



GUAM POWER AUTHORITY

ATURIDÁT ILEKTRESEDÁT GUAHAN
P.O. BOX 2977 HAGÁTÑA, GUAM U.S.A. 96932-2977

December 20, 2018

AMENDMENT NO.: VIII

TO

INVITATION FOR MULTI-STEP BID NO.: GPA-034-18

FOR

**BUILD, OPERATE & TRANSFER CONTRACT FOR 180MW OF NEW GENERATION CAPACITY
STEP 2 – TECHNICAL SPECIFICATIONS**

Step 1 Qualified Bidders are hereby notified of the following changes, inclusions and responses to inquiries received from the following:

CHANGES:

Bidders shall submit Envelope II with the exception of their Fixed Capacity Charge (Form 15.2) which shall be submitted separately in Envelope III as indicated in the below milestones. Envelope II must be submitted as indicated in the below milestone and cannot be changed or revised afterward. Failure to follow this requirement will result in disqualification. Bidders must submit a written statement to GPA Procurement Office that they understand and will conform to this requirement upon received of this amended milestones.

Table 12.1: Procurement and Development Milestones

Milestone No.	Milestones	Durations	Cumulative Duration	Expected Completion
1	IFB Issued to Potential Bidders			10/1/2018
2	Pre-Bid Meeting with Bidders	1	1	11/5/2018
3	Site Visit	1	2	11/6/2018 9:00 A.M.
4	Cut-Off Date for Receipt of Questions	1	3	12/19/2018 5:00 P.M.
STEP 2 - TECHNICAL PROPOSAL EVALUATION				

Milestone No.	Milestones	Durations	Cumulative Duration	Expected Completion
5	Bid Date - Envelope I and II with exception of Fixed Cap Charge submitted to GPA.	113	116	2/19/2019 4:00 P.M. (Guam Standard Time)
6	Complete Evaluation of Technical Proposals & Notify Bidders	45	161	4/5/2019
7	Submittal of Price Proposal Deadline Fixed Capacity Charge (Envelope III)	1	162	3/29/2019 4:00 P.M. (Guam Standard Time)
STEP 3 - PRICE PROPOSAL EVALUATION				
8	Conduct Envelope II & III Public Bid Opening Meeting	1	163	4/19/2019 2:00 P.M. (Guam Standard Time)
9	Complete Evaluation of Envelope II & III; Invite the First-Ranked Bidder to Clarification Meeting	14	177	5/3/2019
10	Conduct Clarification Meeting(s) with First-Ranked Bidder and other top-ranked Bidders as required and selection of the Selected Bidder.	28	205	5/31/2019
11	Complete Negotiations of ECA with the Selected Bidder.	70	275	8/9/2019
12	Obtain CCU and PUC approval	52	358	9/30/2019
13	Sign the ECA with the Selected Bidder.	1	359	10/1/2019
14	IPP achieves financial close and starts construction.	180	538	3/29/2020

INCLUSIONS:

8in RFO Pipeline Additional Drawings (see attached).

Qualified Bidder #1 dated 11/02/2018:

QUESTION:

1. Raw water and grey water supply

Please provide the following information:

- Minimum guaranteed supply quantity per day

ANSWER:

GWA grey water discharge permitted is up to 6 million gallons per day. Flow is not uniform and may be interrupted for up to several hours. See specification requirements for onsite storage of raw water.

QUESTION:

2. Point 8.1 Section A

The options may include entering into a Water Supply Agreement with the GWA, using well water, or sea water, subject to obtaining appropriate environmental and other permits

Point 1.3.3 Section C

There will be no sea water makeup utilized.

Section 8.1 and Section 1.3.3 are in contradiction. Please clarify if sea water is allowed to be used in this power plant?

ANSWER:

Sea water use is not allowed.

QUESTION:

3. Section C, Appendix A: Grey Water Quantity and Analysis

Section C, Appendix D: ASHRAE Guam Climate Information

Please provide legible tables. Current tables are of poor quality and difficult to read.

Also, we wonder if GPA could provide the IFMSB Document in editable format, so that we can get and modify forms, tables, etc., to put into the Project Company's RFP to EPC Bidders?

ANSWER:

a. See attached NDSS FY -18.xlsx and ASHRAE files

b. The editable formats are already provided on GPA's website and can be downloaded from - http://guampowerauthority.com/gpa_authority/procurement/gpa_current_rfps.php

QUESTION:

4. Concerning the telemetering interface to GPA PSCC;
Section C, 3.5.22 Metering, page 148/595

What type of Metering Settlement and Verification technology is installed in PSCC for the plant to comply with?

ANSWER:

PSCC is currently using SCADA Energy Management System, Siemens Spectrum 5 version 5.4. All data should be transferred to PSCC using DNP3 protocol using serial, Telco or Ethernet communications.

QUESTION:

5. Section C, 3.2 Electrical Plant and Systems Requirements, page 116/595

What type of telecommunication system is installed in GPA Substation & PSCC for the plant to comply with?

ANSWER:

GPA's current telecommunication service providers are GTA, Docomo Pacific and others who provide minimal service on an as need basis. Our communications medium is Serial, Ethernet, copper, fiber using the industry standard DNP3 protocol.

QUESTION:

6. Section C, 3.2 Electrical Plant and Systems Requirements, page 116/595

What type of data exchange does GPA use for the power transmission interfacing to GPA / Harmon substation and PSCC?

ANSWER:

Our current data exchange includes but not limited to:

- a. Analog Inputs (AI): MW, MVAR, PF, VAB, VBC, VCA, IA, IB, IC, Frequency, etc.
- b. Digital Inputs (DI): Breaker Status, TCM Status, LRS, Relay Alarms, Transformer Alarms, Device Status Alarms, etc.
- c. Digital Output (DO): Trip/Close, Raise/Lower, Reclosers, Pulse on/off, Latch on/off, etc.
- d. Analog Output (AO): Setpoint increase/decrease, Analog value raise/lower, etc.

QUESTION:

7. Section C, 3.2 Electrical Plant and Systems Requirements, page 116/595

Please clarify the number of and type of signals for exchange for protection, control and indication to both GPA Harmon Substation and PSCC.

ANSWER:

GPA has tens of thousands of types of signals for exchange for protection, control and status indication. Please see above #3 for types of signal exchanges.

QUESTION:

8. Section C, Appendix D : GPA Power Network One Line Diagram

Drawing from the GPA MFS for the network Single Line Diagram (115/34.5kV Transmission One-Line Diagram) only shows the existing arrangements for the connections at the 115KV Harmon Substation. Does a proposed connection arrangement drawing exist for the plant transmission line interface points at the Harmon substation? If yes provide or clarify the interconnection points.

ANSWER:

Please refer to Proposed Harmon Substation Interface_Online Reference 11-30-2017.pdf diagram for proposed interface at the Harmon substation.

QUESTION:

9. Section C, 2.2.1 Capacity, C, page 106/595.

Performance requirements for Fossil Fired Plants – what is the “higher real power output” limit maximum value above 20MW under item 2.2.1 Capacity, C? We presently assume 100% plant capacity is referred to.

ANSWER:

The real power output is referring to the actual amount of power dispatched from the Plant by the GPA AGC system to serve GPA's load requirement. The intent was to provide the bidders with the minimum level of power output under which the 700 MVA of Short Circuit energy is required to be available.

QUESTION:

10. Section C, MFS 1.2.7

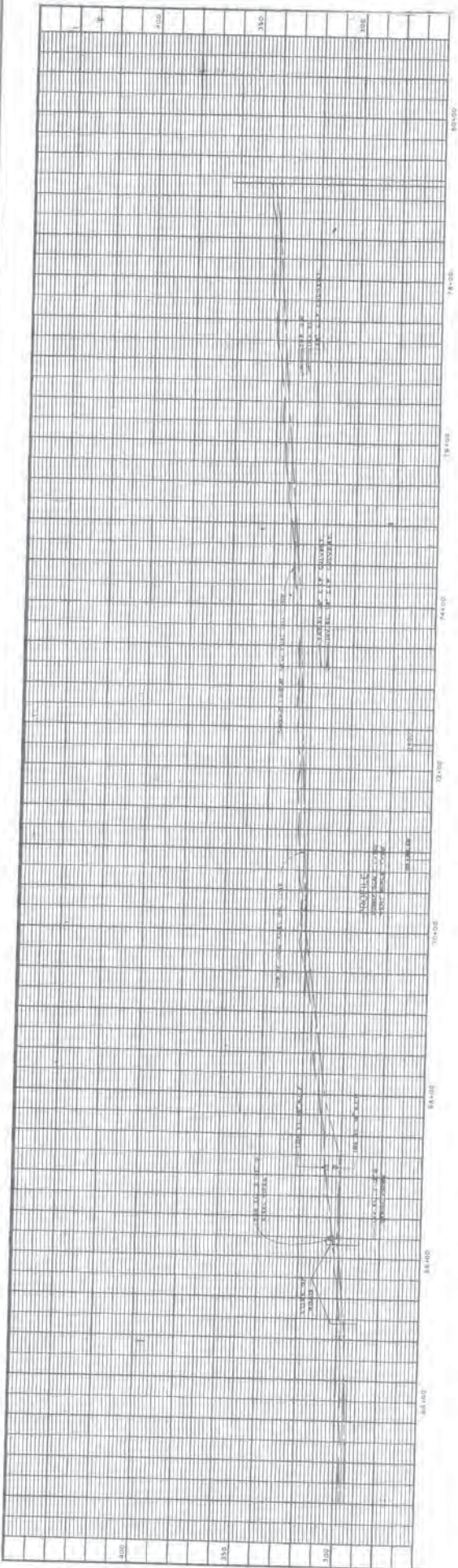
Please provide capacity requirements on the ULSD transfer station

ANSWER:

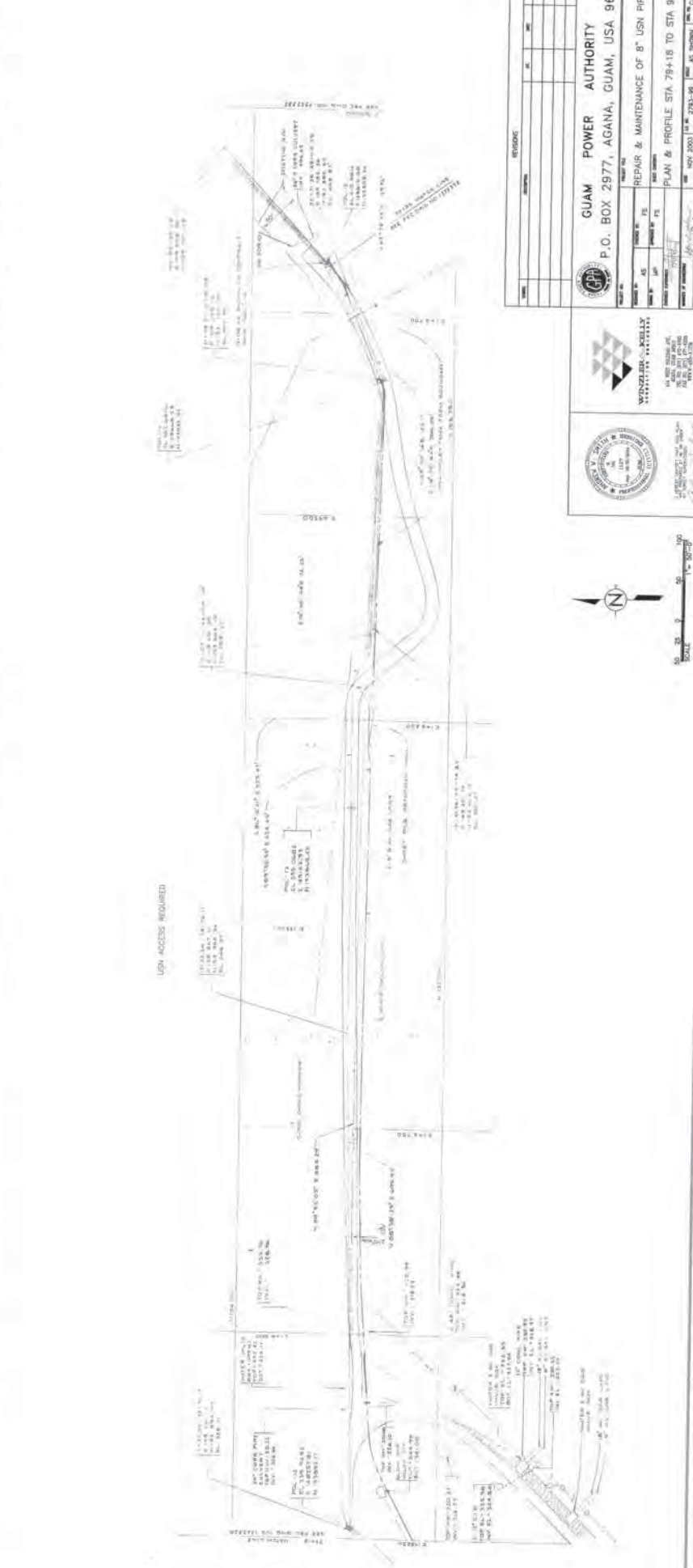
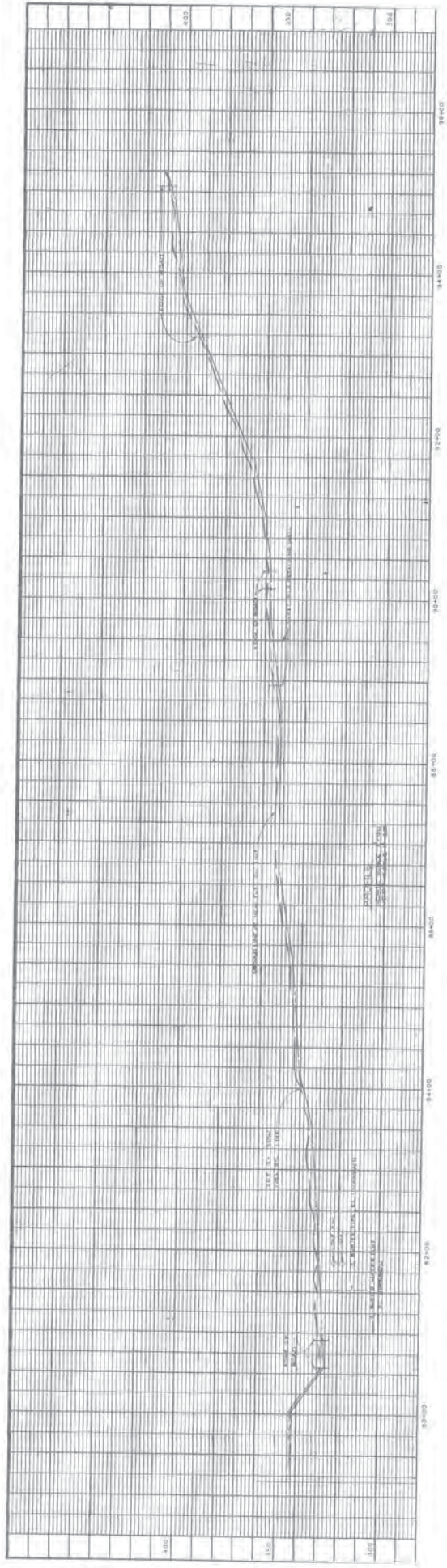
For loading fuel trucks at plant for transfer to other plants; use industry standards for fuel tanker truck loading times.

All other Terms and Conditions in the bid package shall remain unchanged and in full force.


JOHN M. BENAVENTE, P.E.
General Manager



GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910	
PROJECT NO.	808085
ISSUED BY	AS
DATE	1/15/88
SCALE	AS SHOWN
REPAIR & MAINTENANCE OF 8" USN PIPELINE PLAN & PROFILE STA 82+86 TO STA 79+18	



NO.	DESCRIPTION	DATE	BY	CHK

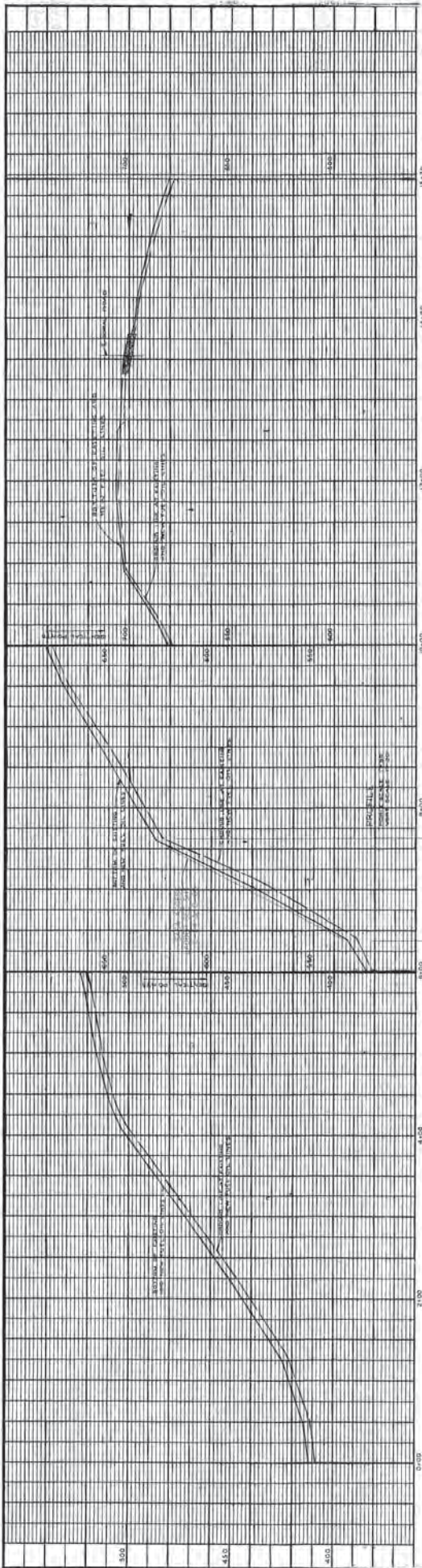
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

WYNZELBY & KELLY
 ENGINEERS & ARCHITECTS
 1400 GARDEN ST., SUITE 200
 AGANA, GUAM 96910
 TEL: (671) 475-1234
 FAX: (671) 475-1235

GUAM POWER AUTHORITY
 ENGINEER
 NAME: [] TITLE: []
 NAME: [] TITLE: []
 NAME: [] TITLE: []
 NAME: [] TITLE: []

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA. 78+18 TO STA. 95+25

NOV 2003 | 100% 2963-08 | 100% AS SHOWN | 100% C-10



REVISIONS	
NO.	DESCRIPTION

AS-BUILT
J&B Modern Tech
 LOCAL CONTRACTORS
 1000 W. WASHINGTON STREET, SUITE 100
 AGANA, GUAM 96910
 TEL: (670) 660-0008 FAX: (670) 660-0009



LEGEND

- PIPE #119 (119) ALSO WITH NUMBER OF HITS TO BE FILLED IN SPAN.
- NUMBER OF HITS (RESIDES) WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED).
- SUPPORT CONDITION IF (E) AND SHALL BE INDICATED.
- SUPPORT CONDITION IS (P) AND SHALL BE INDICATED.

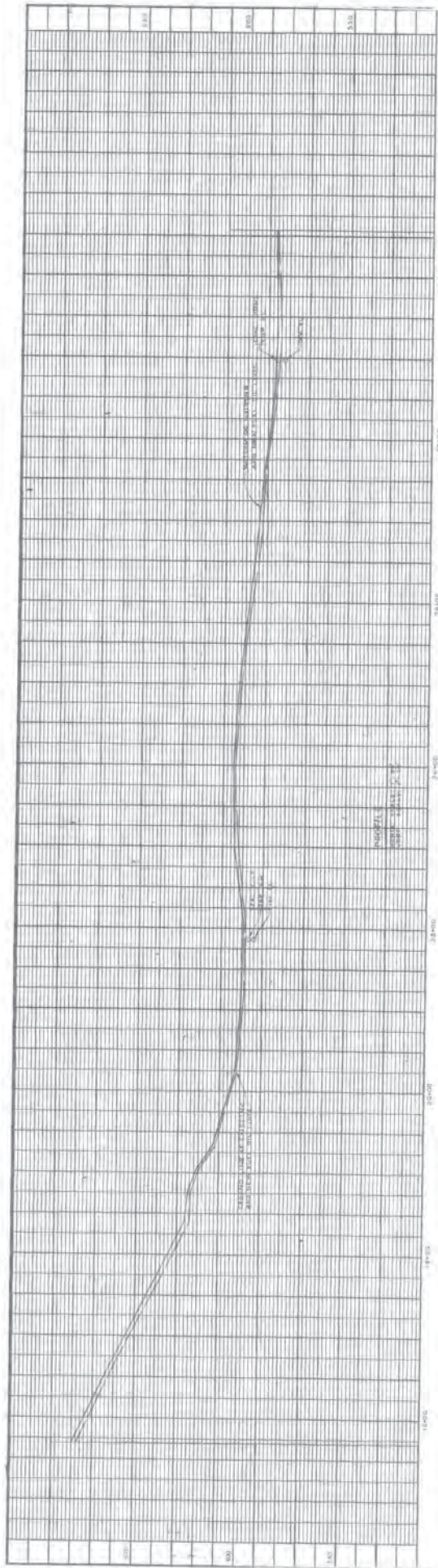


NOTE:
 REFER TO ALL WORKSHEETS, SPECIFICATIONS, CONTRACT BILLS, MATERIAL TEST, SAMPLES, CHECK FOR EXPANSION FITS, AND REPAIRS ACCORDING TO SPECIFICATION SECTIONS 05040 AND 09711.
 1. PIPE COATING REHABILITATION (P-C-R)

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF U.S. PIPELINE
 PLAN & PROFILE STA 0+00 TO STA 15+70

DATE: 08/20/03
 DRAWN BY: J&B
 CHECKED BY: J&B
 APPROVED BY: J&B



USN ACCESS REQUIRED



LEGEND

- ▽ 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN
- 1-12 NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT (TYPE NOTED)
- ⊙ SUPPORT CONDITION IS FAIR AND SHALL BE UPDATED
- ⊖ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED

NOTE

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PITS. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09771.

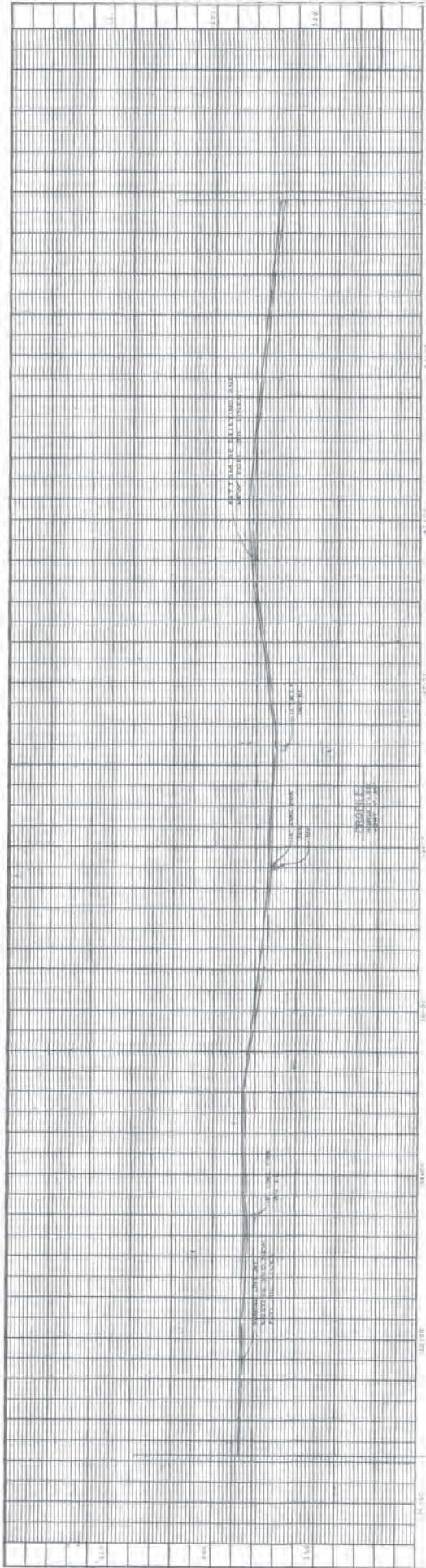
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DESIGNED BY	GP
CHECKED BY	GP
IN CHARGE	GP
APPROVED BY	GP
DATE	10/15/15
PROJECT NO.	15-0000
DATE	10/15/15
SCALE	AS SHOWN
DESIGNED BY	GP
CHECKED BY	GP
IN CHARGE	GP
APPROVED BY	GP
DATE	10/15/15

TANGUSSION AREA AND ROAD CROSSINGS



REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 15+70 TO STA 30+57.48

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910



NOTE:

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE FEEDS. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 02592 AND 02971.

