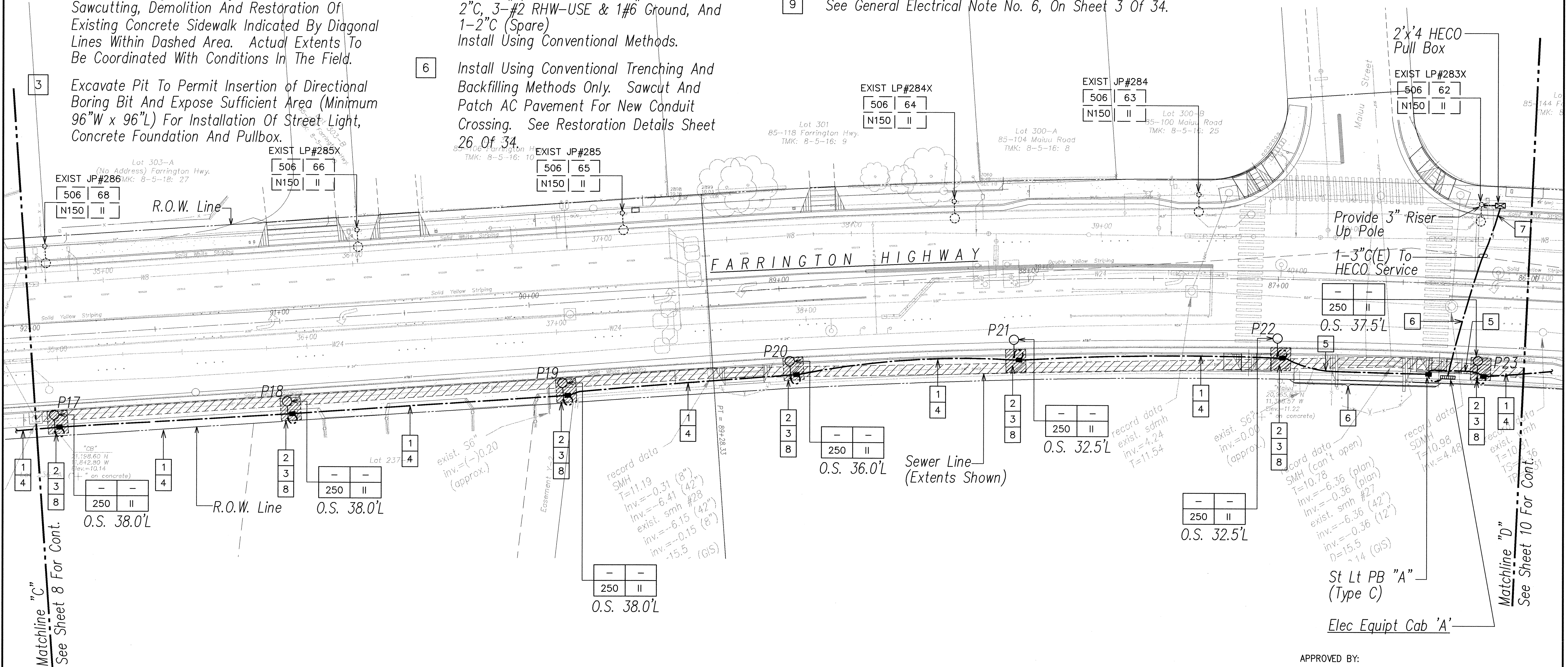




NOTES:

- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent Of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C, 3-#2 RHW-USE & 1#6 Ground, And 1-2"C (Spare)
- 5 To Electrical Equipment Cabinet Via Street Light Pull Box 'A'
- 6 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C, 3-#2 RHW-USE & 1#6 Ground, And 1-2"C (Spare) Install Using Conventional Methods.
- 7 Install Using Conventional Methods. Sawcut And Restore Curb And Sidewalk For New Conduits To HECO Service.
- 8 Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Concrete In Accordance with BWS Standards.
- 9 See General Electrical Note No. 6, On Sheet 3 Of 34.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	7	8

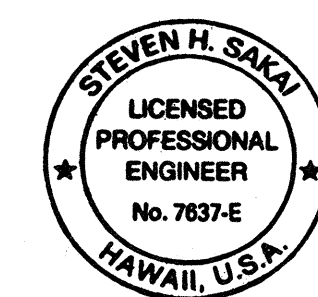
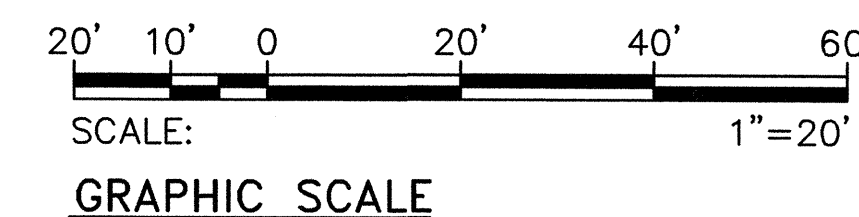


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DATE	DRAWN BY
DATE	DESIGNED BY
DATE	CHECKED BY

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ELECTRICAL PLAN IV 7  
SCALE: 1"=20'-0"



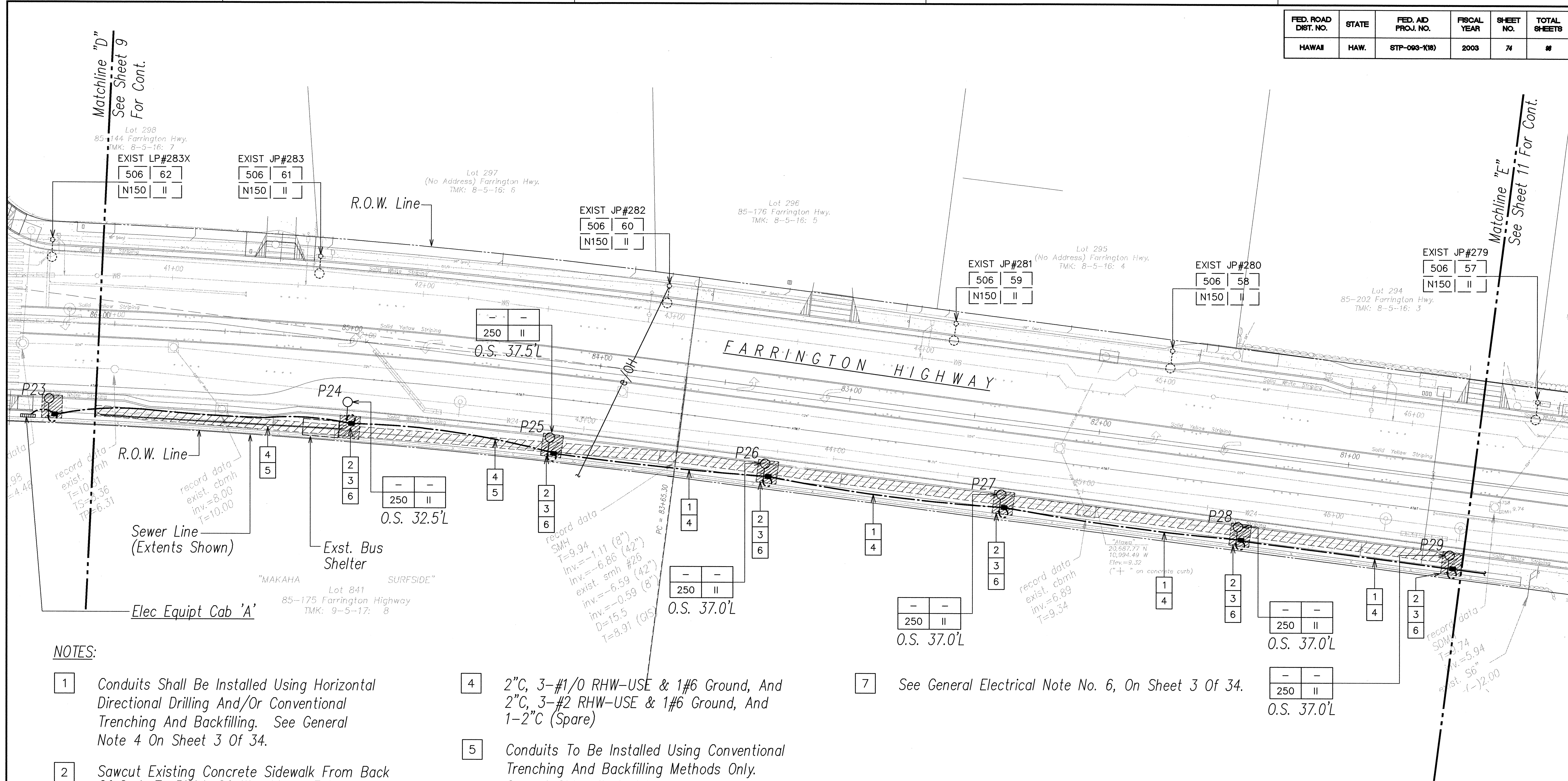
APPROVED BY:  
  
 CHIEF, WASTEWATER BRANCH, DPP 5/15/03  
 DATE

STATE OF HAWAII  
 DEPARTMENT OF TRANSPORTATION  
 HIGHWAYS DIVISION  
 ELECTRICAL PLAN IV  
 FARRINGTON HIGHWAY IMPROVEMENTS  
 NANAKULI TO MAKAHA  
 F.A.I. Proj. No. STP-093-1(18)  
 Scale: As Noted Date:

SHEET No. 9 OF 34 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	74	#

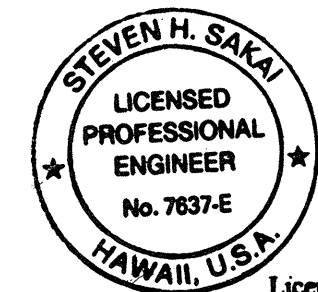
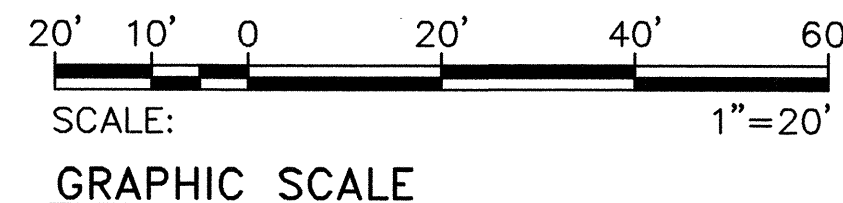


NOTES:

- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C, 3-#2 RHW-USE & 1#6 Ground, And 1-2"C (Spare)
- 5 Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34.
- 5 Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Concrete In Accordance With BWS Stds.
- 7 See General Electrical Note No. 6, On Sheet 3 Of 34.



ELECTRICAL PLAN V 7  
SCALE: 1"=20'-0"



APPROVED BY:  
*Dennis M. Nishimura* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP *DN* DATE

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ELECTRICAL PLAN V**  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)  
Scale: As Noted Date: \_\_\_\_\_  
SHEET No. 10 OF 34 SHEETS

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
DESIGNED BY	
QUANTITIES BY	
NOTES BY	
NO.	

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Z:\VADO\PROJECTS\2007\100796405 PREP: MA HEMA-LEHOKU



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	75	80

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NOTE BOOK	
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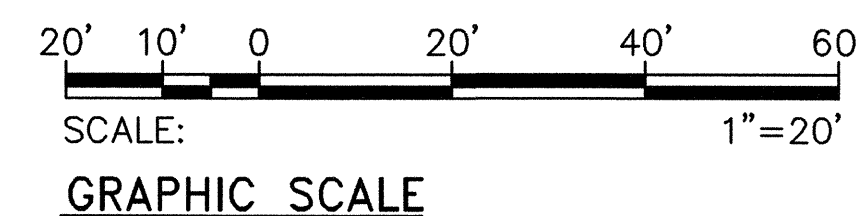
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# NOTES:

- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C, 3-#2 RHW-USE & 1#6 Ground, And 1-2"C (Spare)
- 5 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- 6 Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Concrete In Accordance With BWS Standards.
- 6 See General Electrical Note No. 6, On Sheet 3 Of 34.
- 8 Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34. Contractor Shall Contact AT&T Prior To Trenching To Locate & Mark The Existing Ductline.



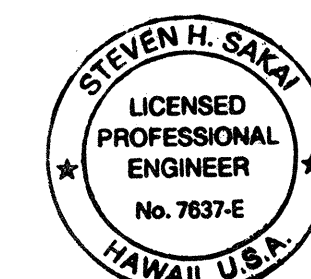
**ELECTRICAL PLAN VI** 7  
SCALE: 1"=20'-0"



APPROVED BY:

*Dennis M. Nishimura*  
CHIEF, WASTEWATER BRANCH, DPP *mw*

5/15/03  
DATE



LICENSE EXPIRES  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Steven H. Sakai*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## ELECTRICAL PLAN VI

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

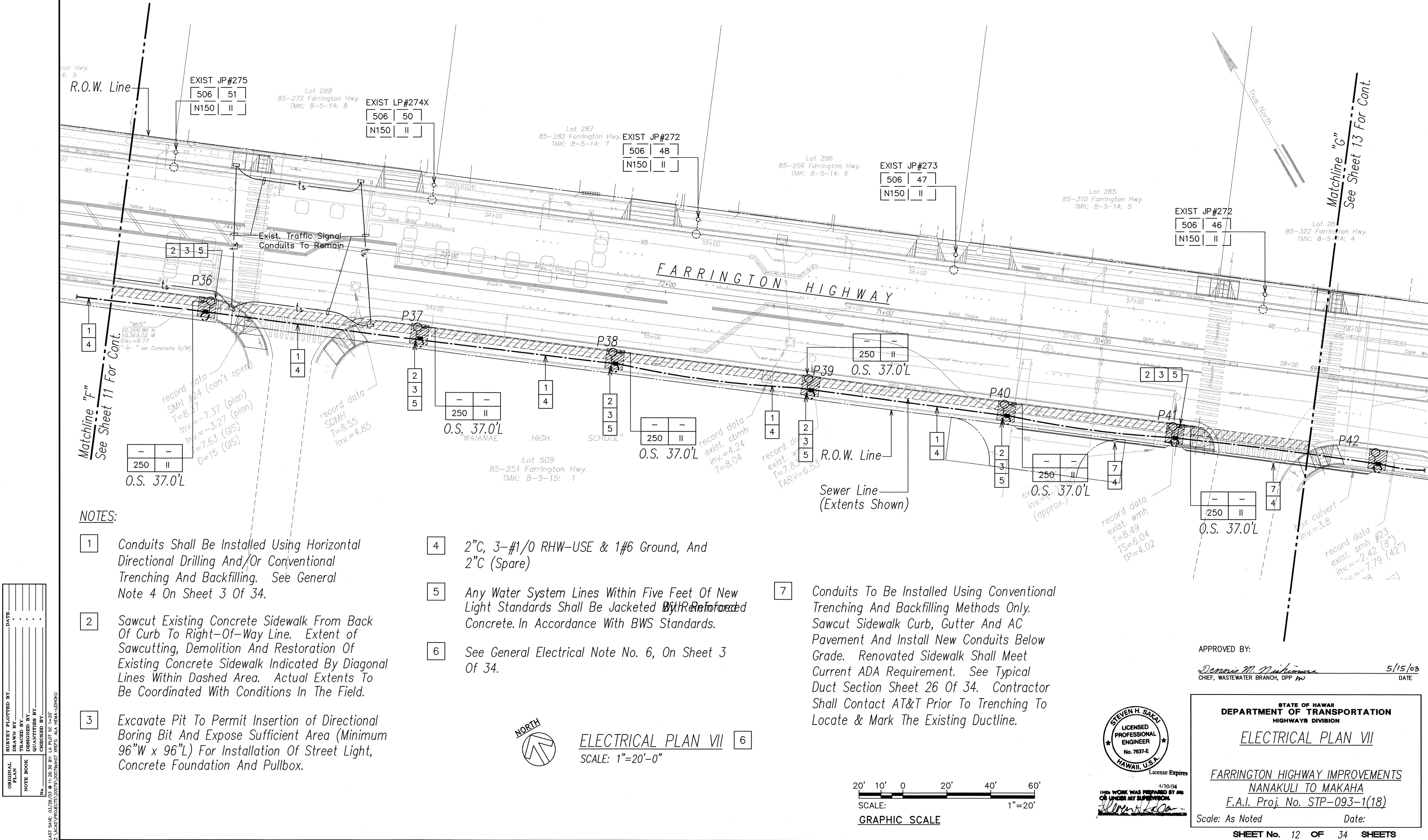
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Date:

SHEET No. 11 OF 34 SHEETS

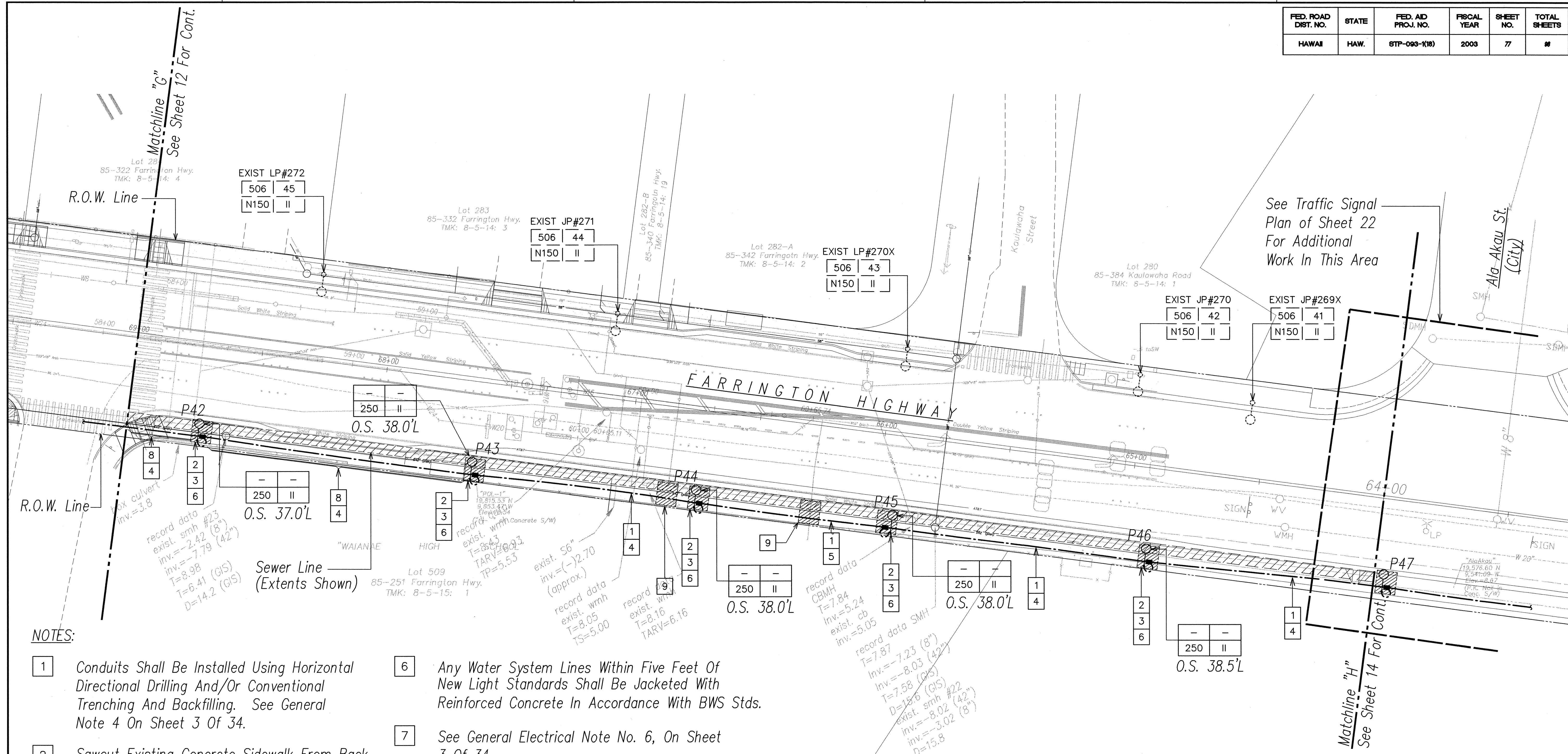


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	78	#



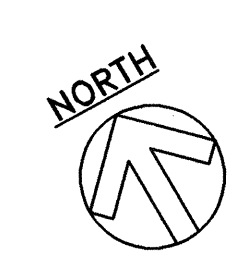


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HAWAII	HAW.	STP-093-1(18)	2003	77	#

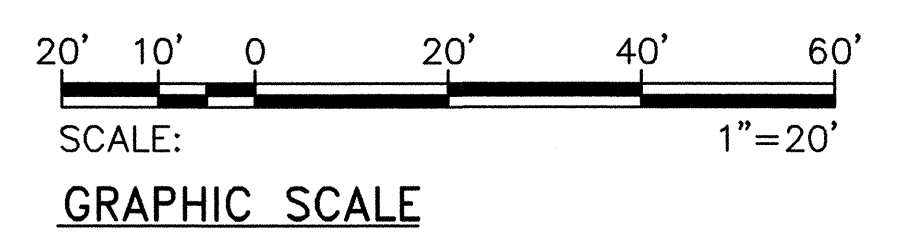


**NOTES:**

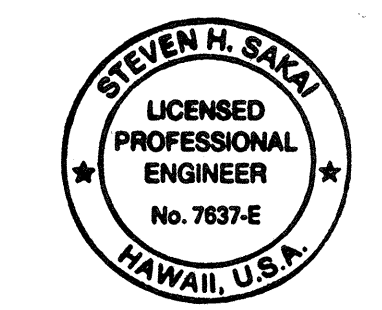
- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- 5 2-2"C (Spare)
- 6 Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Concrete In Accordance With BWS Stds.
- 7 See General Electrical Note No. 6, On Sheet 3 Of 34.
- 8 Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34. Contractor Shall Contact AT&T Prior To Trenching To Locate & Mark The Existing Ductline.
- 9 If Horizontal Directional Drilling Method Is Selected, Sawcut Sidewalk (Minimum 96"L x 96"W) Hand Excavated Pot Hole 42" Below Finish Grade To Verify Whether Conduits Will Conflict With Utility Line. (For Sewer Lines, Verify Depth) If Conduits Are Within 6" (36" For Sewer Lines) Vertically Of Utility Line, Provide 3" Concrete Encasement Over Utility Line. Provide Tar Paper Over Line Prior to Jacketing. (For Sewer Line RC Jackets, See City Standard Detail S-5).



**ELECTRICAL PLAN VIII**  
SCALE: 1"=20'-0"



APPROVED BY:  
*Dennis M. Williams* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP HW DATE



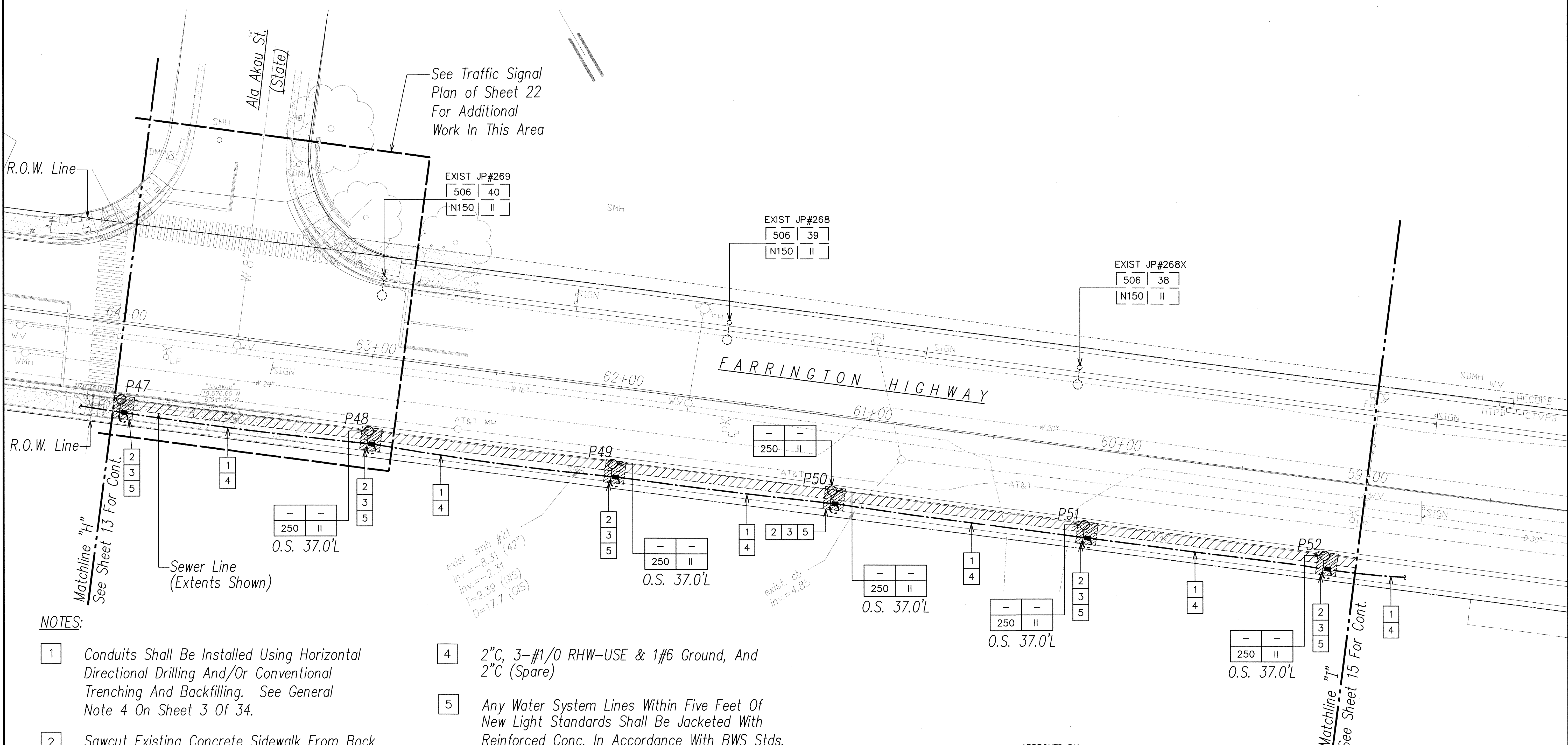
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
**ELECTRICAL PLAN VIII**  
  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)  
Scale: As Noted Date:  
**SHEET No. 13 OF 34 SHEETS**

SURVEY PLOTTED BY	DATE
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CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
NO.	

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	78	#



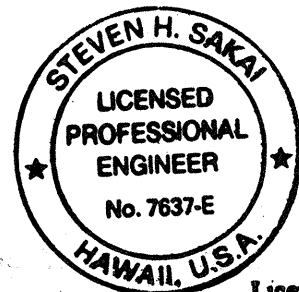
NOTES:

- Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent Of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- Excavate Pit To Permit Insertion Of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Conc. In Accordance With BWS Stds.
- See General Electrical Note No. 6, On Sheet 3 Of 34.

APPROVED BY:

*Dennis M. Nicholson*  
CHIEF, WASTEWATER BRANCH, DPP

5/15/03  
DATE



4/30/04  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*[Signature]*

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

ELECTRICAL PLAN IX

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

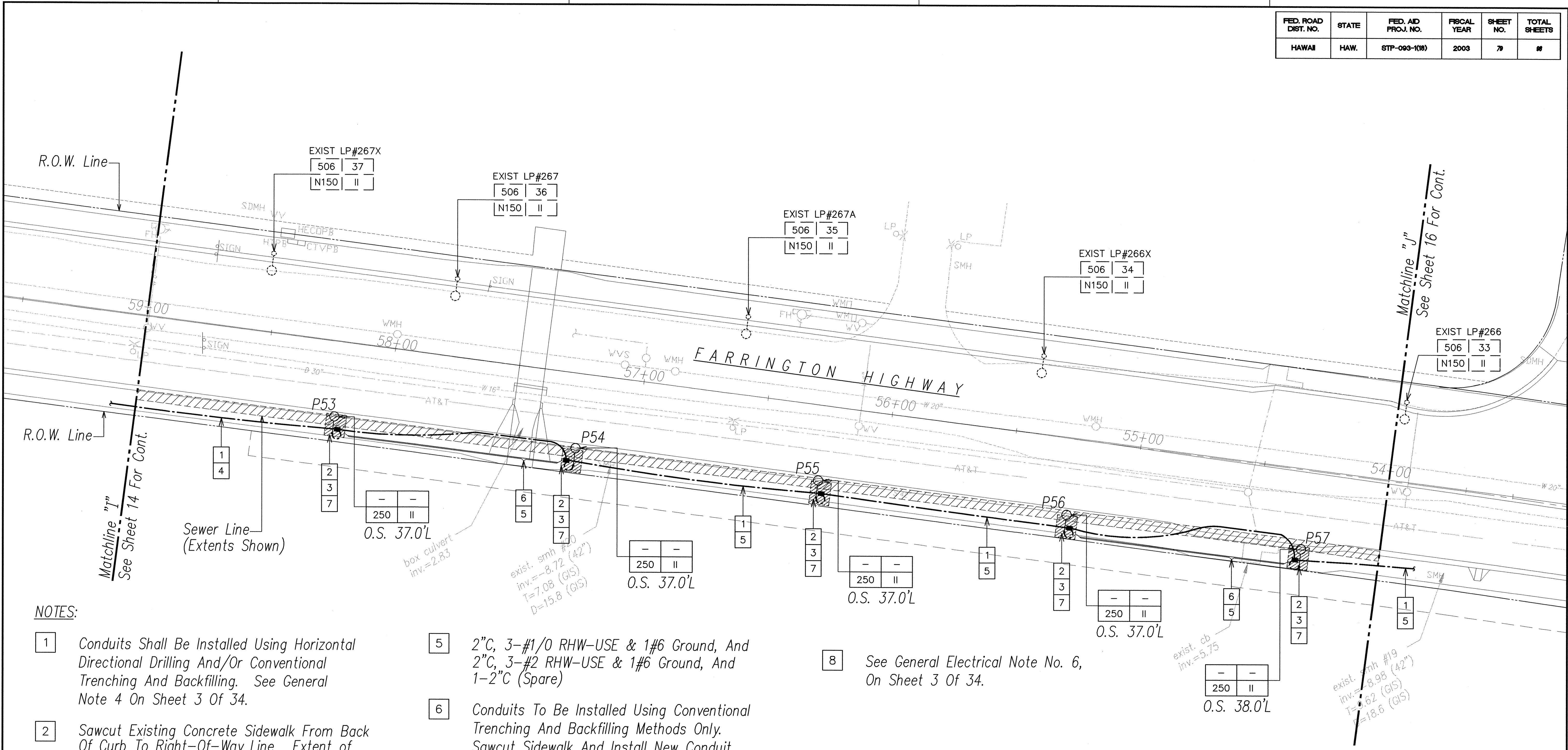
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Date:

SHEET No. 14 OF 34 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	79	#



NOTES:

- 1

Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2

Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3

Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4

2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- 5

2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C, 3-#2 RHW-USE & 1#6 Ground, And 1-2"C (Spare)
- 6

Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34. Contractor Shall Contact AT&T Prior To Trenching To Locate & Mark The Existing Ductline.
- 7

Any Water System Lines Within Five Feet Of New Light Standards Shall Be Jacketed With Reinforced Conc. In Accordance With BWS Stds.
- 8

See General Electrical Note No. 6, On Sheet 3 Of 34.