REVISIONS			
NO.	DESCRIPTION	DATE	BY

GUAM POWER AUTHORITY

P.O. BOX 2977, AGANA, GUAM, USA 96910

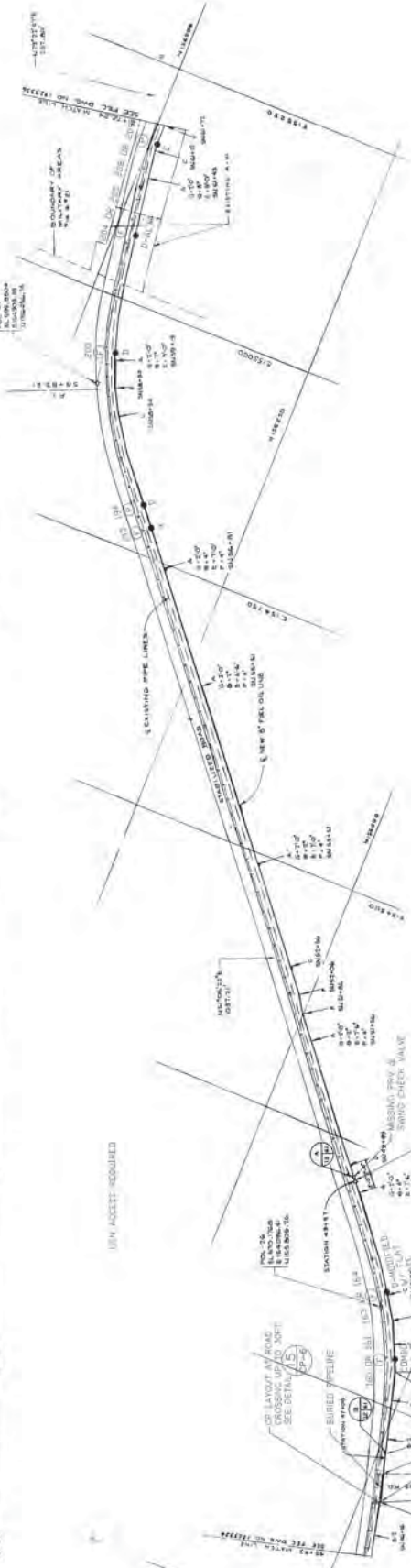
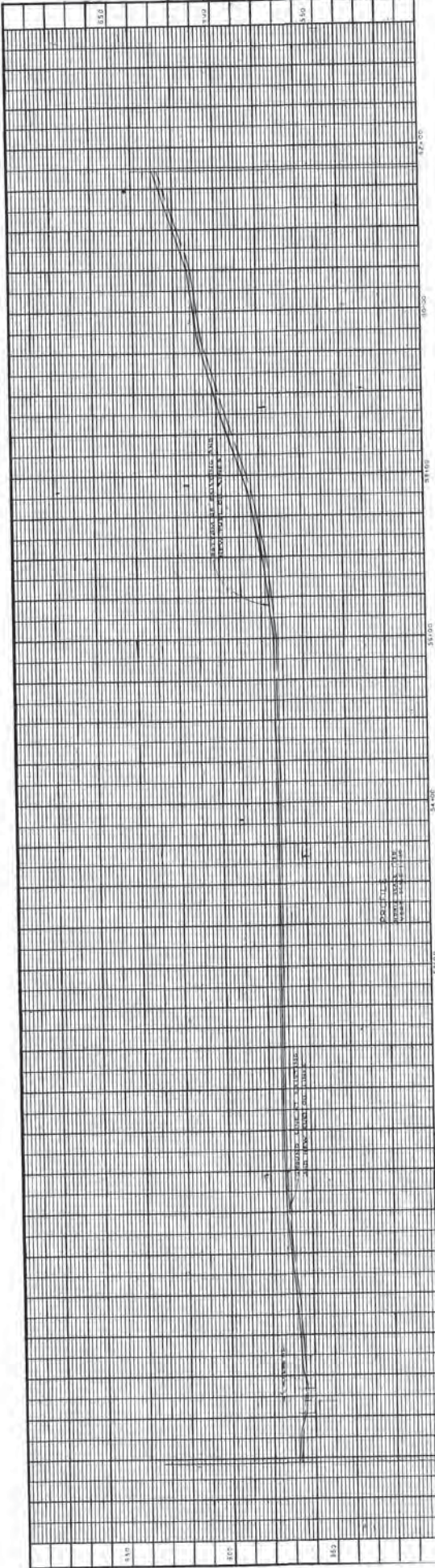
PROJECT NO. 45
 DRAWING NO. 45-13
 SHEET NO. 13 OF 15
 DATE: MAY 2003
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 PROJECT: REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA. 30+57.48 TO STA. 45+83

DATE: MAY 2003
 SCALE: AS SHOWN
 DRAWN BY: [Signature]
 DATE: 18 OF 78



LEGEND

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-
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-



NOTE:
 REPLACE ALL CONCRETE SUPPORTS OF CONCRETE PIPES.
 REPAIR ALL DAMAGED CONCRETE PIPES
 ACCORDING TO SPECIFICATION SECTIONS 05600 AND 09871

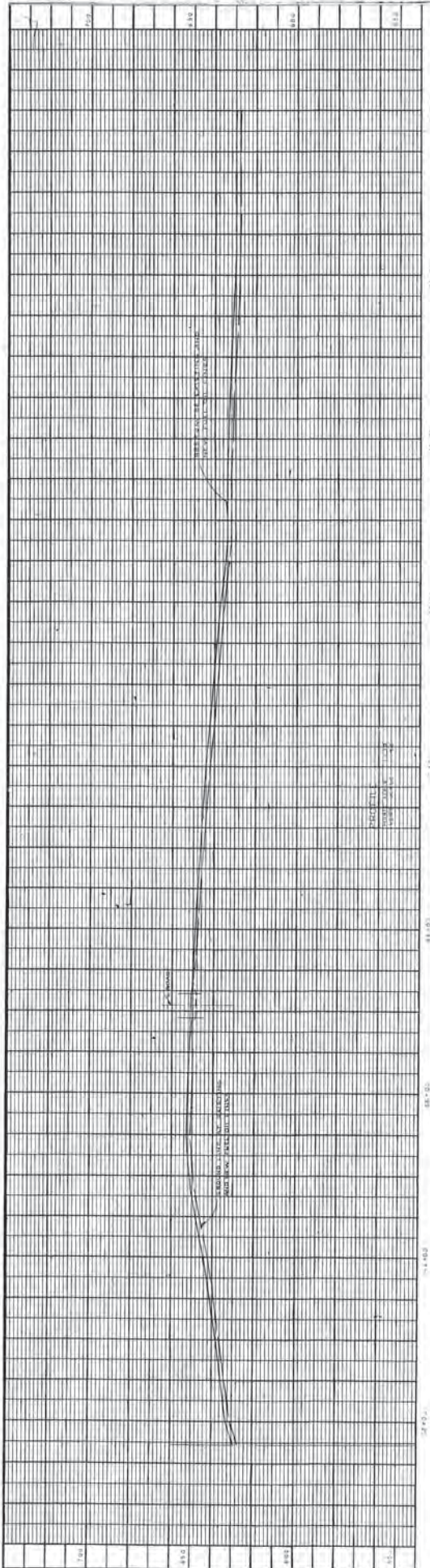
DATE	NOV 2003	BY	WJG
NO.	000	REVISION	
GPH			
GUAM POWER AUTHORITY			
P.O. BOX 2977, AGANA, GUAM, USA 96910			
PROJECT NO.	45	PROJECT TITLE	REPAIR & MAINTENANCE OF 8\"/>
DESIGNER	AS	APPROVER	TS
DATE	NOV 2003	SCALE	AS SHOWN
PLAN & PROFILE STA 45+00 TO STA 61+72.24			

AS-BUILT
J&B Modern Tech
 1000 W. WILSON BLVD.
 SUITE 200
 SAN ANTONIO, TEXAS 78201
 TEL: (214) 349-3388 FAX: (214) 349-3345



LEGEND

- 100 FT. TICK MARK WITH NUMBER OF FITS-OUT BE FILLED IN SEPA.
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN FEET.
- SUPPORT TYPE NOTE.
- SUPPORT CONDITION IS FAIL AND SHALL BE UPGRADED.
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.
- PIPE COATING RENOVULATION.



- LEGEND**
- 100 FT DIA. MARK WITH NUMBER OF FITS TO BE FILLED IN REPAIR
 - 111-11 NUMBER OF PATCH REMAINS WITH LENGTH OF PATCH IN INCHES
 - SUPPORT (TYPE NOTED)
 - SUPPORT CONDITION (S) (4th DIGIT SHALL BE (P)OR(R)OR(L))
 - SUPPORT CONDITION (S) POOR AND SHALL BE REPLACED
 - FINISH TYPE 2 CONCRETE ENCASUREMENT (C-2) (P-2)

INDEX
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIPE REPAIRS WITH TYPE 2 CONCRETE ENCASUREMENT ACCORDING TO SPECIFICATION SECTIONS 02500 AND 09711.

FRESH CONCRETE ENCASUREMENT TYPE 2 4/0-80 CONCRETE
 ENCASUREMENT

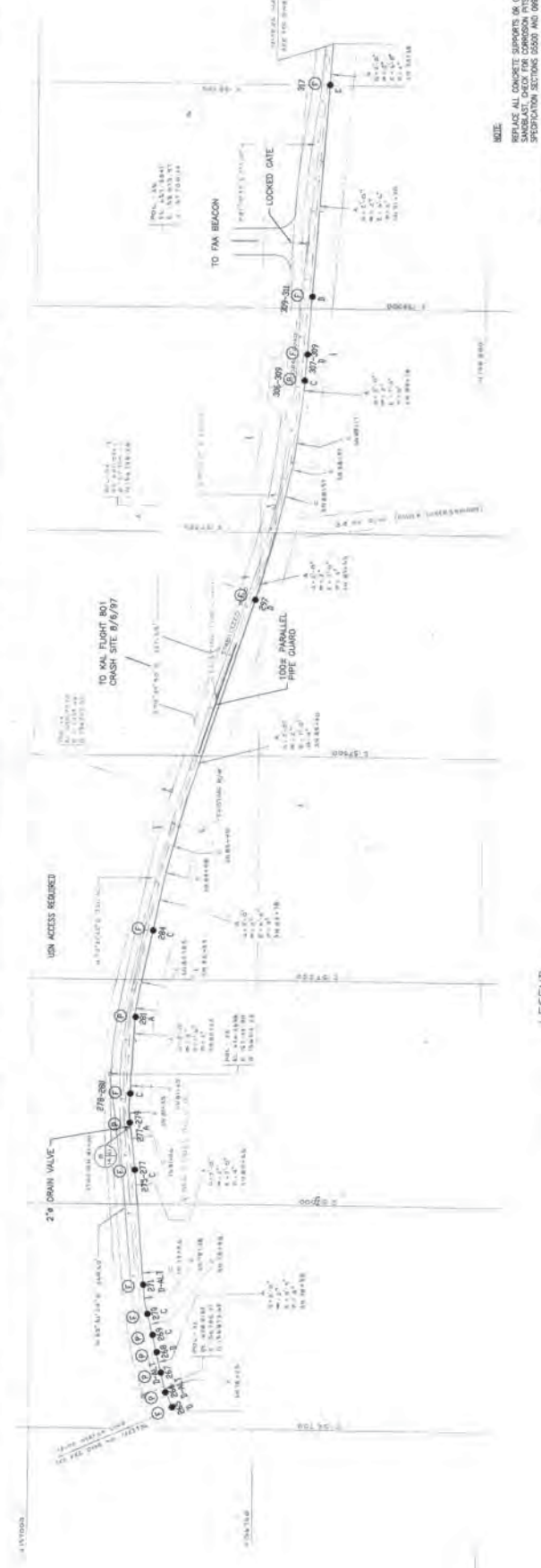
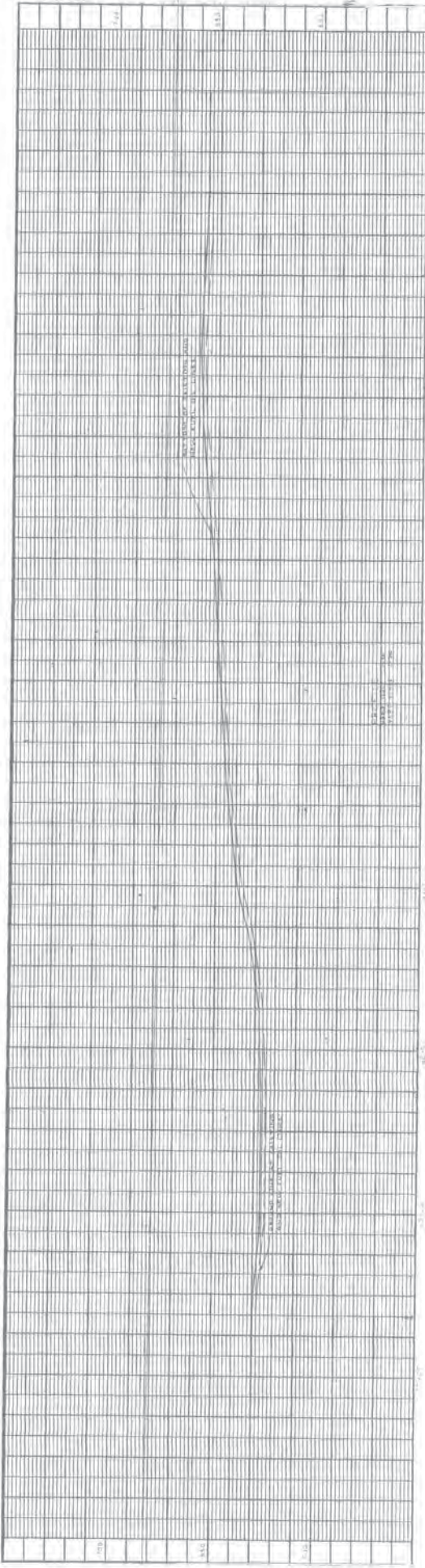
AS-BUILT
J&B Modern Tech
 400 W. 17th Street, Suite 200
 San Jose, CA 95131



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 61+72.24 TO STA 78+00

DATE: 02/20/2023
 DRAWN BY: [Name]
 CHECKED BY: [Name]
 APPROVED BY: [Name]



NOTE:
 REPLACE ALL CONCRETE SUPPORTS BE CONCRETE PILES, BRIDGE PITS, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 0550 AND 0671.

REVISIONS

NO.	DATE	DESCRIPTION

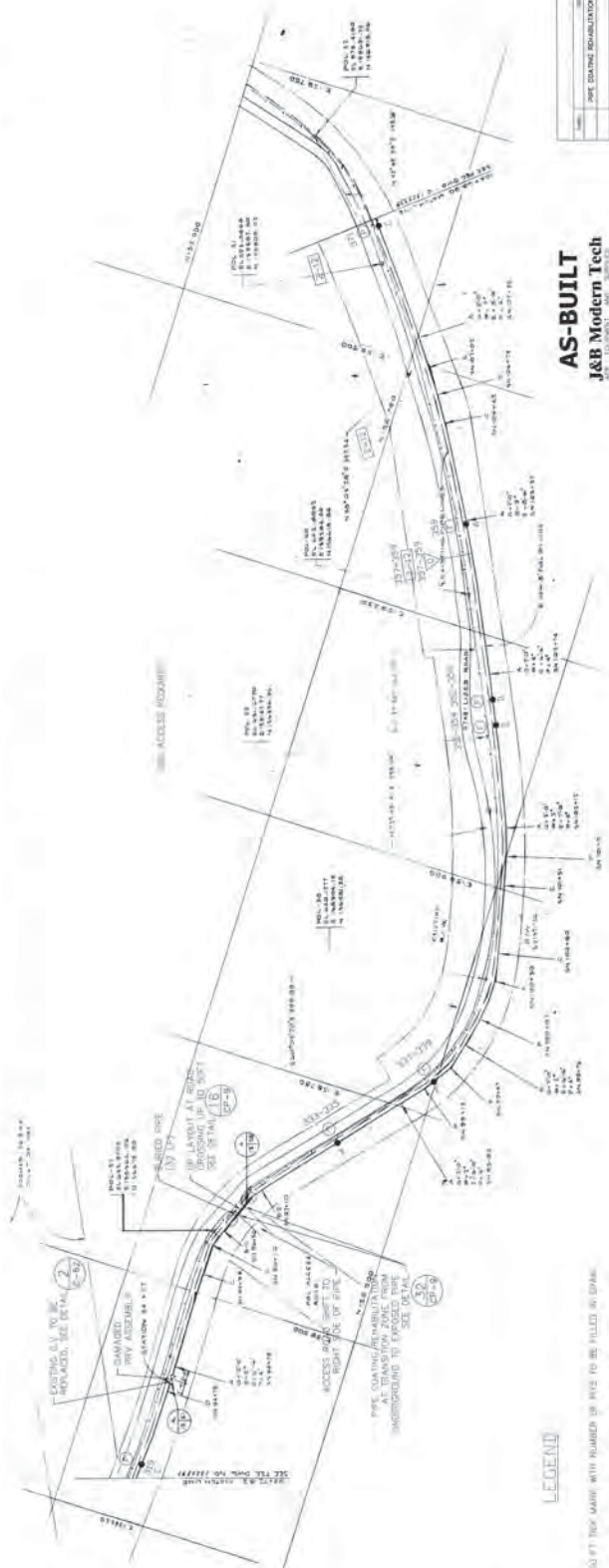
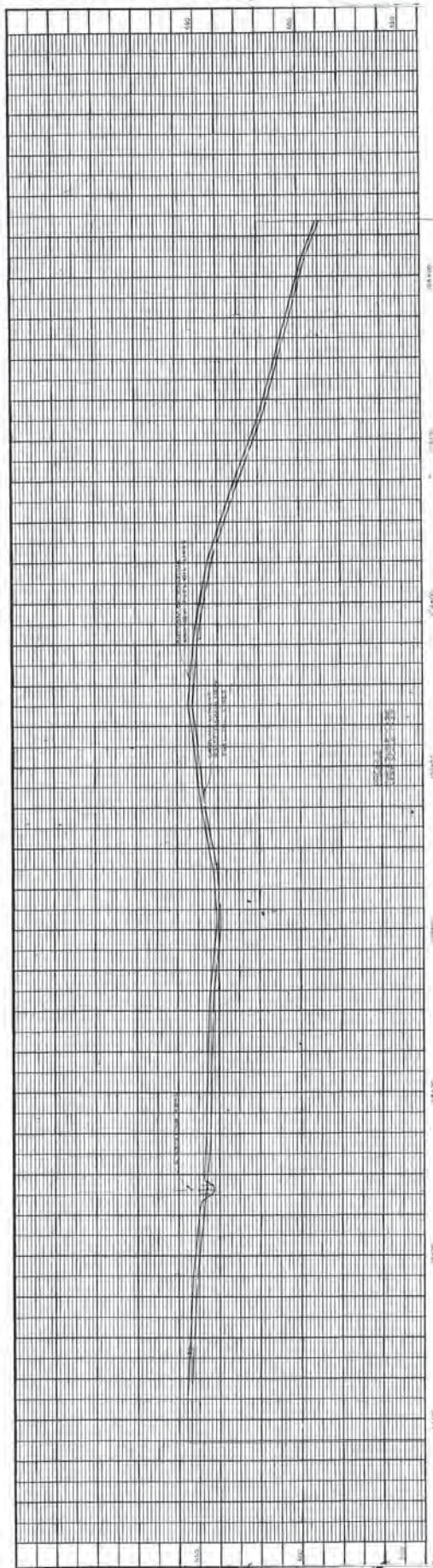
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910



SCALE
 1" = 50'

LEGEND

- ▽ 100 FT TIE MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- [] NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN FEET.
- SUPPORT (TYPE NOTED).
- ① SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ② SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.



LEGEND

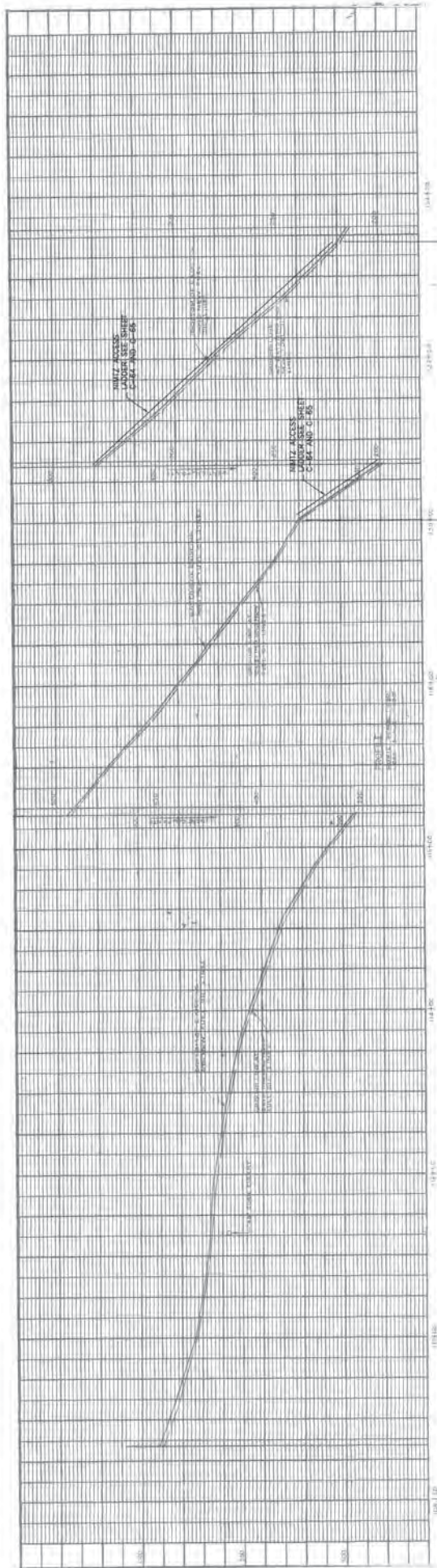
- ▽ 100 FT TRUCK MARKS WITH NUMBERED OR RISE TO BE FILLED IN GRADE.
- 1-2-2 NUMBER OF MATCH REPAIRS WITH LENGTH OF MATCH IN INCHES.
- SUPPLY TYPE NOTED.
- SUPPORT CONDITION IS (AW) AND SHALL BE APPROVED.
- ⊙ SUPPORT CONDITION IS (P) AND SHALL BE REFERENCE.

AS-BUILT
J&B Modern Tech
 U.S. AND VIETNAM VETERANS
 10000 W. 10TH AVENUE, SUITE 100
 DENVER, COLORADO 80202

WENZEL-SABELLY
 CONSULTANTS, INC.
 10000 W. 10TH AVENUE, SUITE 100
 DENVER, COLORADO 80202

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO.	10000
DATE	10/10/00
SCALE	AS SHOWN
DESIGNED BY	J&B
CHECKED BY	J&B
APPROVED BY	J&B
DATE	10/10/00
PROJECT NO.	10000
DATE	10/10/00
SCALE	AS SHOWN
DESIGNED BY	J&B
CHECKED BY	J&B
APPROVED BY	J&B
DATE	10/10/00



NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PERIS. REMOVE ALL CONCRETE PERIS AND SUPPORTS NOT PERMITTED ACCORDING TO SPECIFICATION SECTIONS 03500 AND 06070.

- LEGEND**
- 100 FT TACK MARK WITH NUMBER OF FITS TO BE FILLED IN SPAN.
 - NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT (TYPE NOTED).
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

NO.	DESCRIPTION	DATE	BY	CHKD

GUAM POWER AUTHORITY
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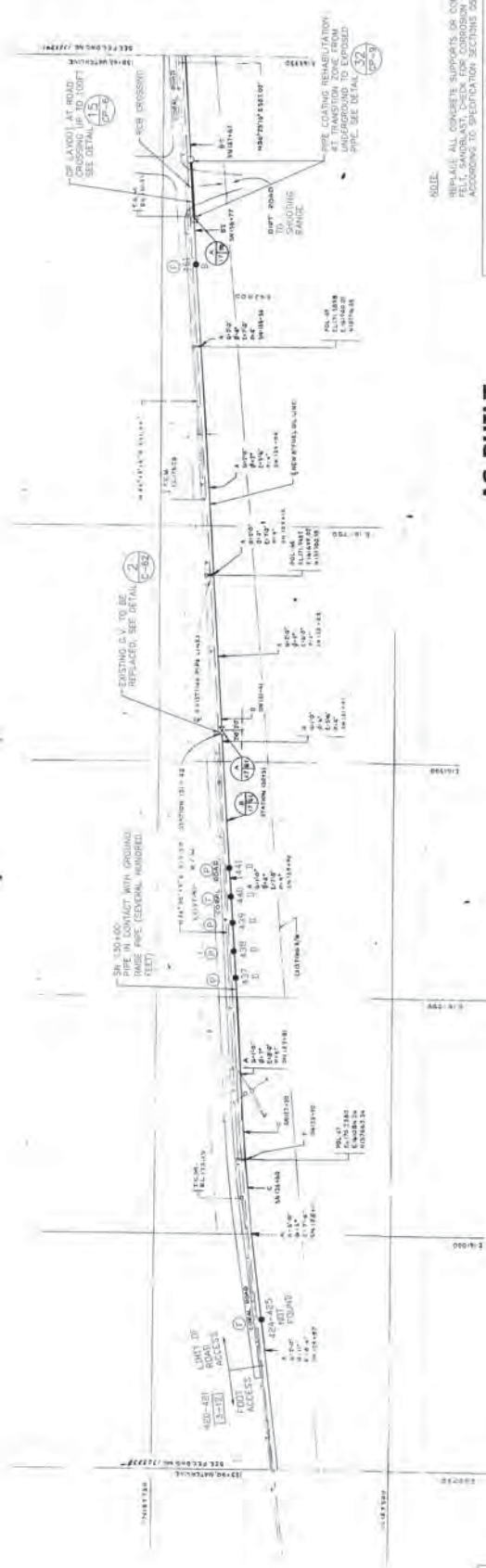
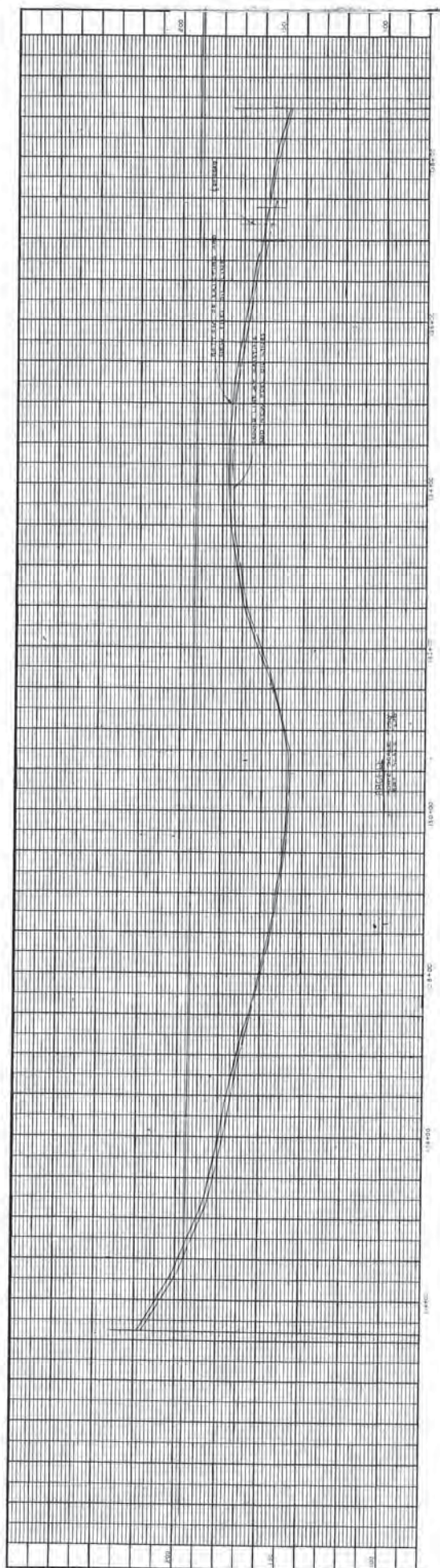
REPAIR & MAINTENANCE OF 8" USM PIPELINE

PLAN & PROFILE STA 108+68 TO STA 123+60

DATE: MAY 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]



SCALE: 1" = 20'-0"
 DATE: MAY 2003



100 FT TOX MARK WITH NUMBER OF PITS TO BE FILLED IN SPAS
 NUMBER OF WATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
 SUPPORT CONDITION IS POOR AND SHALL BE UPGRADED
 SUPPORT CONDITION IS GOOD AND SHALL BE RETAIRED

LEGEND

- 100 FT TOX MARK WITH NUMBER OF PITS TO BE FILLED IN SPAS
- NUMBER OF WATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT CONDITION IS POOR AND SHALL BE UPGRADED
- SUPPORT CONDITION IS GOOD AND SHALL BE RETAIRED

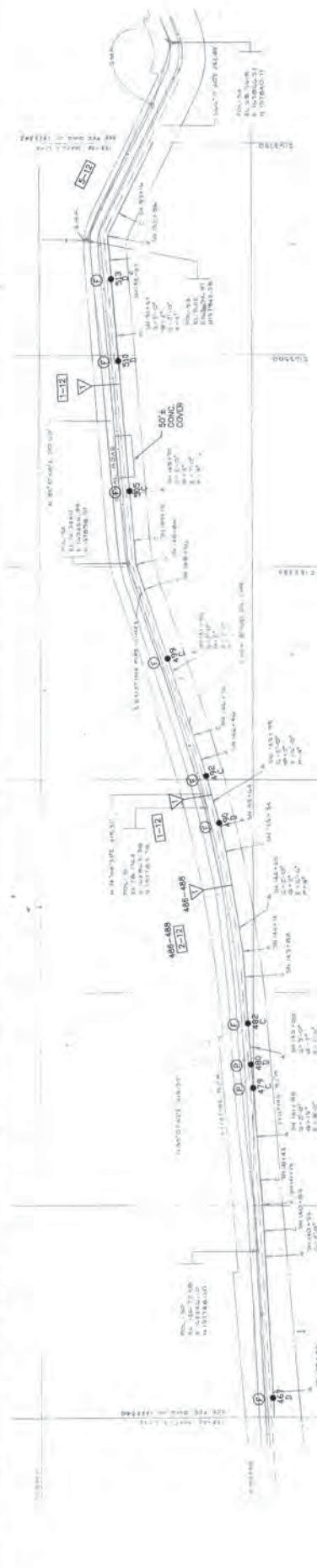
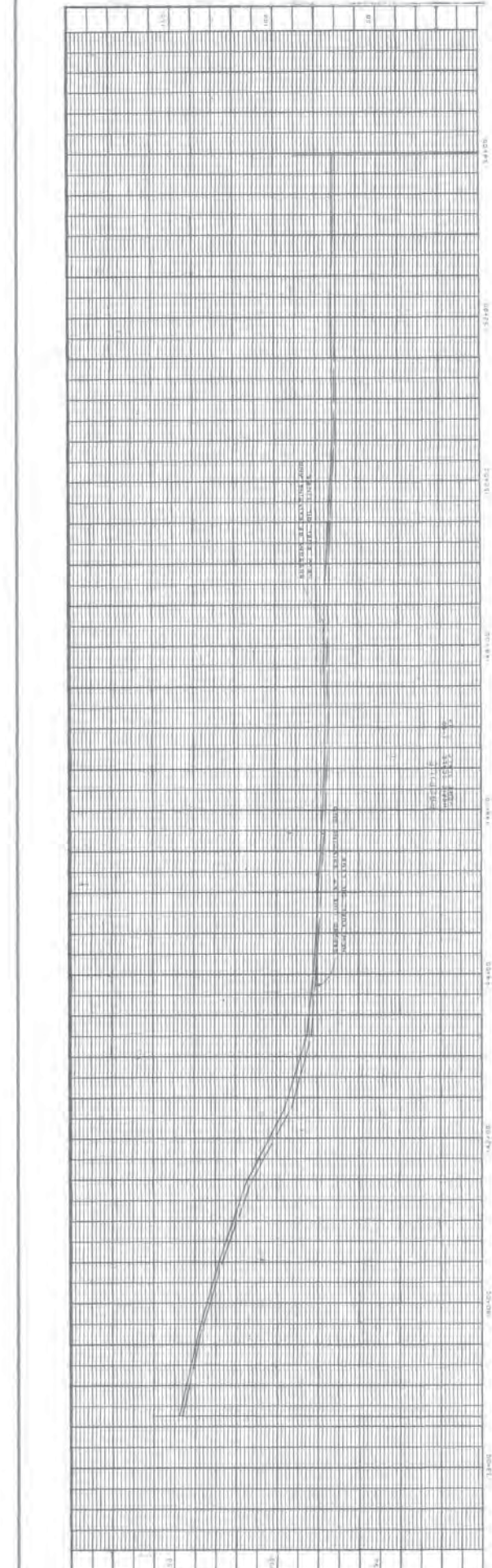
AS-BUILT
J&B Modern Tech
 2100 SHAW BLVD, SUITE 200
 SAN JOSE, CA 95128
 (408) 434-1100



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

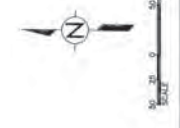
PROJECT NO. 15
 DRAWING NO. 15
 SHEET NO. 15
 DATE: 03/20/15

PIPE COATING RENOVATION - 32" DP-3
 REPAIR & MAINTENANCE OF 8" LIEN PIPELINE
 PLAN & PROFILE STA 123+60 TO STA 138+63



LEGEND

- 100 FT ROK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED)
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.



NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE JOINTS. REMOVE
 ALL REBAR AND REINFORCEMENT FROM ALL JOINTS AND SUPPORTS
 ACCORDING TO SPECIFICATION SECTIONS 05550 AND 09710.

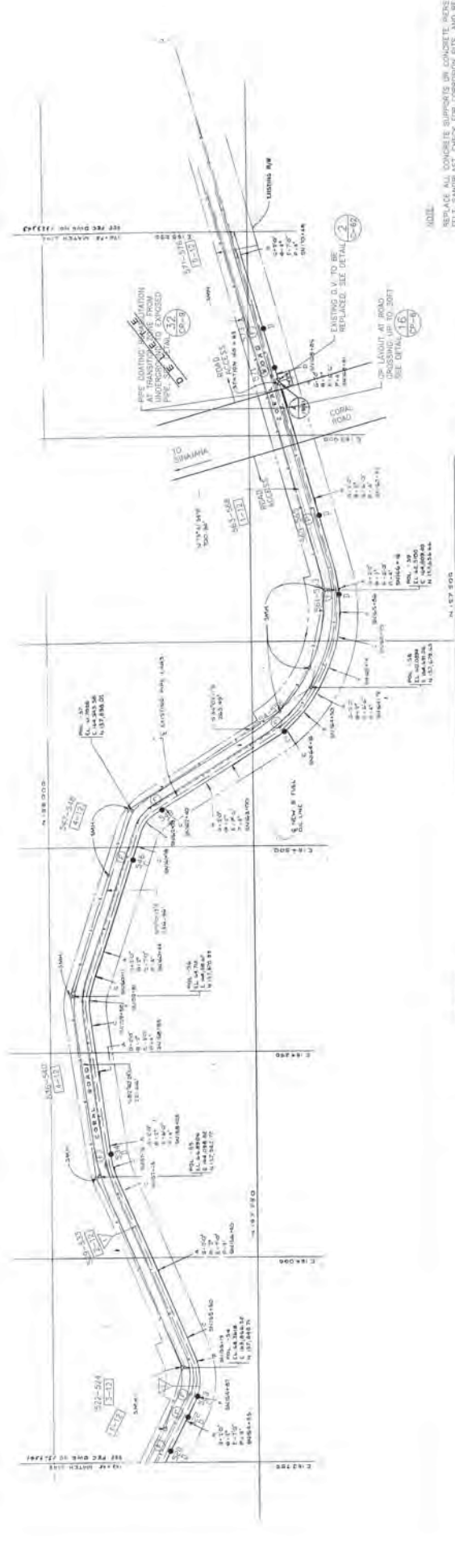
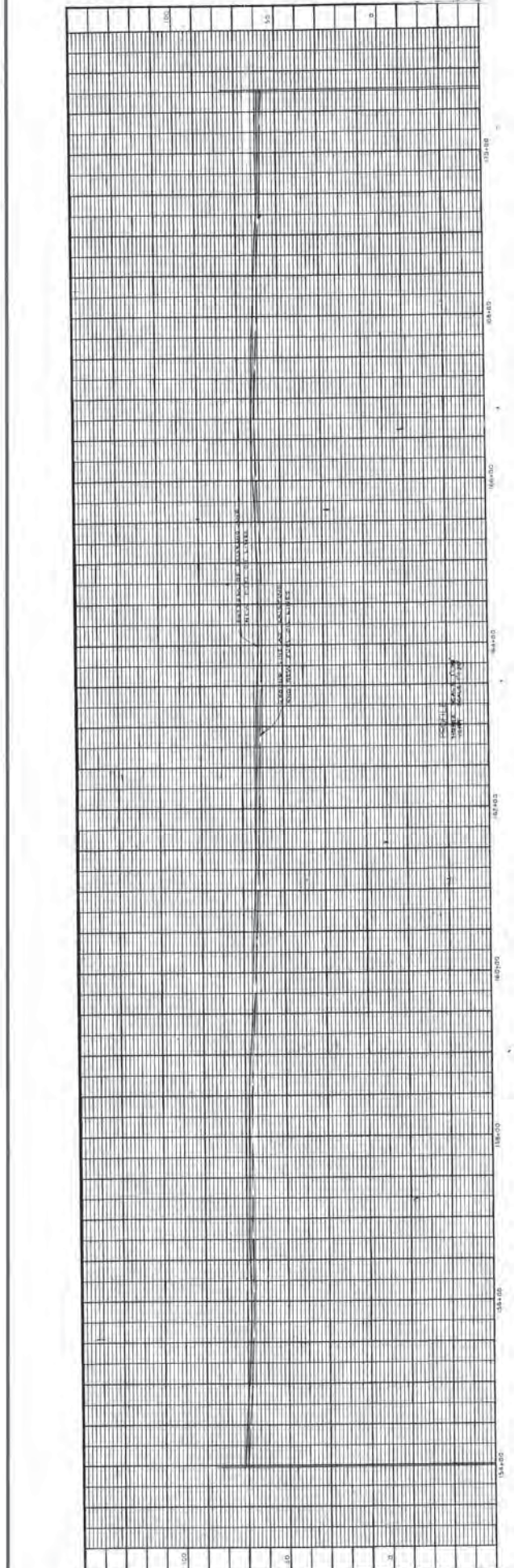
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO.		REVISION	
DATE	DESCRIPTION	DATE	BY



DATE: MAY 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 SCALE: AS SHOWN

PROJECT: REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 138+63 TO STA 153+98
 SHEET NO. C-39
 TOTAL SHEETS: 40



REPLACE ALL CONCRETE SUPPORTS ON CONCRETE PILES
 REPAIR ALL DAMAGED CONCRETE ENCASEMENT
 ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09901

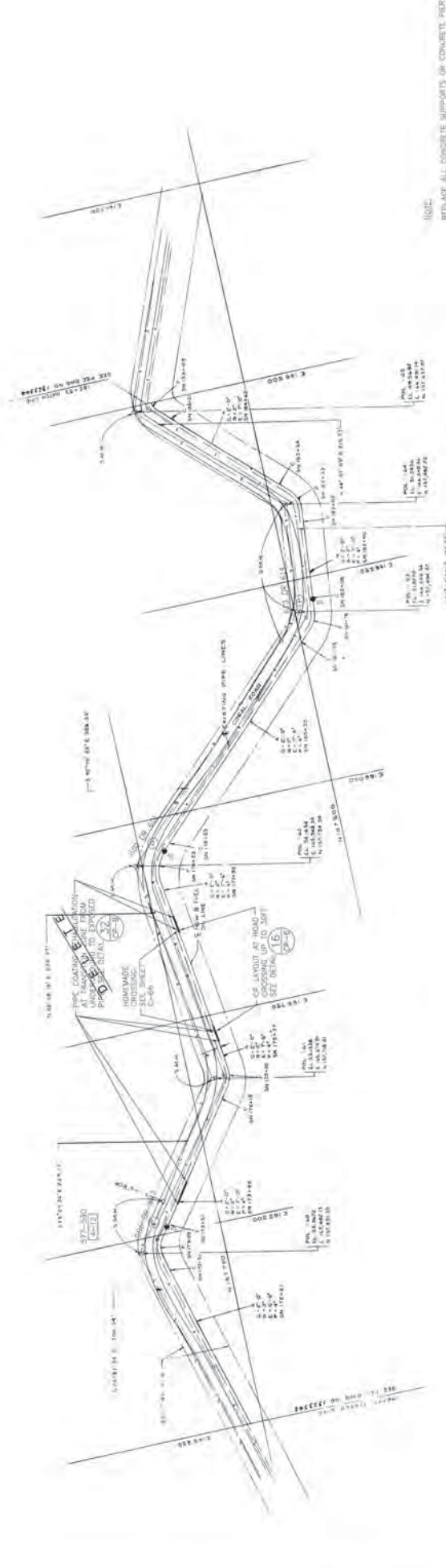
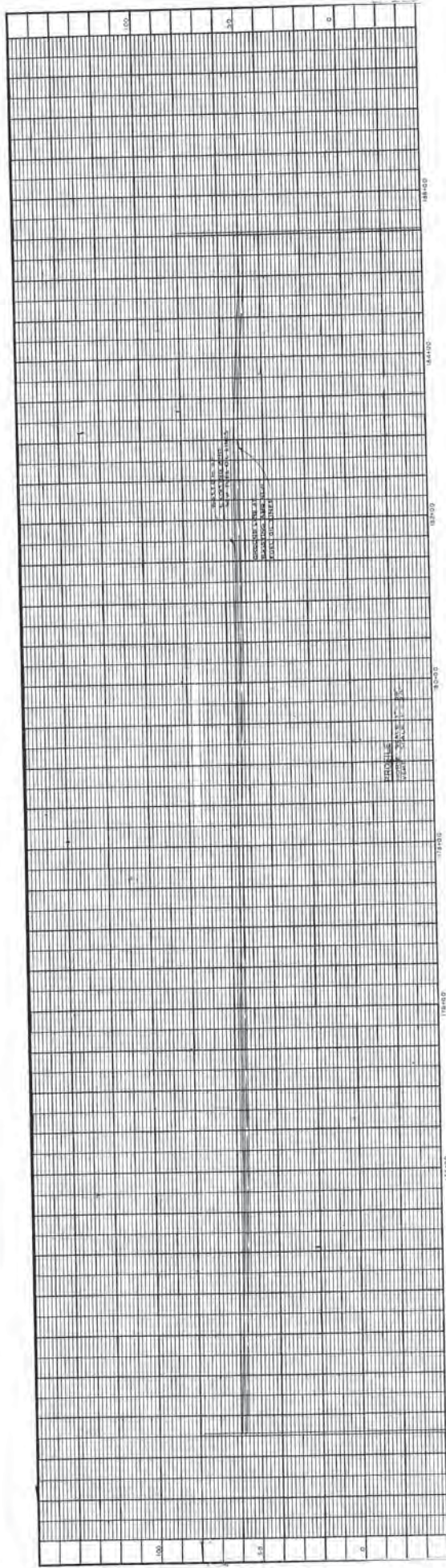
PROJECT NO.	100000
CONTRACT NO.	100000
SECTION	DRIVEWAY TYPE 1 - 2/2'-6"
DATE	
BY	
CHECKED BY	
APPROVED BY	
DATE	
SCALE	
PROJECT TITLE	GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910
PROJECT LOCATION	REPAIR & MAINTENANCE OF 6" USN PIPELINE
PROJECT NUMBER	PLAN & PROFILE STA 153+08 TO STA 170+78
PROJECT DATE	REV. NO. 2003 (REV. 2793-08) (REV. 08/2004)
PROJECT DRAWN BY	REV. 02/2003

AS-BUILT
J&B Modern Tech
 1200 Ross Pkwy, Roseville, CA 95747
 Tel: (916) 584-2000 Fax: (916) 584-4448

GUAM POWER AUTHORITY
 NATIONAL SOCIETY OF PROFESSIONAL ENGINEERS
 LICENSE NO. 100000
 EXPIRES 12/31/2004



- LEGEND**
- 100 FT OR MORE MARK WITH NUMBER OF PILES TO BE FILLED IN SEAL
 - NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
 - SUPPORT TYPE NOTED
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED



NOTE:
REPLACE ALL CONCRETE SUPPORTS OF CONCRETE RISERS WITH PRECAST CONCRETE RISERS AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05560 AND 09777.

PROJECT NO.	170-78
SECTION NO.	185+63
DATE	2/7/88
BY	IN/0000
CHECKED BY	
APPROVED BY	

GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

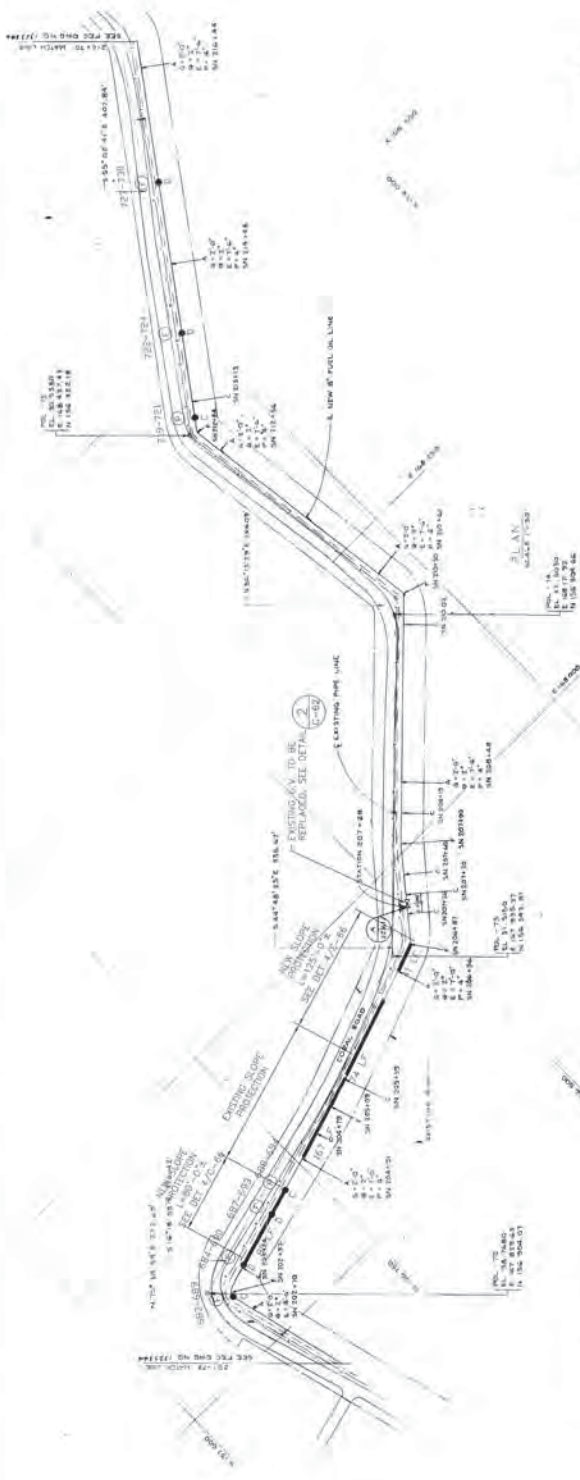
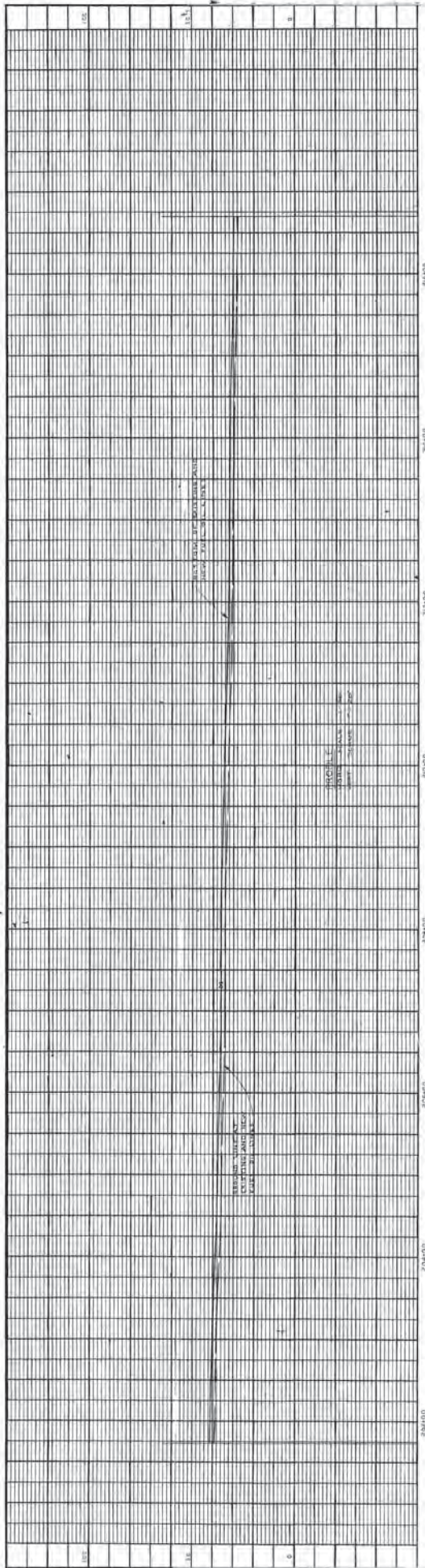
REPAIR & MAINTENANCE OF R' USN PIPELINE
PLAN & PROFILE STA 170+78 TO STA 185+63

AS-BUILT
J&B Modern Tech
P.O. Box 9158, Tumalo, OR 97141
(503) 838-2888 Fax (503) 838-8432



LEGEND

- 185+77 TOX-MASK WITH NUMBER OF REBAR/BE FILLED IN SPAN
- 185+77 TOX-MASK WITH NUMBER OF REBAR/BE FILLED IN SPAN
- NUMBER OF EACH REBAR WITH LENGTH OF PATCH IN INCHES
- SUPPORT TYPE NOTED
- SUPPORT CONDITION IF FAIR AND SHALL BE UPGRADED
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED



- 150 FT TOE MARK WITH NUMBER OF RIPS TO BE TALLER IN SPAN
- NUMBER OF PATCH-REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT TYPE NOTED
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED
- NEW SLOPE PROTECTION ACTUAL LENGTH - RPT, 74L1, & 41L1

NOTE

REMOVE ALL EXISTING SLOPE PROTECTION AND REPAIRS. REMOVE ALL EXISTING SLOPE PROTECTION AND REPAIRS. REMOVE ALL EXISTING SLOPE PROTECTION AND REPAIRS. REMOVE ALL EXISTING SLOPE PROTECTION AND REPAIRS. REMOVE ALL EXISTING SLOPE PROTECTION AND REPAIRS.