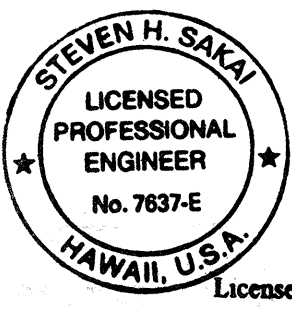
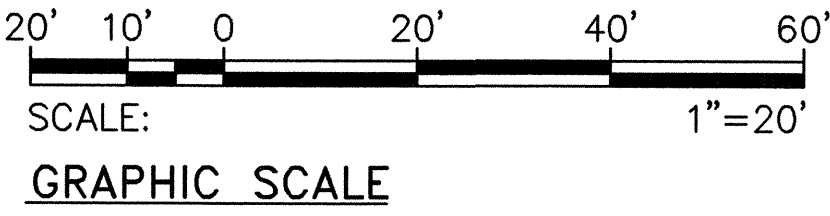
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DRAWN BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
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RMTC JOB NO.: 1-18835-0E



ELECTRICAL PLAN X 8  
SCALE: 1"=20'-0"



THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*[Signature]*

APPROVED BY:  
*[Signature]* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

ELECTRICAL PLAN X

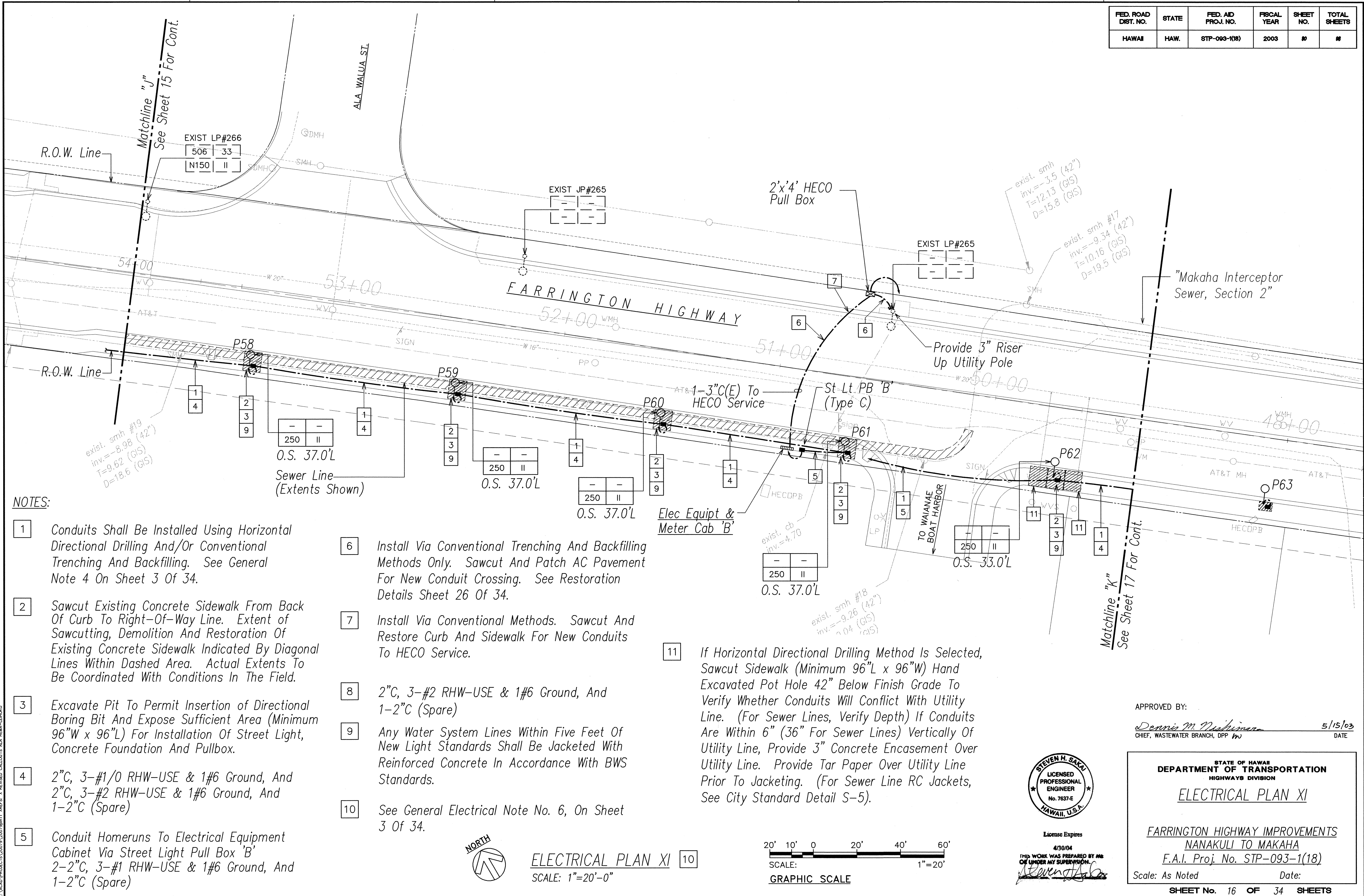
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted      Date:

SHEET No. 15 OF 34 SHEETS

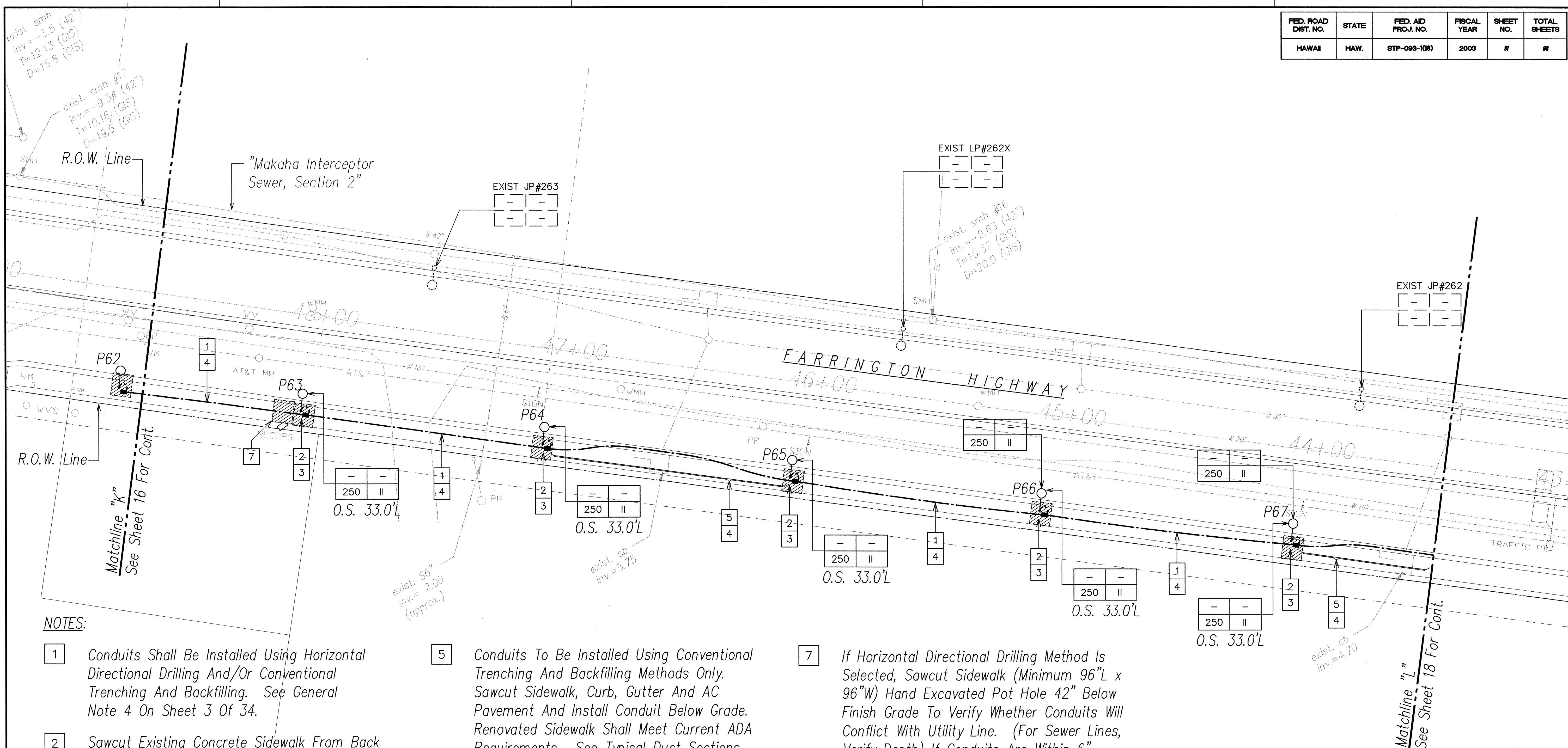


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	80	80





FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	#	#



NOTES:

- 1

Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2

Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent Of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3

Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4

2"C, 3-#1/0 RHW-USE & 1#6 Ground  
2"C, 3-#2 RHW-USE & 1#6 Ground  
1-2"C (Spare)
- 5

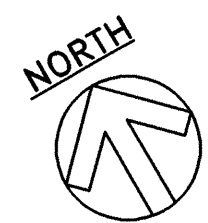
Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk, Curb, Gutter And AC Pavement And Install Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34.
- 6

See General Electrical Note No. 6, On Sheet 3 Of 34.
- 7

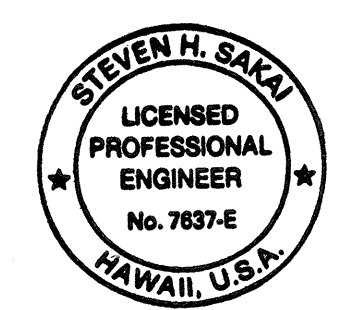
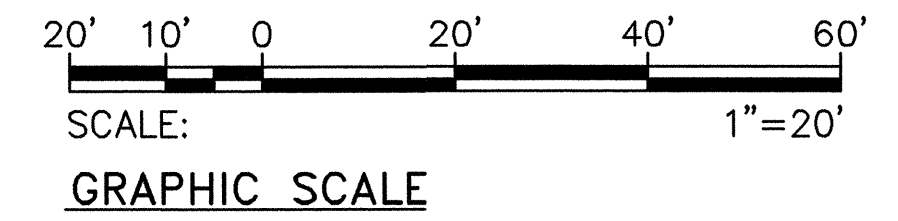
If Horizontal Directional Drilling Method Is Selected, Sawcut Sidewalk (Minimum 96"L x 96"W) Hand Excavated Pot Hole 42" Below Finish Grade To Verify Whether Conduits Will Conflict With Utility Line. (For Sewer Lines, Verify Depth) If Conduits Are Within 6" (36" For Sewer Lines) Vertically Of Utility Line, Provide 3" Concrete Encasement Over Utility Line. Provide Tar Paper Over Line Prior To Jacketing. (For Sewer Line RC Jackets, See City Standard Detail S-5).

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

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ELECTRICAL PLAN XII 7  
SCALE: 1"=20'-0"



License Expires 4/30/04  
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
*[Signature]*

APPROVED BY:  
*[Signature]* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ELECTRICAL PLAN XII

FARRINGTON HIGHWAY IMPROVEMENTS

NANAKULI TO MAKAHA

F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted

Date:

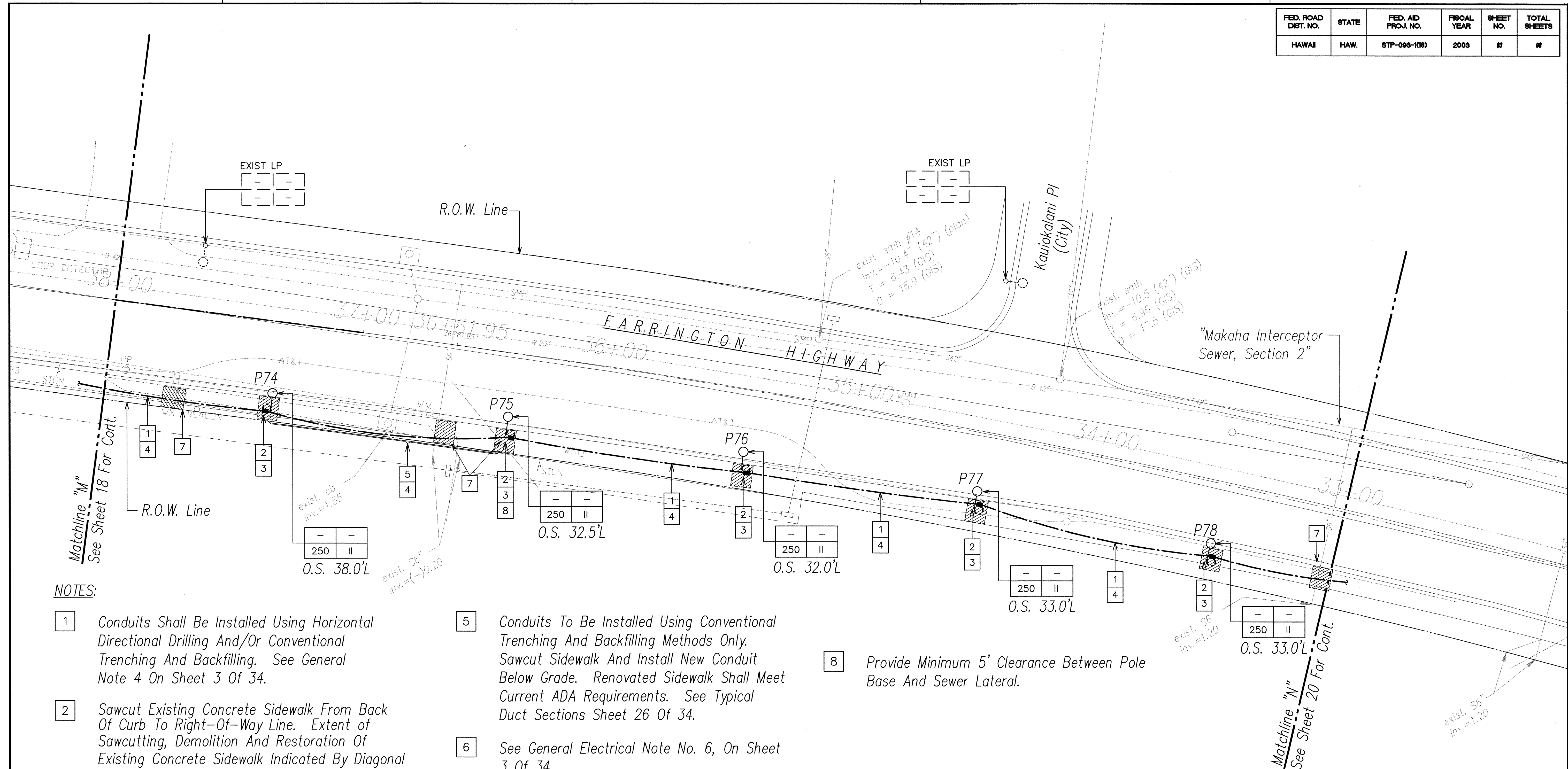
SHEET No. 17 OF 34 SHEETS







FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	83	88



NOTES:

- 1 Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.

2 Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent Of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.

3 Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.

4 2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)

5 Conduits To Be Installed Using Conventional Trenching And Backfilling Methods Only. Sawcut Sidewalk And Install New Conduit Below Grade. Renovated Sidewalk Shall Meet Current ADA Requirements. See Typical Duct Sections Sheet 26 Of 34.

6 See General Electrical Note No. 6, On Sheet 3 Of 34.

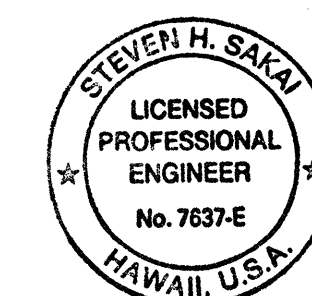
7 If Horizontal Directional Drilling Method Is Selected, Sawcut Sidewalk (Minimum 96"L x 96"W) Hand Excavated Pot Hole 42" Below Finish Grade To Verify Whether Conduits Will Conflict With Utility Line. (For Sewer Lines, Verify Depth) If Conduits Are Within 6" (36" For Sewer Lines) Vertically Of Utility Line, Provide 3" Concrete Encasement Over Utility Line. Provide Tar Paper Over Line Prior To Jacketing. (For Sewer Line RC Jackets, See City Standard Detail S-5).

8 Provide Minimum 5' Clearance Between Pole Base And Sewer Lateral.

APPROVED BY:

Dennis M. Nishimura  
CHIEF, WASTEWATER BRANCH, DPP m

5/15/03  
DATE



### License Expires

4/30/04  
THIS WORK WAS PREPARED BY ME  
OR UNDER MY SUPERVISION  
*Steven H. Allen*

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

ELECTRICAL PLAN XIV

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

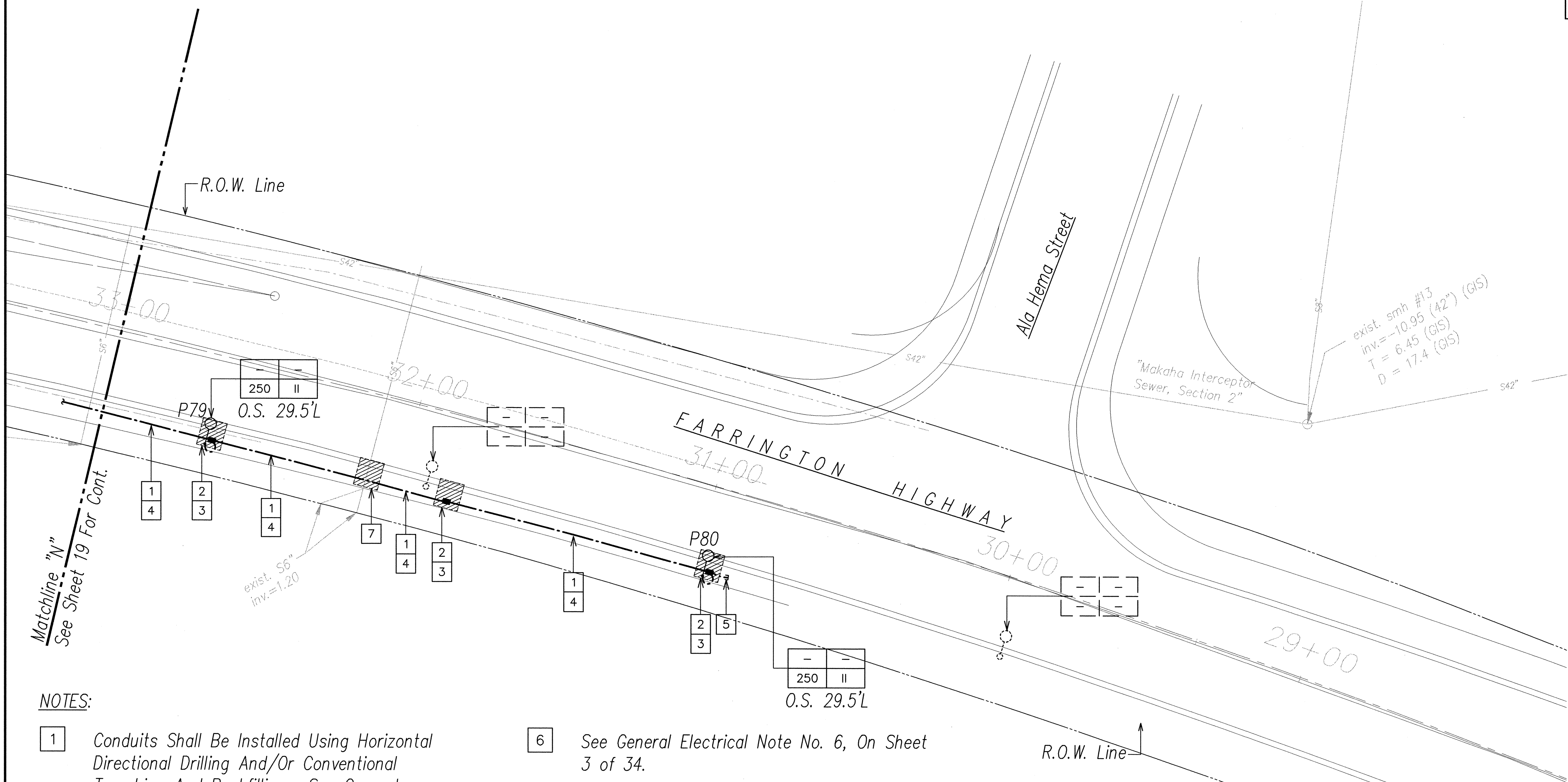
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Date:

**SHEET No. 19 OF 34 SHEETS**



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	14	18



NOTES:

- 1

Conduits Shall Be Installed Using Horizontal Directional Drilling And/Or Conventional Trenching And Backfilling. See General Note 4 On Sheet 3 Of 34.
- 2

Sawcut Existing Concrete Sidewalk From Back Of Curb To Right-Of-Way Line. Extent of Sawcutting, Demolition And Restoration Of Existing Concrete Sidewalk Indicated By Diagonal Lines Within Dashed Area. Actual Extents To Be Coordinated With Conditions In The Field.
- 3

Excavate Pit To Permit Insertion of Directional Boring Bit And Expose Sufficient Area (Minimum 96"W x 96"L) For Installation Of Street Light, Concrete Foundation And Pullbox.
- 4

2"C, 3-#1/0 RHW-USE & 1#6 Ground, And 2"C (Spare)
- 5

Provide 2-2"C Stubs, 5 feet from Pullbox.
- 6

See General Electrical Note No. 6, On Sheet 3 of 34.
- 7

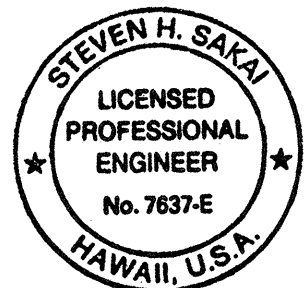
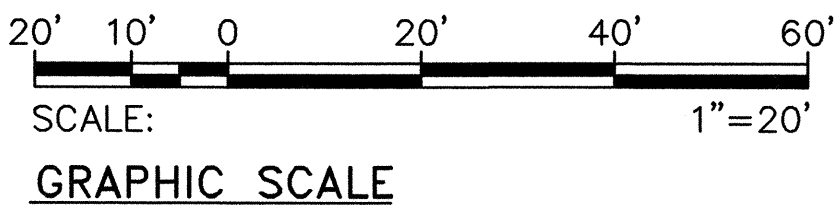
If Horizontal Directional Drilling Method Is Selected, Sawcut Sidewalk (Minimum 96"L x 96"W) Hand Excavated Pot Hole 42" Below Finish Grade To Verify Whether Conduits Will Conflict With Utility Line. (For Sewer Lines, Verify Depth) If Conduits Are Within 6" (36" For Sewer Lines) Vertically Of Utility Line, Provide 3" Concrete Encasement Over Utility Line. Provide Tar Paper Over Utility Line Prior to Jacketing. (For Sewer Line RC Jackets, See City Standard Detail S-5).

SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
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ELECTRICAL PLAN XV 6  
SCALE: 1"=20'-0"



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*Steven H. Sakai*

APPROVED BY:  
*Dennis M. Nakamura* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP *mn* DATE

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

HIGHWAYS DIVISION

ELECTRICAL PLAN XV

FARRINGTON HIGHWAY IMPROVEMENTS

NANAKULI TO MAKAHA

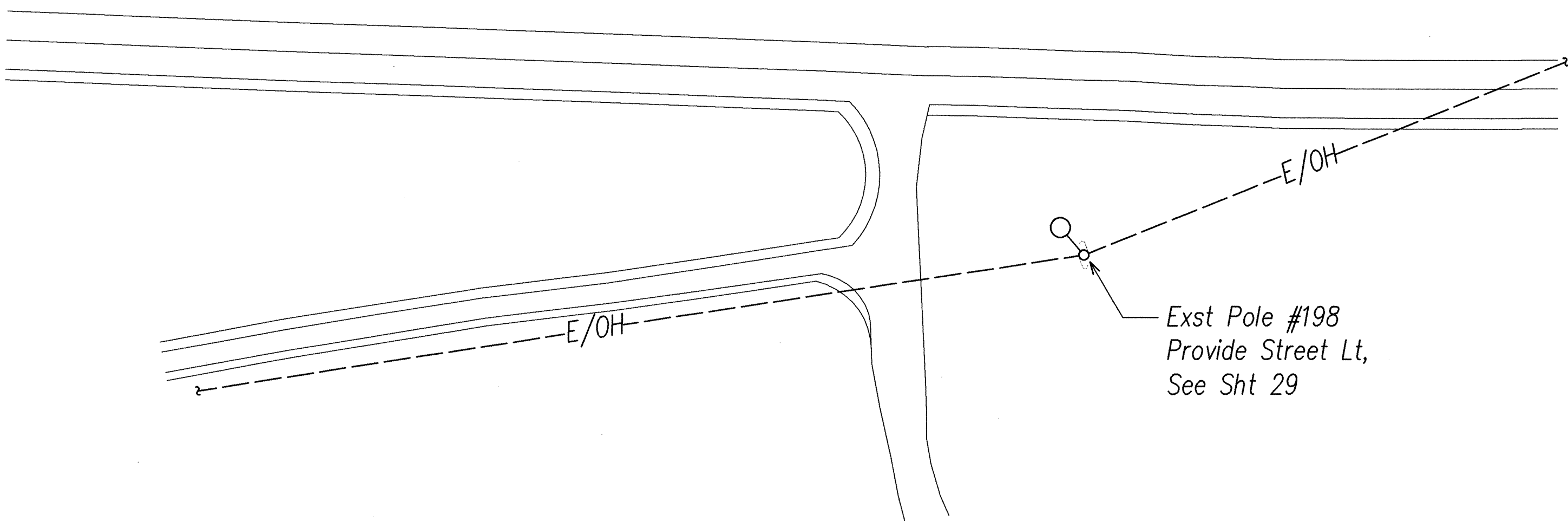
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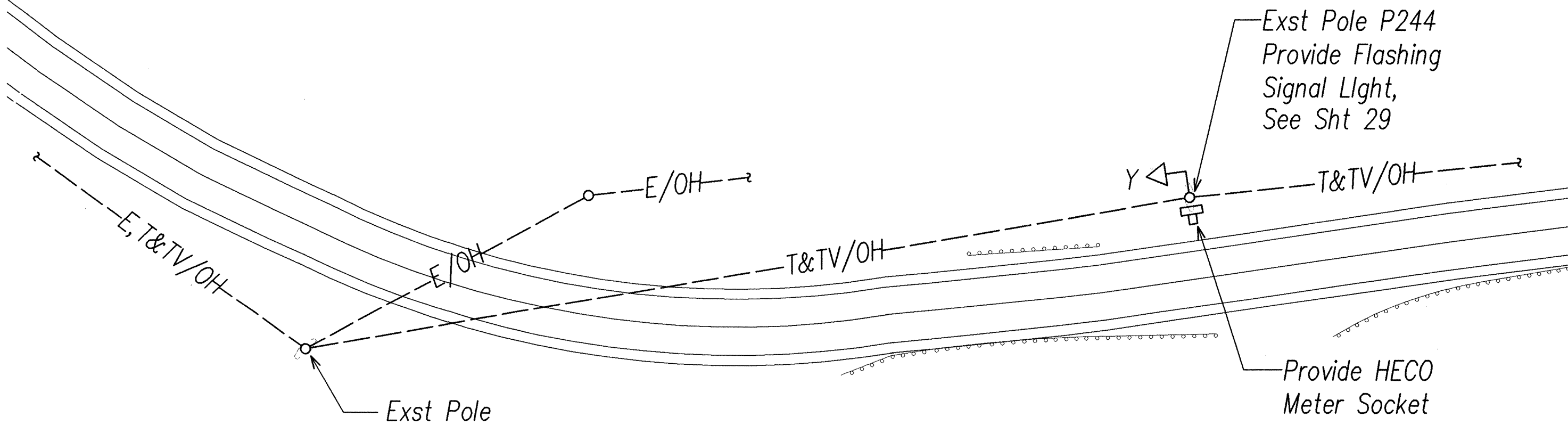
SHEET No. 20 OF 34 SHEETS



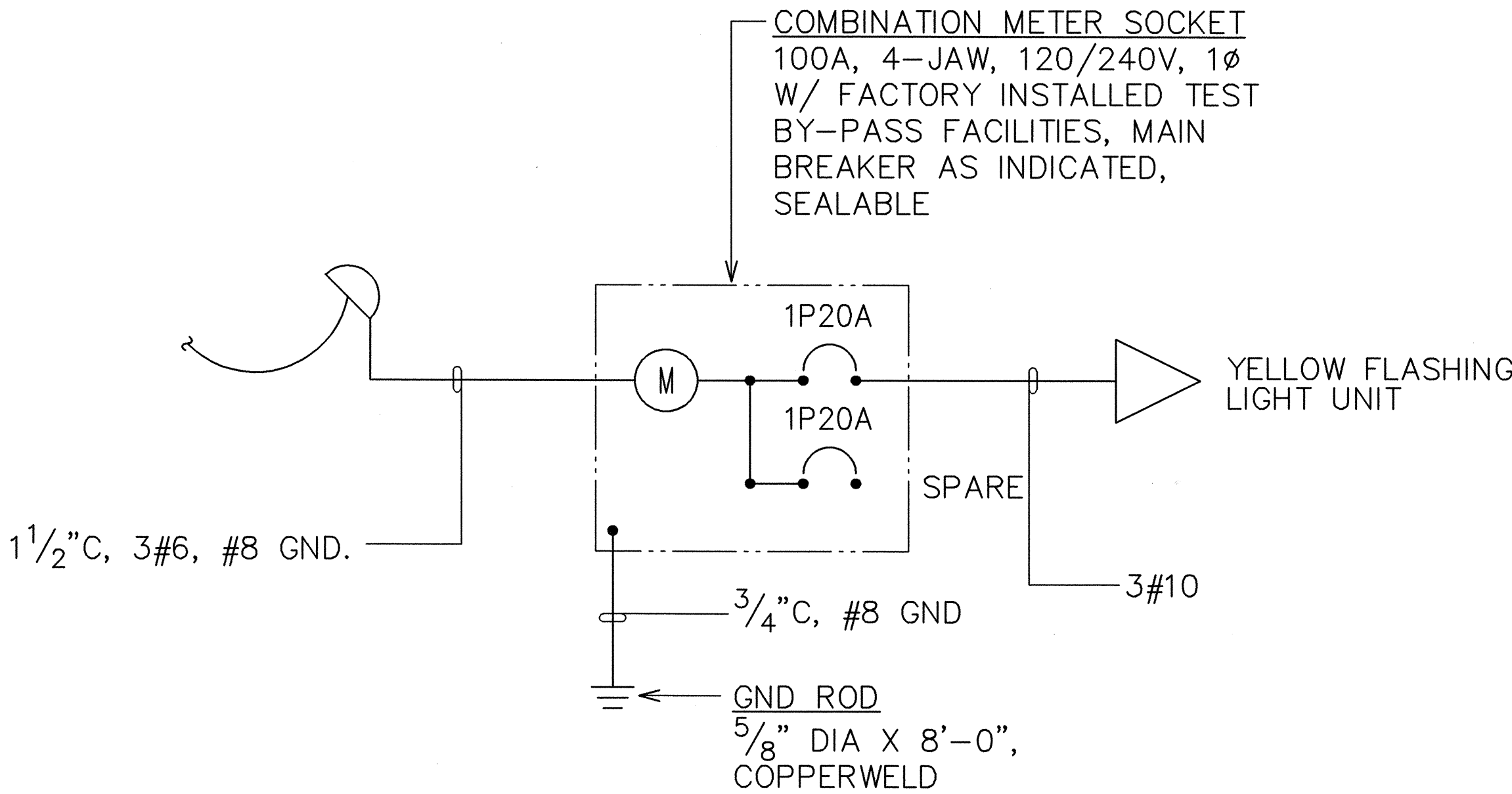
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	85	88



ELECTRICAL SITE PLAN XVI  
SCALE: 1"=40'



ELECTRICAL SITE PLAN XVII  
SCALE: 1"=40'



NOTES:

- ALL EQUIPMENT AND WIRING ARE NEW UNLESS OTHERWISE NOTED.