NEW SLOPE PROTECTION ACTUAL LENGTH - RPT, 74L1, & 41L1		SECTION	
NO.	DATE	BY	CHKD.

AS-BUILT
J&B Modern Tech
 1000 W. WILSON BLVD., SUITE 100
 DALLAS, TEXAS 75203
 TEL: (214) 443-1100 FAX: (214) 443-1105

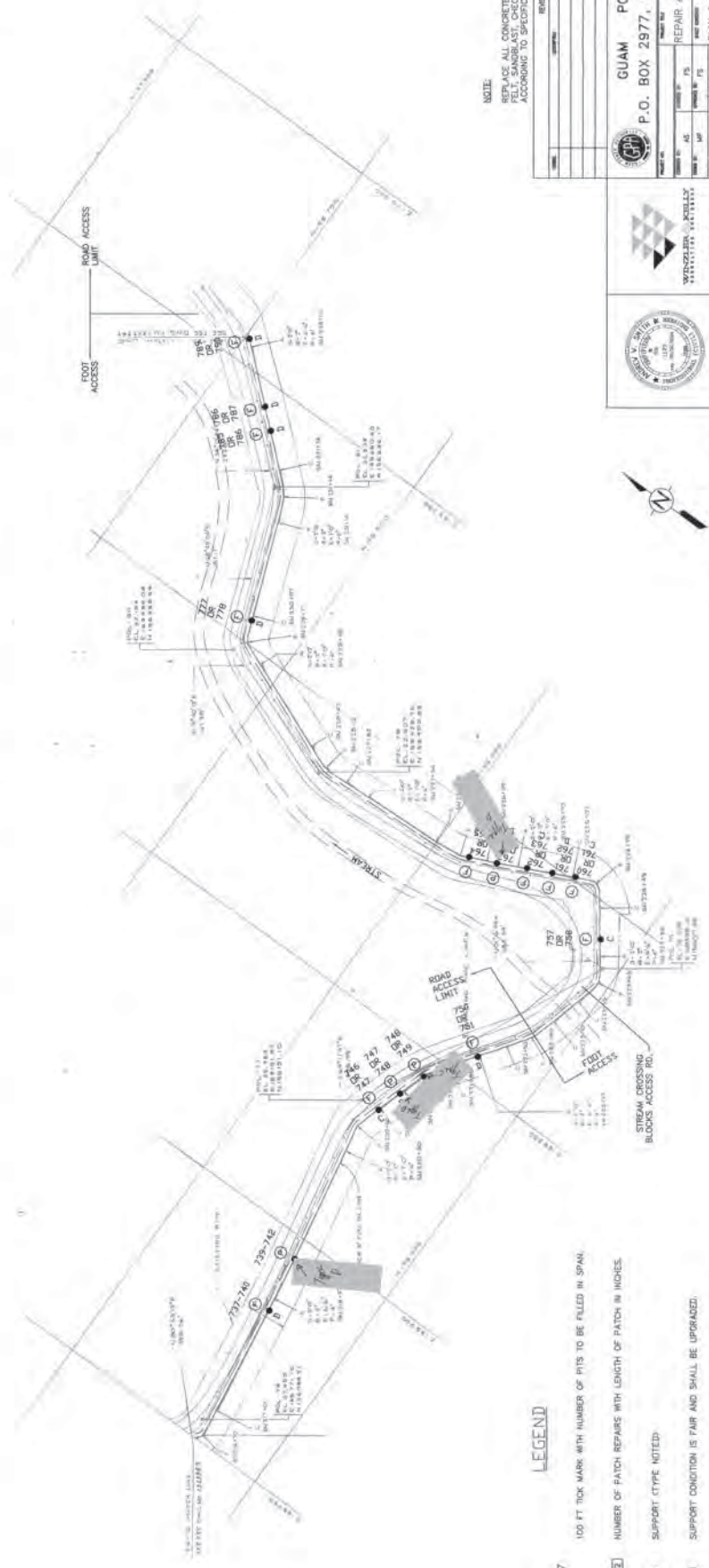
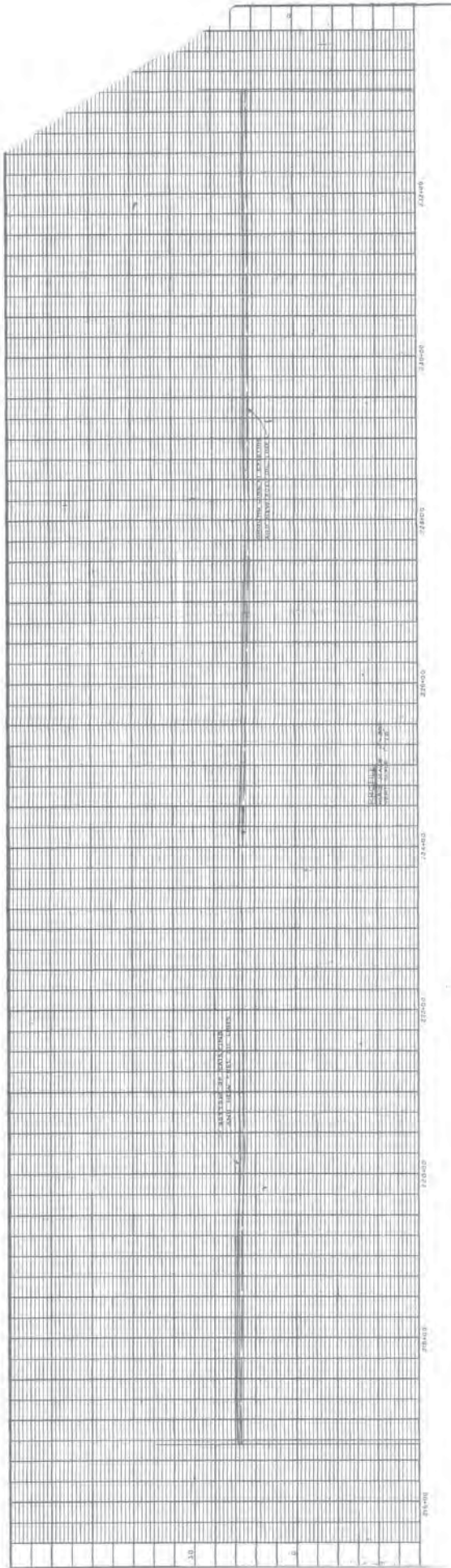
WENZEL & SCHAFFELT
 PROFESSIONAL ENGINEERS
 1000 W. WILSON BLVD., SUITE 100
 DALLAS, TEXAS 75203
 TEL: (214) 443-1100 FAX: (214) 443-1105



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 6" USK FIRELINE
 PLAN & PROFILE STA. 201+73 TO STA. 216+70

DATE: 06/27/2023 10:47:23 AM 2163-000 100% 03.00000
 DRAWN BY: J&B
 CHECKED BY: J&B
 PROJECT NO.: 2163-000
 SHEET NO.: 03.000



NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERES. REMOVE
 FELT, SANDBLAST, CHECK FOR CORROSION FITS, AND REPAIR
 ACCORDING TO SPECIFICATION SECTION 0550 AND 0971.

REVISIONS	
NO.	DESCRIPTION

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 216+70 TO STA 233+27

DATE: NOV 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

MINISTRY OF PUBLIC WORKS

AGANA, GUAM
 P.O. BOX 10000
 GUAM, GUAM 96910

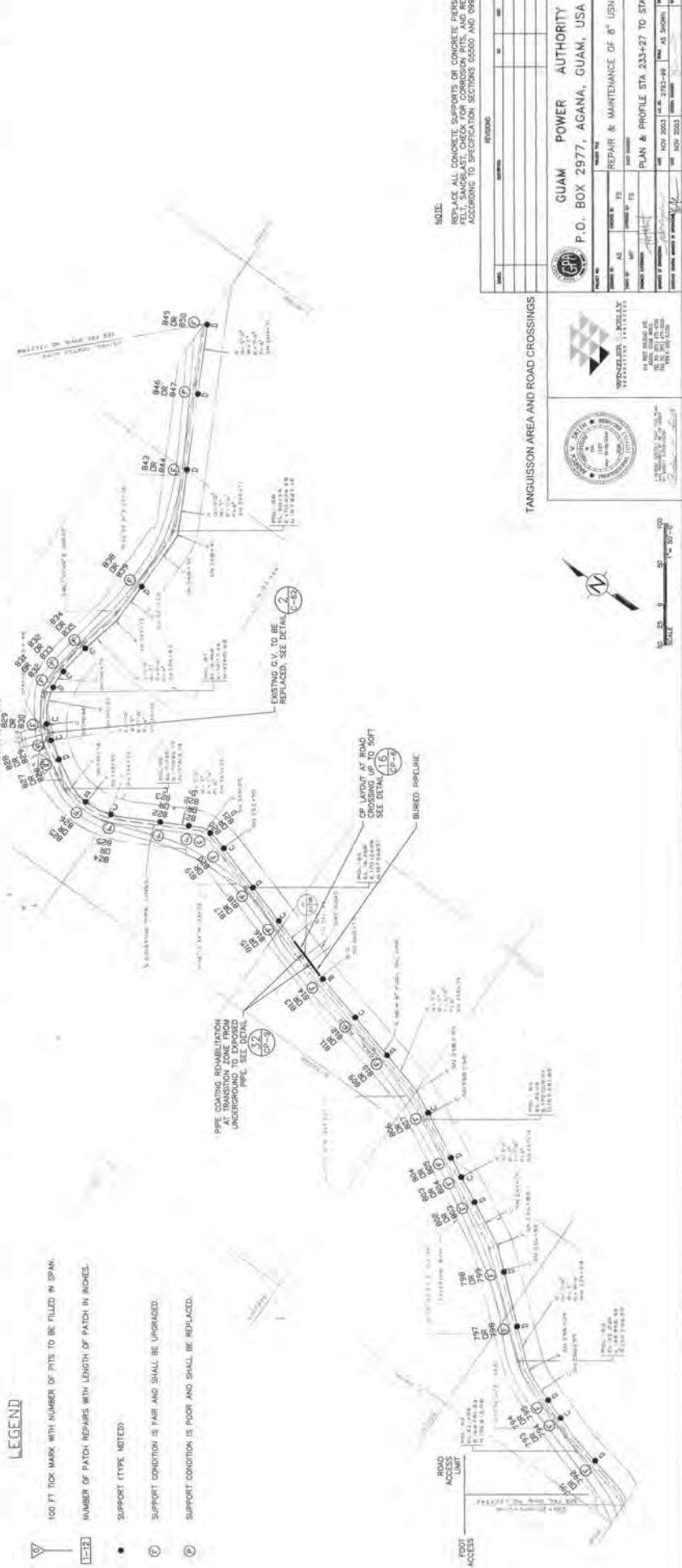
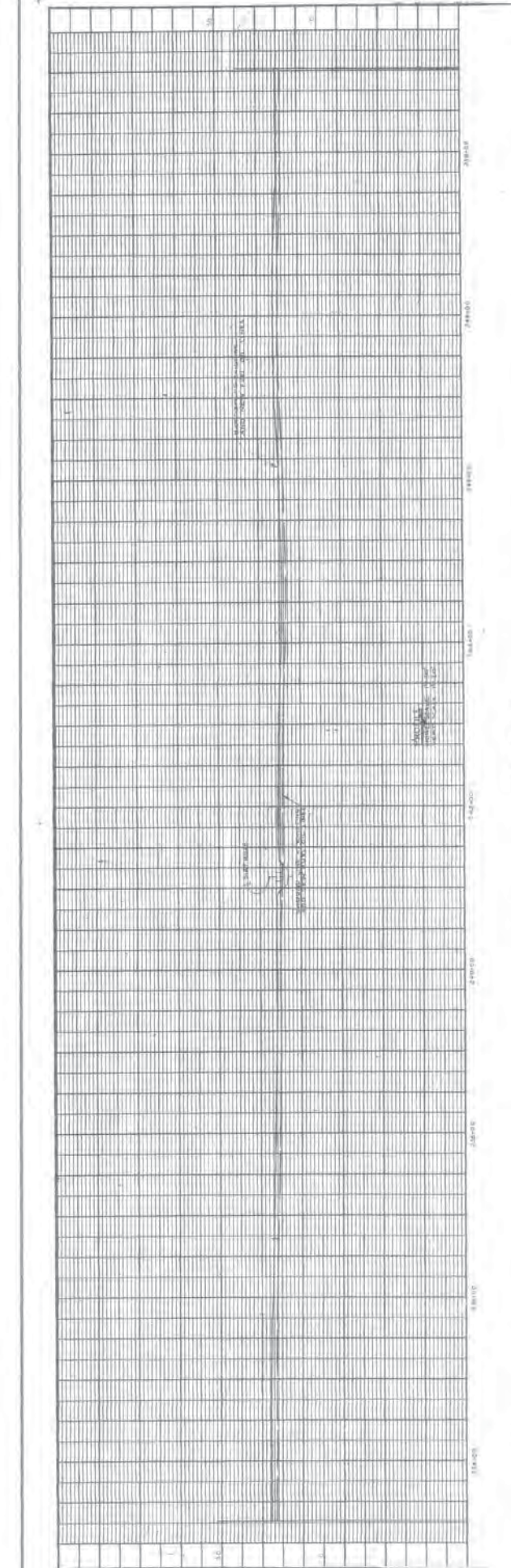
DATE: NOV 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

LEGEND

- 100 FT TYP MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT TYPE NOTED.
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

SCALE
 1" = 200'

N



- LEGEND**
- 100 FT TICK MARK WITH NUMBER OF FITS TO BE FILLED IN SPAN;
 - NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT (TYPE NOTED)
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

NOTE
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE SPANS. REMOVE
 ALL EXCESS CONCRETE. REPAIR AND MAINTENANCE SHALL BE
 ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09971.

NO.	DATE	REVISION

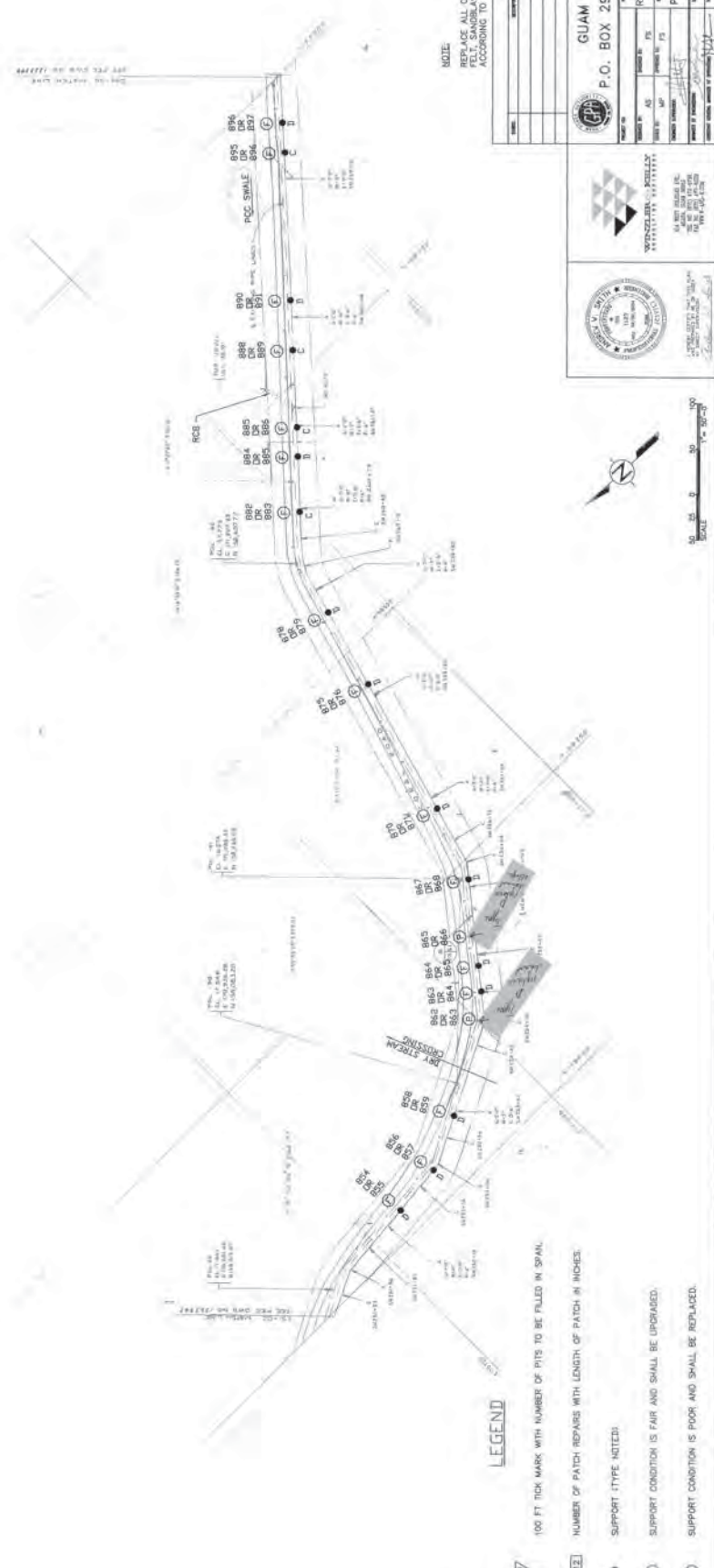
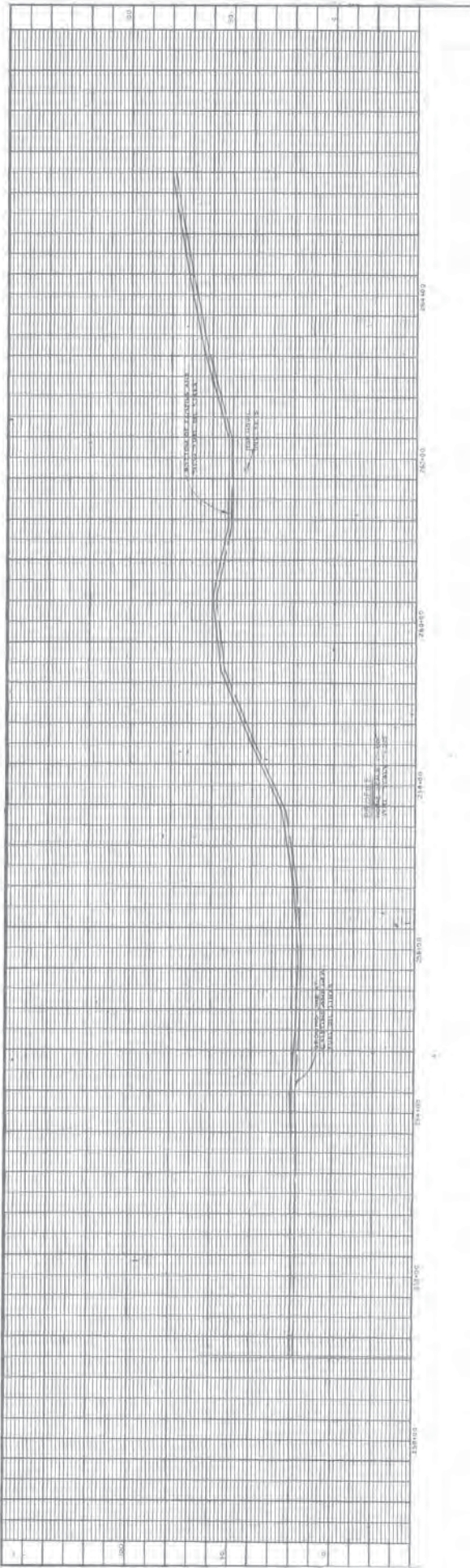
TANQUISSON AREA AND ROAD CROSSINGS

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 233+27 TO STA 251+02

DATE: MAY 2002
 DRAWN BY: AS SHOWN
 CHECKED BY: AS SHOWN
 SCALE: AS SHOWN





NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERS. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 0550 AND 09971.