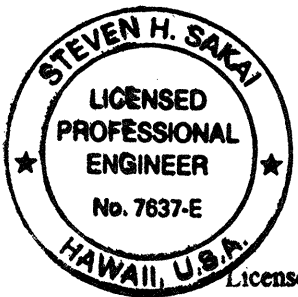
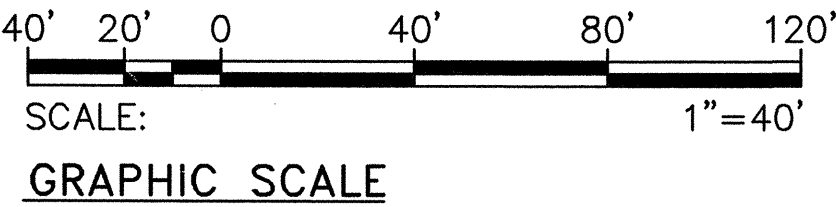
SINGLE LINE DIAGRAM

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General Notes:

- See Sheet 2 For General Location Of Poles.



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4/30/04  
License Expires

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
  
ELECTRICAL PLAN XVI & XVII  
  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)  
Scale: As Noted Date:

SHEET No. 21 OF 34 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	22	34

Notes:

- 1 Remove Existing Pedestrian Pushbutton Station And Provide ADA Compliant Pushbutton Station, See Detail B/22/30.
- 2 Provide ADA Compliant Pushbutton Station On Existing Pole.
- 3 Remove Existing Pedestrian Pushbutton Station.
- 4 Pedestrian Pushbutton Post. See Detail A/22/30.
- 5 1-2"C With Cable Complement Required For Pedestrian Pushbutton Station. Install Using Conventional Methods. See Sheet 26.

Existing Signal Indications

12" RYG Traffic Signal Head (L.E.D. Signal Assembly)	12" RYG Traffic Signal Head (L.E.D. Signal Assembly)	Pedestrian Signal Head
--->	--->	--->
A-1 B-1, B-3 D-1, D-2	B-1 C-1	A-2 B-4 D-3, D-4

Farrington Hwy/Ala Akau Street  
Traffic Diagram & Schedule



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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

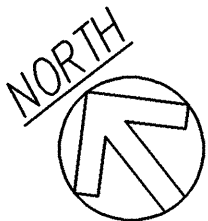
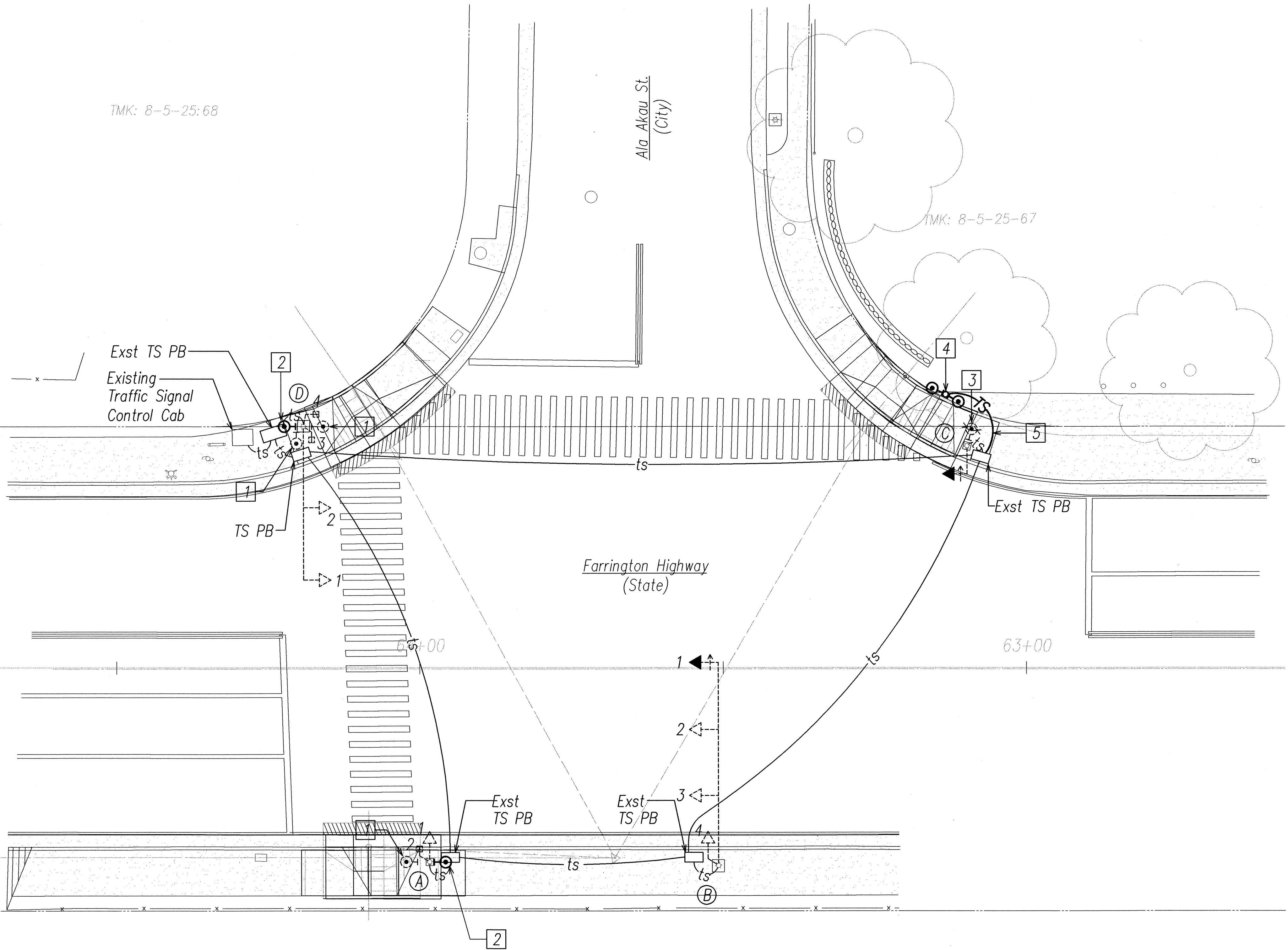
FARR HWY/ALA AKAU STREET  
TRAFFIC SIGNAL PLAN

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA

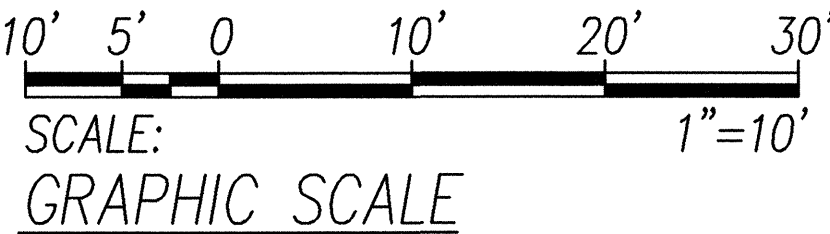
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 22 OF 34 SHEETS



FARRINGTON HWY/ALA AKAU STREET TRAFFIC SIGNAL PLAN  
SCALE: 1"=10'



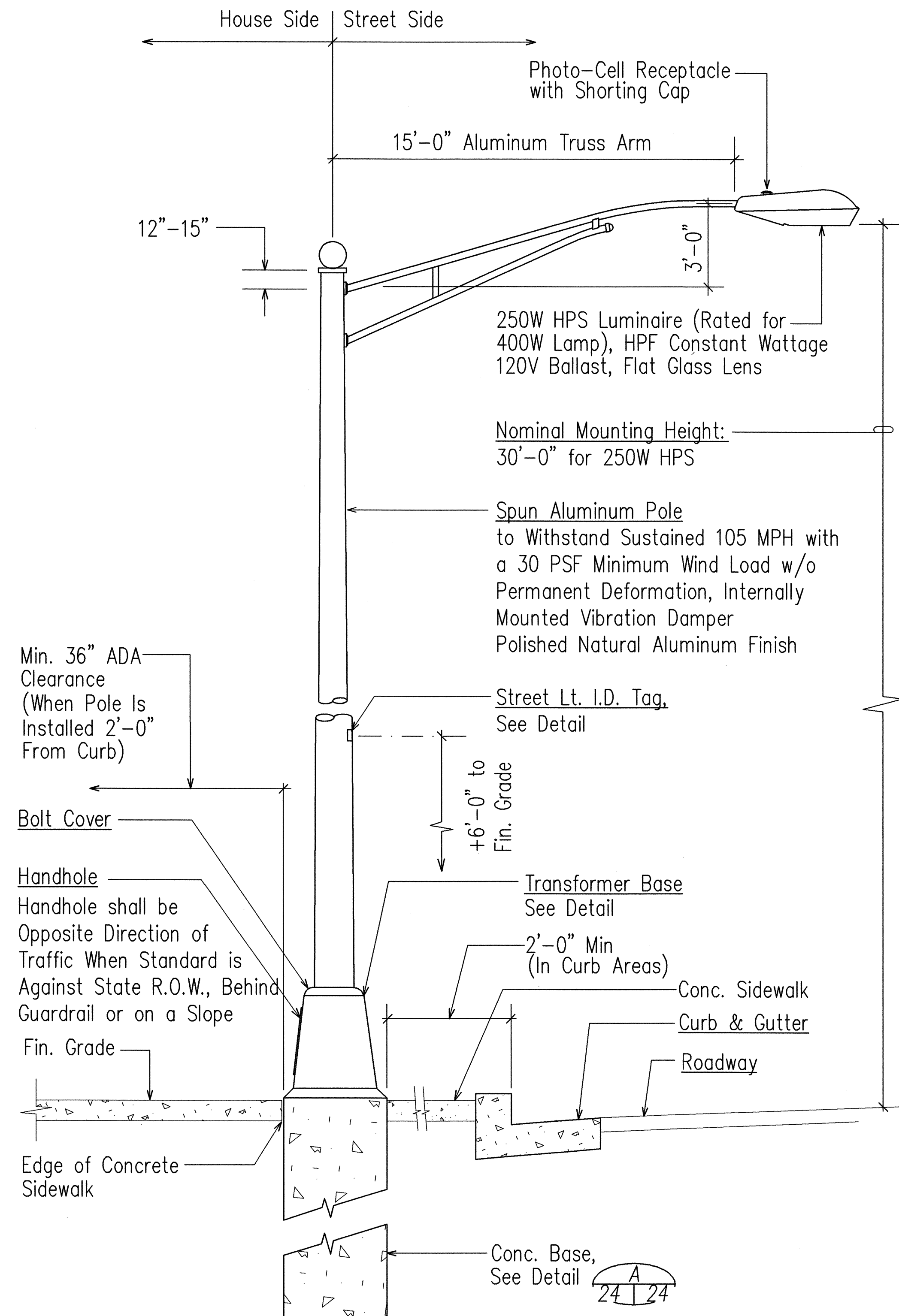
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	DESIGNED BY	
	QUANTITIES BY	
	NO.	

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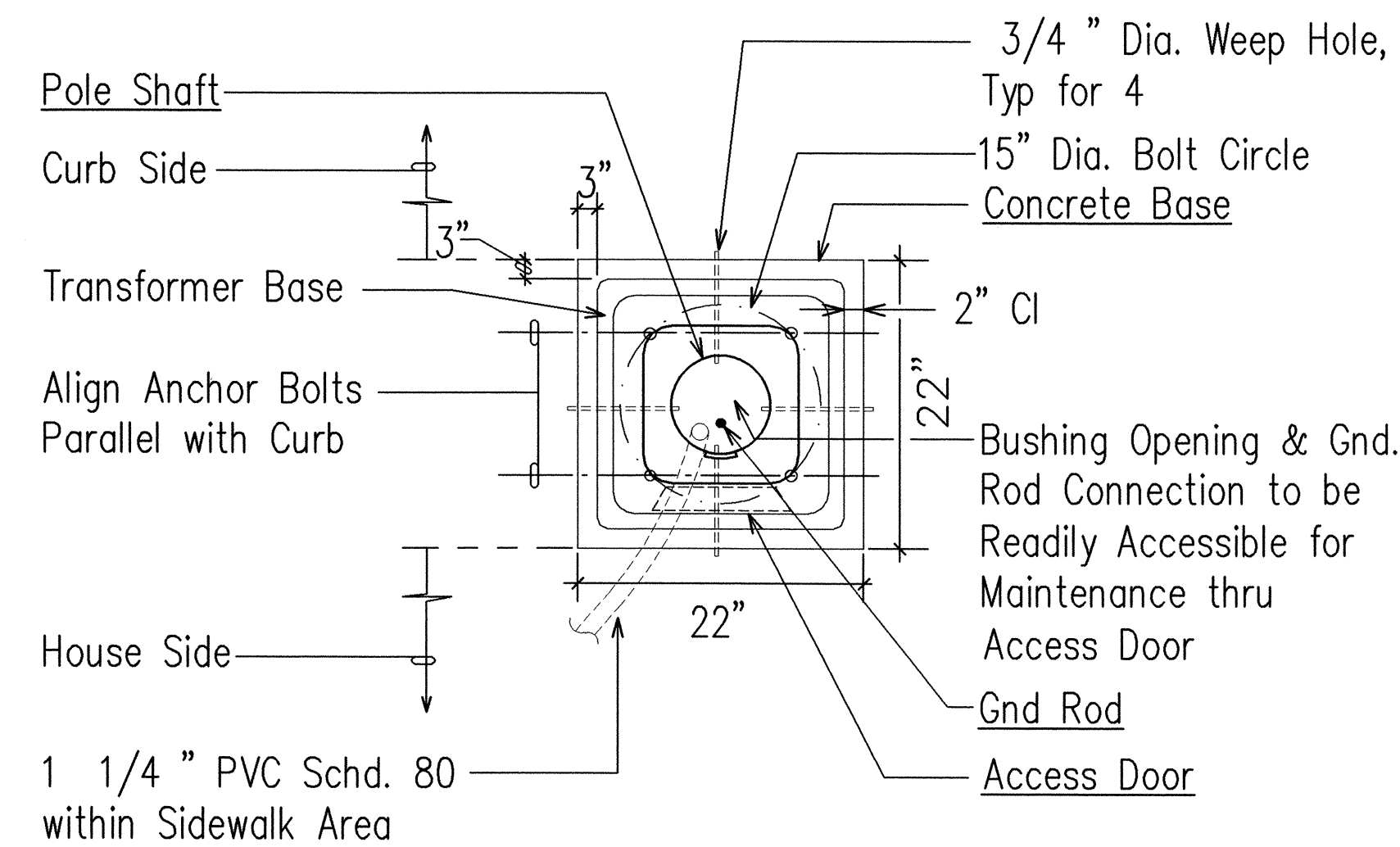




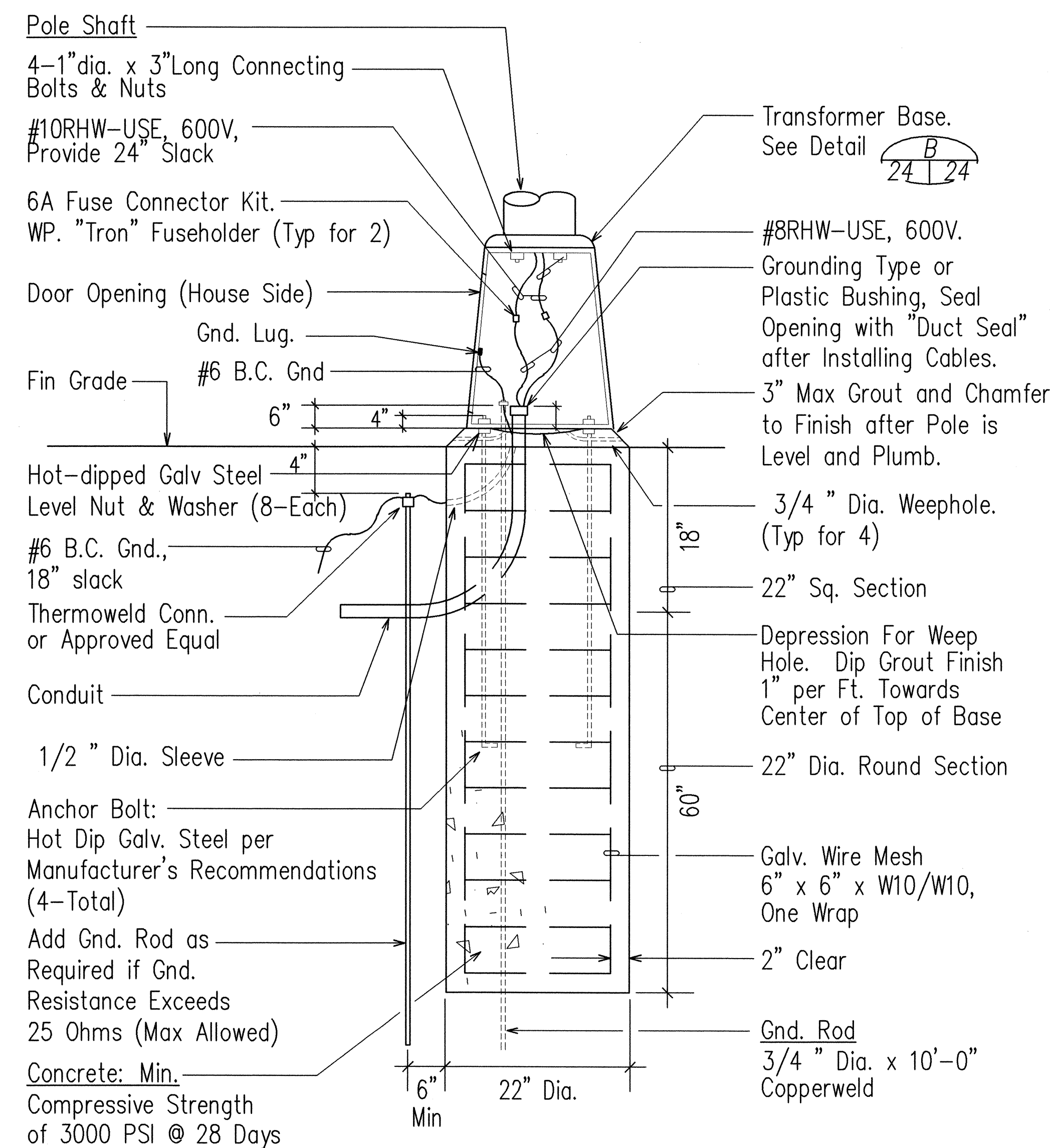
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HAWAII	HAW.	STP-093-1(18)	2003	24	41



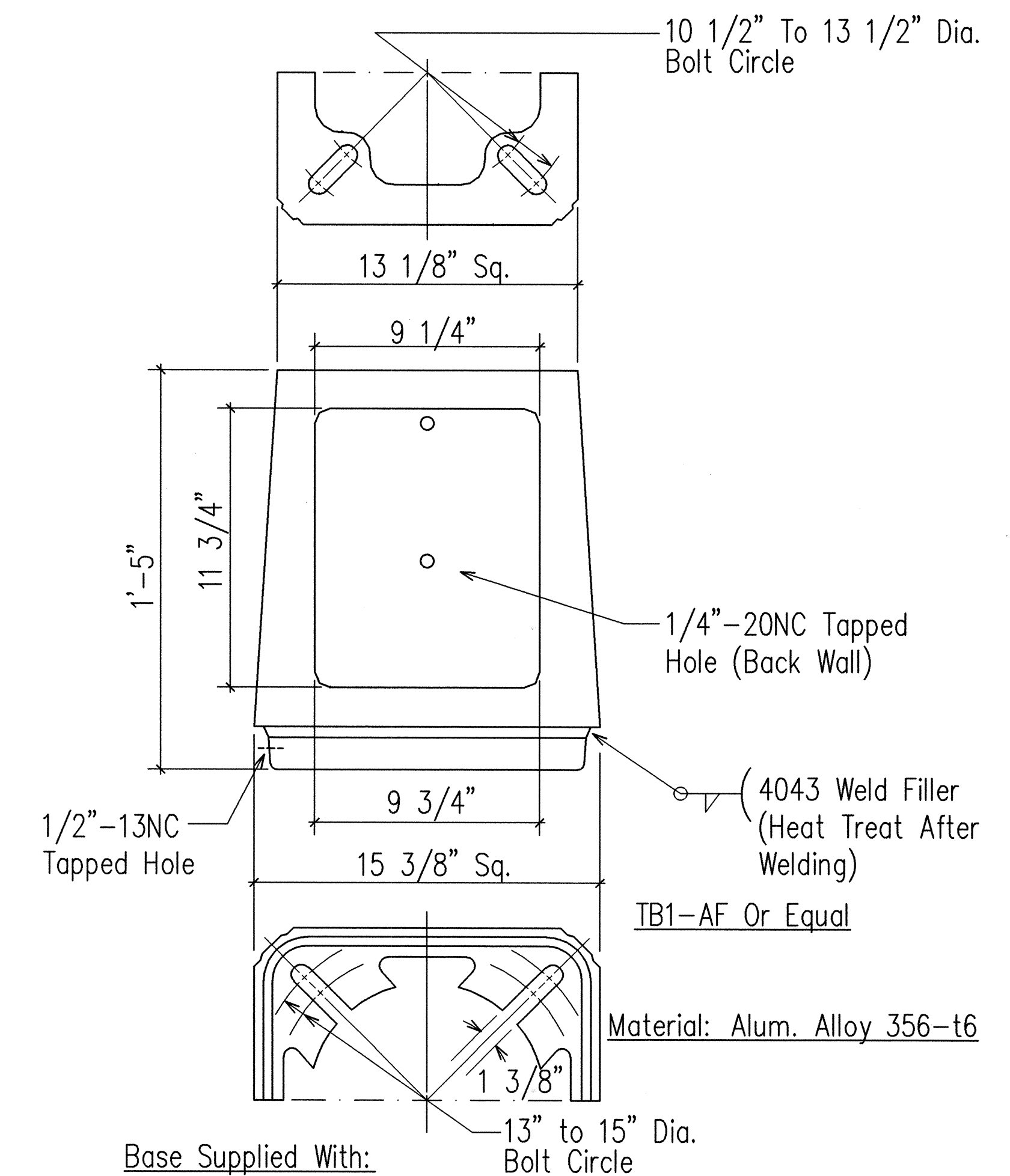
**TYPICAL STREET LIGHT STANDARD DETAIL**  
NOT TO SCALE



**PLAN VIEW**



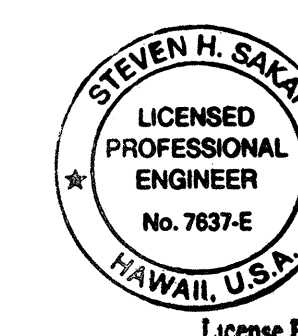
**TYPICAL CONCRETE BASE DETAIL**  
NOT TO SCALE



**Base Supplied With:**

1. Door and 1/4"-20NC S.S. Screw
2. Eight 1" Washers 1/2" Thick X 2 3/4" O.D. (Washers Mechanical Galvanized Per ASTM B454)
3. Four 1"-8NC X 3 3/4" Long Galvanized Steel Hex Head Bolts
4. Four 1"-8NC Galvanized Steel Hex Nuts
5. Four 1" Galvanized Steel Lock Washers
6. Four 1" X 2" O.D. Galvanized Steel Flatwashers
7. Transformer Base Shall Rated By AASHTO As Breakaway Type For Areas Without Curb Or Guardrail

**TRANSFORMER BASE DETAIL**  
NOT TO SCALE



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**MISCELLANEOUS DETAILS**

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA

F.A.I. Proj. No. STP-093-1(18)