NO.	REVISIONS	DATE	BY	CHKD

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE

PLAN & PROFILE STA 251+02 TO STA 265+50

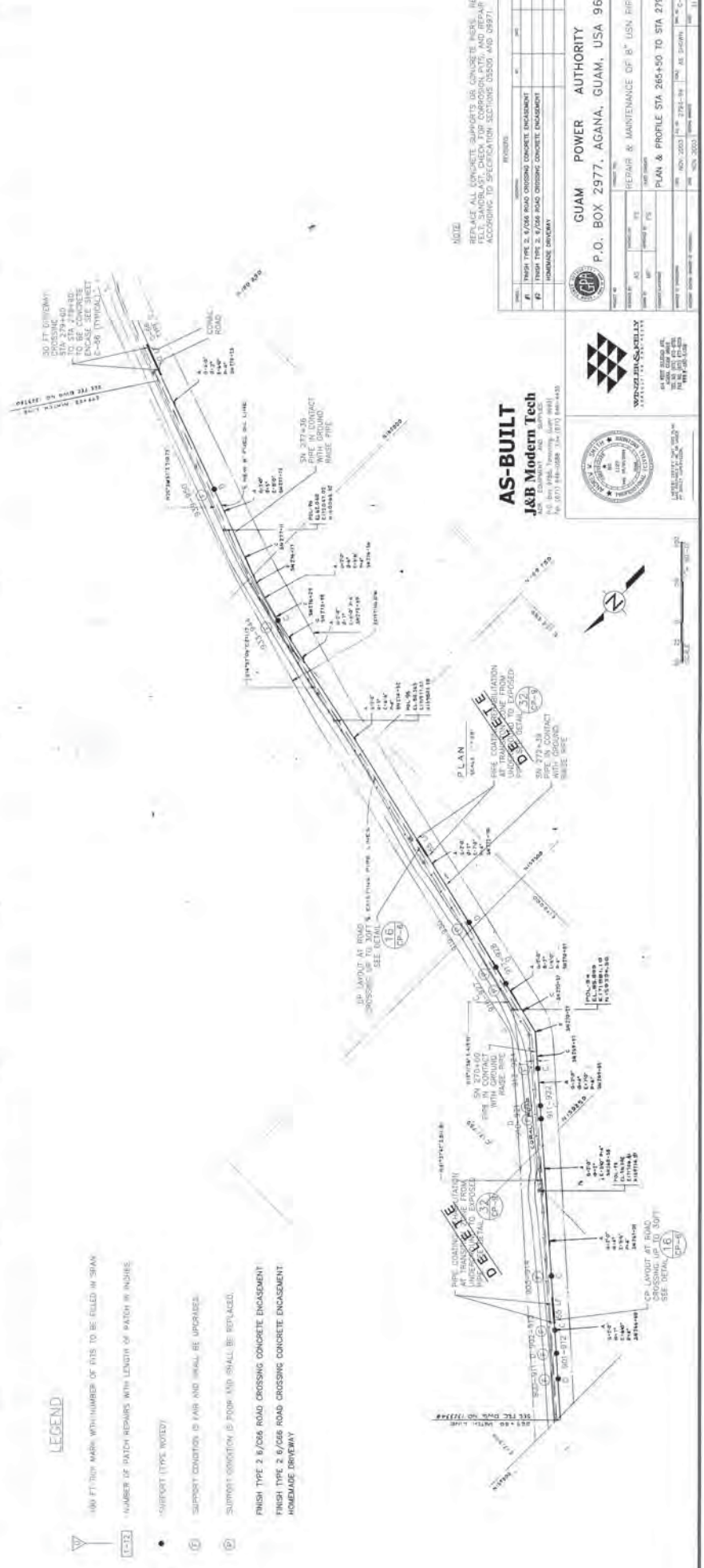
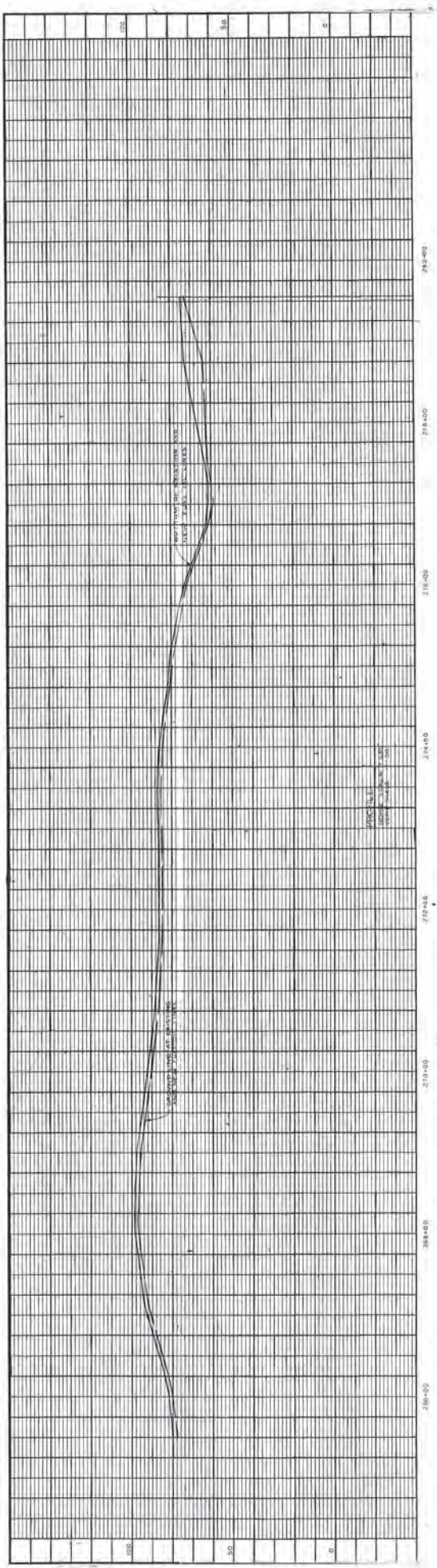
DATE: 07/2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 PROJECT NO.: 03-027

LEGEND

- ▽ 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAL.
- 1-3 1 NUMBER OF PATCH-REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED).
- ⊖ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ⊕ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

GUAM POWER AUTHORITY
 1000 GARDEN DRIVE
 AGANA, GUAM 96910
 TEL: (671) 494-1313

GUAM WATER SUPPLY AUTHORITY
 1000 GARDEN DRIVE
 AGANA, GUAM 96910
 TEL: (671) 494-1313



LEGEND

- (100 FT) MARK WITH NUMBER OF FT'S TO BE ELLED IN SPAN
 - (16) NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
 - (SUPPORT TYPE NOTED)
 - (S) SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADES
 - (D) SUPPORT CONDITION IS POOR (ND) SHALL BE REPLACED.
- FINISH TYPE 2 8/06 ROAD CROSSING CONCRETE ENCASMENT
 FINISH TYPE 2 8/06 ROAD CROSSING CONCRETE ENCASMENT
 HOMEAGE DRIVEWAY

NOTE
 REFLECT ALL REPAIRS TO BE MAINTAINED TO STA 274+00 TO BE CONCRETE TO MATCH EXISTING CONCRETE IN PLACE.
 REFLECT ALL REPAIRS TO BE MAINTAINED TO STA 274+00 TO BE CONCRETE TO MATCH EXISTING CONCRETE IN PLACE.
 REFLECT ALL REPAIRS TO BE MAINTAINED TO STA 274+00 TO BE CONCRETE TO MATCH EXISTING CONCRETE IN PLACE.

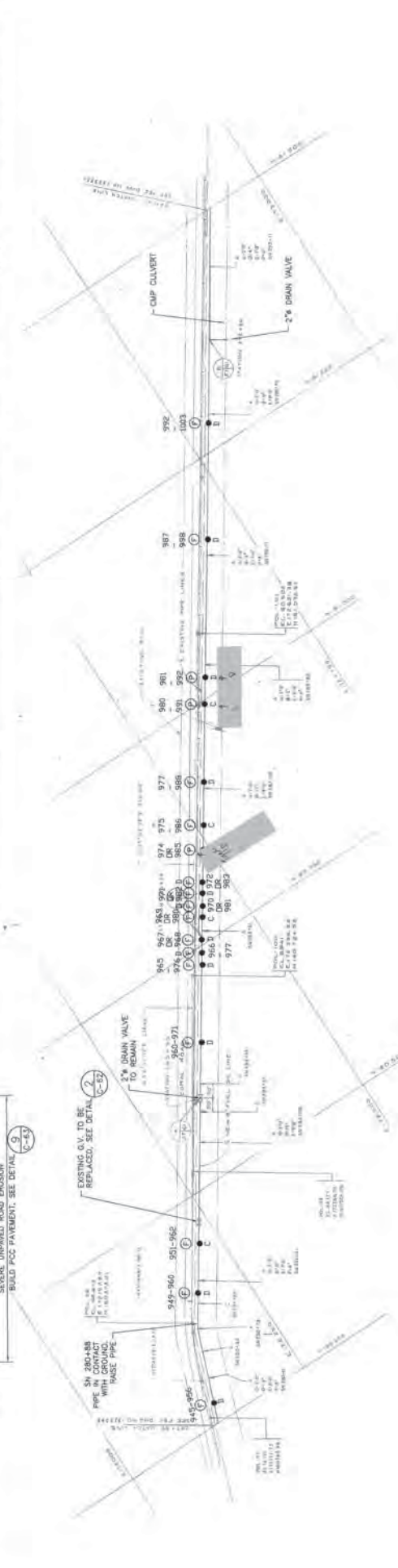
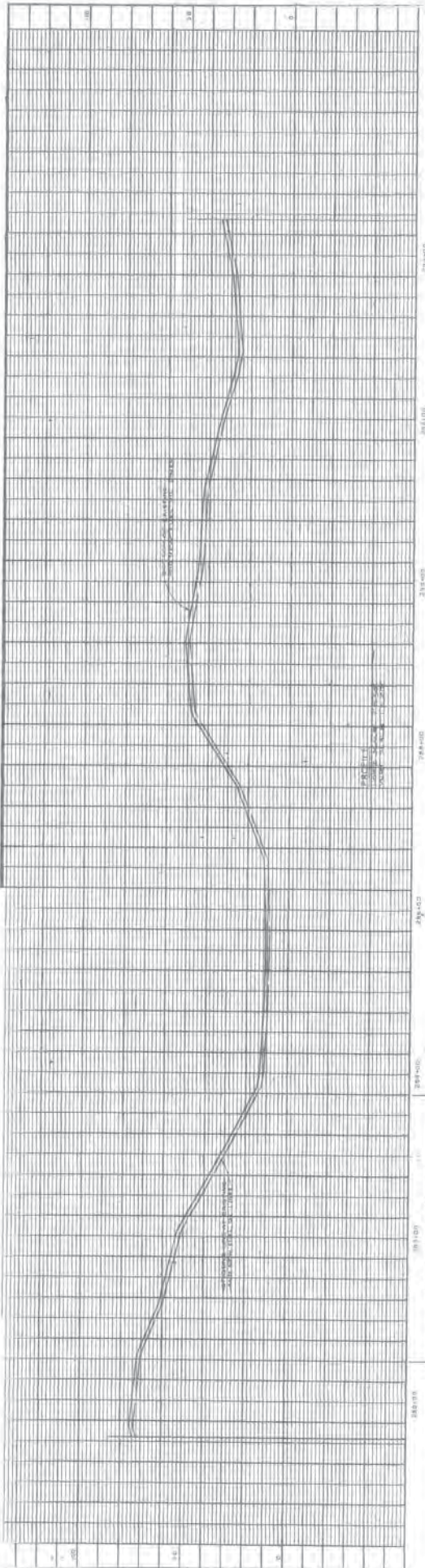
NO.	REVISIONS
1	ISSUE FOR CONSTRUCTION
2	ISSUE FOR CONSTRUCTION
3	ISSUE FOR CONSTRUCTION

AS-BUILT
J&B Modern Tech
 10000 W. IROUPE VALLEY RD. SUITE 100
 LAS VEGAS, NV 89135
 TEL: 702.735.1234 FAX: 702.735.1235

GUAM POWER AUTHORITY
 P.O. BOX 2377, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8\"/>





NOTE:
 REPLACE ALL CONCRETE SUPPORTS OF CONCRETE PIPES. REMOVE
 FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR
 ACCORDING TO SPECIFICATION SECTIONS 05500 AND 05670.

NO.	REVISION	DATE	BY	CHKD.

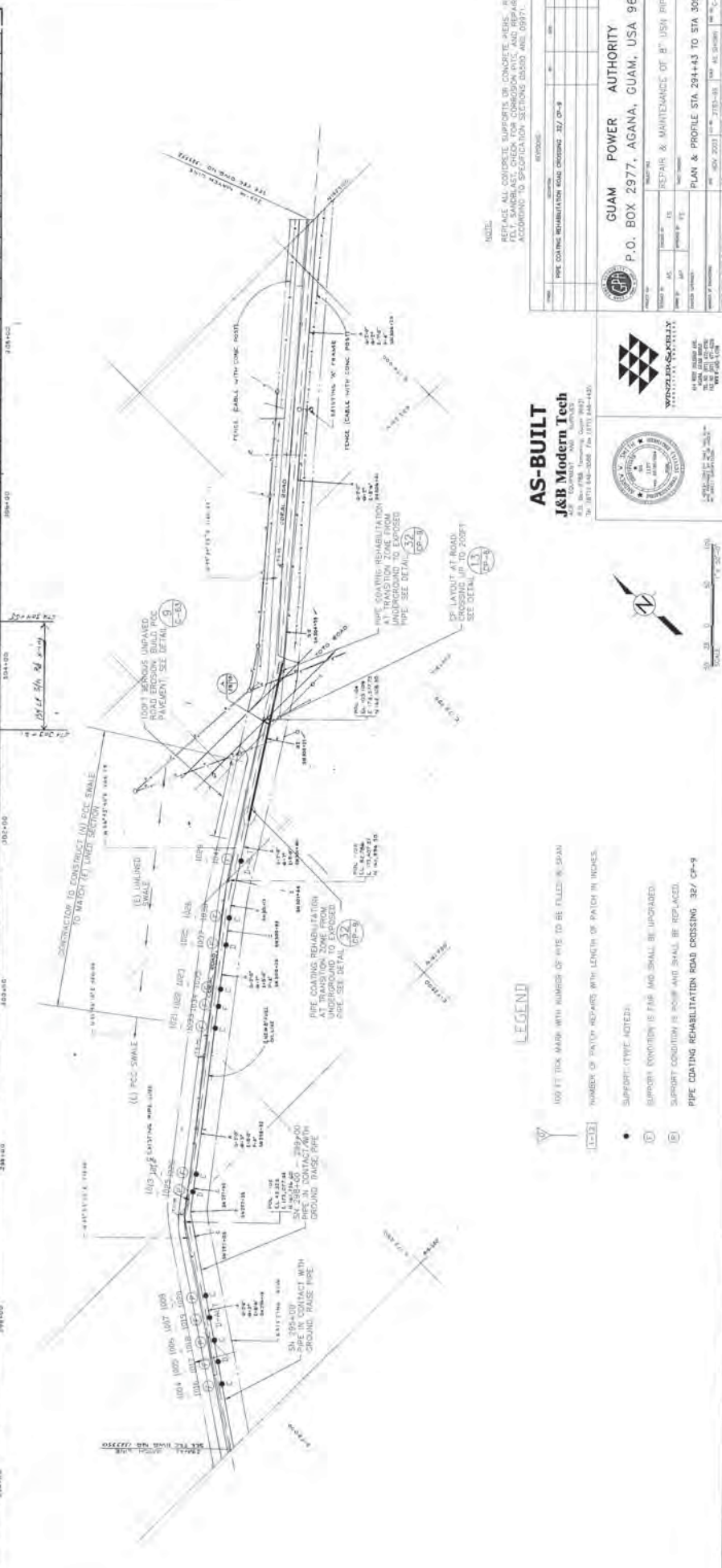
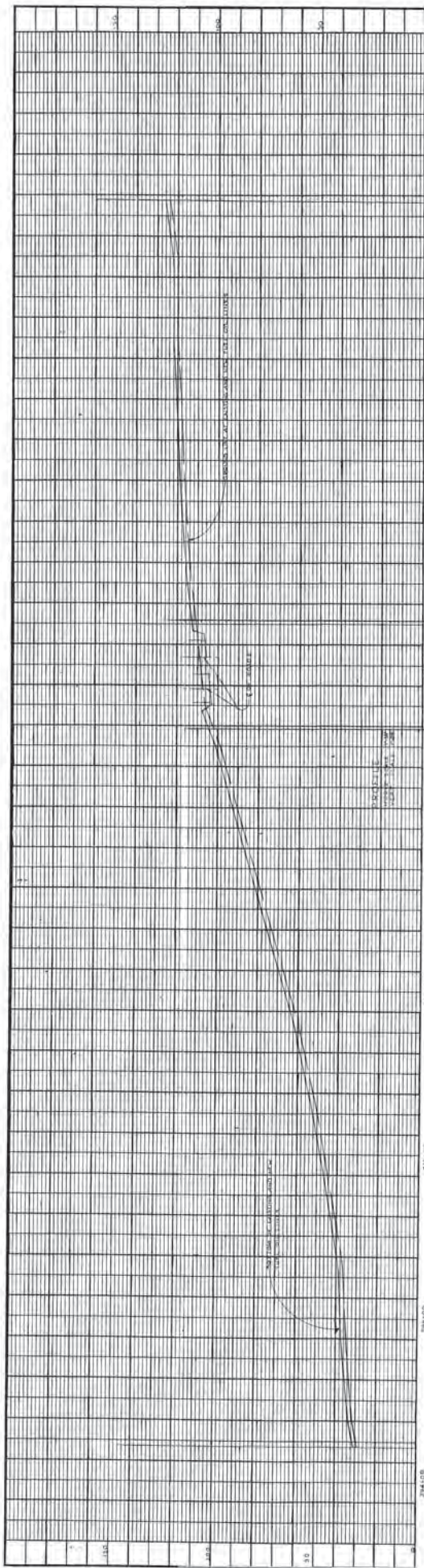
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO. 100-00000000
 DRAWING NO. 100-00000000
 SHEET NO. 100-00000000

DATE: 10/20/2023
 SCALE: AS SHOWN
 PROJECT: REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 279+55 TO STA 284+43



- LEGEND**
- ▽ 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
 - ①-⑩ NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT (TYPE NOTED).
 - ⊕ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
 - ⊖ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.



NOTE:
 REPAIR ALL CONCRETE SUPPORTS OF CONCRETE PIPES. REMOVE
 FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR
 ACCORDING TO SPECIFICATION SECTIONS 60300 AND 09771.

AS-BUILT
J&R Modern Tech
 4141 NE 16TH AVE
 SUITE 200
 MIAMI, FL 33179
 TEL: (305) 555-1111
 FAX: (305) 555-1112

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

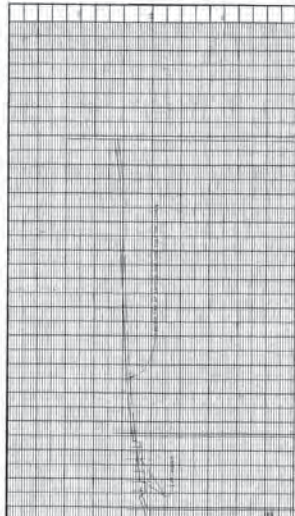
REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 294+43 TO STA 309+66

DATE: 08/20/2013
 DRAWN: JRM
 CHECKED: JRM
 PROJECT NO: 2977-13
 SHEET NO: 32/CP-9

LEGEND

- 100 FT TYP MARK WITH NUMBERS OF PIPES TO BE FILLED @ SPAN
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT-TYPE NOTES:
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.
- PIPE COATING REHABILITATION ROAD CROSSING 32/CP-9





AS-BUILT
AS-BUILT



GUAM POWER AUTHORITY
 P.O. BOX 2077, HONOLULU, HAWAII, USA 96810



Scale: 1" = 10'-0"

DATE: 10/15/2010

PROJECT: [Illegible]

DESIGNER: [Illegible]

CHECKED: [Illegible]

APPROVED: [Illegible]

PROJECT NO.: [Illegible]

DATE PLOTTED: 10/15/2010

PLotted by: [Illegible]

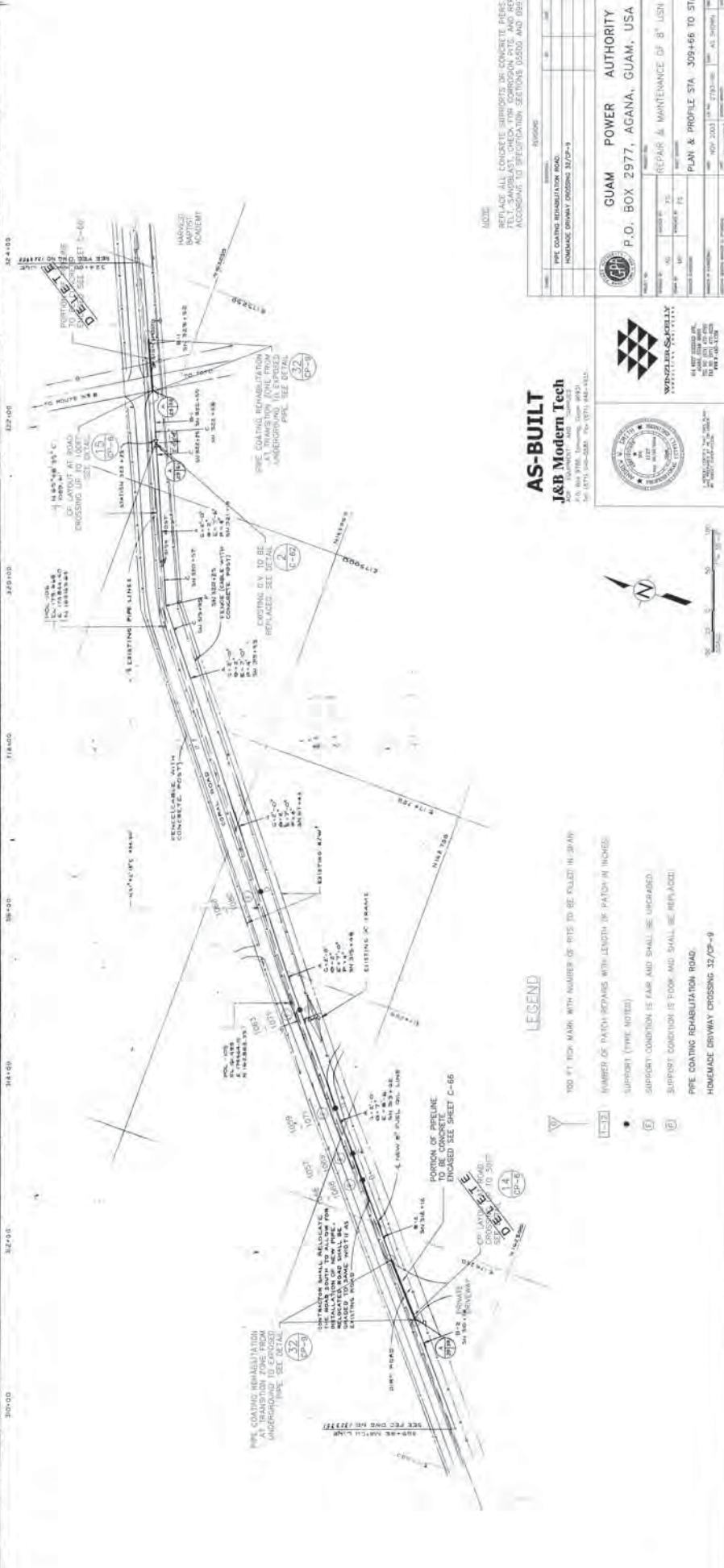
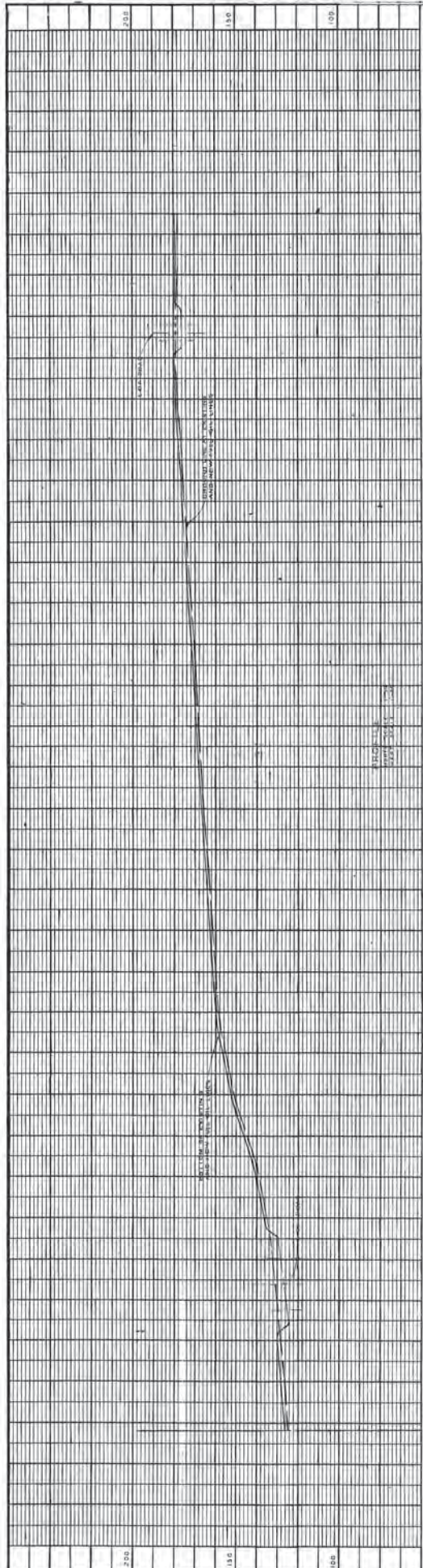
Scale: 1" = 10'-0"

DATE: 10/15/2010

PROJECT: [Illegible]

DESIGNER: [Illegible]

CHECKED: [Illegible]



MODE
 REPAIRS ALL CONCRETE SURFACES BY CONCRETE REPAIR. REMOVE EXISTING SANDBLAST CHECK FOR CORROSION RATE AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 02520 AND 09271.

AS-BUILT
J&B Modern Tech
 300 W. UNIVERSITY AVE. SUITE 100
 SAN ANTONIO, TEXAS 78201
 TEL: (214) 343-2222 FAX: (214) 343-2222

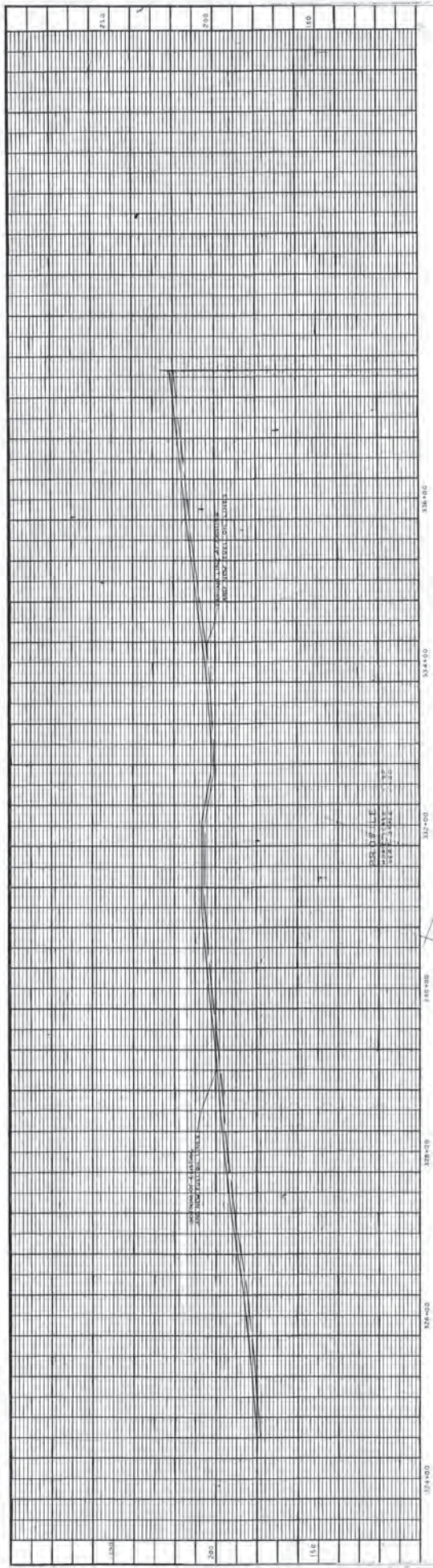


- LEGEND**
- 100 FT. PATCH MARK WITH NUMBER OF RITS TO BE FOLLO W. 20 DAY
 - (C-57) NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
 - SUPPORT (TYPE NOTED)
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED
- PPE COATING REHABILITATION ROAD.
 HOMECOME DRIVEWAY CROSSING 32/3P-9

NO.	DATE	BY	CHKD.	APP.
1	08/20/00	J&B		
2	08/20/00	J&B		
3	08/20/00	J&B		
4	08/20/00	J&B		
5	08/20/00	J&B		
6	08/20/00	J&B		
7	08/20/00	J&B		
8	08/20/00	J&B		
9	08/20/00	J&B		
10	08/20/00	J&B		
11	08/20/00	J&B		
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50	08/20/00	J&B		

GUAM POWER AUTHORITY
 P.O. BOX 2977, ACANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" LIEN PIPELINE
 PLAN & PROFILE STA 30+4+50 TO STA 32+4+50
 DATE: 08/20/00
 DRAWN BY: J&B
 CHECKED BY: J&B
 APPROVED BY: J&B
 PROJECT NO.: 309466
 SHEET NO.: 32/3P-9
 TOTAL SHEETS: 32/3P-1 TO 32/3P-9



NOTE:
 REPAIR ALL CONCRETE SUPPORTS OF EXPOSED PILES, BRIDGE
 PILE, SANDPIT, CHECK FOR CORROSION PITS, AND REPAIR
 ACCORDING TO SPECIFICATION SECTIONS 03530 AND 0921.

PROJECT	PIPE COATING PRIVATE CONCRETE DRIVEWAY CROSSING 3270+5
DATE	10/20/2021
SCALE	AS SHOWN
DESIGNER	J&B MODERN TECH
CHECKER	J&B MODERN TECH
APPROVED BY	J&B MODERN TECH

AS-BUILT
J&B Modern Tech
 701 EAST BROADWAY, SUITE 200
 SAN ANTONIO, TEXAS 78215
 TEL: (214) 441-3338 FAX: (214) 441-3339

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

WINDYBERRY CONSULTANTS
 11100 WINDYBERRY DRIVE, SUITE 100
 SAN ANTONIO, TEXAS 78240
 TEL: (214) 441-3338 FAX: (214) 441-3339

REPAIR & MAINTENANCE OF 8" IJON PIPELINE
 PLAN & PROFILE STA 324+50 TO STA 337+58

DATE: 10/20/2021
 DRAWN BY: J&B MODERN TECH
 CHECKED BY: J&B MODERN TECH
 APPROVED BY: J&B MODERN TECH

LEGEND

- 800 FT TOX MARK WITH NUMBER OF PITS TO BE PAID IN SPAN
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT TYPE (NOTE)
- SUPPORT CONDITION IS FAIR AND SHALL BE REPAIRED
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED

PIPE COATING PRIVATE CONCRETE DRIVEWAY CROSSING 3270+5

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LEGEND

- 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN
- [SYMBOL] NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- [SYMBOL] SUPPORT (TYPE NOTED)
- [SYMBOL] SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
- [SYMBOL] SUPPORT CONDITION IS POOR AND SHALL BE REPLACED

NOTE:

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERS, REMOVE REINFORCING, CHECK FOR CORROSION, PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 15500 AND 08971.

TANGUISSON AREA AND ROAD CROSSINGS

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

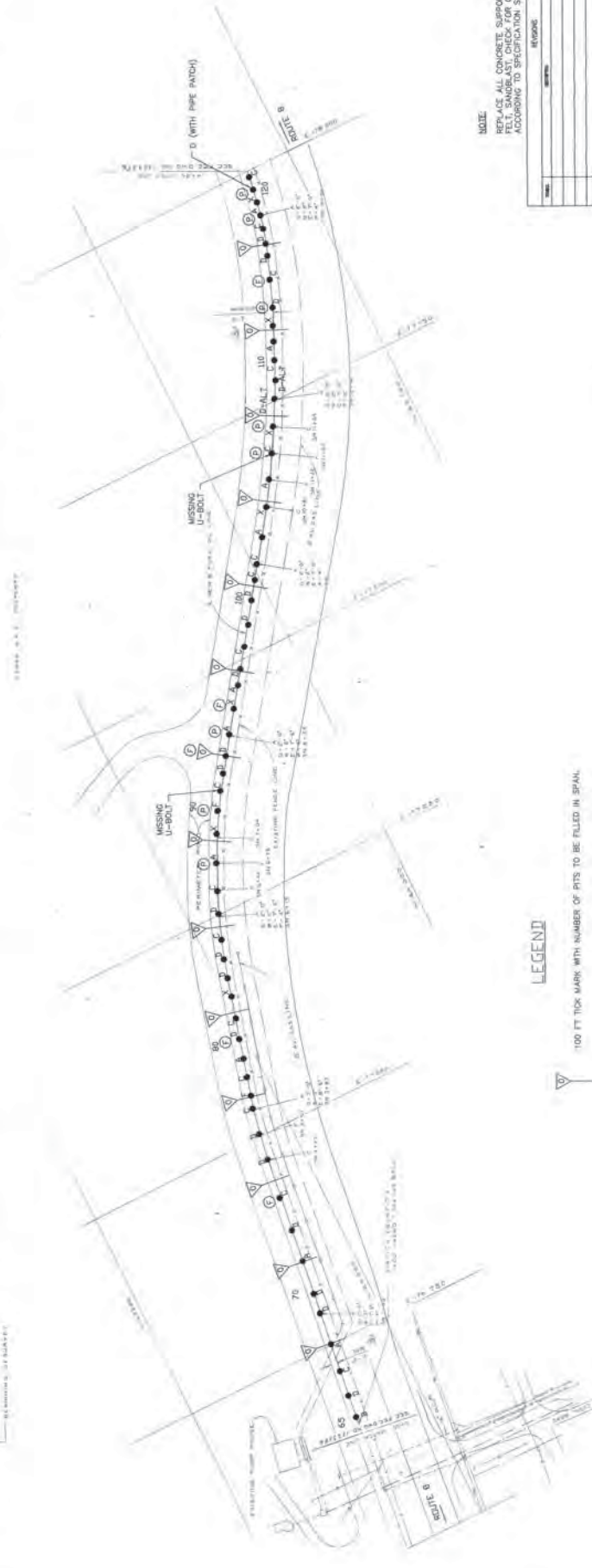
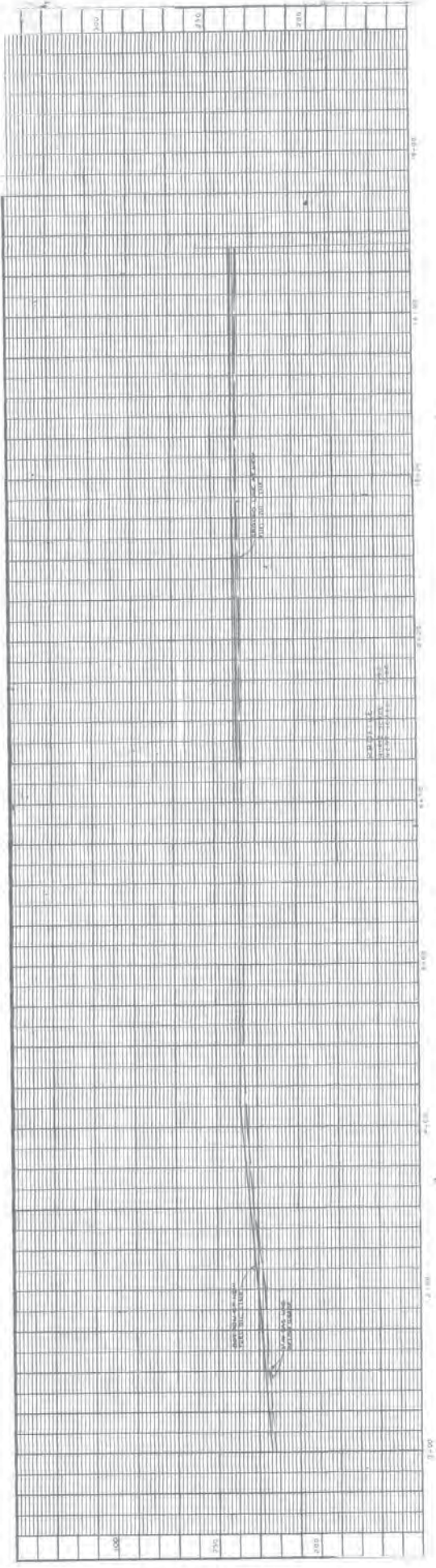
REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA. 337+58 TO STA. 344+45

REVISED: _____

DATE: _____

BY: _____

CHKD: _____



LEGEND

- ▽ 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- 1-12 NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED)
- F SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- D SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

NOTE
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERES. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05500 AND 02071.

CPA GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 0+00 TO STA 1+48.4

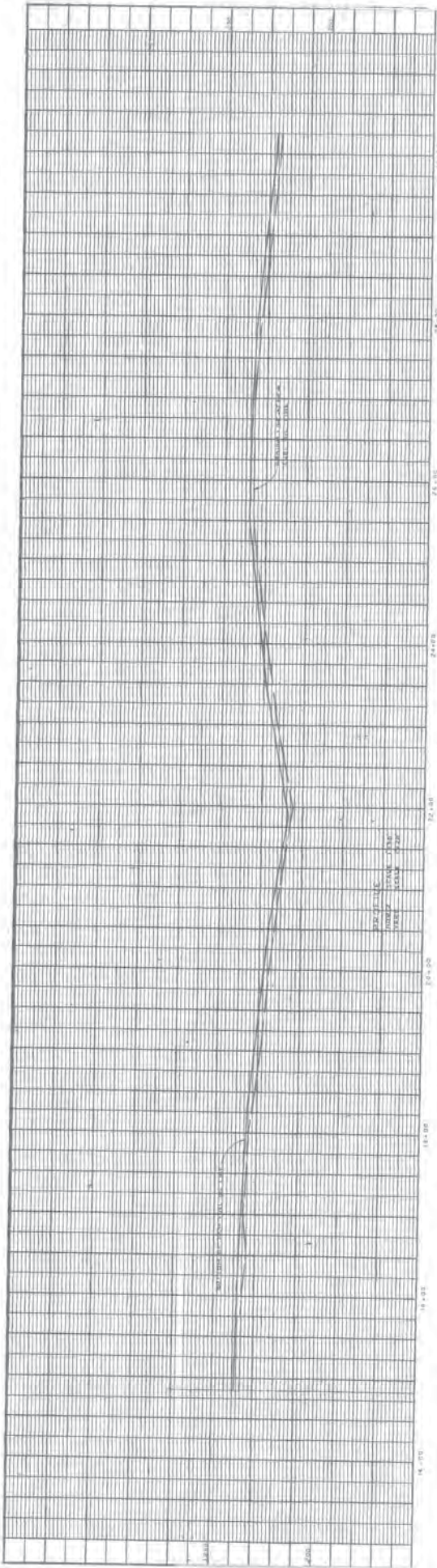
DATE: 05/10/2001
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 SCALE: 1" = 20' (VERTICAL)
 1" = 30' (HORIZONTAL)

WINDWARD TECHNOLOGY
 4444 HAWAIIAN BLVD
 SUITE 200
 HONOLULU, HI 96822

U.S. GEOLOGICAL SURVEY
 WATER RESOURCES DIVISION
 NATIONAL CENTER FOR WATER RESOURCES INFORMATION
 1400 RUSSELL AVENUE
 FORT COLLINS, COLORADO 80526

DATE: 05/10/2001
 TIME: 10:00 AM
 FILE: 21212-01
 USER: JAY BURTON
 PLOT: 27 OF 73





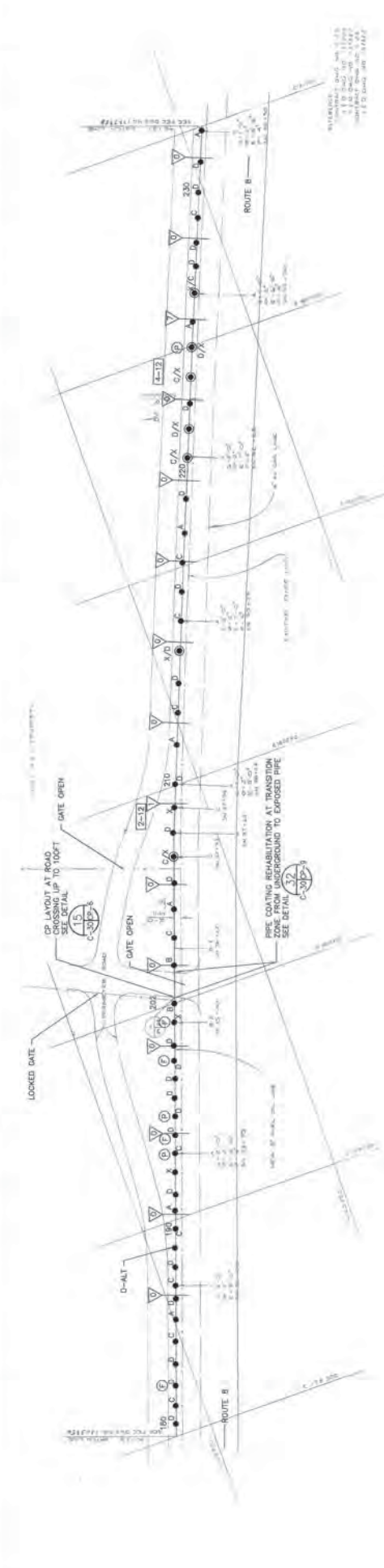
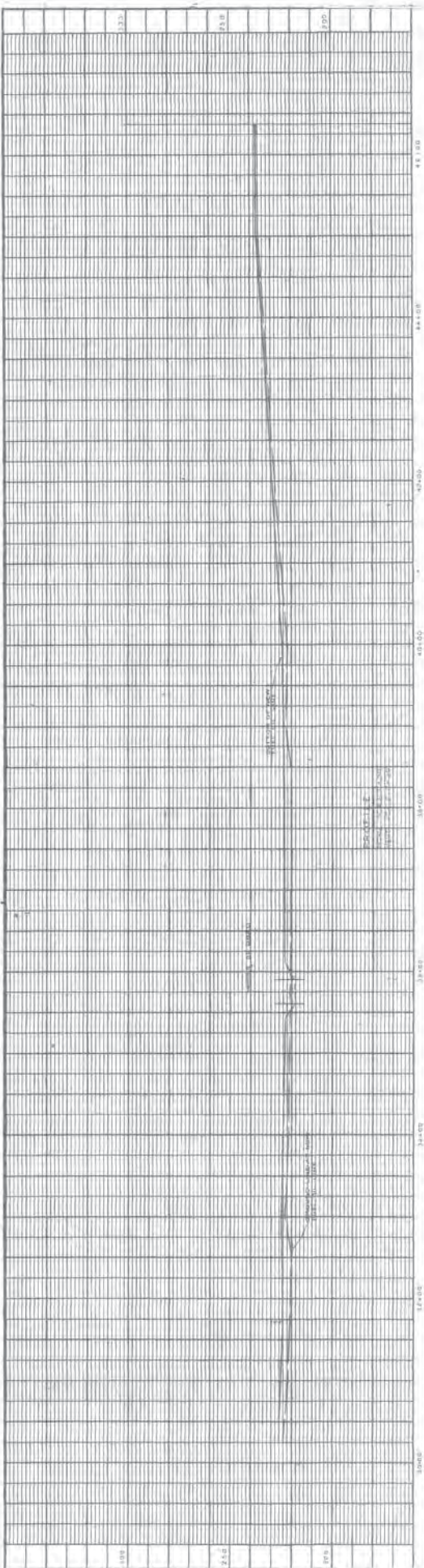
NOTE:
 REPLACE ALL EXISTING SUPPORTS OF CONCRETE REINFORCED FELT SANDBLAST CHECK FOR CORROSION AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09771.

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910



WYNZELER & KELLY
 WYNZELER & KELLY
 IN THE STATE OF GUAM
 REGISTERED PROFESSIONAL ENGINEERS
 1401 CHERRY BLVD., SUITE 100
 AGANA, GUAM 96910

- LEGEND**
- 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
 - [] NUMBER OF PATCH/REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT TYPE NOTED.
 - (F) SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
 - (P) SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.



NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERCE. REMOVE
 FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR
 ACCORDING TO SPECIFICATION SECTIONS 05507 AND 0971.

REVISIONS	
NO.	DESCRIPTION

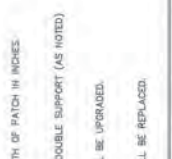
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

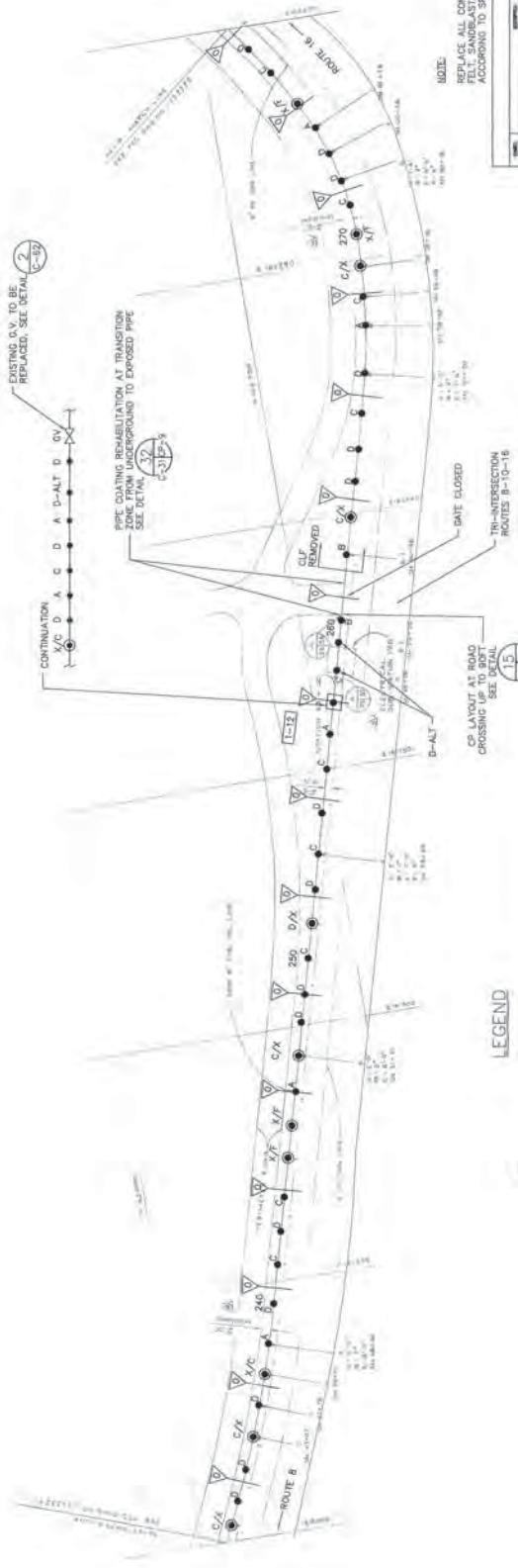
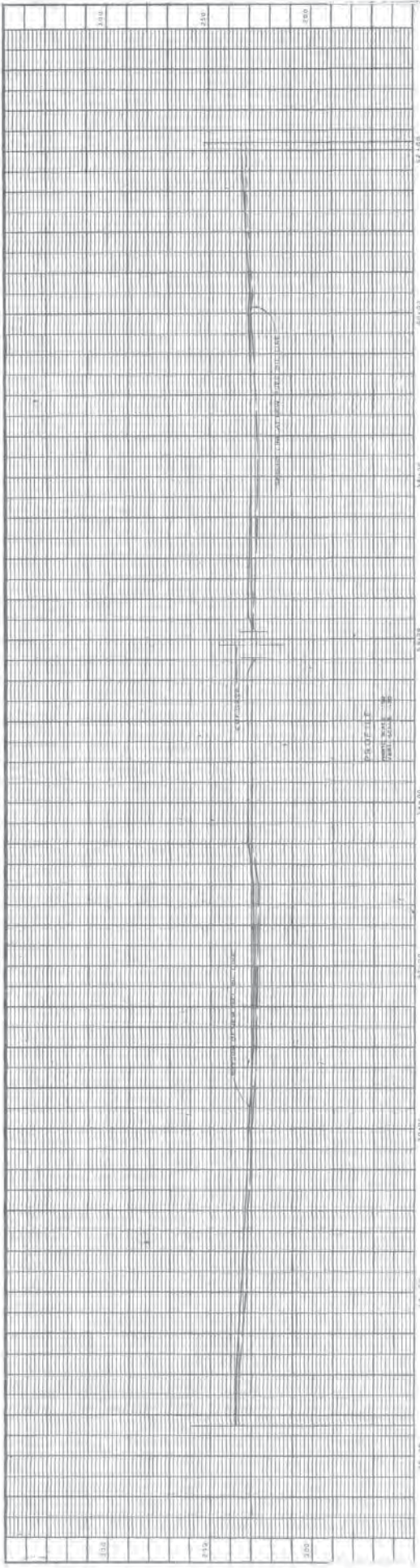
REPAIR & MAINTENANCE OF 8" USEN PIPELINE
 PLAN & PROFILE STA 30+25 TO STA 46+37

DATE: NOV 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]



- LEGEND**
- 100 FT HIGH MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
 - NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT (TYPE NOTED) DOUBLE SUPPORT (AS NOTED)
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.





LEGEND

- ▽ 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- L-12 NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT (TYPE NOTED) ○ DOUBLE SUPPORT (AS NOTED)
- ⊕ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ⊖ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

NOTE:

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERES. REMOVE SANDBLASTED CONCRETE SUPPORTS AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 60500 AND 60711.