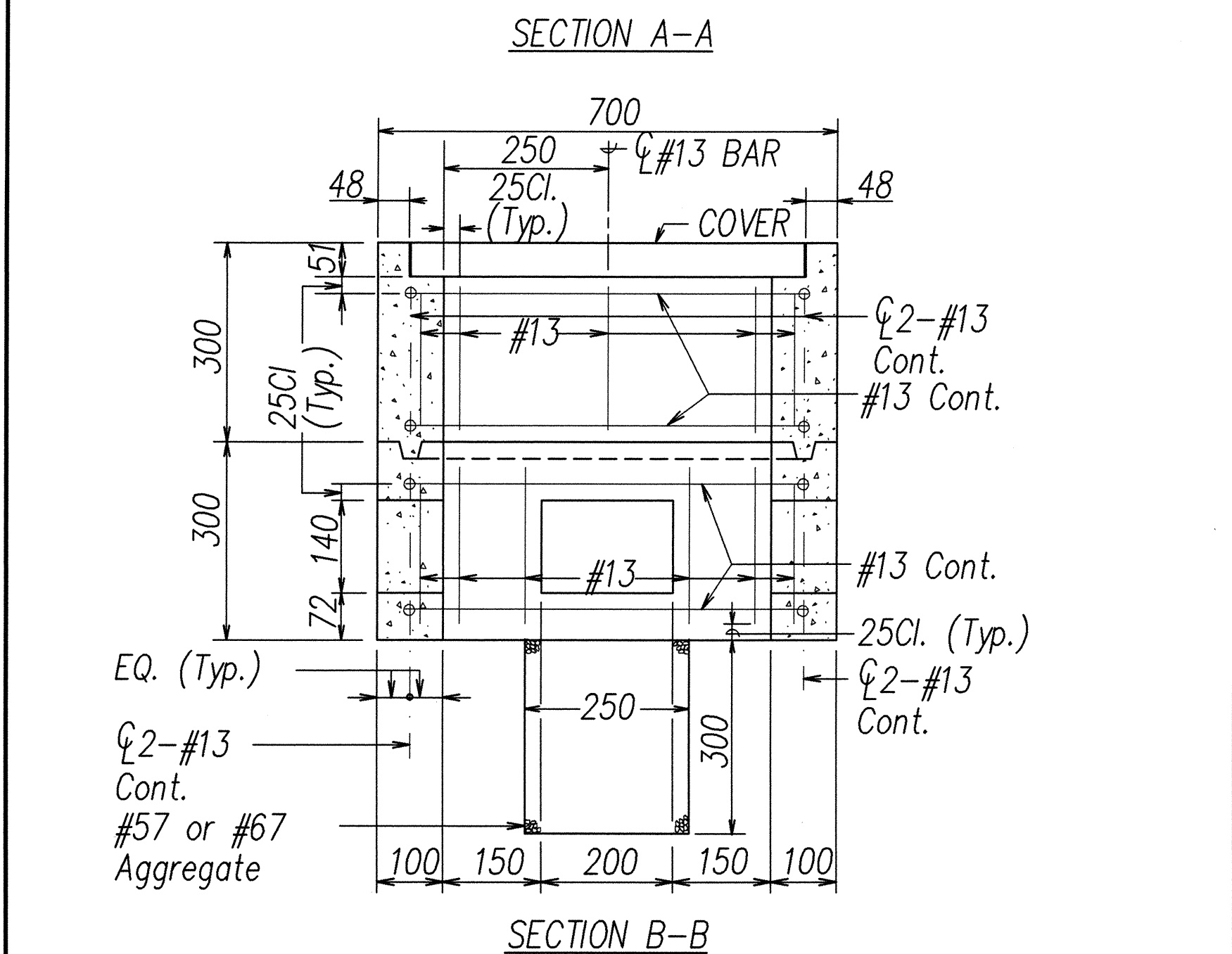
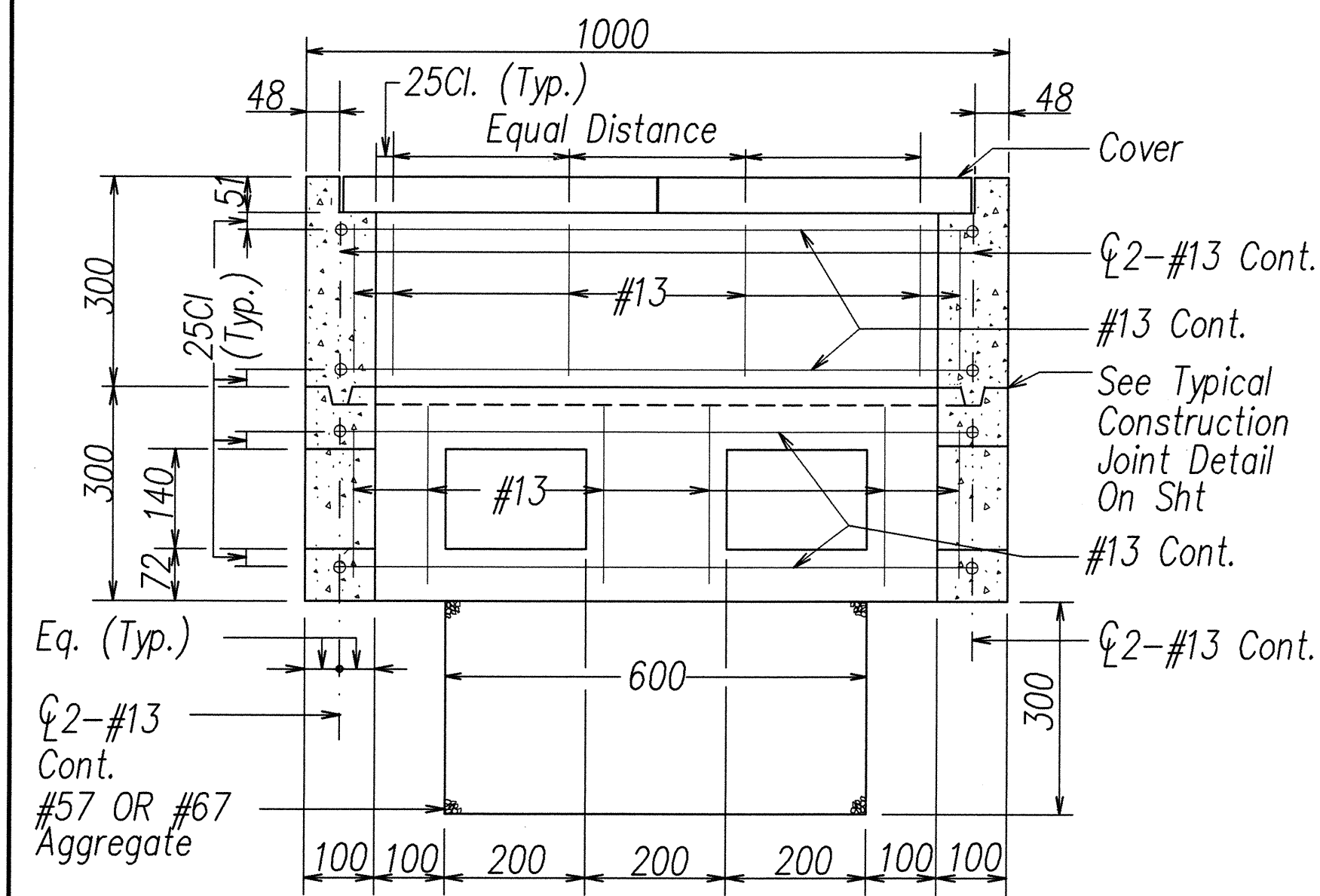
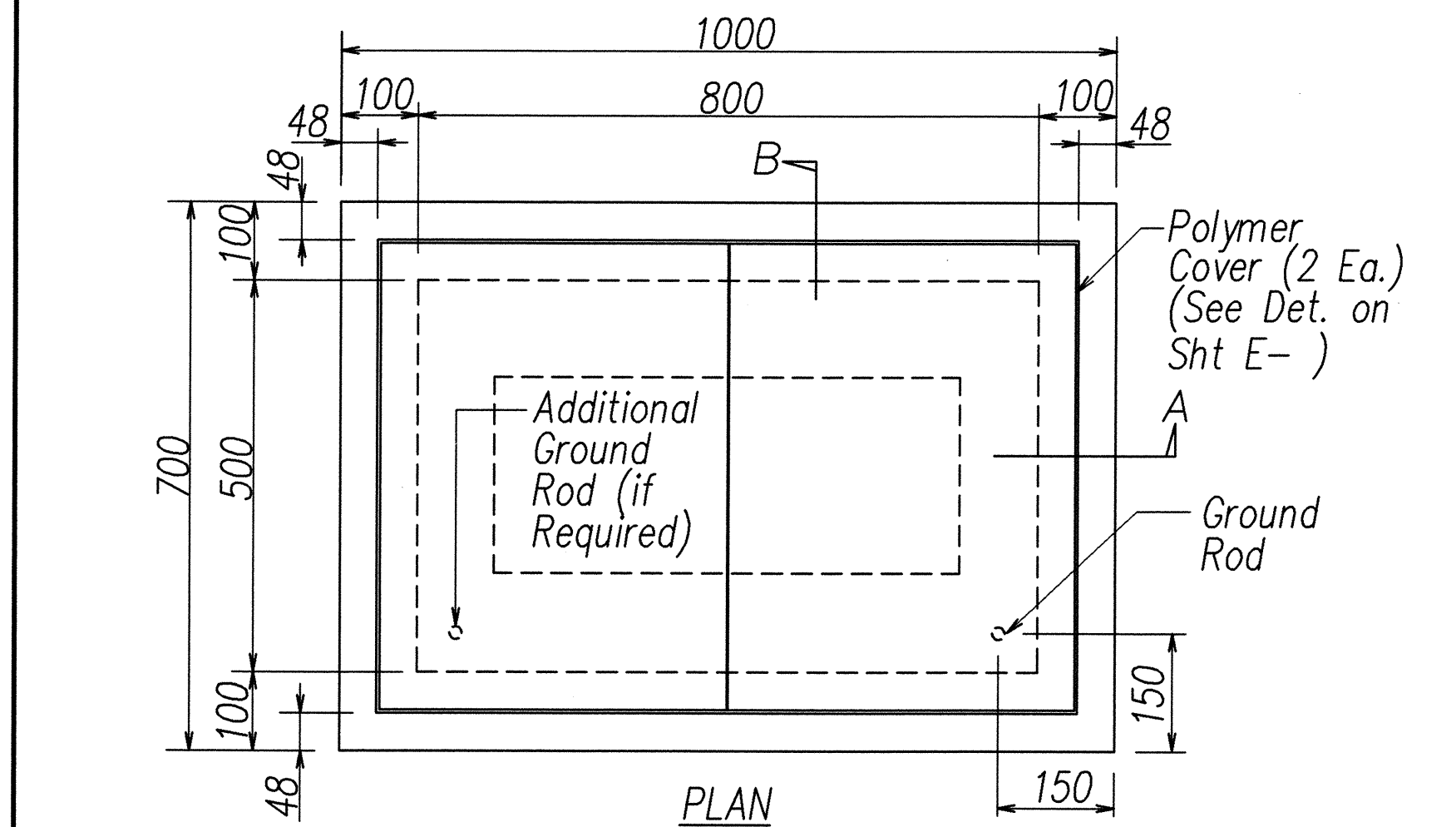
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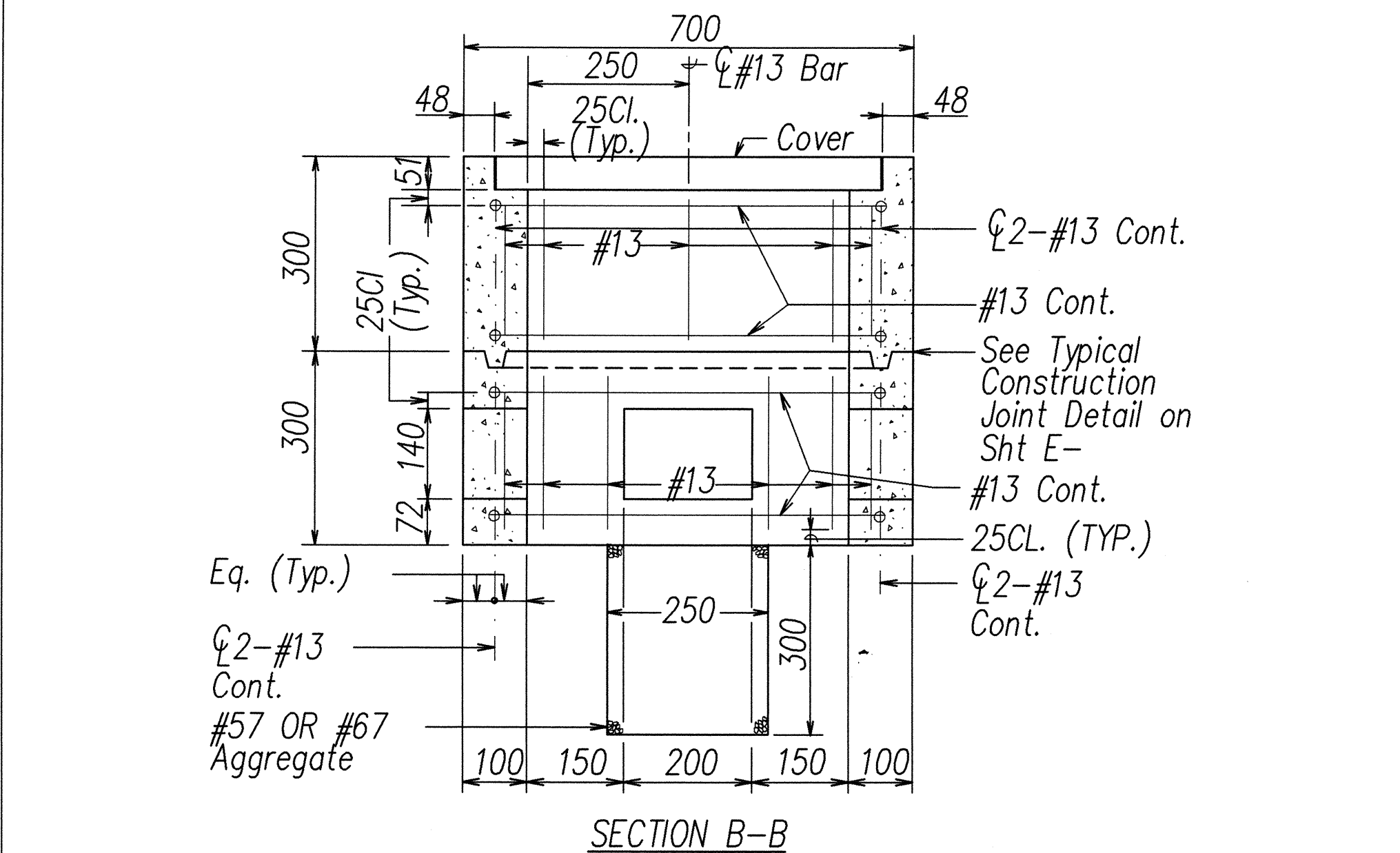
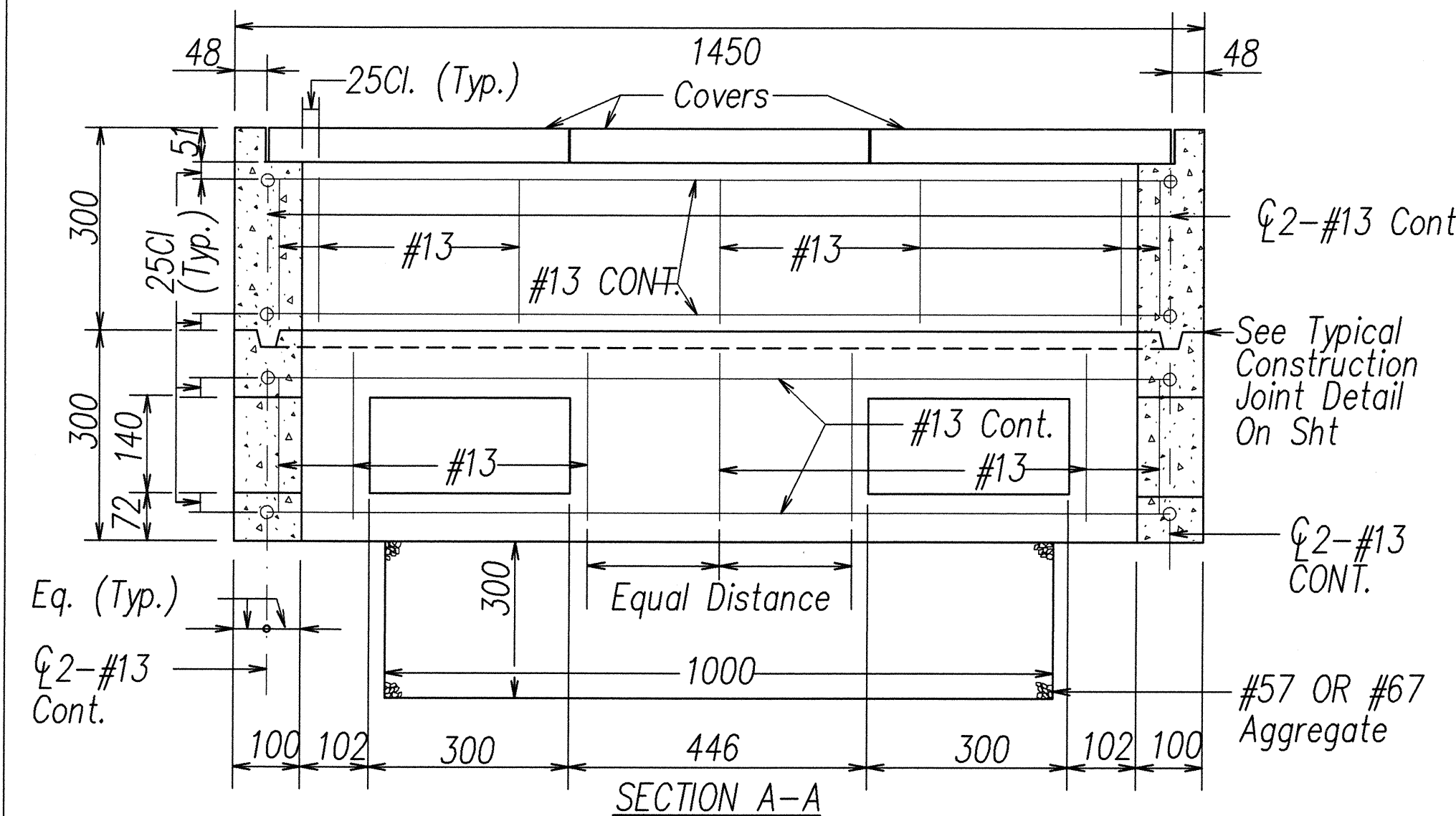
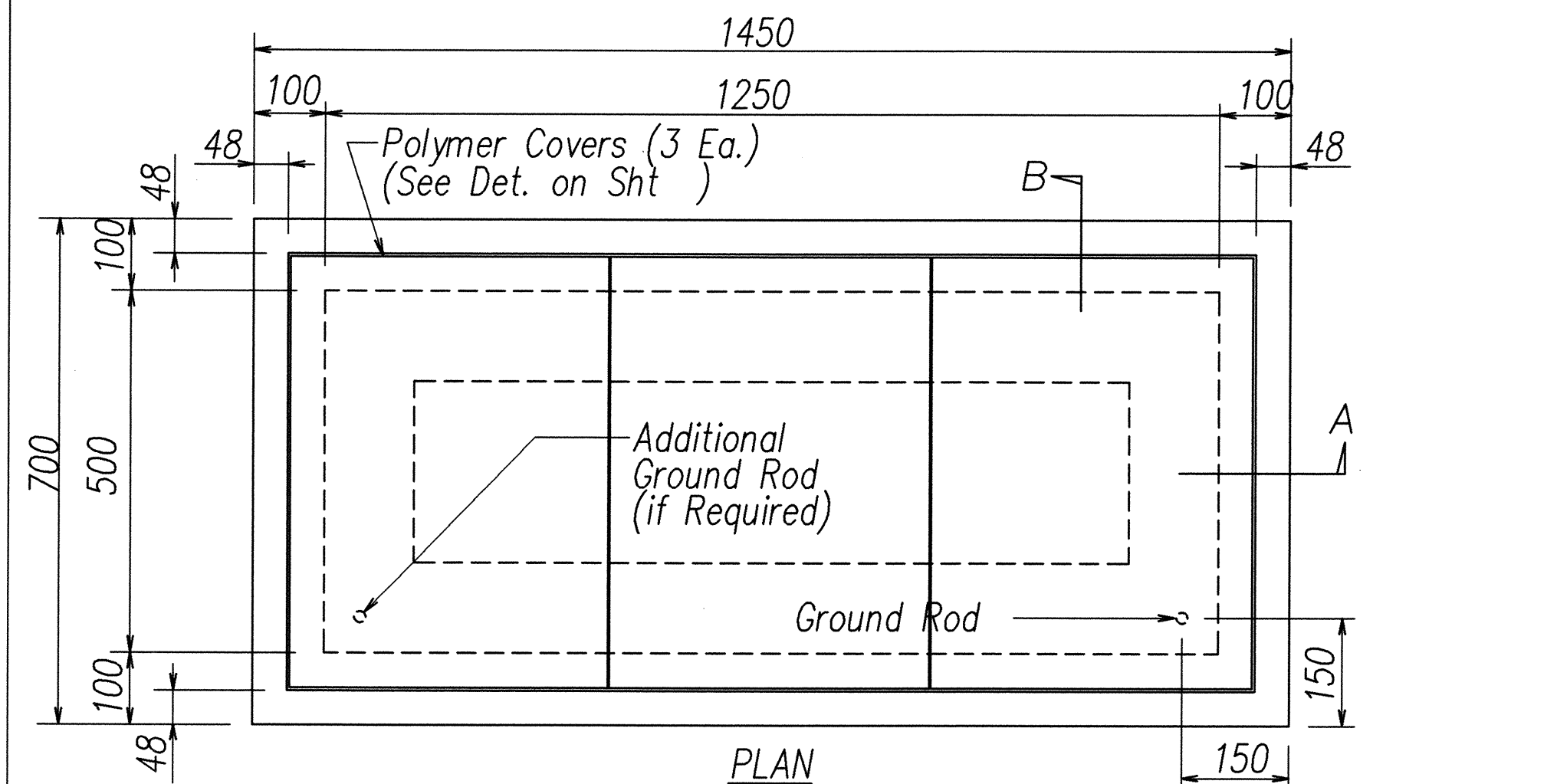
SHEET No. 24 OF 34 SHEETS



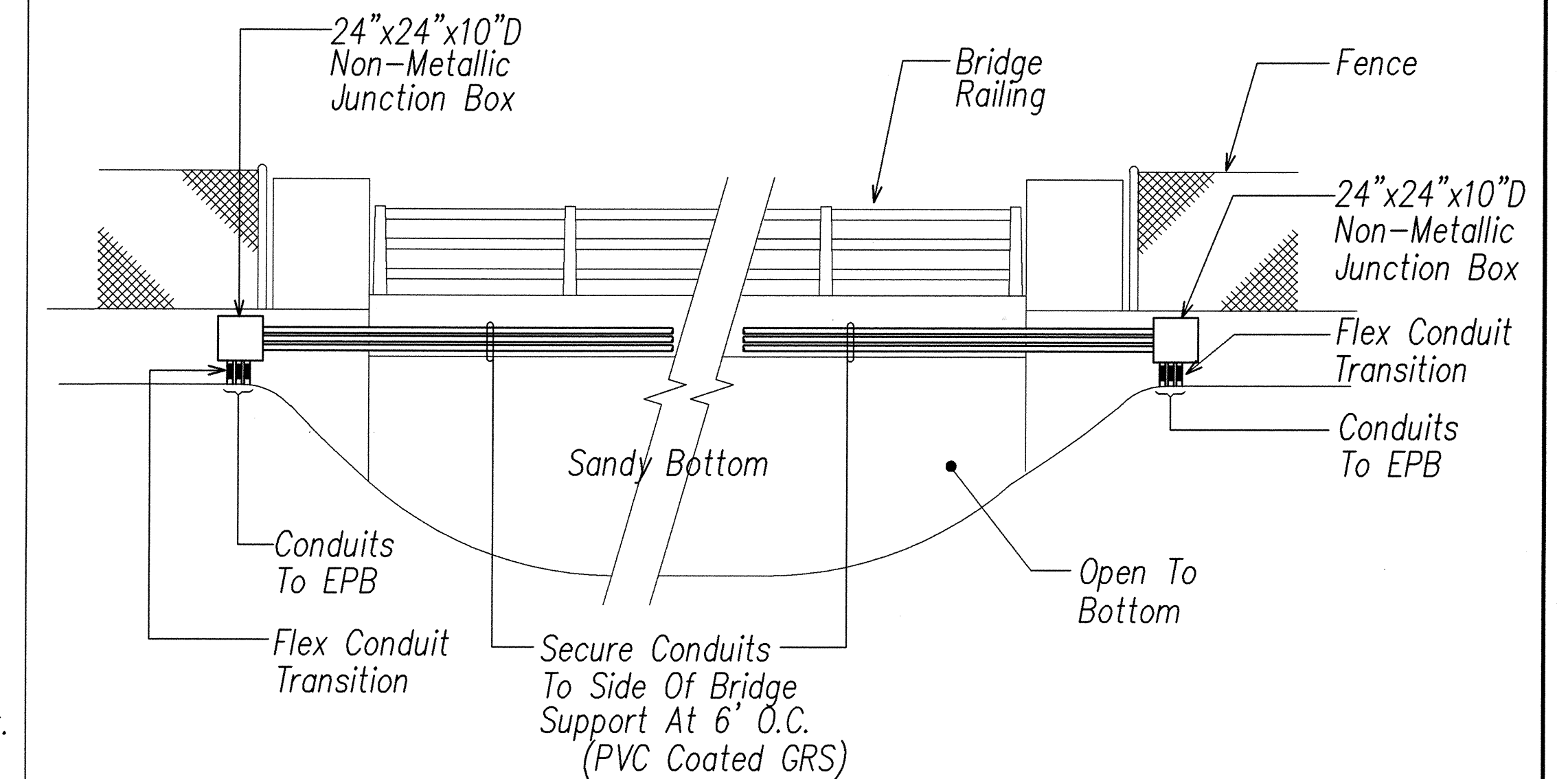
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	#	#



**TYPE "B" STREET LIGHT PULLBOX (OLD TYPE "C")**  
NOT TO SCALE



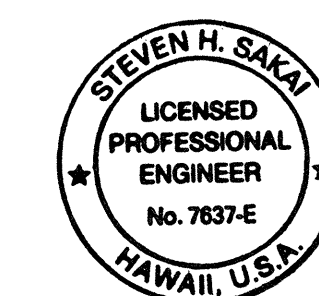
**TYPE "C" STREET LIGHT PULLBOX (OLD TYPE "D")**  
NOT TO SCALE



**CONDUIT INSTALLATION DETAIL - MAKAHA BRIDGE (South Elevation)**  
NOT TO SCALE

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DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

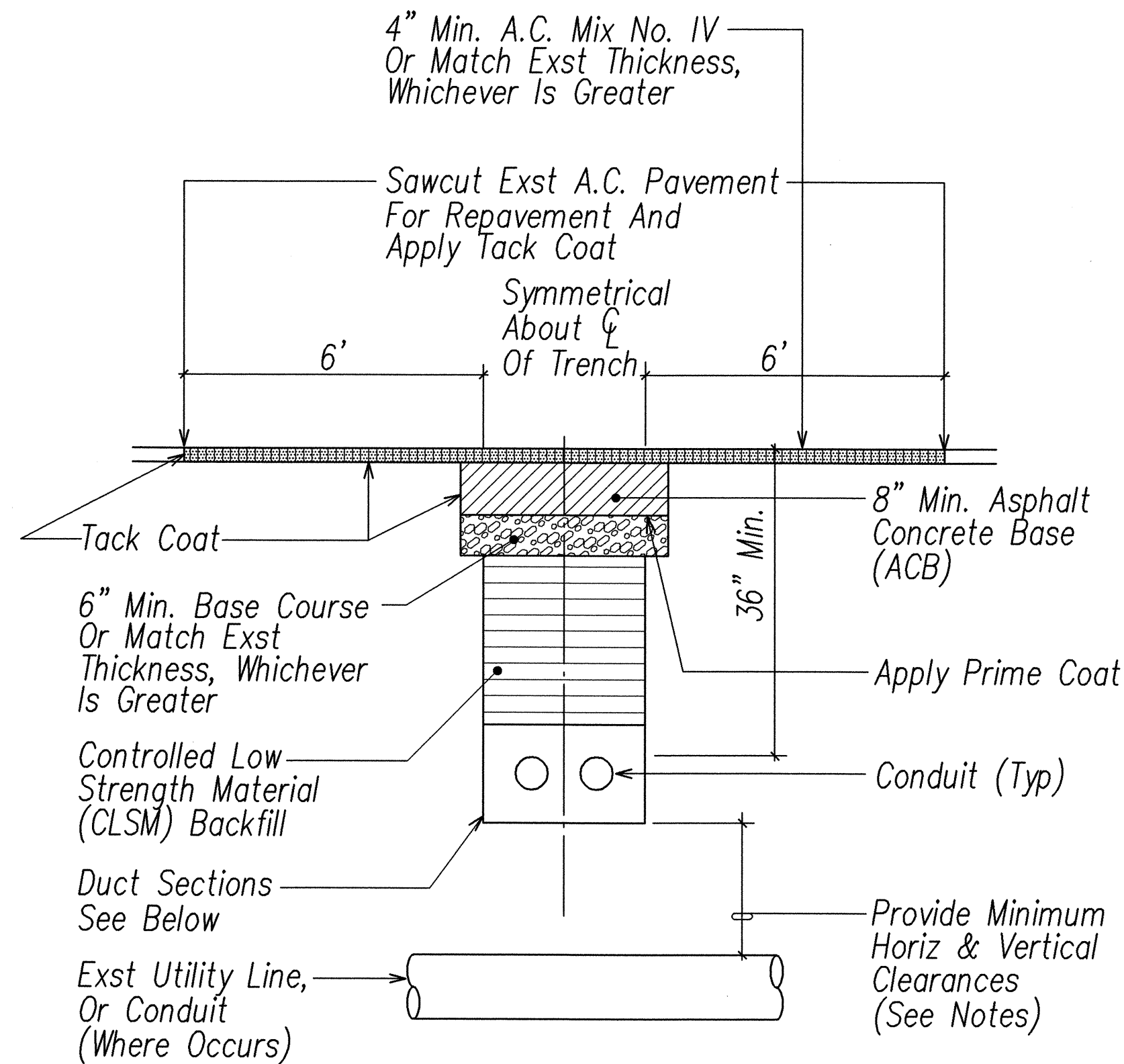
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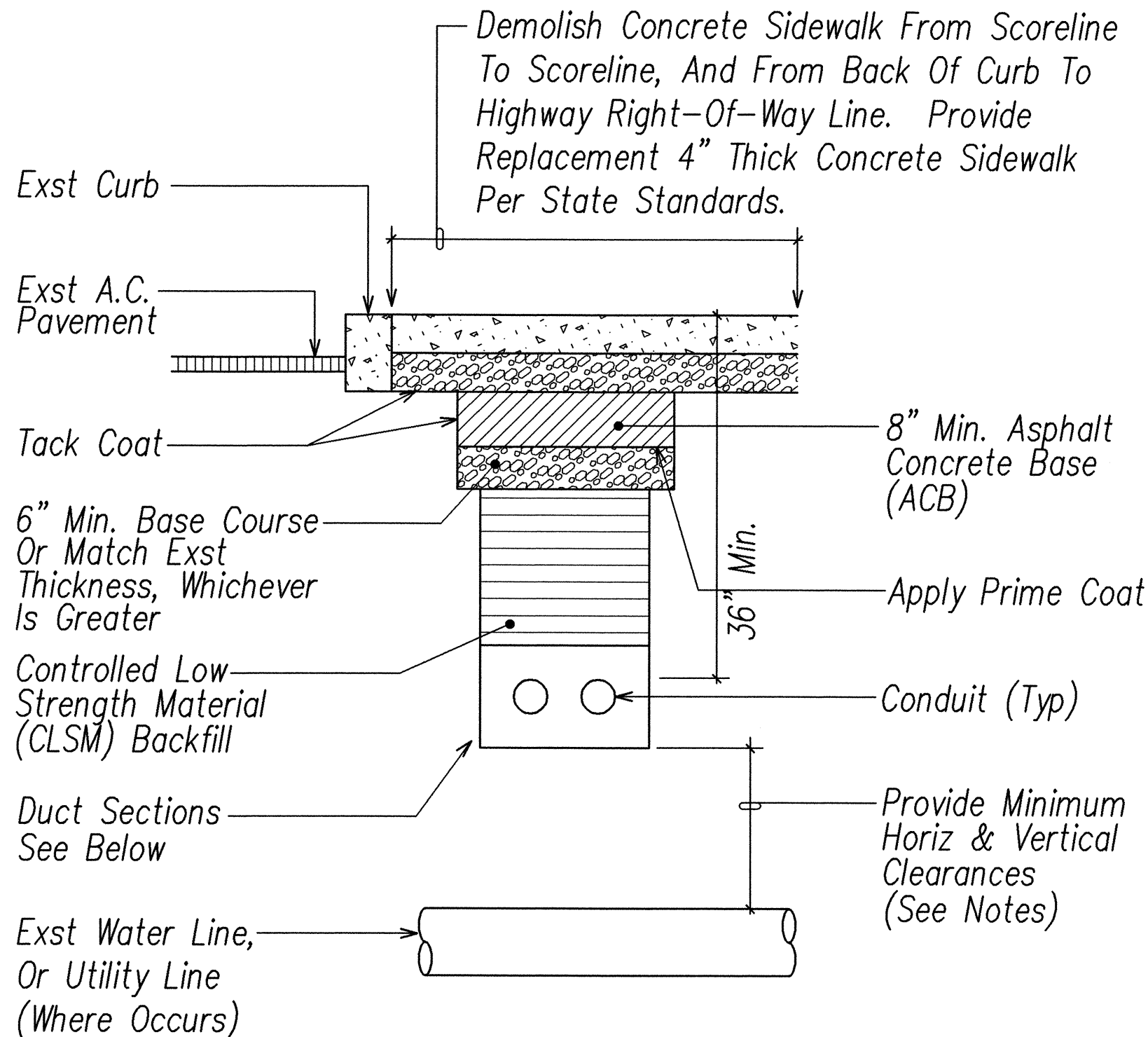
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION  
Date: 4/30/04  
Signature: [Signature]