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA, 96910

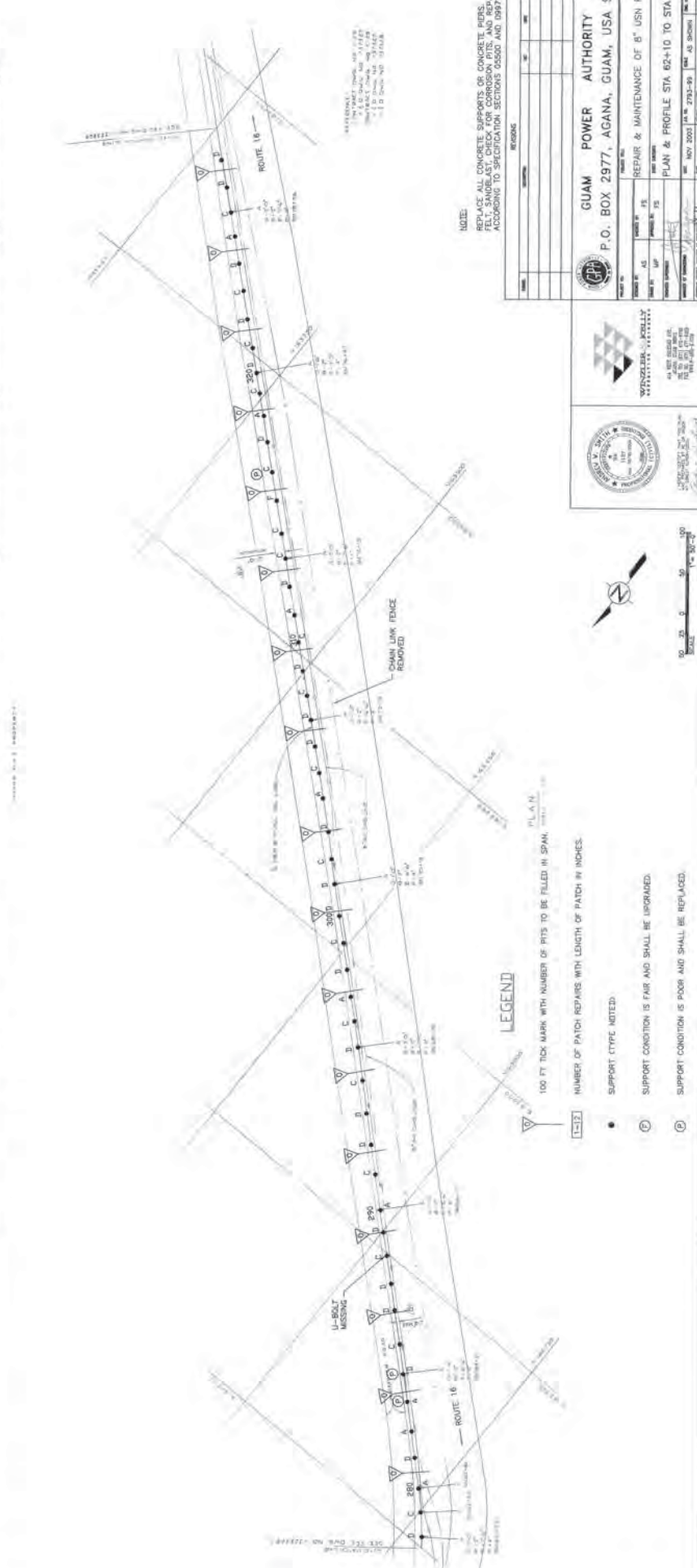
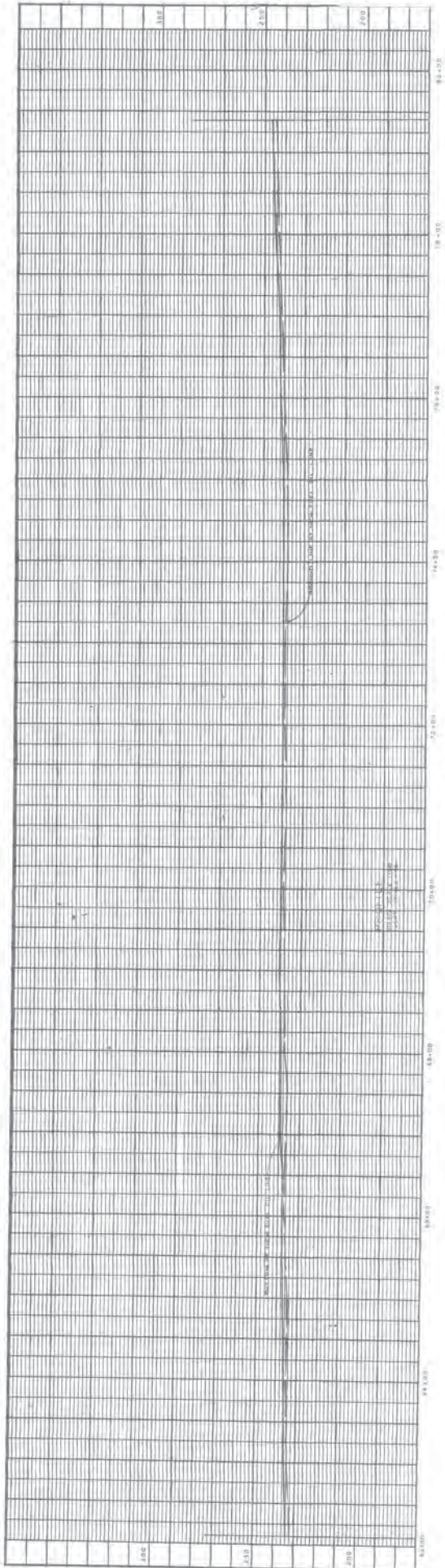
REPAIR & MAINTENANCE OF 8" USN PIPELINE

PLAN & PROFILE STA 48+37 TO STA 62+10

DATE: MAY 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 SCALE: AS SHOWN



UN 40 OF 78



NOTE:
REMOVE ALL CONCRETE SUPPORTS OR CONCRETE PITS. REMOVE REINFORCING BARS AND REPAIR WITH PORTLAND CEMENT. REMOVE REINFORCING BARS AND REPAIR WITH PORTLAND CEMENT. REMOVE REINFORCING BARS AND REPAIR WITH PORTLAND CEMENT.

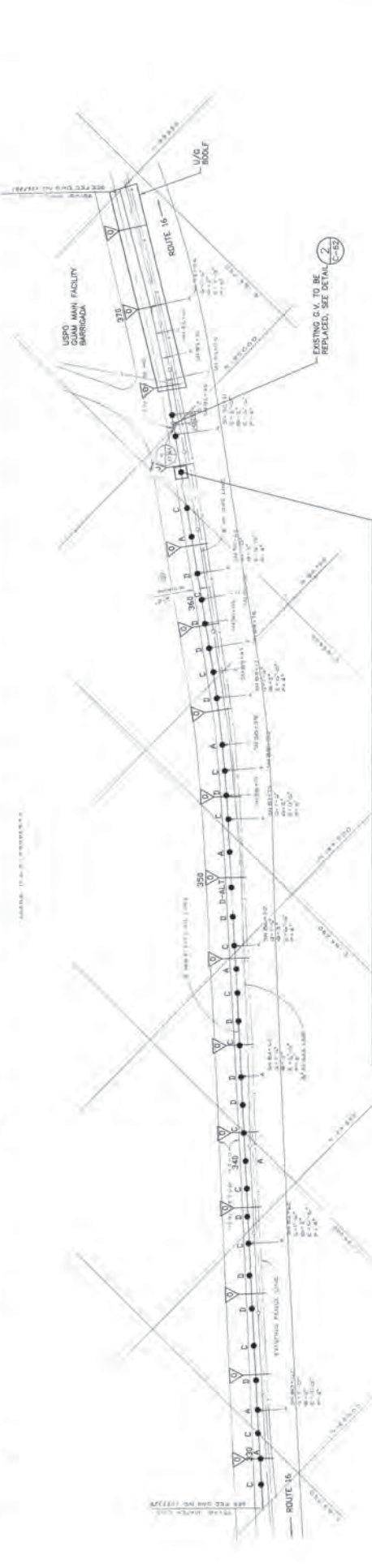
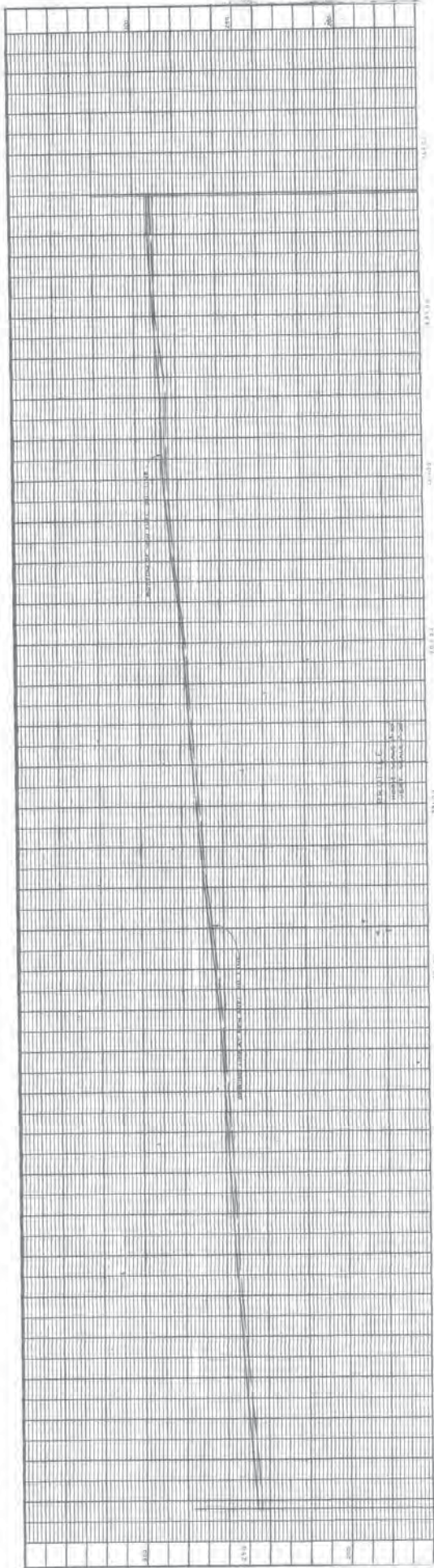
REVISIONS	
NO.	DESCRIPTION

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

CONTRACT NO. GP-2000-10
 WORK ORDER NO. 2993-99
 SHEET NO. 41 OF 73

WANZEL-KELLY
 ENGINEERS AND ARCHITECTS
 441 ST. JOSEPH ST.
 SUITE 200
 HONOLULU, HI 96813

COMMONWEALTH OF GUAM
 DEPARTMENT OF PUBLIC WORKS
 100 GARDEN OF EDEN DRIVE
 HONOLULU, HI 96813



LEGEND

- 100 FT ROCK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT (TYPE NOTED)
- DOUBLE SUPPORT (AS NOTED)
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED

NOTE
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERS, AND ALL CONCRETE REPAIRS ACCORDING TO SPECIFICATION SECTIONS 0555D AND 0997A.

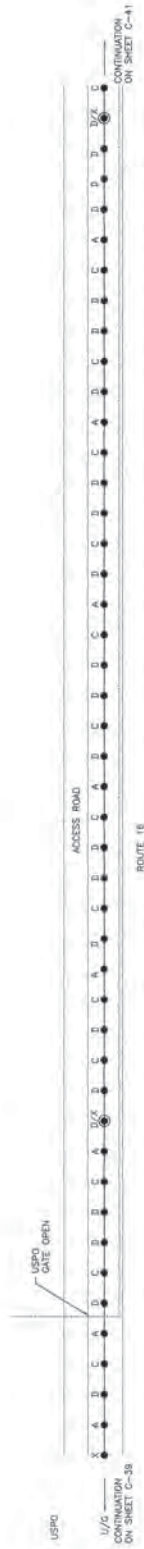
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 78+48 TO STA 92+00

NOV 2002 14" x 22" 2793-98
 NOV 2002 14" x 22" 2793-98



PROFILE NOT AVAILABLE FOR THIS SECTION



LEGEND

- 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED)
- DOUBLE SUPPORT (AS NOTED)
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

NOTE

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERS, REMOVE ALL DAMAGED CONCRETE AND REPAIR ALL DAMAGED CONCRETE ACCORDING TO SPECIFICATION SECTIONS 04500 AND 09700.

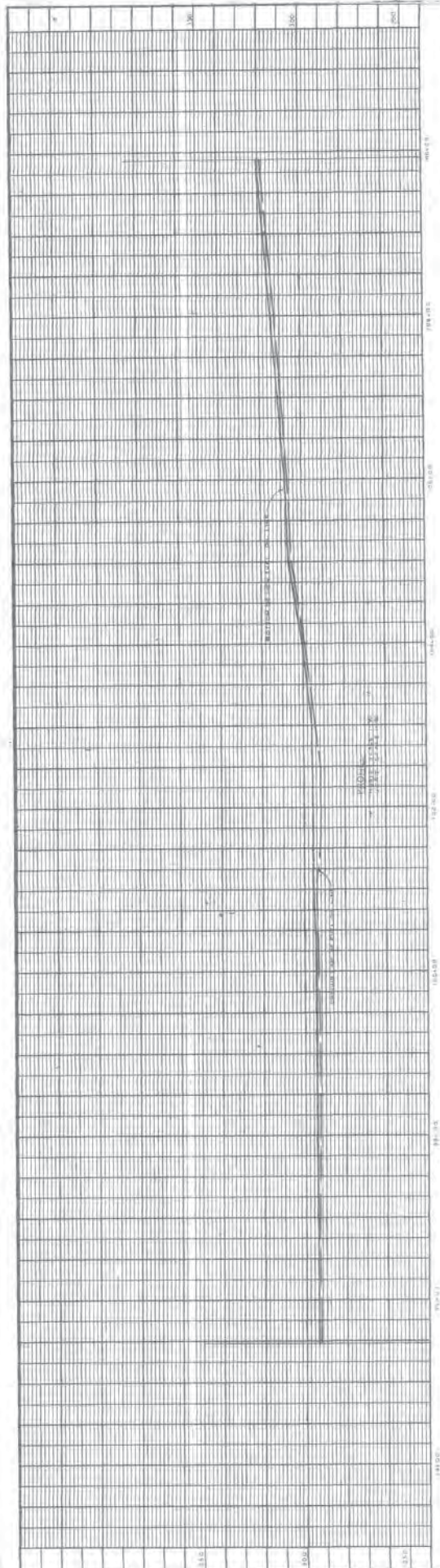
NO.	DATE	REVISIONS

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA, 969 10

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 92+00 TO STA 95+48

DATE: NOV 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 PROJECT NO.: 97-03-01





NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIER. REMOVE
 ALL DAMAGED REINFORCEMENT AND REPAIR WITH CONCRETE
 ACCORDING TO SPECIFICATION SECTIONS 902.02 AND 902.01.

NO.	DATE	REVISION

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 969 10

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 95+48 TO STA 109+91

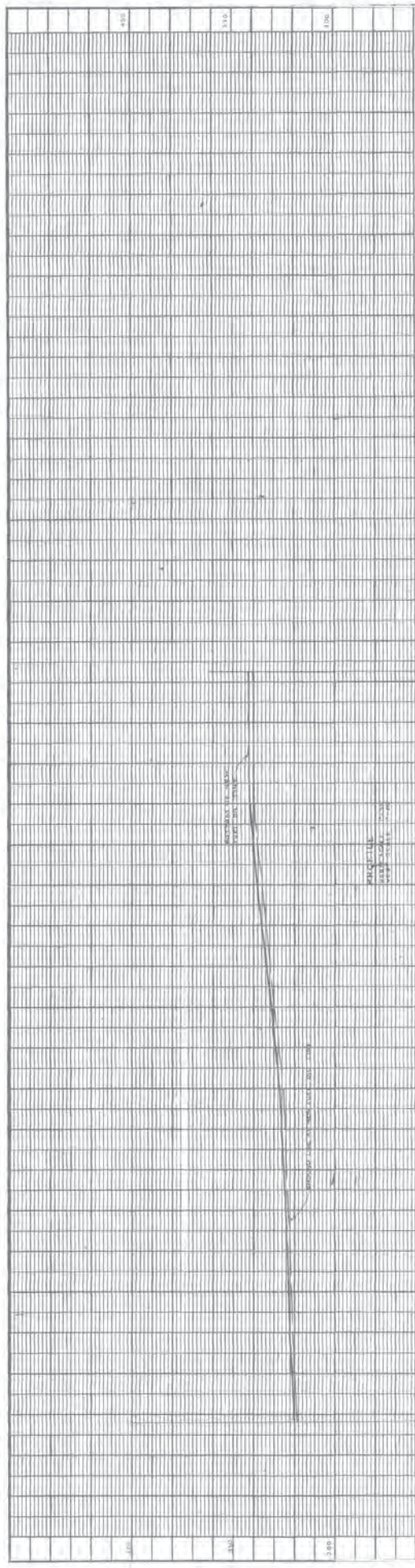
DATE: MAY 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]



LEGEND

- ▽ 100 FT TOX MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
- 1-12 NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES
- SUPPORT TYPE NOTED
- DOUBLE SUPPORT (AS NOTED)
- ⊕ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ⊖ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

CONTINUATION
 SEE SHEET C-40



NOTE:
REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIER. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05509 AND 06971.

NO.	DATE	BY	REVISION

GUA AIRPORT ACCESS REQUIRED

LEGEND

100 FT TACK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN

NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN FEET

SUPPORT CTYPE NOTED

SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED

SUPPORT CONDITION IS POOR AND SHALL BE REPLACED

SCALE: 1" = 20'

N

REVISIONS

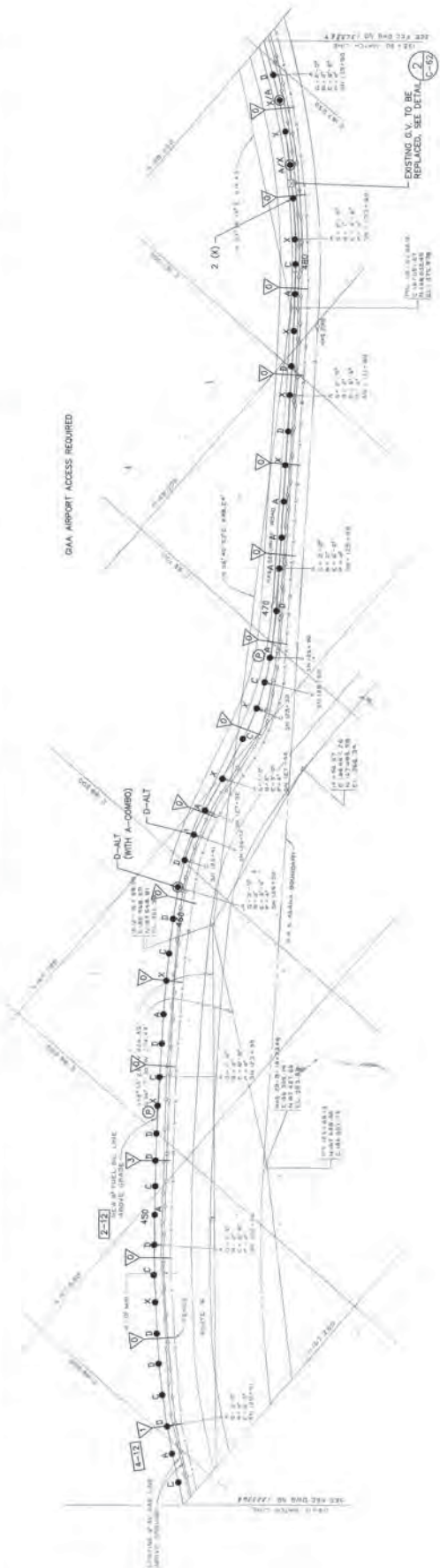
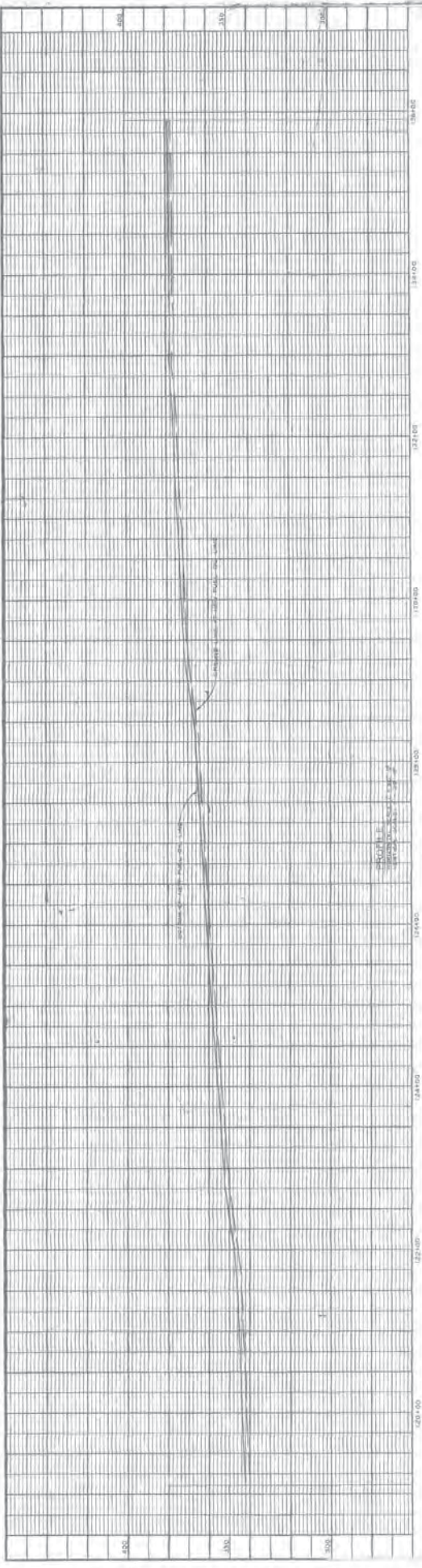
GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
PLAN & PROFILE STA 110+91 TO STA 110+11

AGANA
P.O. BOX 2977, AGANA, GUAM, USA 96910

REVISIONS

NO.	DATE	BY	REVISION



GAA AIRPORT ACCESS REQUIRED

EXISTING G.V. TO BE REPLACED. SEE DETAIL 2-62.

NOTE: REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERES WITH NEW CONCRETE SUPPORTS OR PIERES ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09277.

REVISIONS	
NO.	DESCRIPTION

GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE

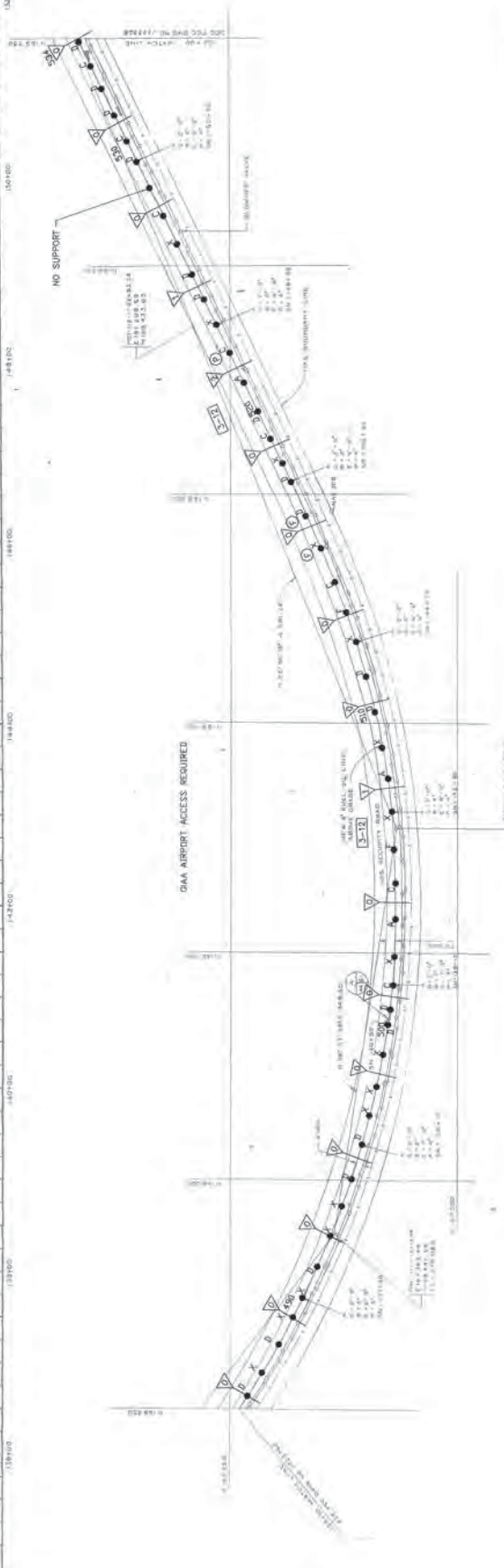
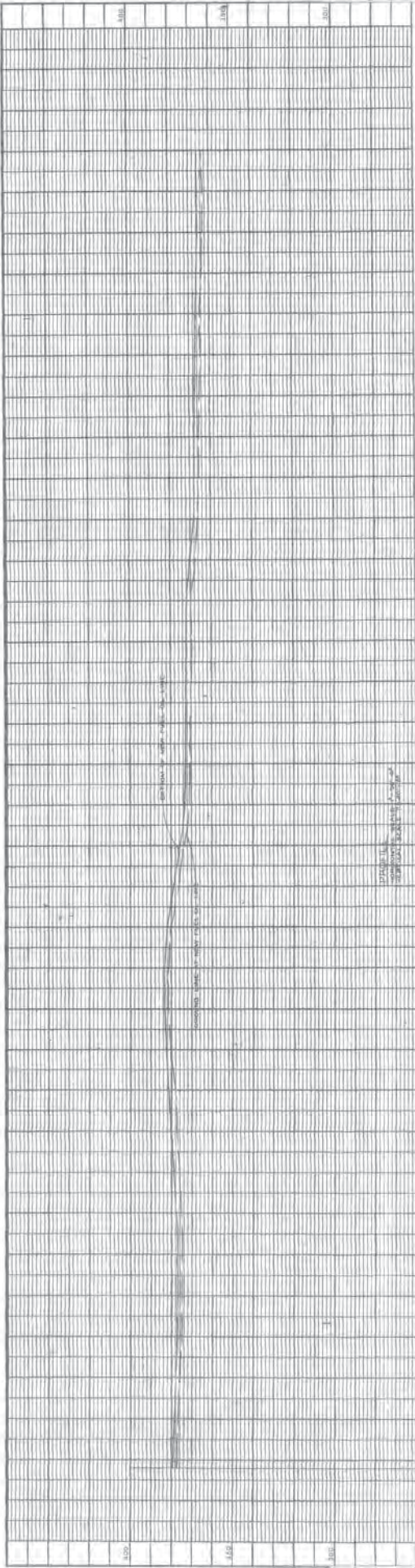
PLAN & PROFILE STA 119+11 TO STA 135+90

DATE: MAY 2003
SCALE: AS SHOWN

LEGEND

- ▽ 100 FT TONG MARK WITH NUMBER OF RITS TO BE FILLED IN SPAN.
- [1-12] NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED)
- DOUBLE SUPPORT (AS NOTED)
- ⊖ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ⊕ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.





NOTE:
 REPLACE ALL CONCRETE SUPPORTS OR CONCRETE PIERES. REMOVE FELT, SANDBLAST, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09771.