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
MISCELLANEOUS DETAILS	
FARRINGTON HIGHWAY IMPROVEMENTS NANAKULI TO MAKAHA F.A.I. Proj. No. STP-093-1(18)	
Scale: As Noted	Date:
SHEET No. 25 OF 34 SHEETS	

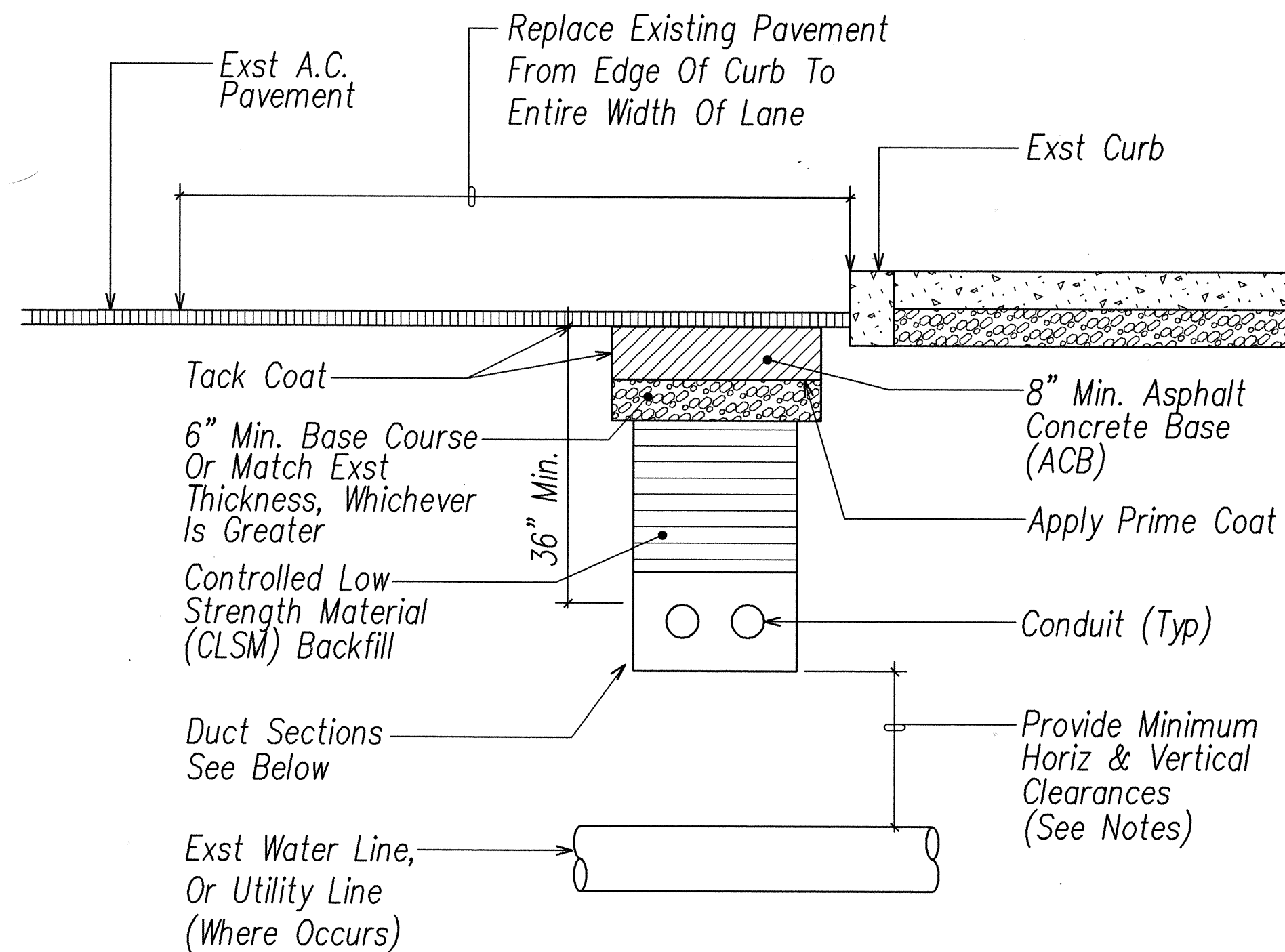
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HAWAII	HAW.	STP-093-1(18)	2003	80	80



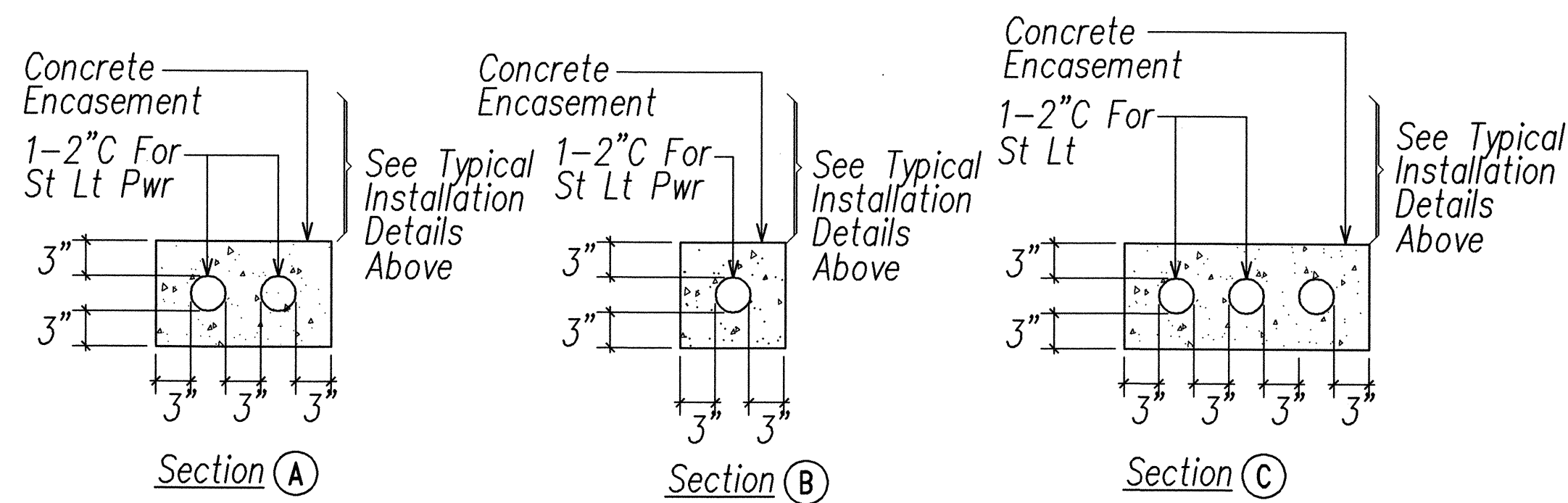
**TYPICAL POWER CONDUIT ROADWAY CROSSING DETAIL**  
NOT TO SCALE



**TYPICAL POWER CONDUIT SIDEWALK INSTALLATION DETAIL**  
NOT TO SCALE

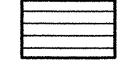

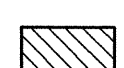
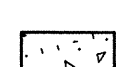


**TYPICAL POWER CONDUIT IN ROADWAY INSTALLATION DETAIL**  
NOT TO SCALE

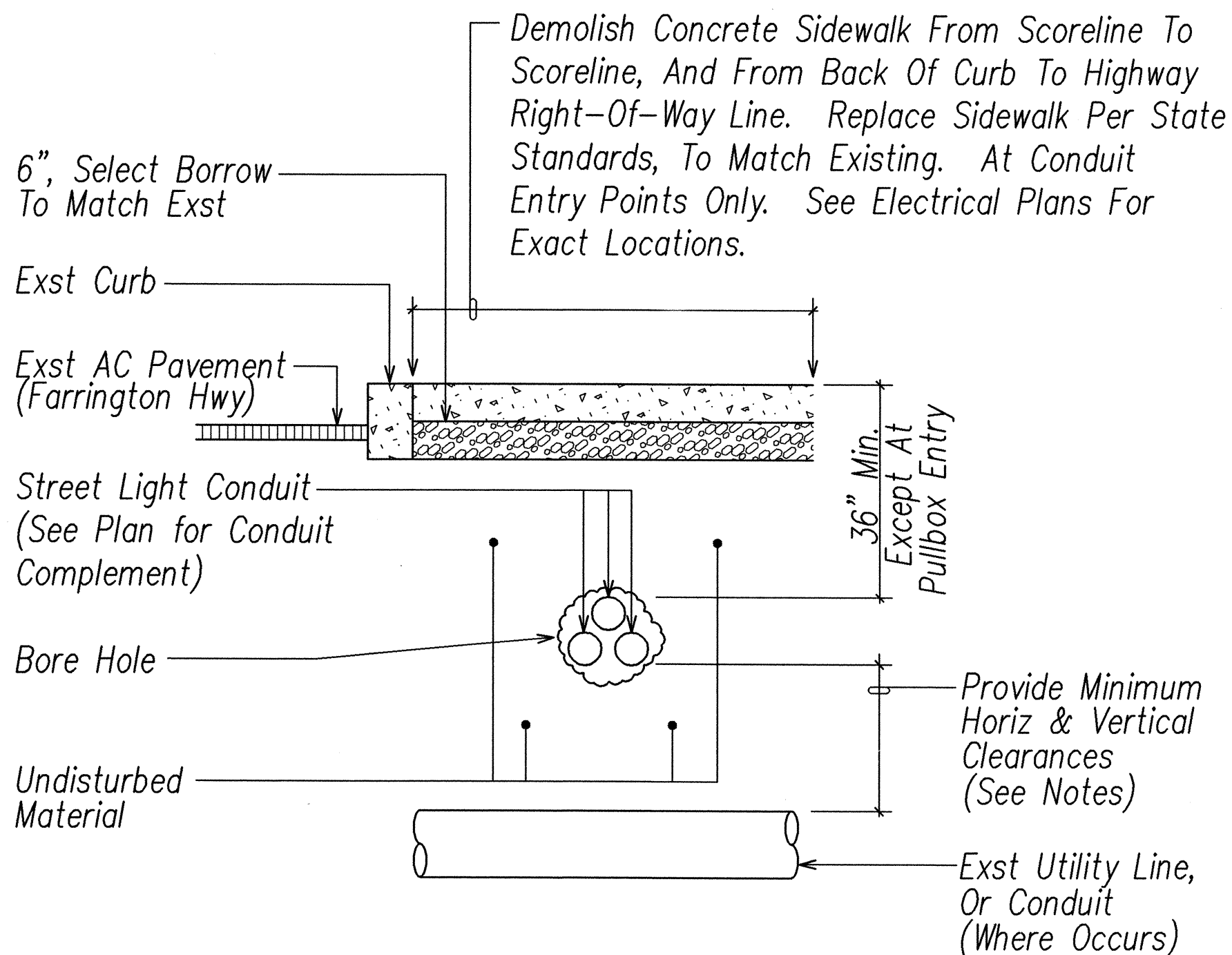


See Plans For Number Of Conduits

**Backfill Notes:**

-  Type "A" Backfill – Earth & Gravel. Rock Size To Be 1" Maximum & 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 Compressive Strength @ 28 Days.

**DUCT SECTIONS**  
NOT TO SCALE



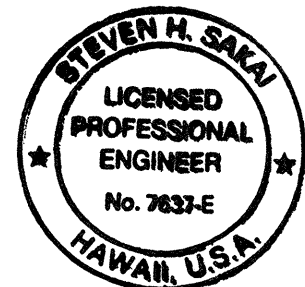
**HORIZONTAL DIRECTIONAL DRILLING – TYPICAL SECTION**  
NOT TO SCALE

**Clearance Notes:**

1. Provide Minimum 36" Horizontal And Vertical Clearance Between New Conduit And Existing Sewer Lines, Laterals And Manholes.
2. Provide Minimum 36" Horizontal And Vertical Clearance Between New Conduit And Existing Water Lines, Laterals, Boxes And Manholes.
3. Provide Minimum 24" Horizontal And Vertical Clearance Between New Conduit And Existing Drain Lines, Laterals And Basins.
4. Provide Minimum 24" Clearance Between New Conduit And Existing HECO, Verizon, Oceanic, and DTS Conduits And Manholes.

DATE	_____
SURVEY PLOTTED BY	_____
DRAWN BY	_____
DESIGNED BY	_____
QUANTITIES BY	_____
CHECKED BY	_____
ORIGINAL PLAN	_____
NOTE BOOK	_____
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LAST SAVE: 02/26/03 @ 14:01:32 BY: LA PROJ SC 1-0-01  
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Signature: *Steven H. Sakai*  
License Expires: \_\_\_\_\_

APPROVED BY:  
*Dennis M. Nishimura* 5/15/03  
CHIEF, WASTEWATER BRANCH, DPP DATE

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

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

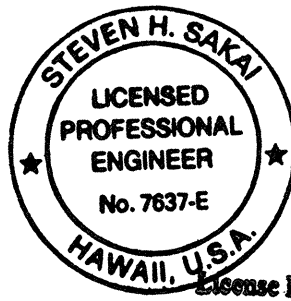
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	#1	#8

STREET LIGHTING NOTES:

1. Connection To Street Lights Shall Be By HECO And Paid For By The Contractor.
2. All Luminaires Shall Be High Pressure Sodium Type With Wattage And IES Type Distribution As Indicated.
3. Contractor Shall Stencil The Date Of Installation On The Bottom Of Photocell.
4. Luminaire And Pole Count:  
64 Poles:      65 Luminaires:      65 Brackets:
5. Contractor Shall Maintain One Set Of Approved Plans At The Project Site At All Times During Construction Work.
6. Contractor Shall Arrange With HECO To Energize Street Lights A Minimum Of Six Hours For Final Inspection And Acceptance. Contractor Shall Pay For All Testing Costs.
7. Final Acceptance Inspection Will Be Undertaken Only After All Work Has Been Completed And The "As-Built" Tracings Have Been Submitted To The State Of Hawaii Department Of Transportation Highways Division.
8. The Contractor Shall Measure And Record The Ground Resistance At Each Standard With No External Ground Wires Connected To The Ground Rod. Contractor Shall Schedule Ground Resistance Measurements 48 Hours In Advance And Shall Not Proceed With Measurements Until Approval Is Granted. Schedules Are Subject To Change Depending Upon Weather Conditions. Reports Shall Include Name Of Personnel Conducting The Test, Meter Type And Serial Number, Date Of Test And Soil Conditions. Test Results Shall Be Certified By The Contractor And Submitted To The Contracting Officer.
9. Contractor Shall Not Backfill Trenches Until Approval Is Granted By The Project Inspector.
10. All Concrete Work Shall Be Scheduled At Least 24 Hours In Advance. Concrete Shall Not Be Poured Until Approval Is Granted By The Project Inspector.
11. All Neutral Conductors Shall Have Solid White Insulation. Any Other Method Of Identification Is Unacceptable.
12. All Work Shall Be Performed By A Duly Licensed Electrician.
13. Trench Dirt And Material Will Not Be Allowed To Be Stored On Roadway Or Sidewalk.
14. Temporary Trench Patches Shall Match Grade.
15. Submit Shop Drawings For All Street Lighting Components Including Luminaires, Lamps, Photocell And Mast Arms, For Approval.



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 4/30/04

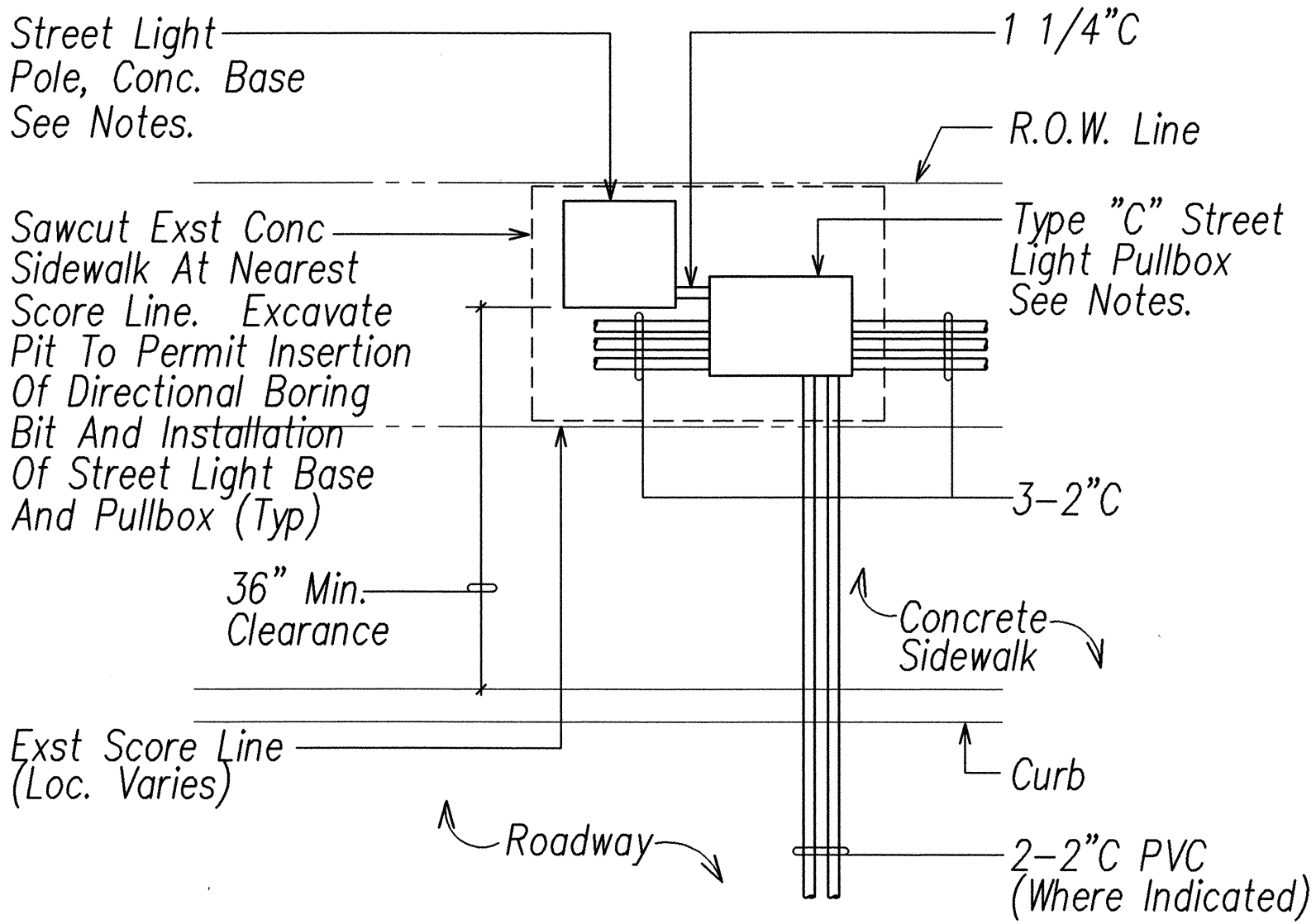
STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MISCELLANEOUS DETAILS

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted      Date:

SHEET No. 27 OF 34 SHEETS

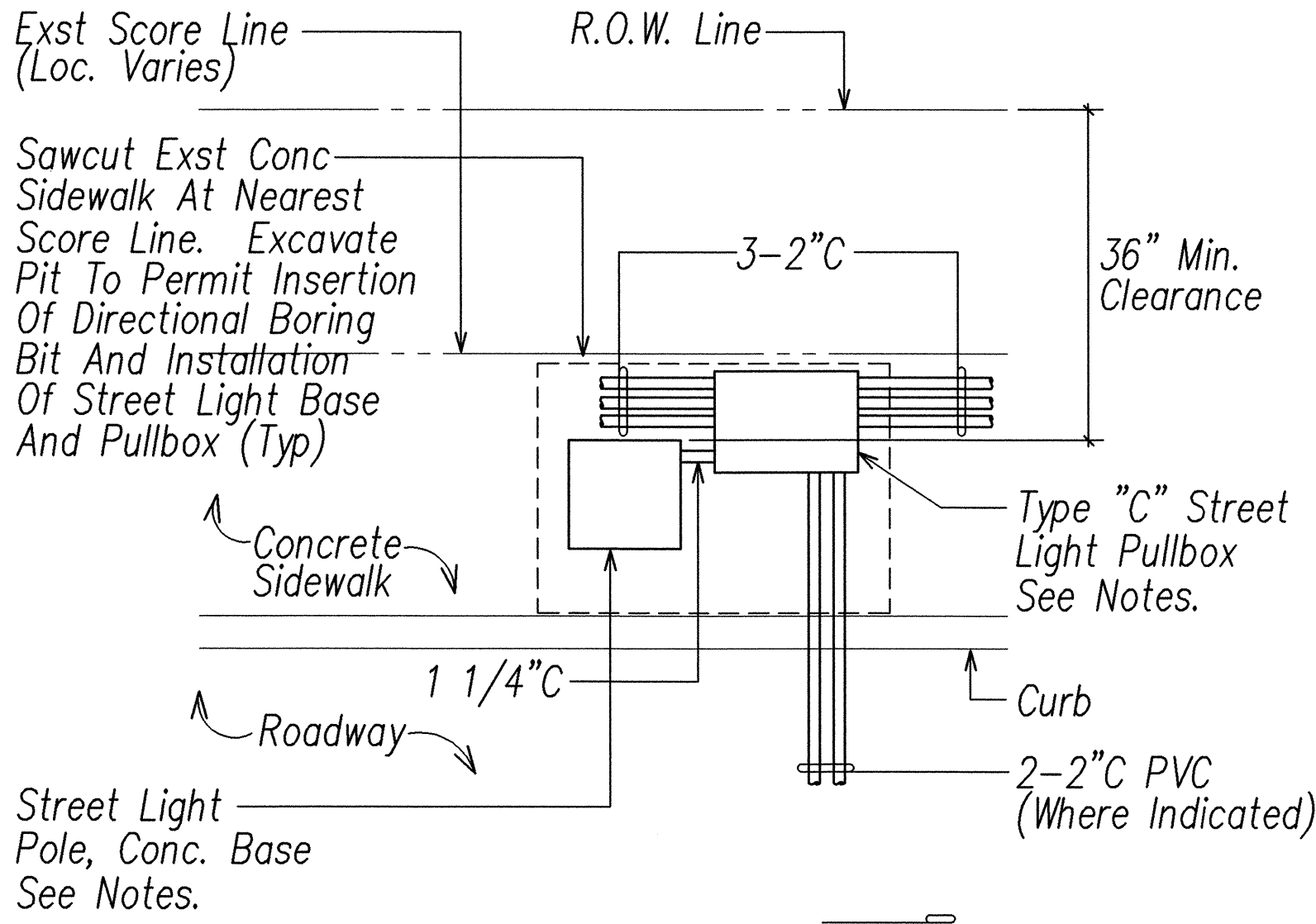


Note:

1. Condition 2 Occurs When New Street Light Pole Is To Be Installed Set Back From Curb Line. See Electrical Plans For Pole Locations. Conditions May Be Reversed In Some Locations, See Electrical Plans For Locations.
2. Contractor Shall Be Permitted To Adjust Location Of Street Light Pole Bases And Pullboxes To Maintain Required Clearances, Or Clear Existing Obstructions.

STREET LIGHT LAYOUT PLAN (Condition 2)

NOT TO SCALE

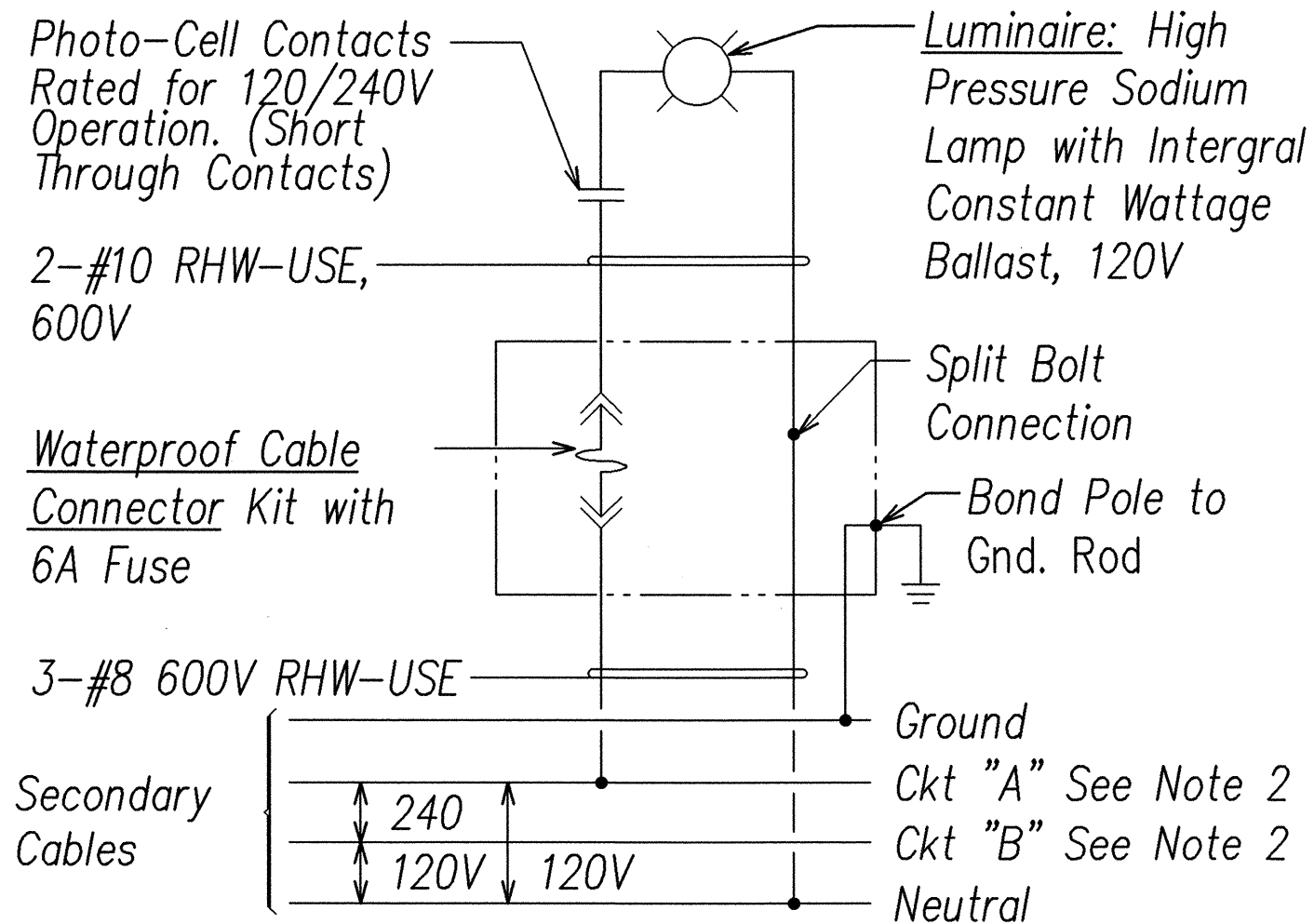


Note:

1. Condition 1 Occurs When New Street Light Pole Is To Be Installed Near Curb Line. See Electrical Plans For Pole Locations. Conditions May Be Reversed In Some Locations, See Electrical Plans For Locations.
2. Contractor Shall Be Permitted To Adjust Location Of Street Light Pole Bases And Pullboxes To Maintain Required Clearances, Or Clear Existing Obstructions.

STREET LIGHT LAYOUT PLAN (Condition 1)

NOT TO SCALE



Note:

1. All Neutral Conductors shall be Identified with White Insulation. Other Means of Identificatoin is Not Acceptable.
2. See Street Light Diagrams On Sheet 32, 33 and 34.

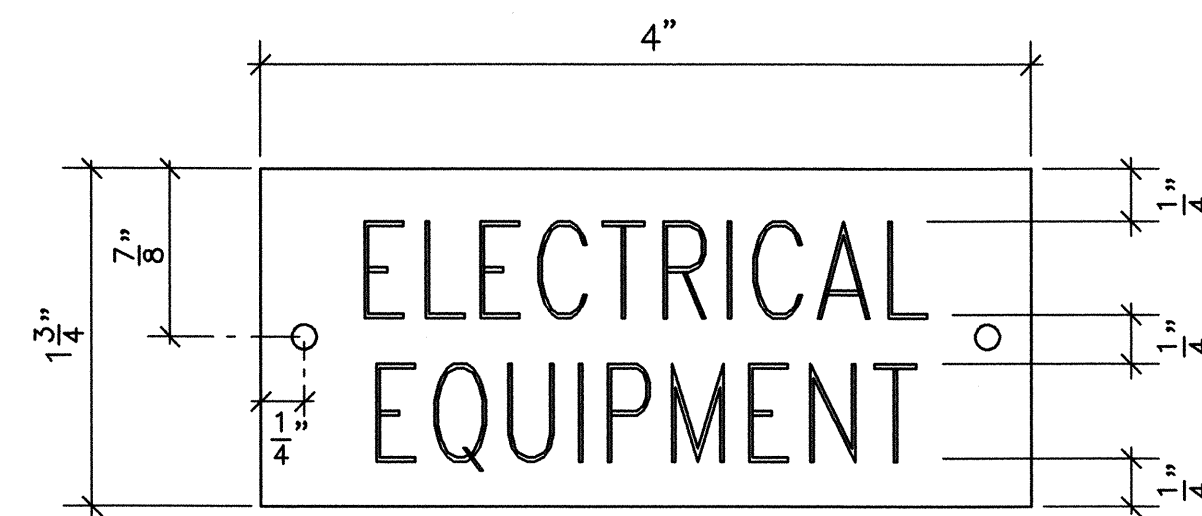
STREET LIGHT CONNECTION DIAGRAM

(120/240V METERED SYSTEM)

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QUANTITIES BY	
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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-K(18)	2003	92	98

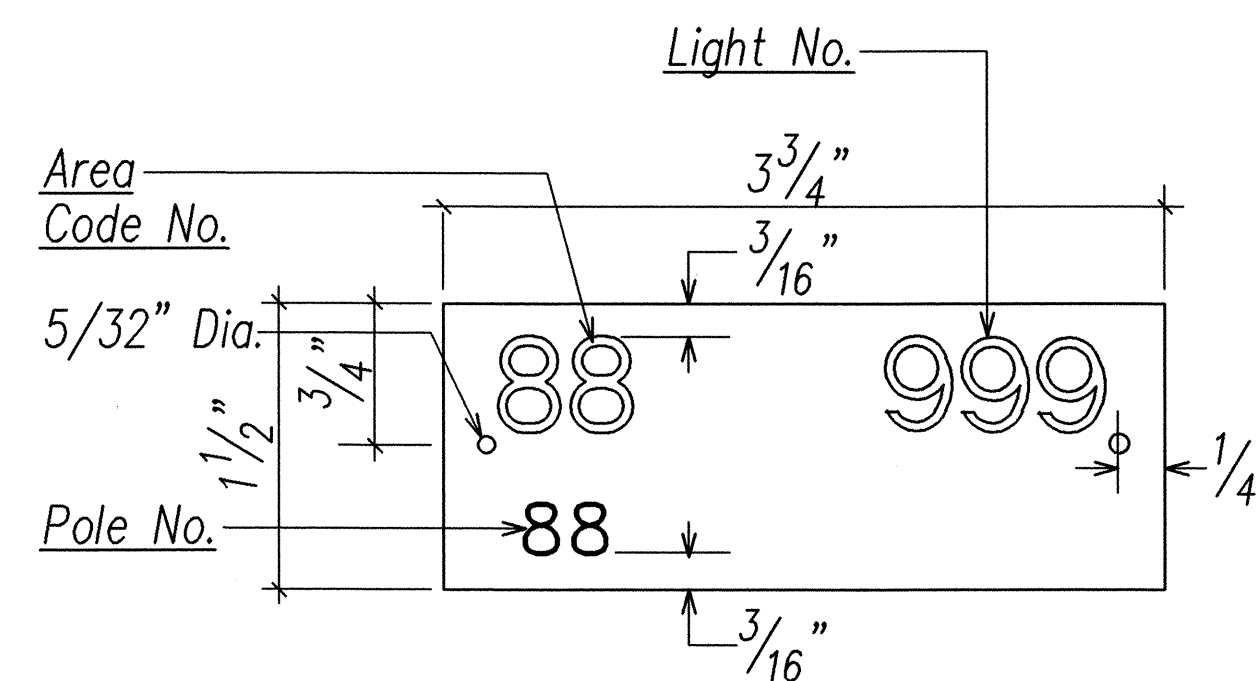


Notes:

1. Use 2 Ply Plastic – Black And White
2. Letter Size Shall Be 1/2" High And Engraved 1/8" Wide, White In Color.
3. Attach Equipment Enclosure With No. 7 Stainless Steel Drive Screws.

DETAIL-METER EQUIPMENT I.D. TAG DETAIL

NOT TO SCALE

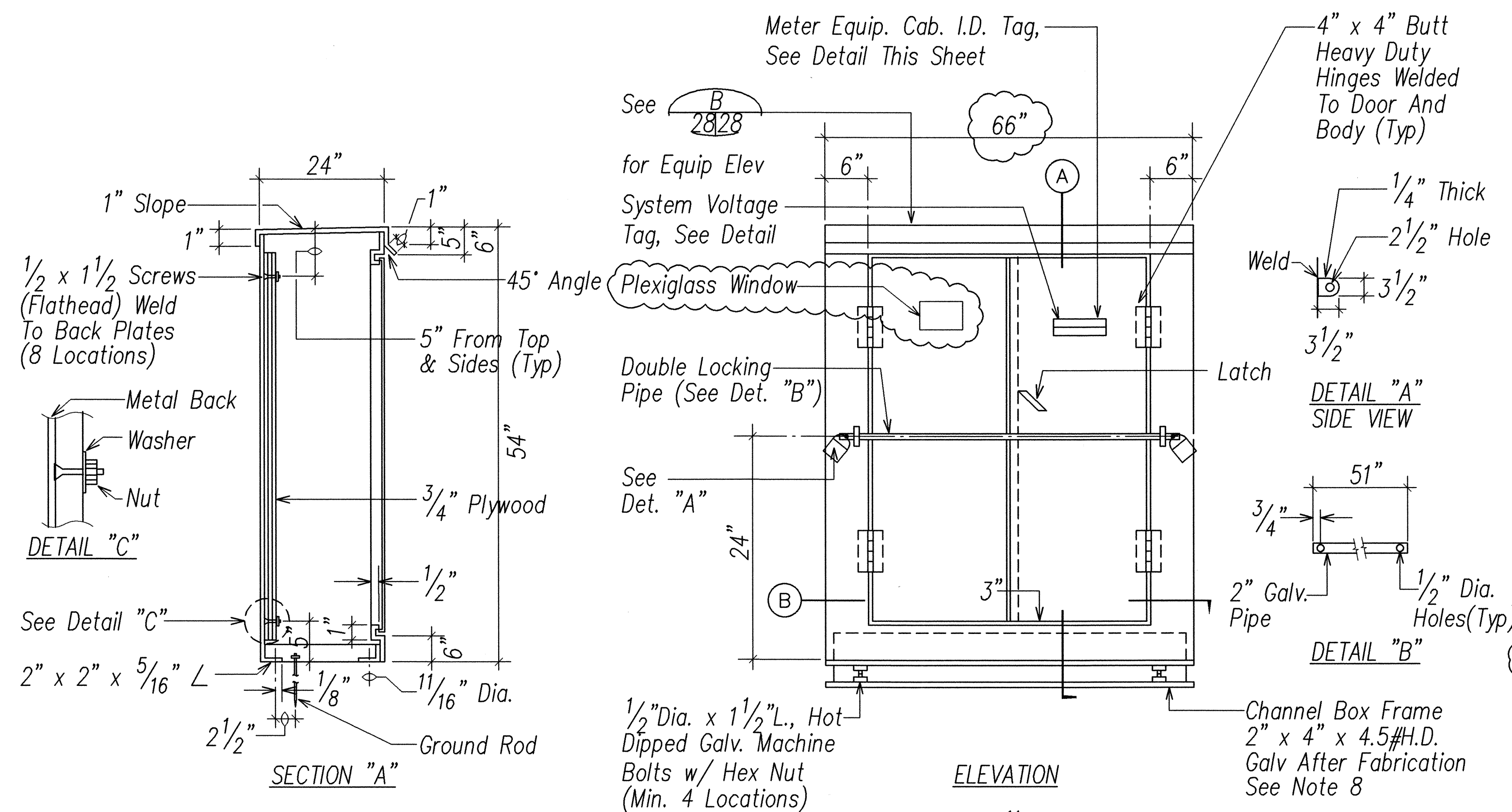


STREET LIGHT I.D. TAG DETAIL

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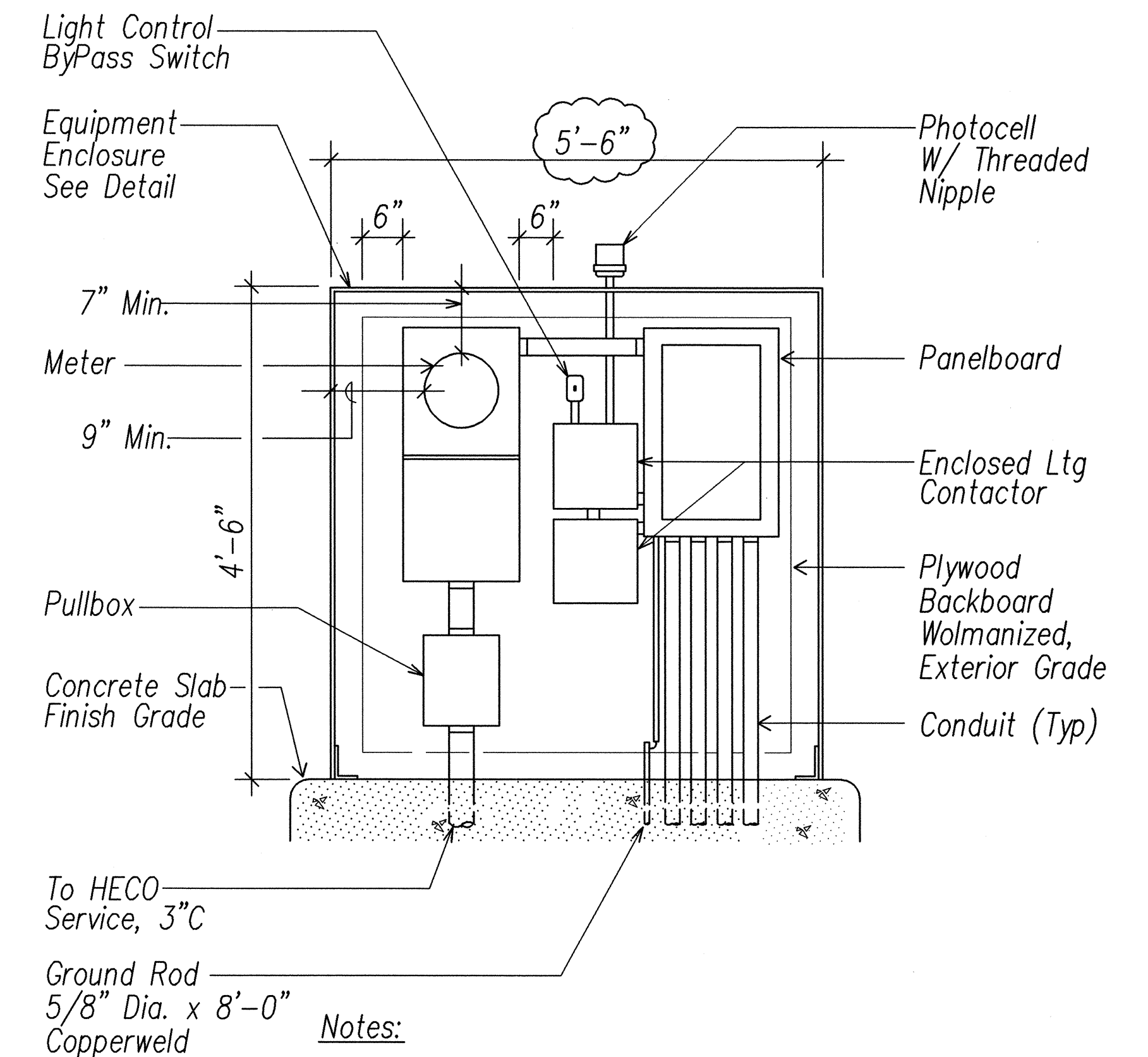
Notes:

1. Use Two Ply Laminated Flexible Plastic, Black-White Thickness Black Cap Sheet-0.010", White Base Sheet-0.052"
2. Area Code And Light Number Shall Be 5/8" High, 1/8" Stroke, White In Color (Number As Required).
3. Pole Number Shall Be 1/4" High, 1/16" Stroke, White In Color (Number As Required).
4. Attach To Aluminum And Steel Poles With No. 8 Stainless Steel, 1/2" Long Drive Screws in 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.



Notes:

1. Cabinet To Be Stainless Steel.
2. 3/4" Plywood To Be Termite Treated. (Wolmanized).
3. Enclosure Shall Be NEMA 4X With Neoprene Gasketing.
4. Padlocks:
  - 2 - HECO Furnished
  - 2 - Contractor Furnished
5. Shop Fabrication Drawings Shall Be Submitted For Approval.
6. Provide 1 5/8" Square Galvanized Steel Channel In Enclosure. Channel To Support Equipment.
7. Wash Channel With Solution Of Chemical Phosphoric Metal Etch And Allow To Dry. Apply Two Coats Of Galvanized Metal Primer And 2 Coats Of Enamel.
8. Provide 4" x 6" Plexiglass Window. Location To Correspond With Meter Location.

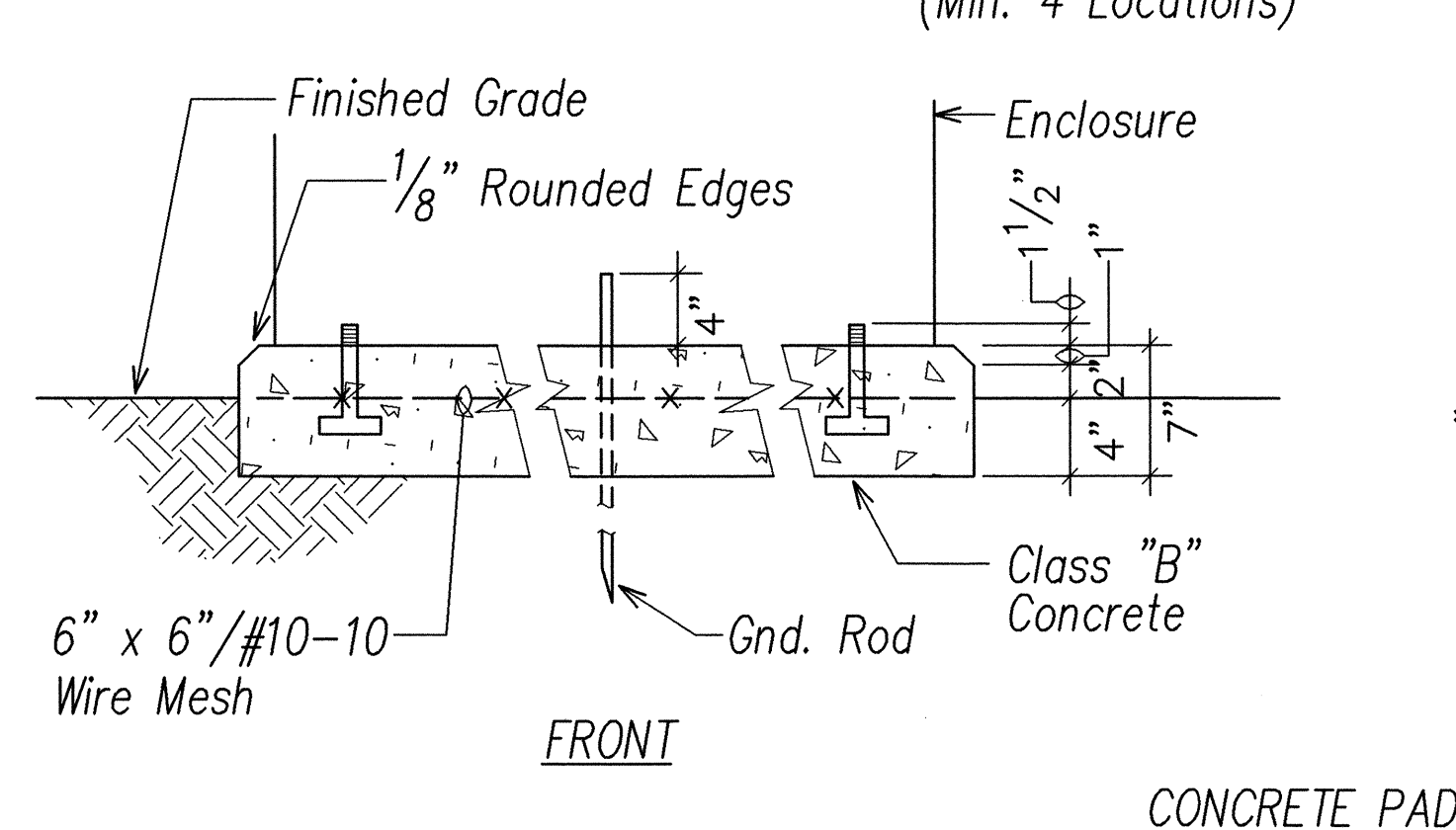


Notes:

1. *Equipment Enclosure Similar For Two Locations.*
2. *Provide Enclosure Of Adequate Size To House Equipment.*
3. *See Sheet 34 For One Line Diagrams.*
4. *Maintain 4'-0" Front Working Clearance.*

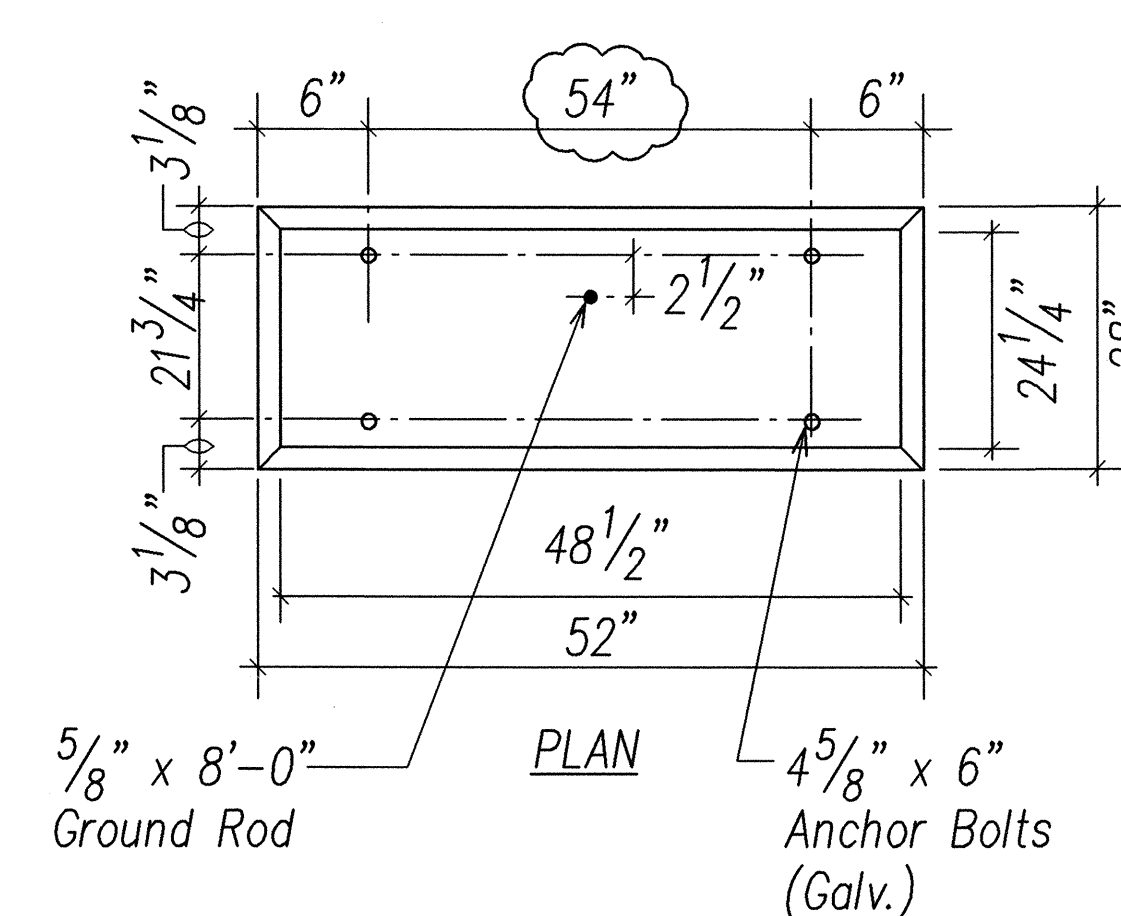
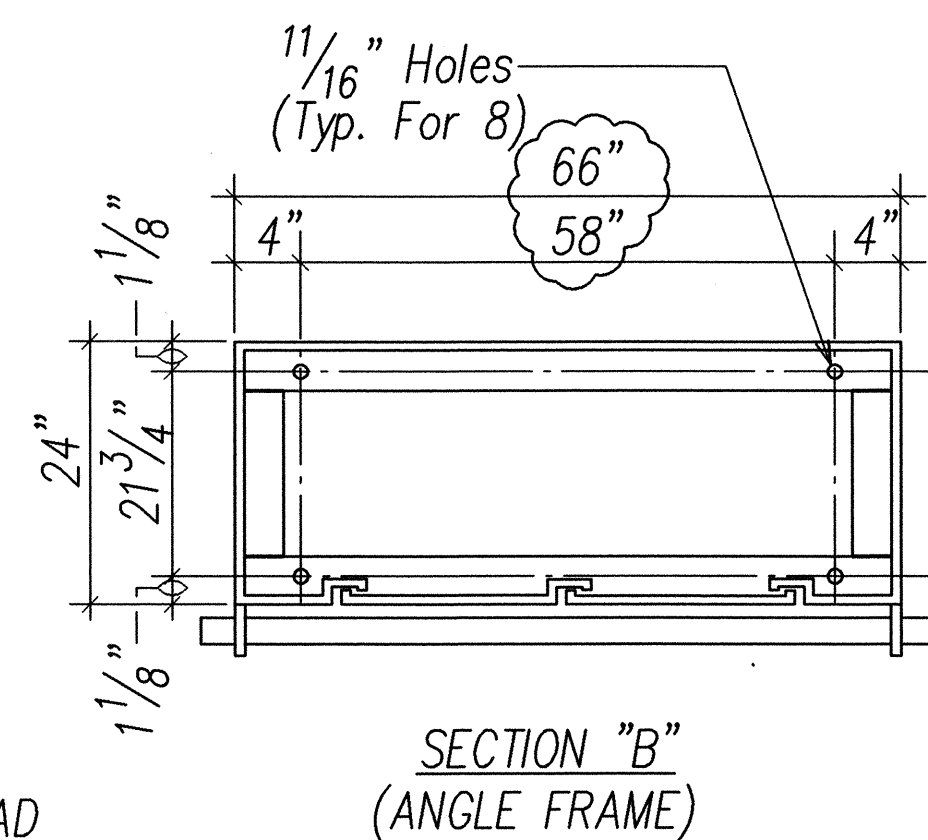
B ELEVATION - ELECTRIC EQUIPMENT ENCLOSURE

28 28' NOT TO SCALE



### DETAIL - ELECTRICAL EQUIPMENT ENCLOSURE

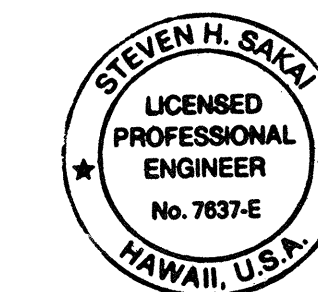
16 9 28 NOT TO SCALE



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

LAST SAVE: 03/04/03 @ 15:17:14 BY: GTN PLOT SC 1'=1'  
 \ACAD\PROJECTS\21051\Ed-Construction\lg-lgwout\20079del15

RMTC JOB NO.: 1-18835-08



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OR UNDER MY SUPERVISION  
Steven H. [Signature]  
License Expires

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

## MISCELLANEOUS DETAILS

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

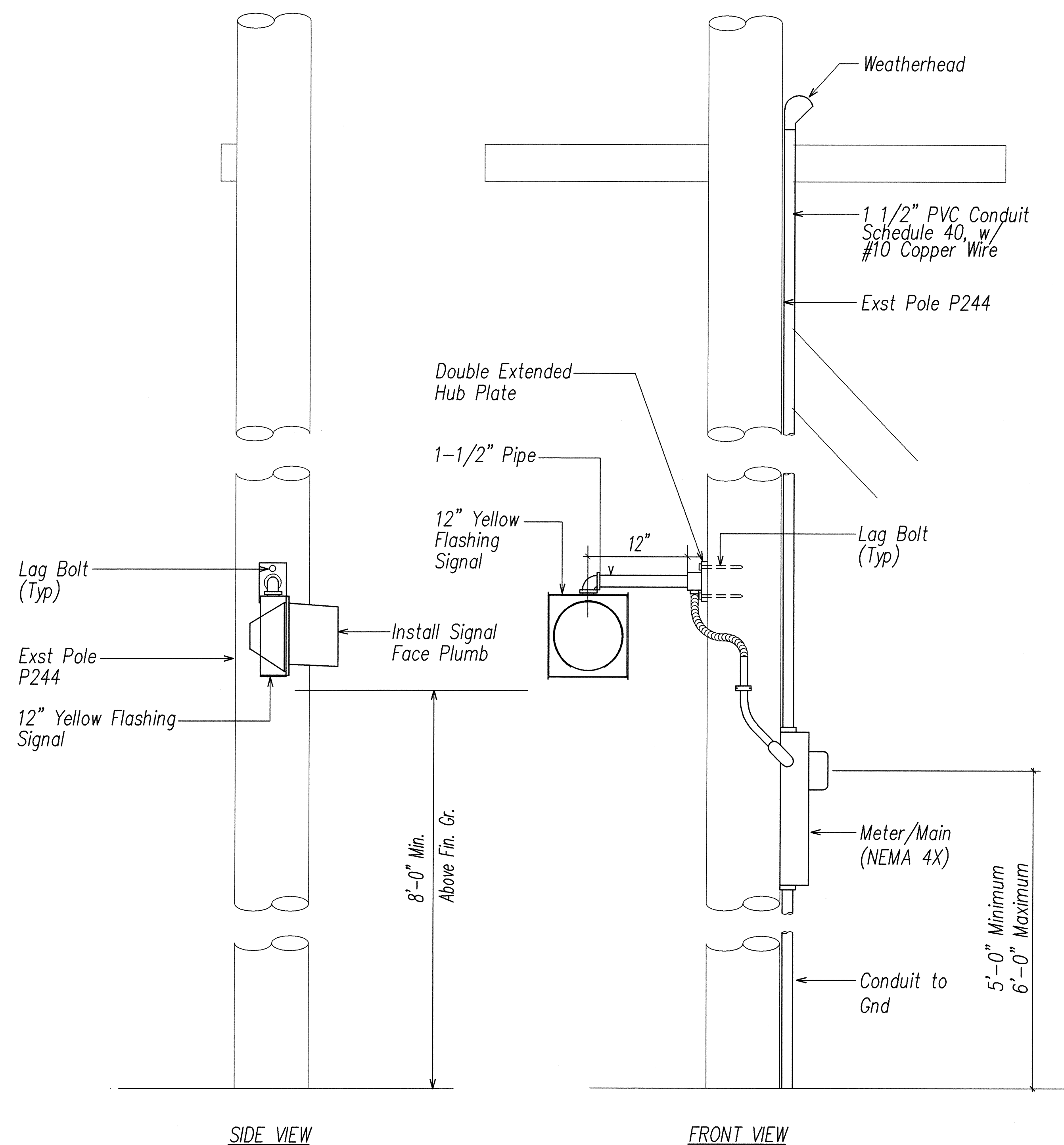
Scale: As Noted

Date:

**SHEET No. 28 OF 34 SHEETS**



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	#	#

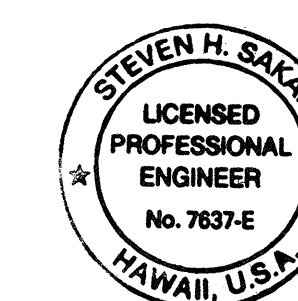
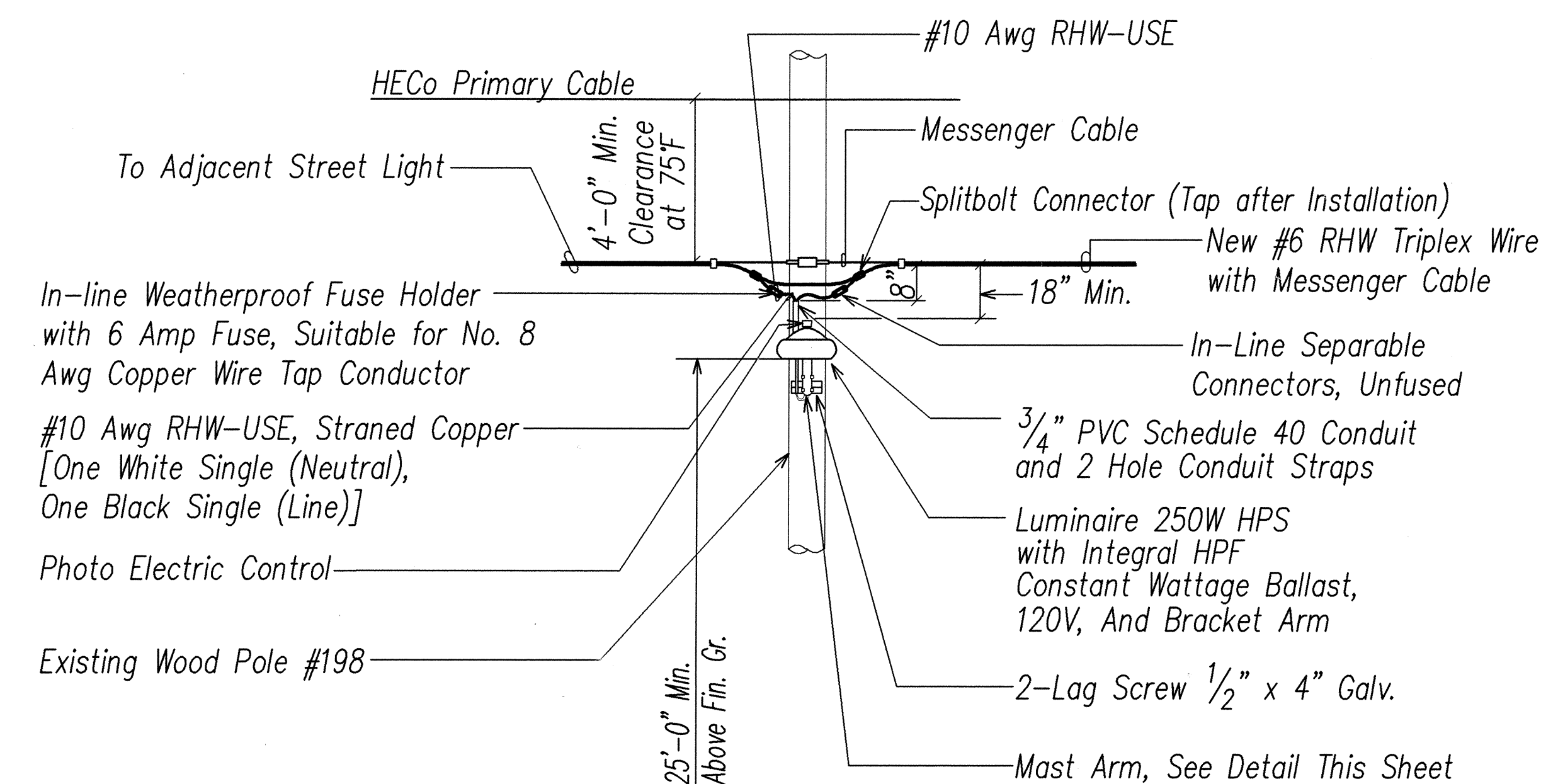
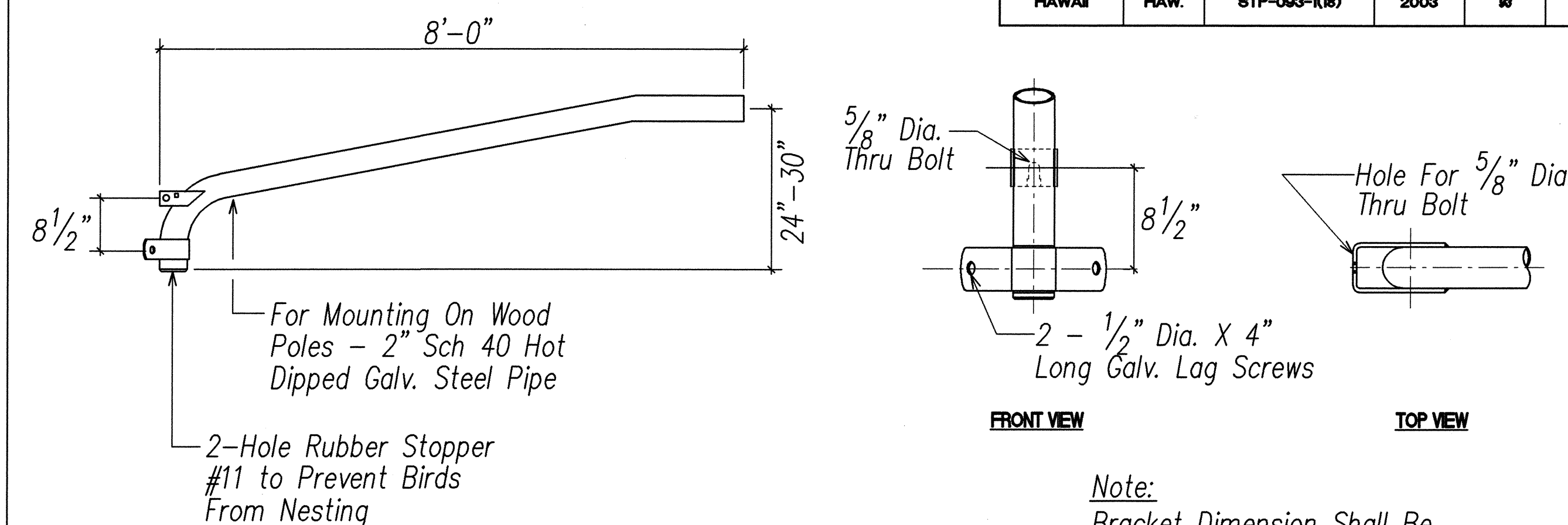


#### NOTES:

1. All aluminum parts shall have an alodine 1200 finish.

#### DETAIL - EXISTING POLE P244

NOT TO SCALE



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Date: 4/30/04  
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STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

#### MISCELLANEOUS DETAILS

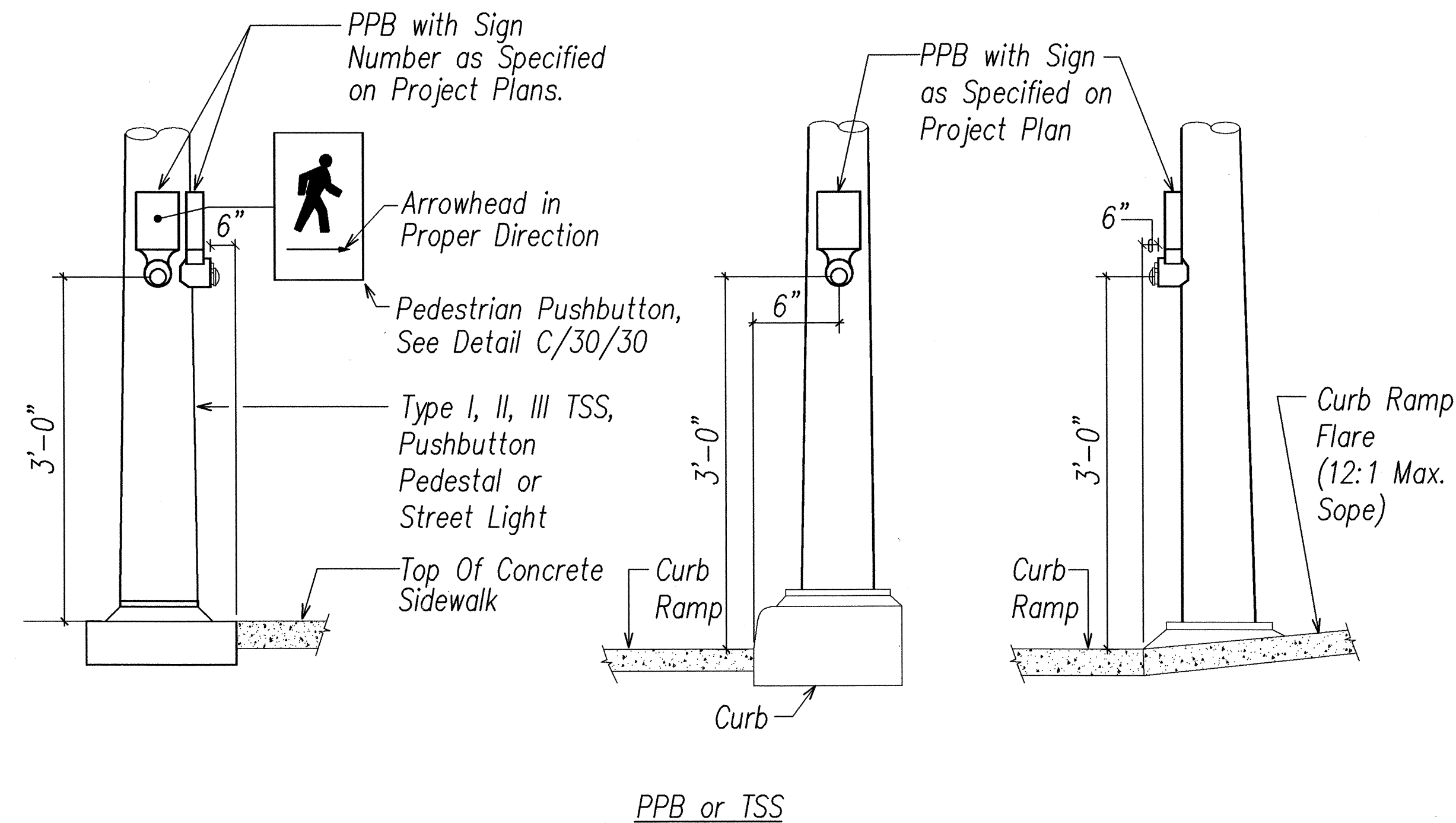
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted

Date:

SHEET No. 29 OF 34 SHEETS

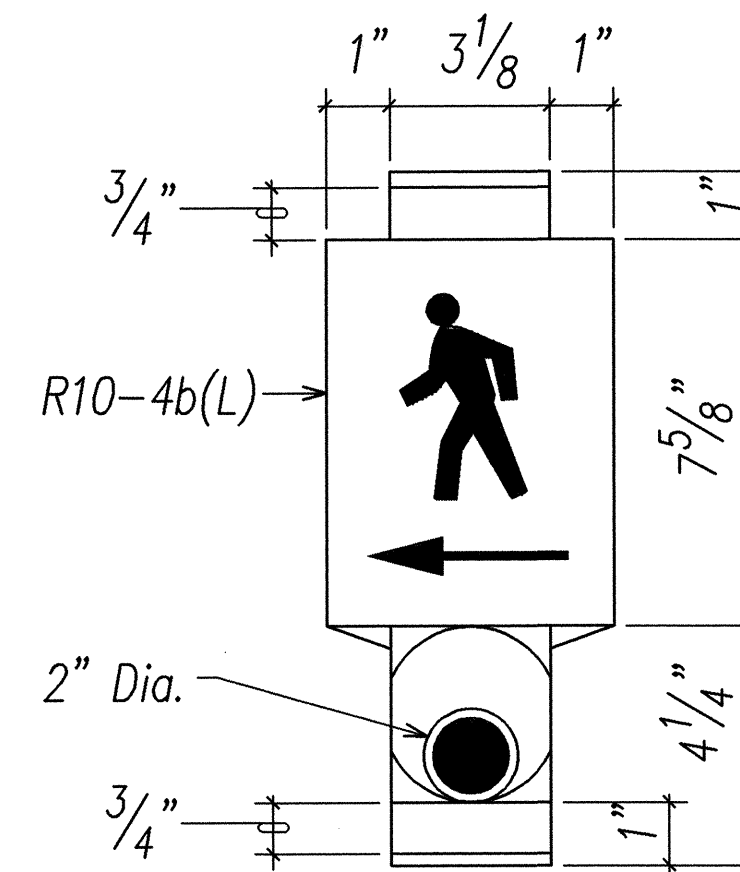
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	94	94



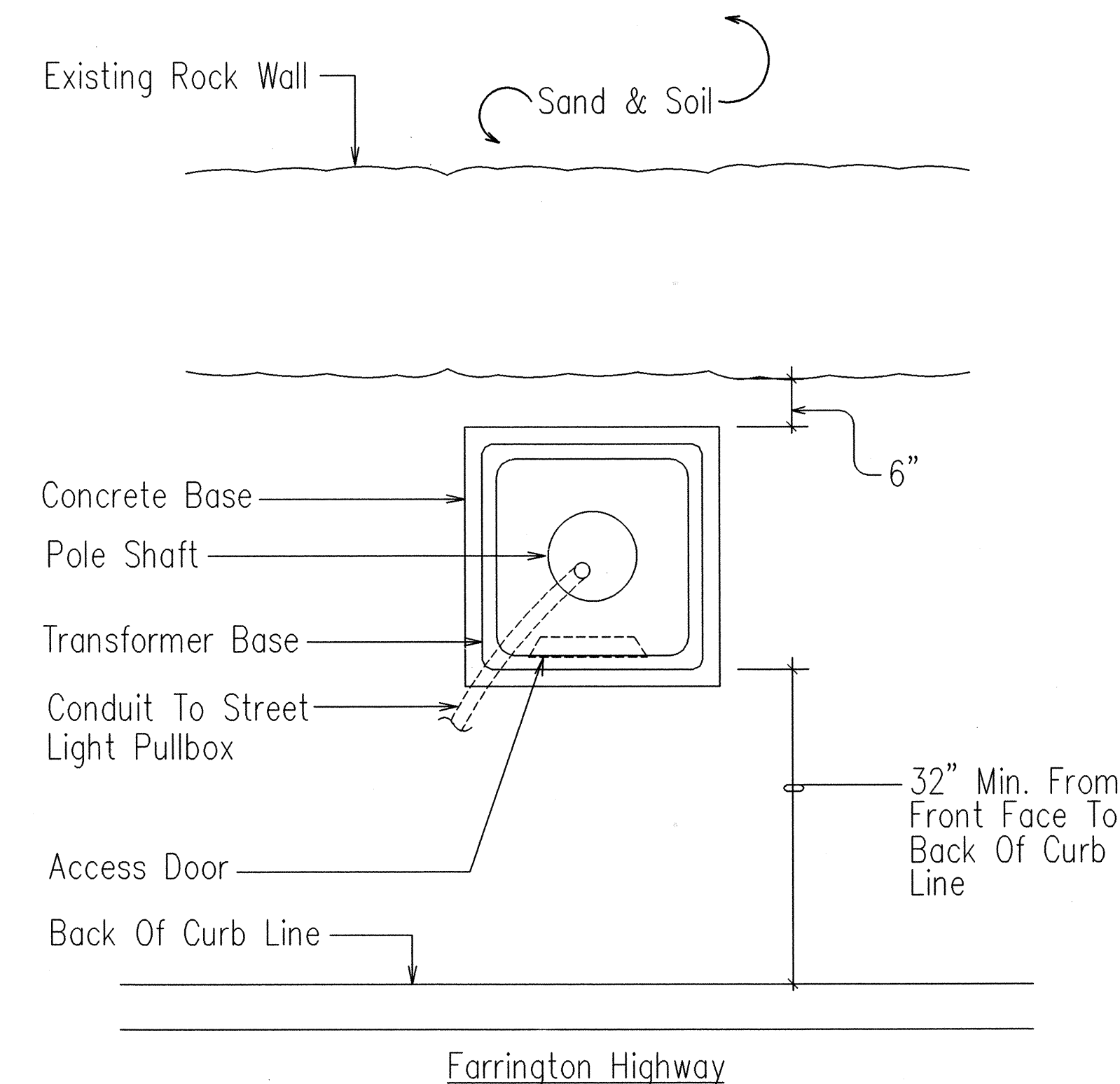
**B**  
2230  
237  
PEDESTRIAN PUSHBUTTON MOUNTING DETAILS  
NOT TO SCALE

# DETAIL NOTES:

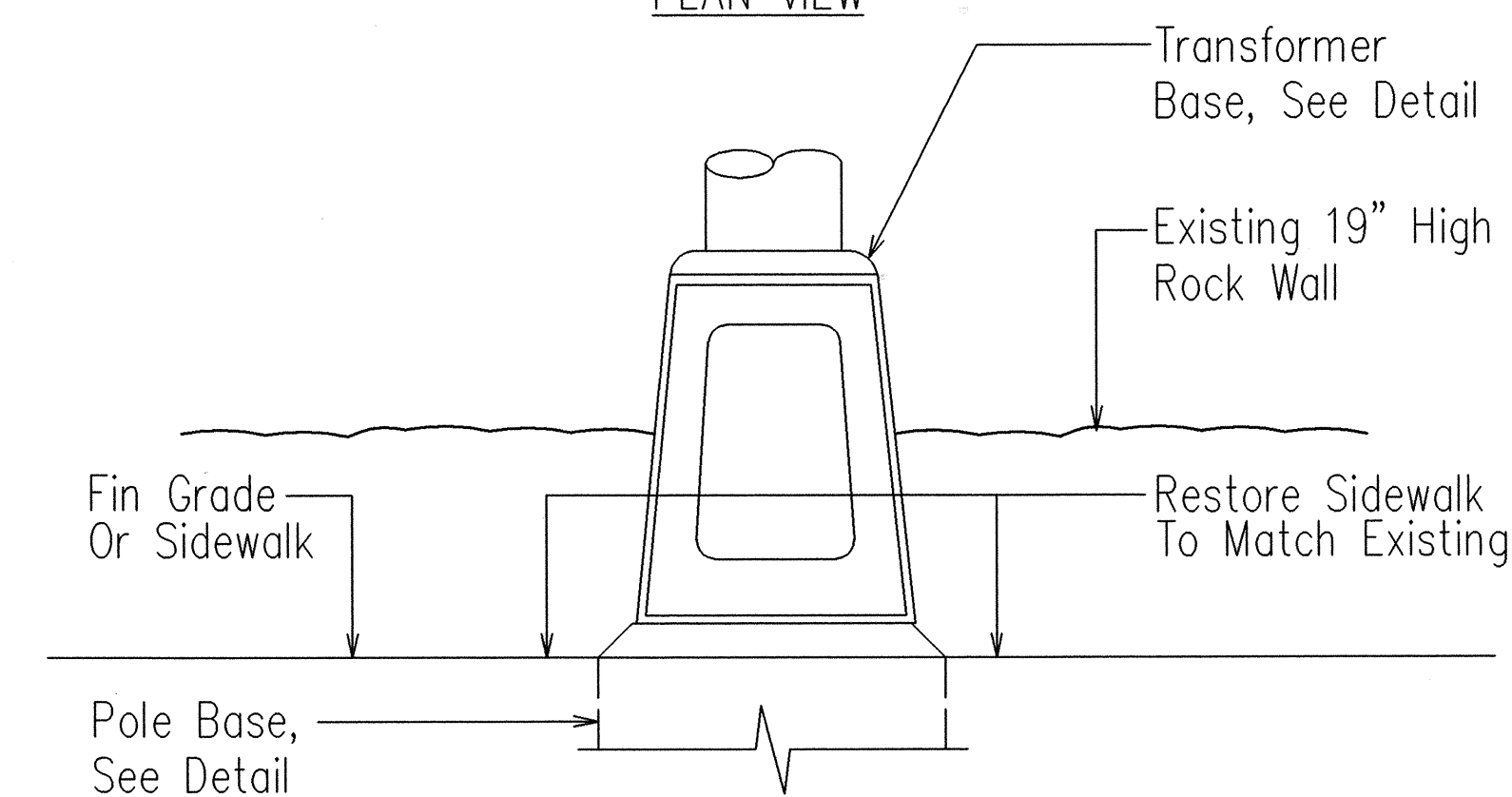
1. The pedestrian pushbutton unit shall consist of a one piece assembly with a raised walking man, arrow indication and push button.
2. The pushbutton activator shall be of the mushroom plunger type, ADA acceptable, 2 inches in diameter that requires less than 5 lbs. of pressure to activate.
3. The raised man and arrows shall be directional and match the directional indication as shown on the plans.
4. The pushbutton shall be tamper proof, weatherproof and constructed so that electrical shocks are impossible.
5. The color scheme shall be:  
White - Man, arrow and pushbutton  
Black - Background



**C**  
30  
30  
PEDESTRIAN PUSHBUTTON DETAIL  
NOT TO SCALE

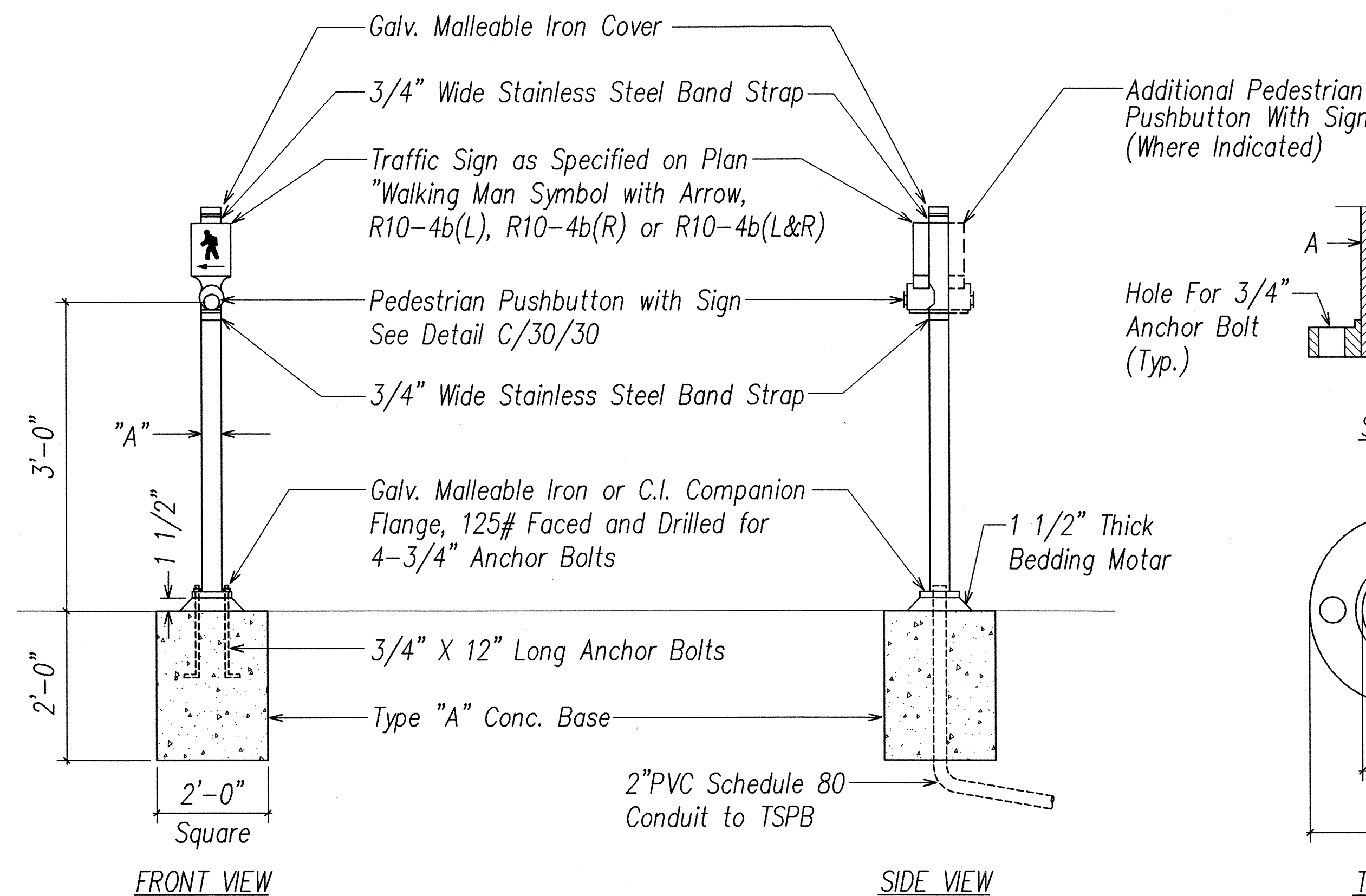


## PLAN VIEW



## VIEW FROM CURB SIDE

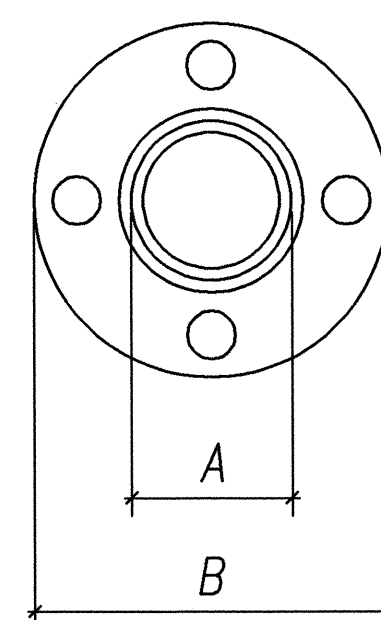
**D**  
230  
237  
INSTALLATION DETAIL (POLE P5, P6, P8, P9 & P10)  
NOT TO SCALE



## FRONT VIEW

## SIDE VIEW

## SECTION



## TOP VIEW

## FLANGE DETAIL

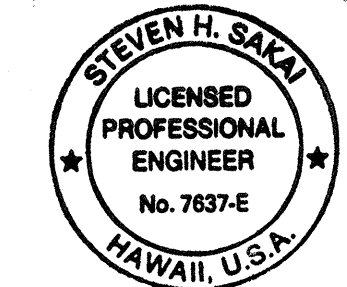
## NOTE:

1. Conduits shall Protrude 2" Max above Finished Surface of Foundation.
2. Conduits Shall slope away from Post Foundation.

DATA TABLE FOR PPB POST		
NUMBER OF PPB	DIMENSIONS	
	A	B
1	3 1/2"	8"
2-3	4 1/2"	9"

ORIGINAL PLAN	DATE
DRAWN BY	
DESIGNED BY	
CHECKED BY	
NO.	

LAST SAVE: 07/01/03 @ 09:43:15 BY: CEN: PLOT: SC: 1:41  
Z:\MAD\PROJECTS\200703\20070304079407



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4/30/04

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*Steven H. Saki*

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DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## MISCELLANEOUS DETAILS

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA

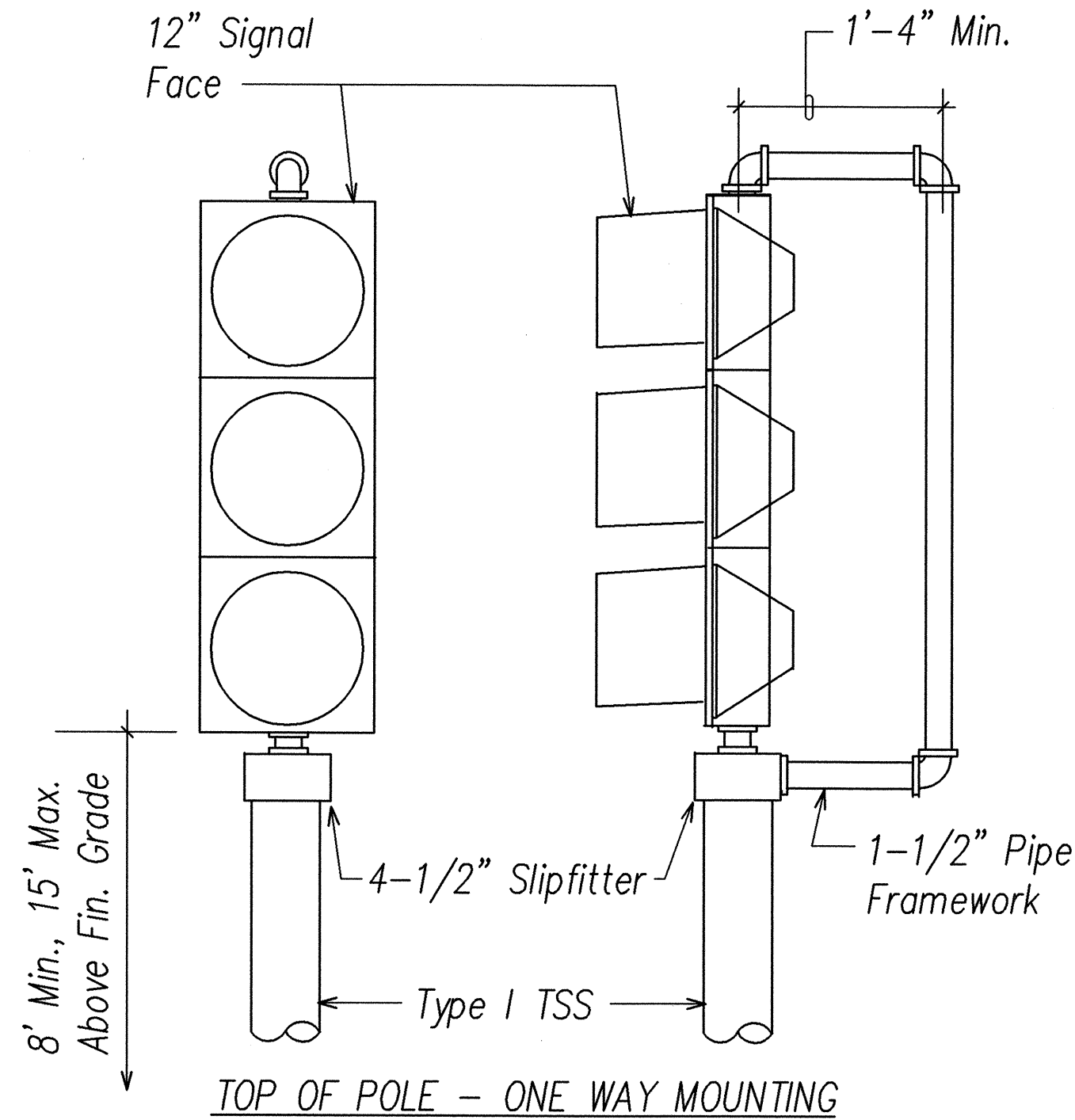
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 30 OF 34 SHEETS

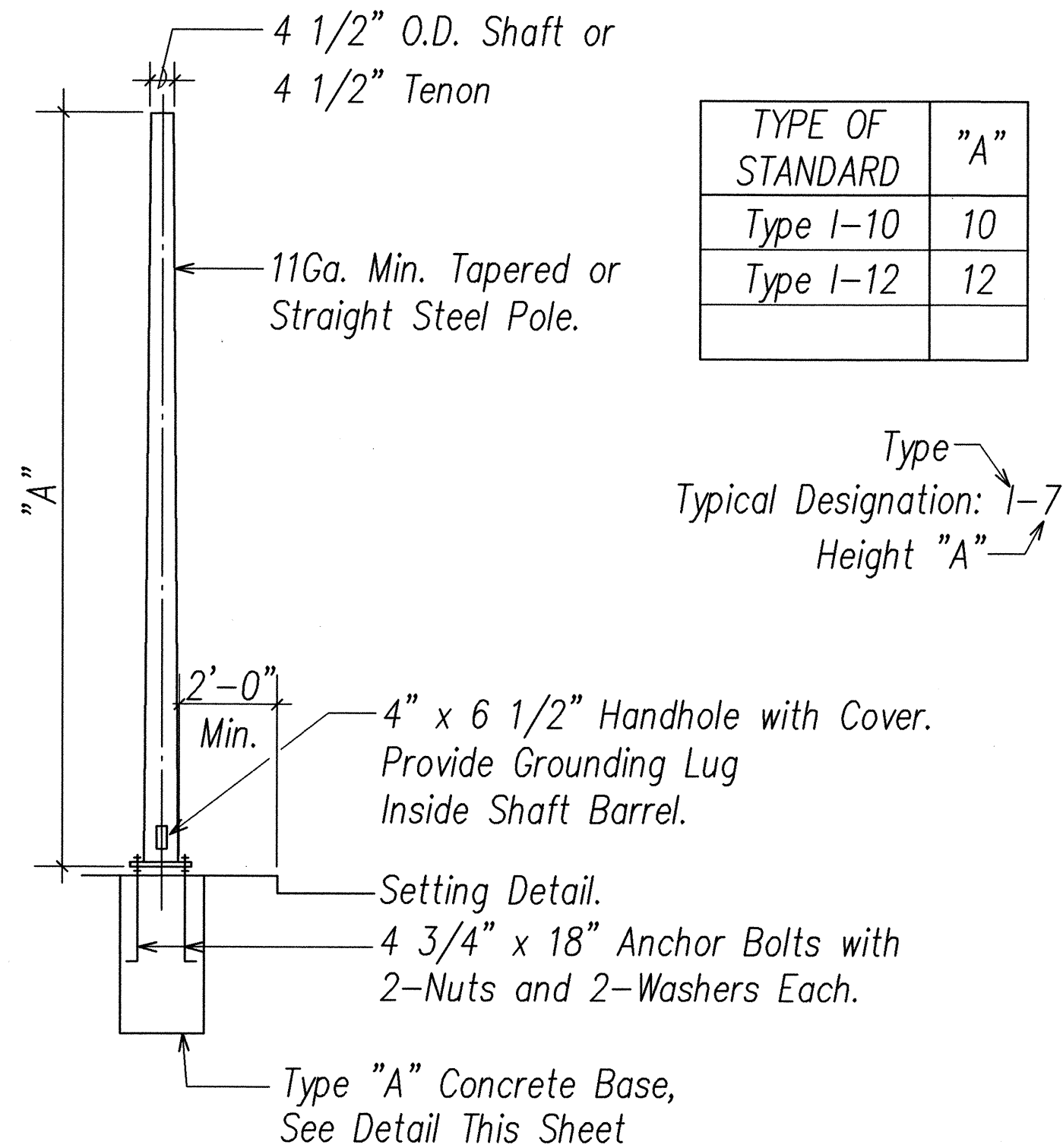


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-(18)	2003	85	88

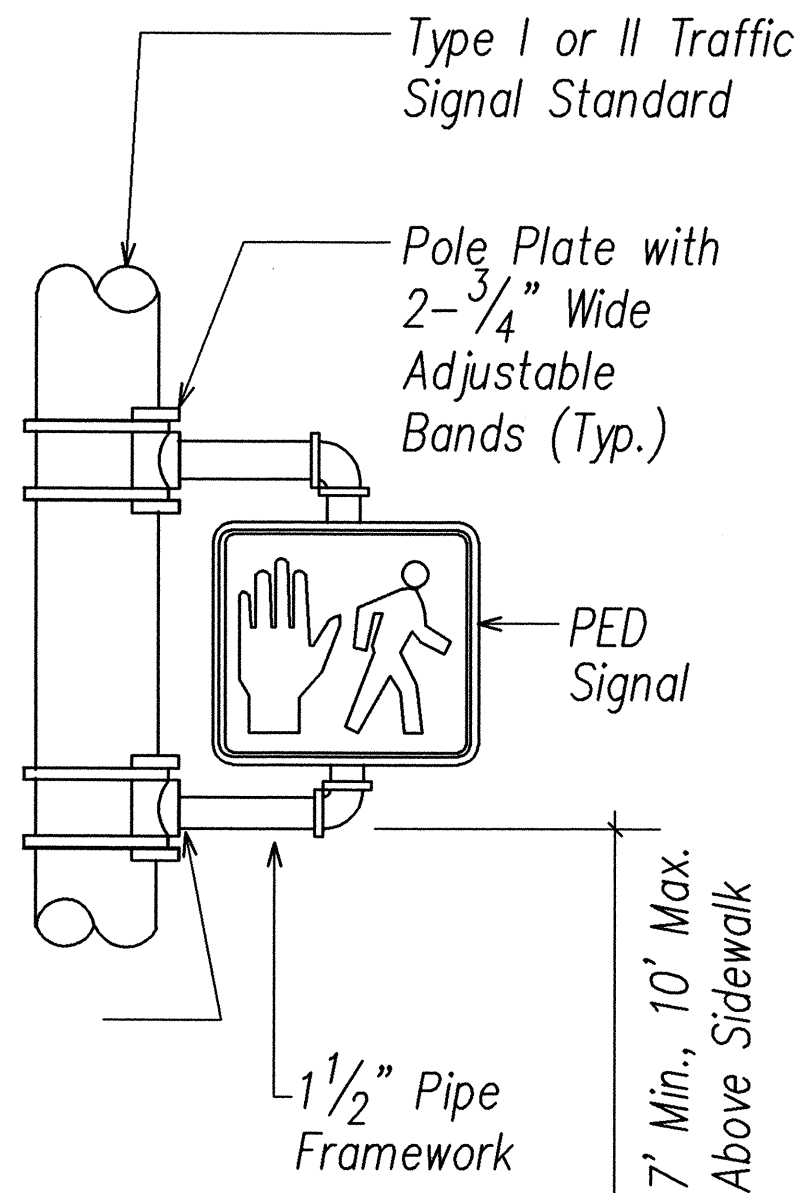


- NOTES:
1. Stainless steel bands shall be 1/2" wide x .050" thick, minimum tensile strength shall be 100,000 psi minimum.
  2. All wiring shall be concealed.
  3. Vertical tube clamp shall be of malleable iron, grade 32510.
  4. All aluminum parts shall have an alodine 1200 finish.
  5. Signal as noted on plans.
  6. Maintain 16" min. clearance at rear of all programmed faces.

VEHICULAR SIGNAL MOUNTING DETAILS  
NOT TO SCALE

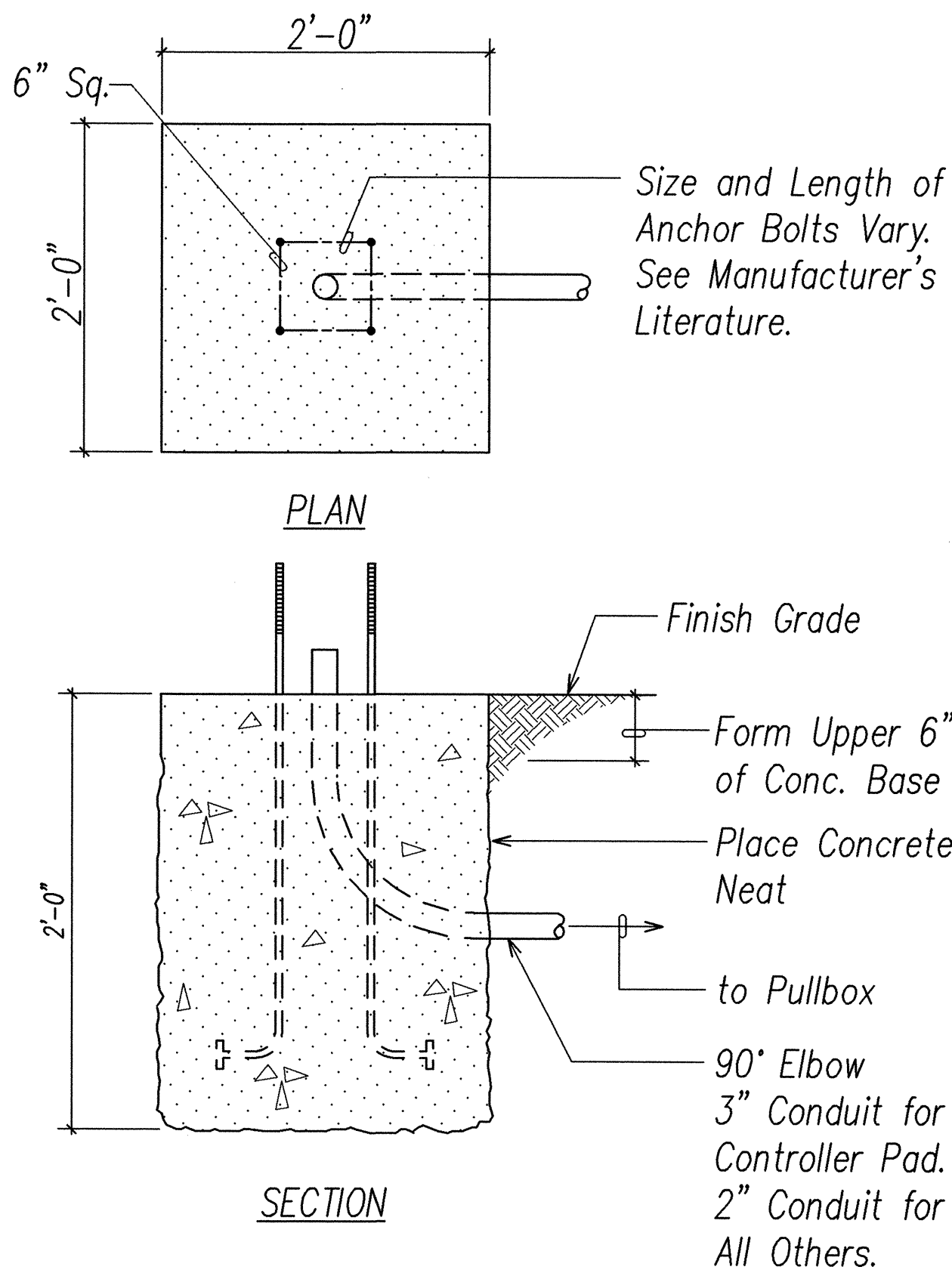


TYPE I TRAFFIC SIGNAL STANDARD  
NOT TO SCALE



BRACKET MOUNT - ONE WAY

PEDESTRIAN SIGNAL MOUNTING DETAIL  
NOT TO SCALE



- NOTES:
1. Concrete shall be class "B".
  2. Type "A" concrete base shall be used for type I-10, I-7 and I-3 standards.
  3. Conduit bend is incidental to concrete base construction.

TYPE "A" CONCRETE BASE  
NOT TO SCALE

SURVEY PLOTTED BY	DATE
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

LAST SAVE: 02/06/03 @ 10:58:19 BY: LA PLOT SC 1"=1'  
2. VARIOUS PROJECTS 00079, 00079-048

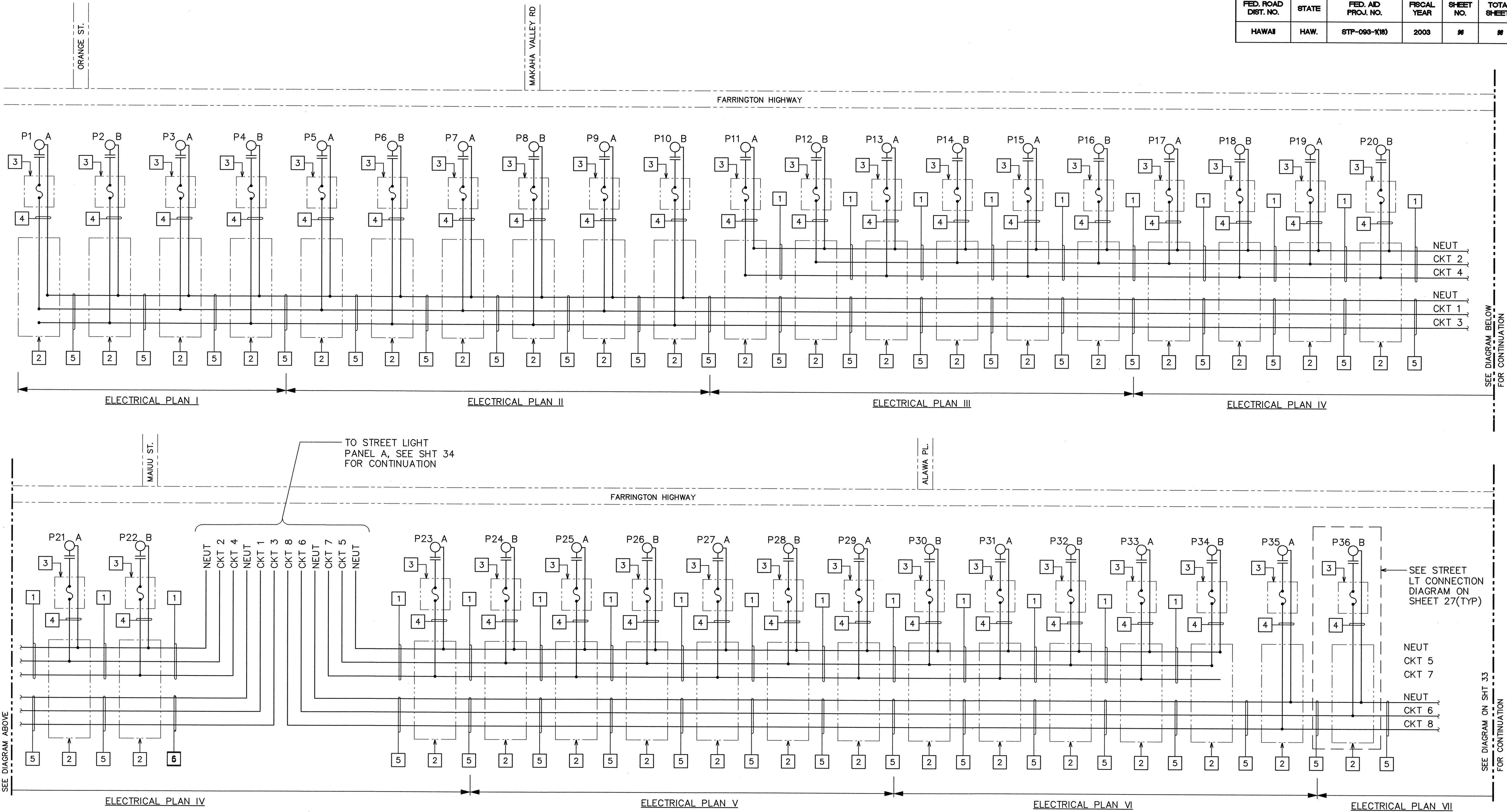


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*Steven H. Saka*  
License Expires  
4/30/04

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION  
  
MISCELLANEOUS DETAILS  
  
FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)  
Scale: As Noted      Date:

SHEET No. 31 OF 34 SHEETS

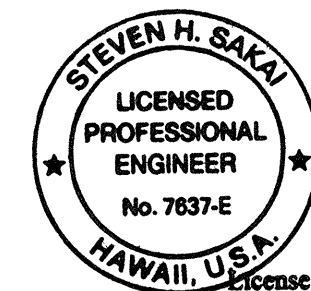
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	96	96



NOTES:

- 1 2"C., 3#1 & #4 GND.
- 2 TYPE C, STREET LIGHT PULLBOX. TAG ALL CABLES.
- 3 AT STREET LIGHT POLE BASE.
- 4 1-1/4"C., 2#8 & #8 GND.
- 5 2"C., 3#1/0, 1#2 GND

STREET LIGHT DIAGRAM - PART I



STATE OF HAWAII  
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STREET LIGHT DIAGRAM -  
PART I

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted

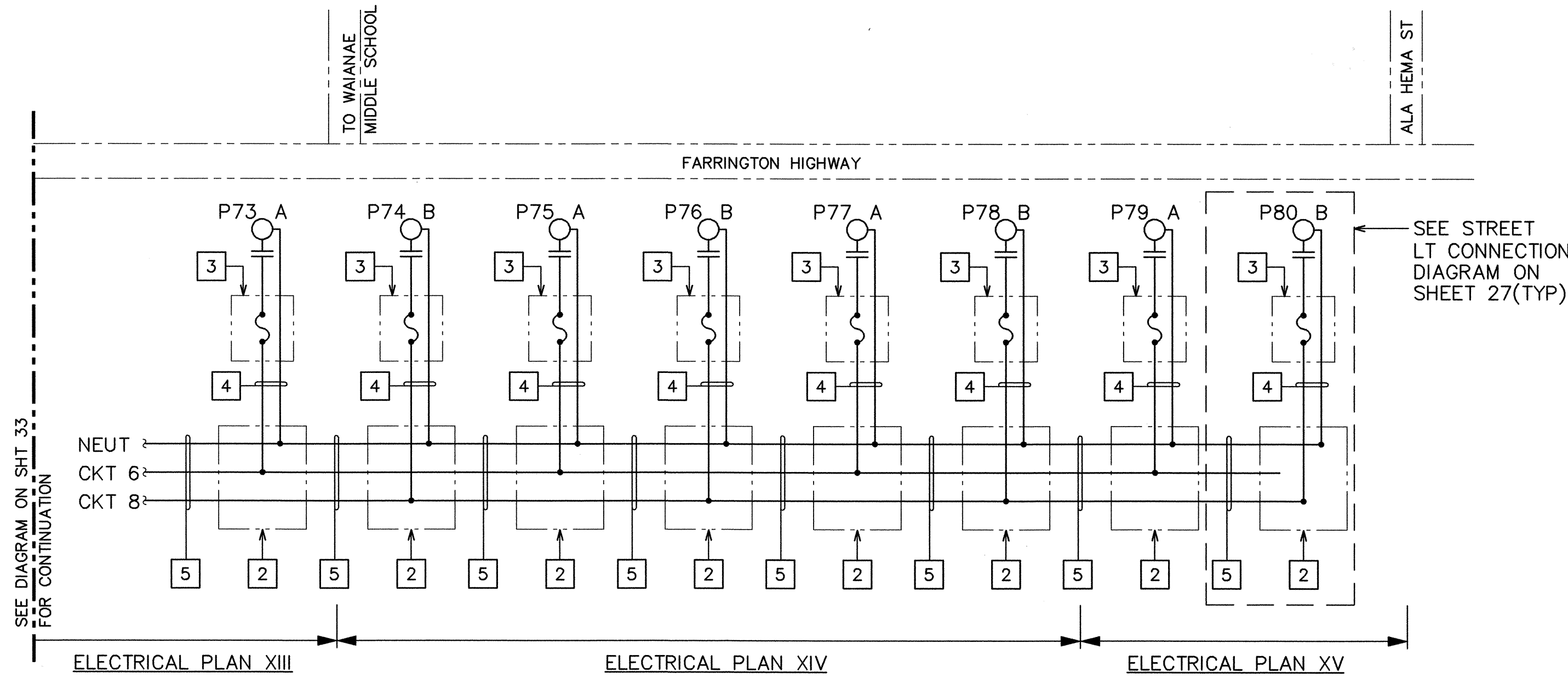
Date:

SHEET No. 32 OF 34 SHEETS



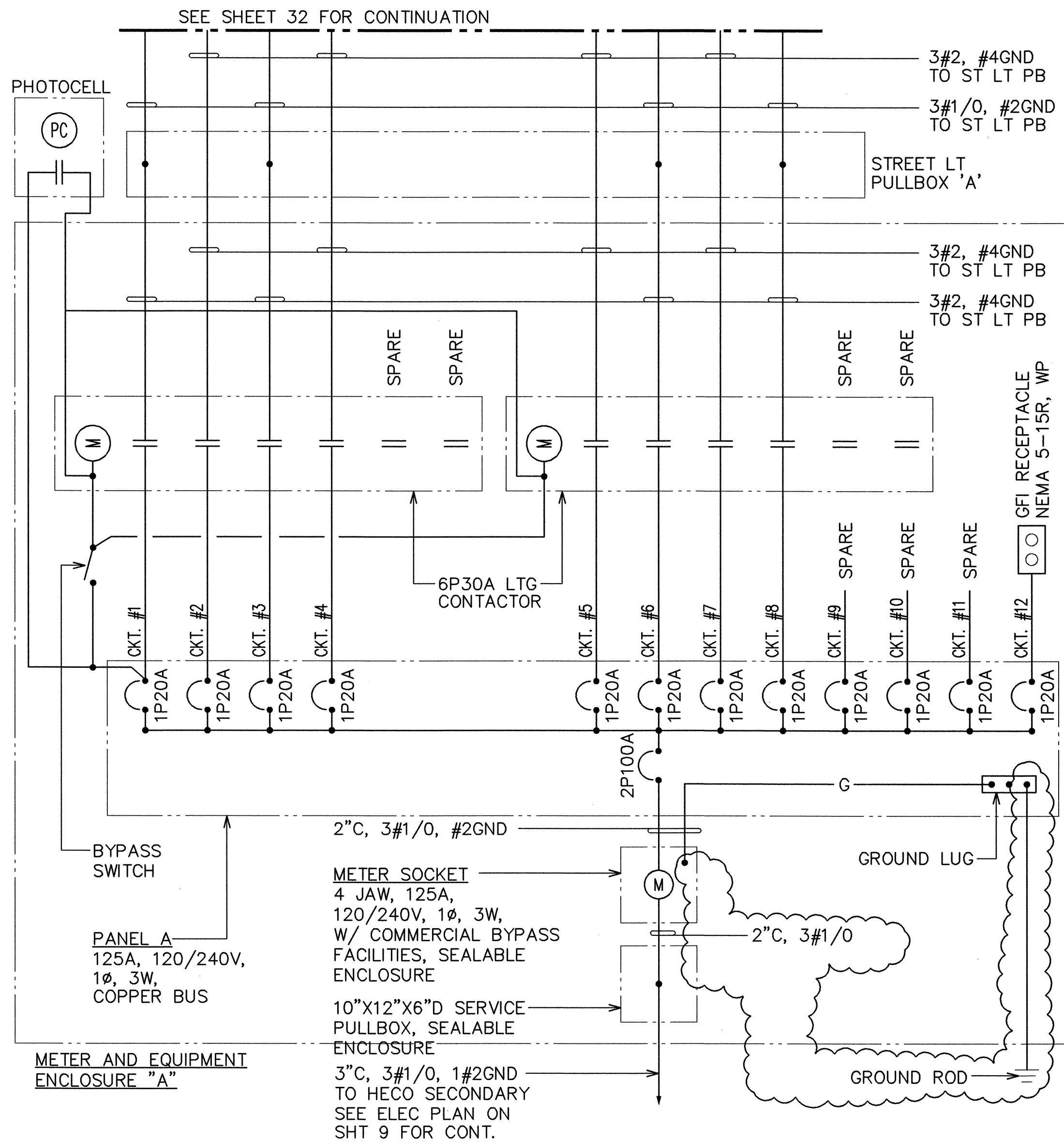


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-093-1(18)	2003	98	98

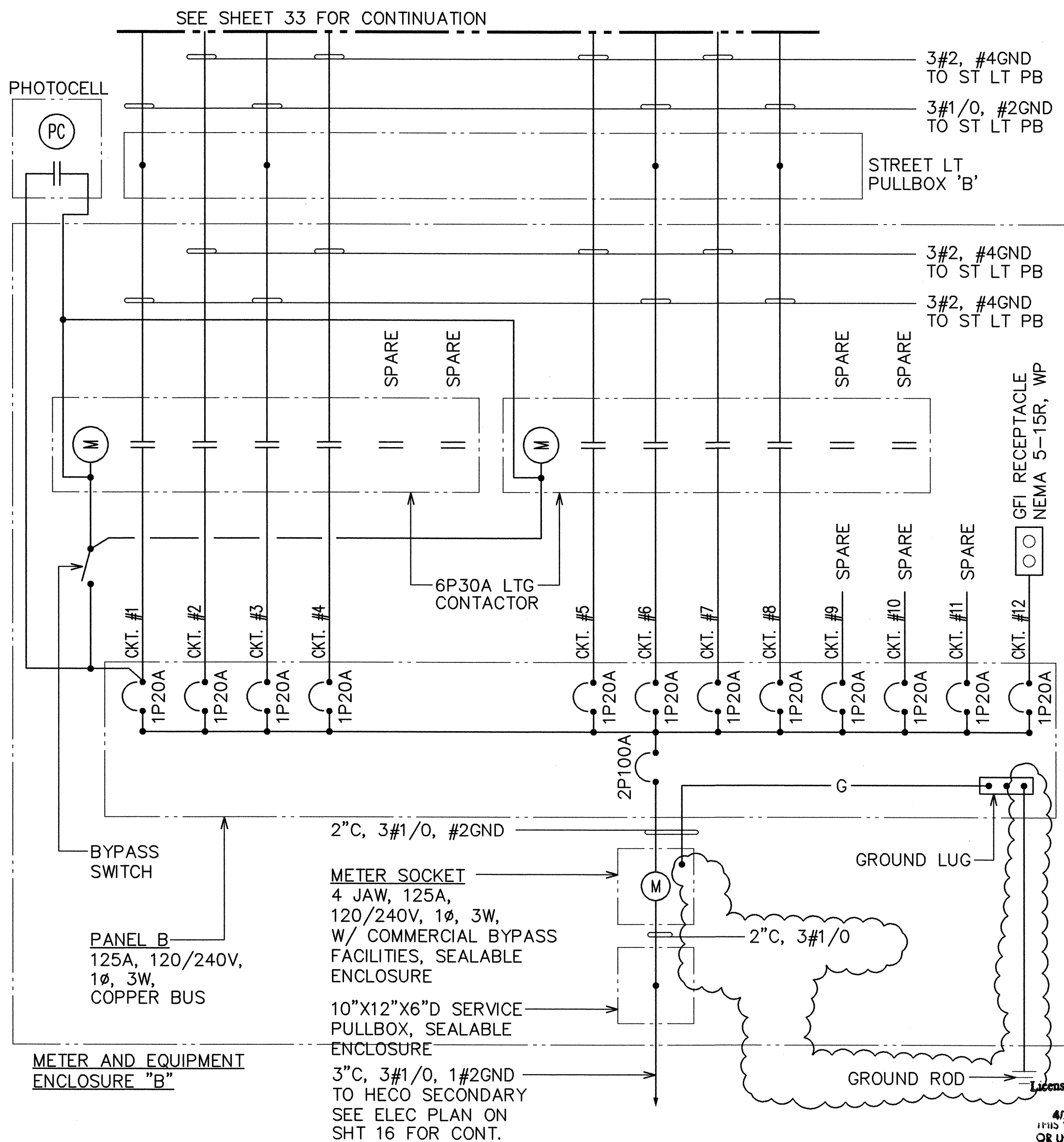


- NOTES:
- 1 2"C, 3#1 & #4 GND.
  - 2 TYPE C, STREET LIGHT PULLBOX. TAG ALL CABLES.
  - 3 AT STREET LIGHT POLE BASE.
  - 4 1-1/4"C, 2#8 & #8 GND.
  - 5 2"C, 3#1/0, 1#2 GND

STREET LIGHT DIAGRAM - PART III  
NOT TO SCALE



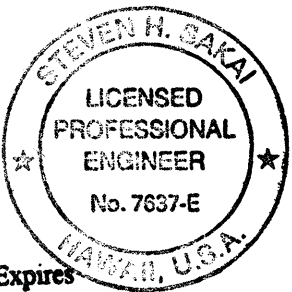
STREET LIGHT SERVICE ONE LINE DIAGRAM - LOCATION A



STREET LIGHT SERVICE ONE LINE DIAGRAM - LOCATION B

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

LAST SAVE: 03/04/03 @ 14:35:36 BY: GIN PLOT SO: 1-207  
Z:\ACAD\PROJECTS\01051\Exp-Construction\fig-report\00794d03



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**STREET LIGHT DIAGRAM &  
ONE LINE DIAGRAMS**

FARRINGTON HIGHWAY IMPROVEMENTS  
NANAKULI TO MAKAHA  
F.A.I. Proj. No. STP-093-1(18)

Scale: As Noted Date:

SHEET No. 34 OF 34 SHEETS