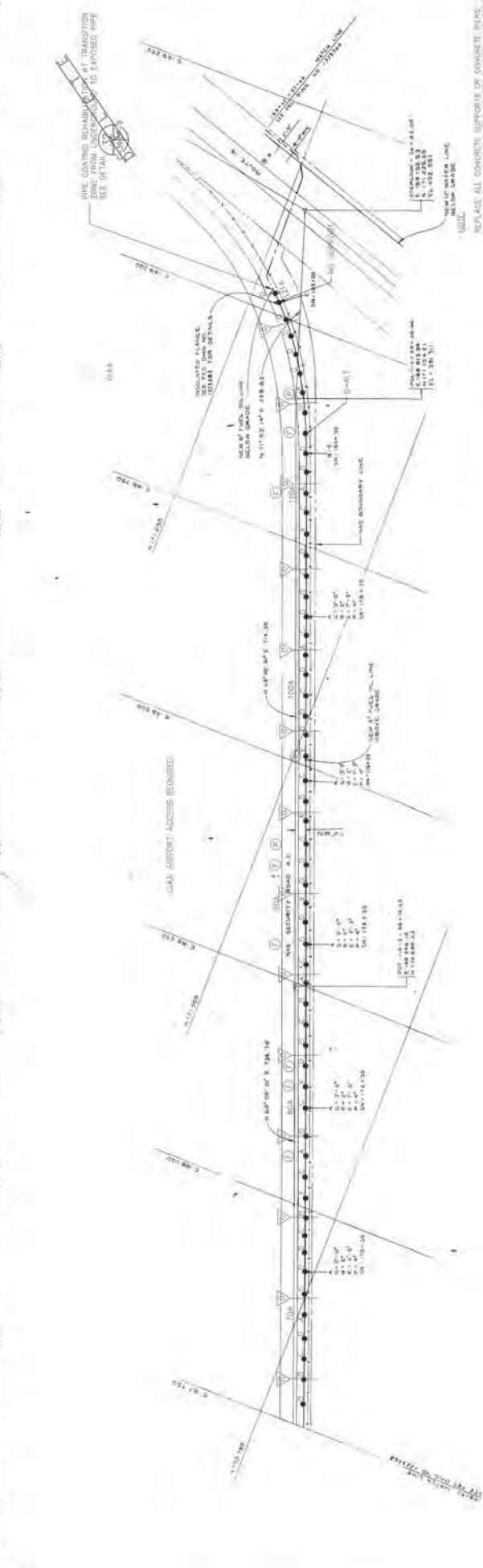
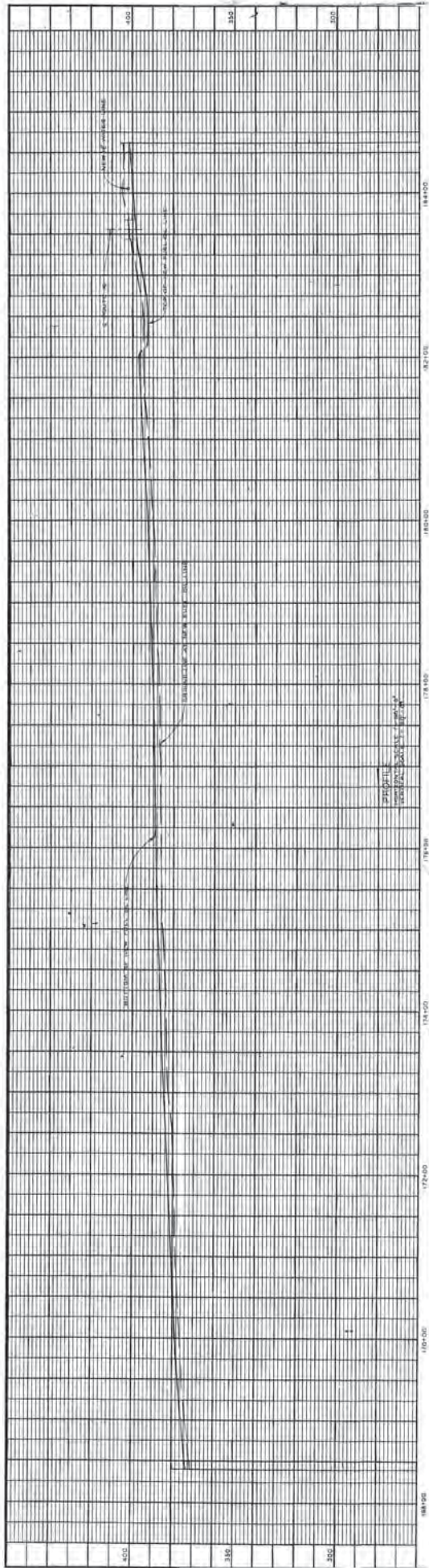
		GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910	
PROJECT NO. 13000	DRAWING NO. 13000-01	SHEET NO. 1 OF 2	DATE 10/20/2003
CONTRACT NO. 13000		PROJECT NAME REPAIR & MAINTENANCE OF 8" USN PIPELINE	
CONTRACTOR WENZEL & KELLY		PROJECT LOCATION PLAN & PROFILE STA 135+90 TO STA 152+00	
DESIGNER WENZEL & KELLY		CHECKED BY [Signature]	
APPROVED BY [Signature]		DATE 10/20/2003	

WENZEL & KELLY
 ENGINEERS & ARCHITECTS
 1111 WEST BROADWAY
 SUITE 200
 SAN ANTONIO, TEXAS 78205
 TEL: 214-222-1111
 FAX: 214-222-1112

STATE OF GUAM
 PROFESSIONAL ENGINEER
 NO. 13000
 EXPIRES 12/31/2004



- LEGEND**
- 100 FT TICK MARK WITH NUMBER OF PITS TO BE FILLED IN SPAN.
 - NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
 - SUPPORT (TYPE NOTED).
 - SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADDED.
 - SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.



REPAIR ALL CORROSION, REPAIR OR REPLACE ALL DAMAGED PIPE, REMOVE SILT, SAND/SLUDG, CHECK FOR CORROSION PITS, AND REPAIR ACCORDING TO SPECIFICATION SECTIONS 030500 AND 09971.

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

INSULATED ABOVE GROUND

AS-BUILT
J&B Modern Tech
 400 E. UNIVERSITY AVE. SUITE 101
 SAN JOSE, CA 95128
 TEL: (415) 434-4048 FAX: (415) 434-4475



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 18" USA PIPELINE
 PLAN & PROFILE STA 168+40 TO STA 164+62

DATE: 02/20/2012
 DRAWN BY: J&B
 CHECKED BY: J&B
 PROJECT NO: 168-40

SCALE: 1" = 100'

DATE: 02/20/2012

LEGEND

- 100 FT TACK MARK WITH NUMBER OF FITS TO BE FILLED IN (SMA)
- NUMBER OF PATCH REPAIRS WITH LENGTH IN FEET IN INCHES
- SUPPORT (TYPE NOTED)
- SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED
- SUPPORT CONDITION IS POOR AND SHALL BE REPLACED



DATE: 02/20/2012

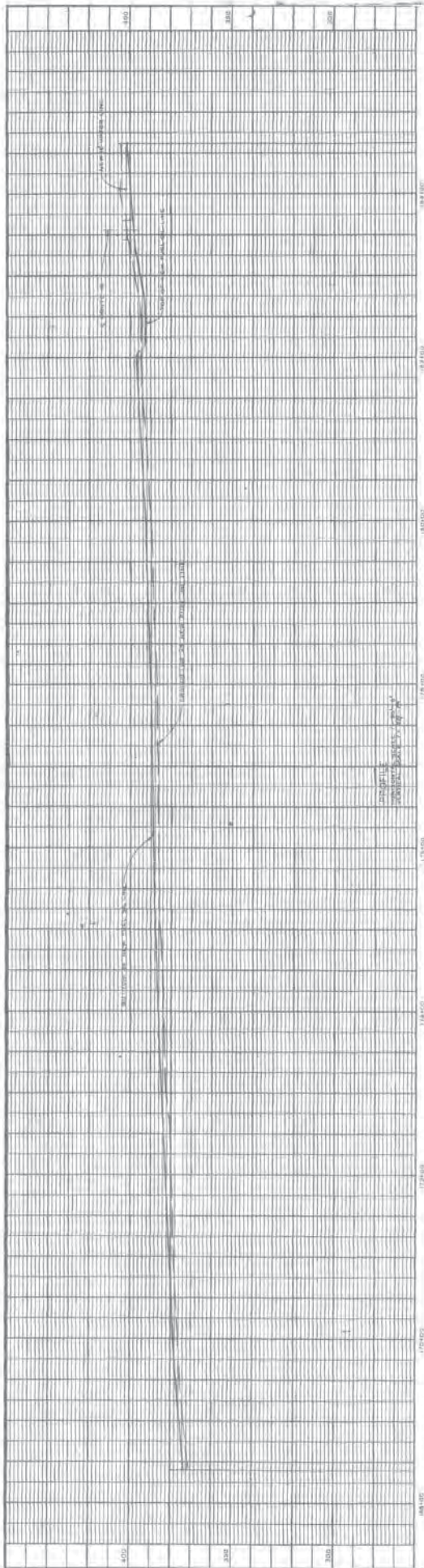
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DATE: 02/20/2012

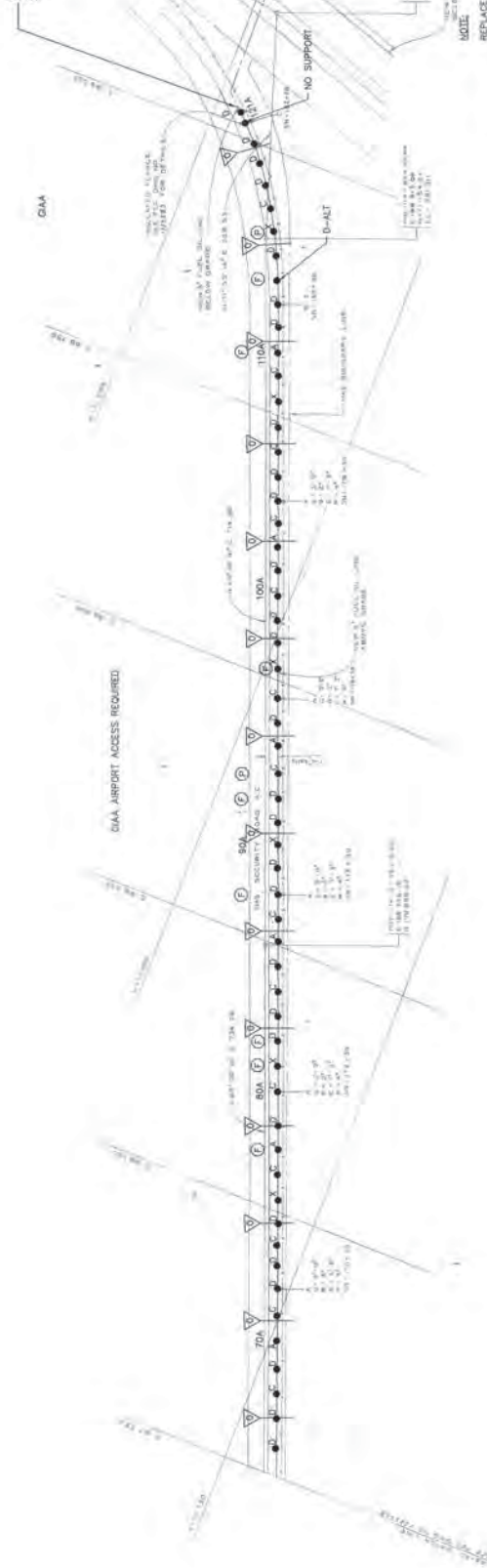
SCALE: 1" = 100'

DATE: 02/20/2012

SCALE: 1" = 100'



REPAIRS TO BE MADE AT TRANSITION ZONE FROM UNDERGROUND TO EXPOSED PIPE SEE DETAIL C-30



LEGEND

- ▽ 100 FT TICK MARK WITH NUMBER OF FITS TO BE FILLED IN SPAN.
- ① NUMBER OF PATCH REPAIRS WITH LENGTH OF PATCH IN INCHES.
- SUPPORT (TYPE NOTED)
- ⊖ SUPPORT CONDITION IS FAIR AND SHALL BE UPGRADED.
- ⊕ SUPPORT CONDITION IS POOR AND SHALL BE REPLACED.

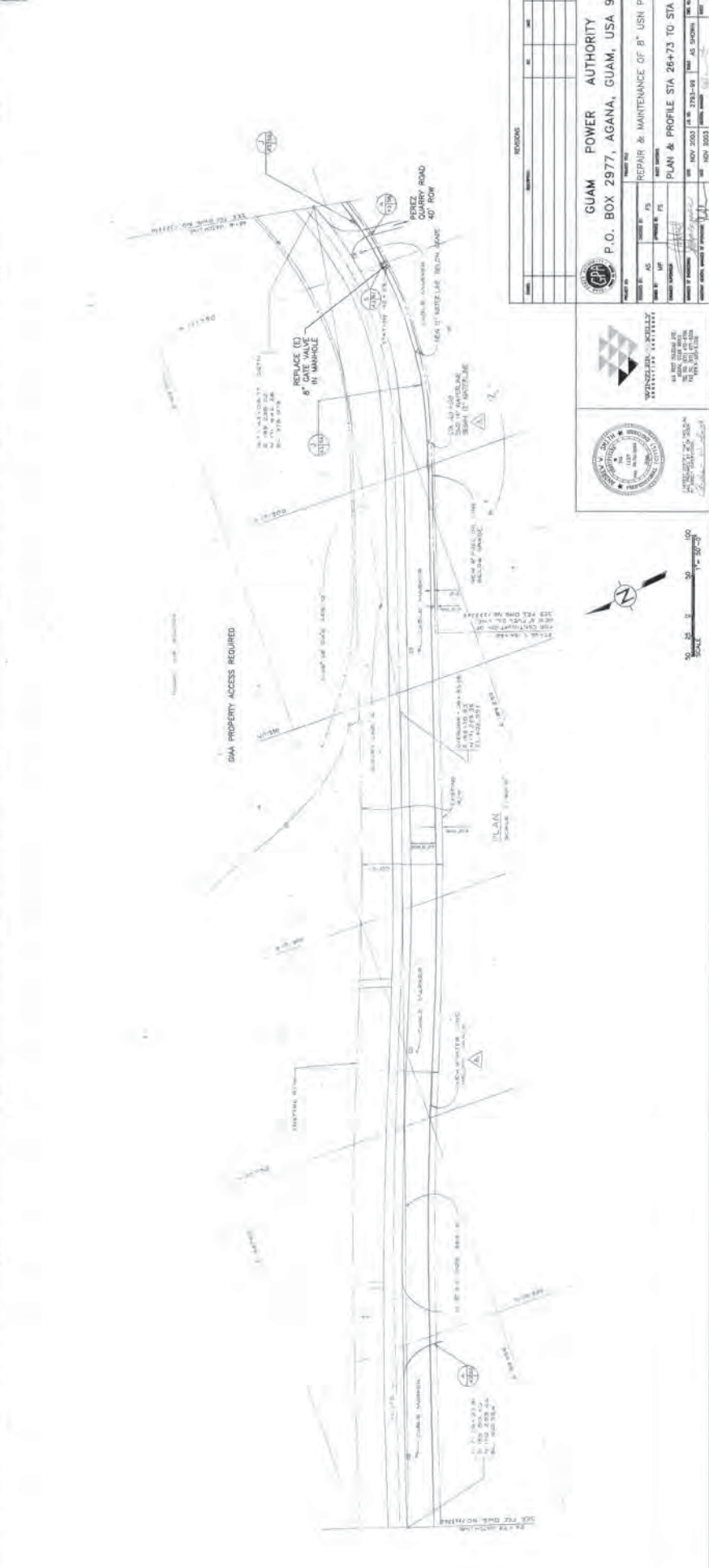
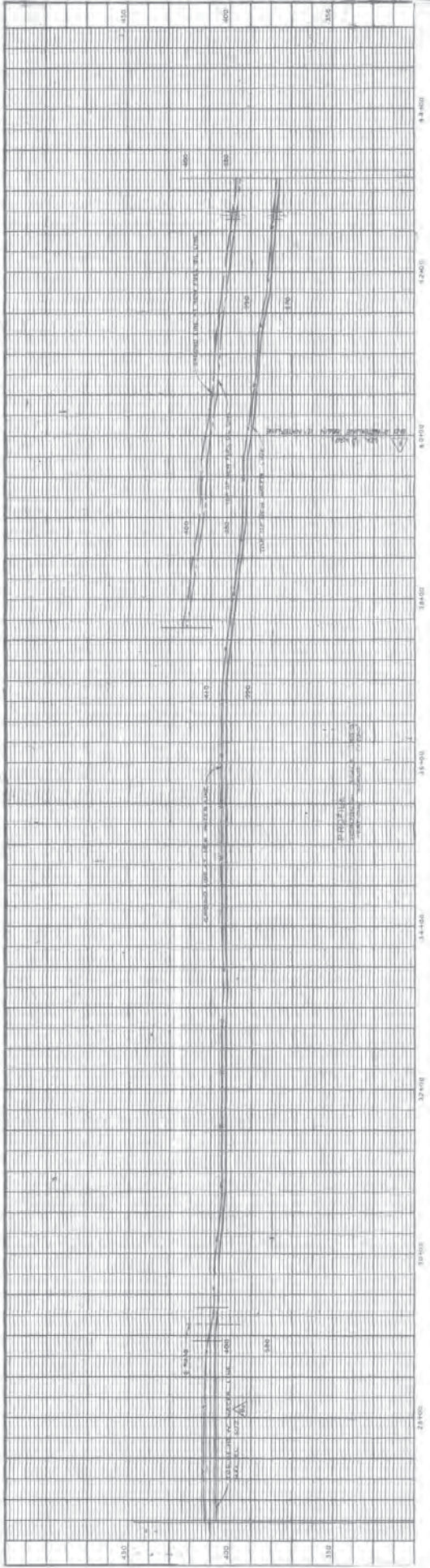
NOTE

REPLACE ALL CONCRETE SUPPORTS OR CONCRETE BENCHES WITH REINFORCED CONCRETE SUPPORTS OR BENCHES ACCORDING TO SPECIFICATION SECTIONS 05500 AND 09971.

TANGUISSON AREA AND ROAD CROSSINGS

GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910	
PROJECT NO. 184-00-001 DRAWING NO. 184-00-001-001 SHEET NO. 184-00-001-001-001	REPAIR & MAINTENANCE OF 8" USN PIPELINE PLAN & PROFILE STA 168+40 TO STA 184+02 DATE: JULY 2003 DRAWN BY: [Signature] CHECKED BY: [Signature]

SCALE: 1" = 50'

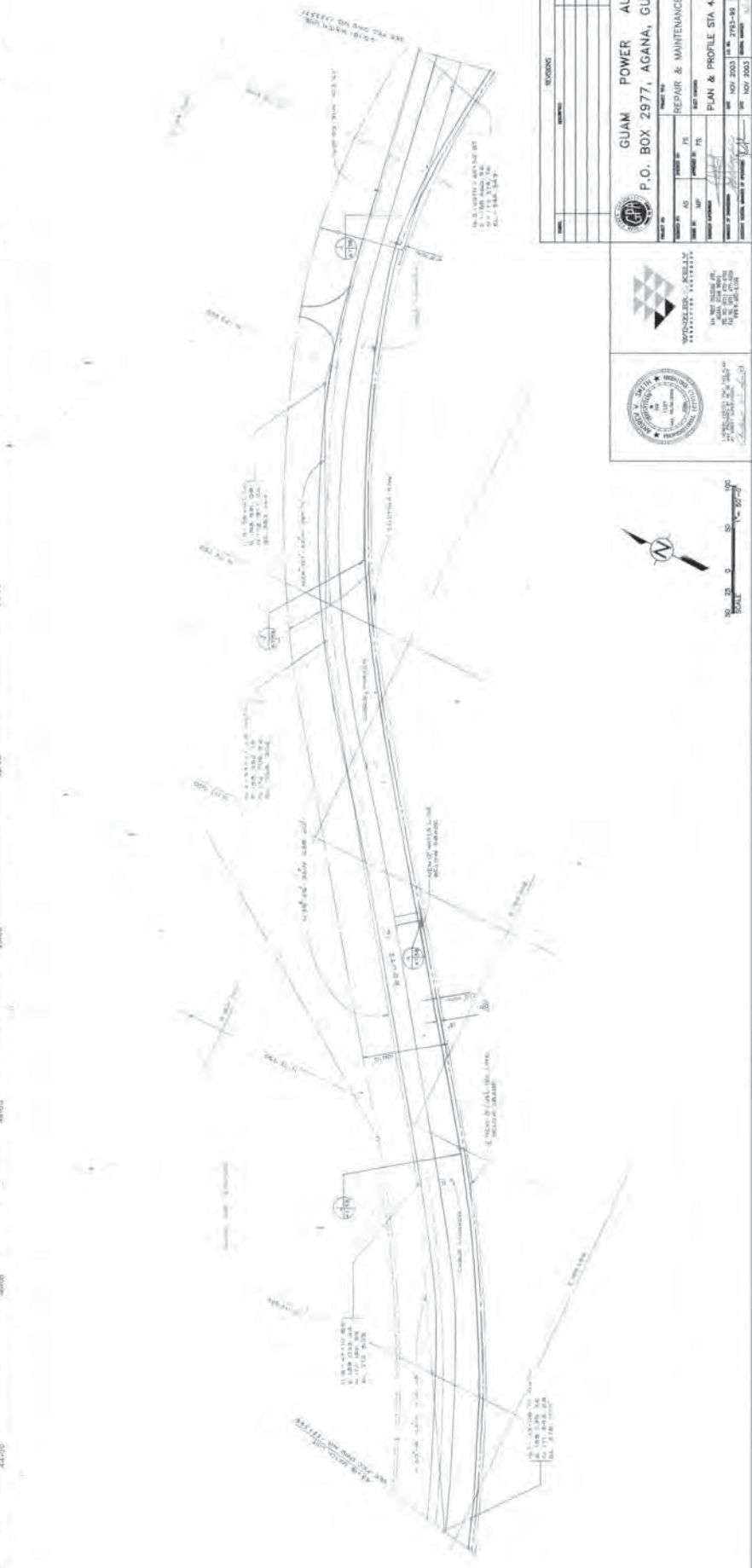
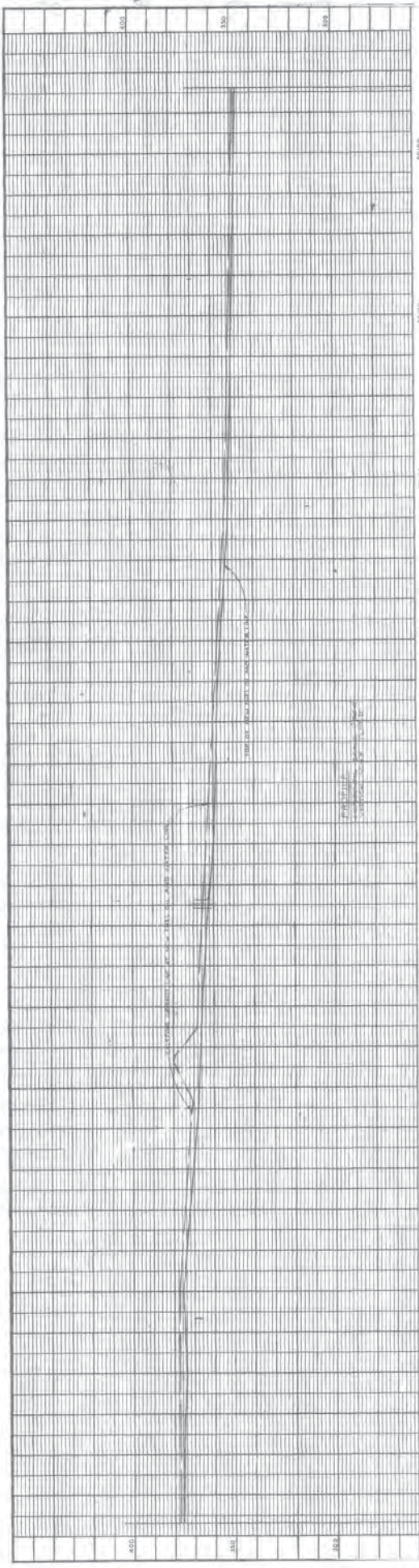


GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 6" USN PIPELINE
 PLAN & PROFILE STA 26+73 TO STA 43+16

NOV 2003
 NOV 2003

NO.	REVISIONS	DATE	BY



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 43+16 TO STA 60+81

DATE: NOV 2003
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]

WONDERLUX ENGINEERING
 1410 N. HAWAIIAN DRIVE
 SUITE 200
 HONOLULU, HI 96817

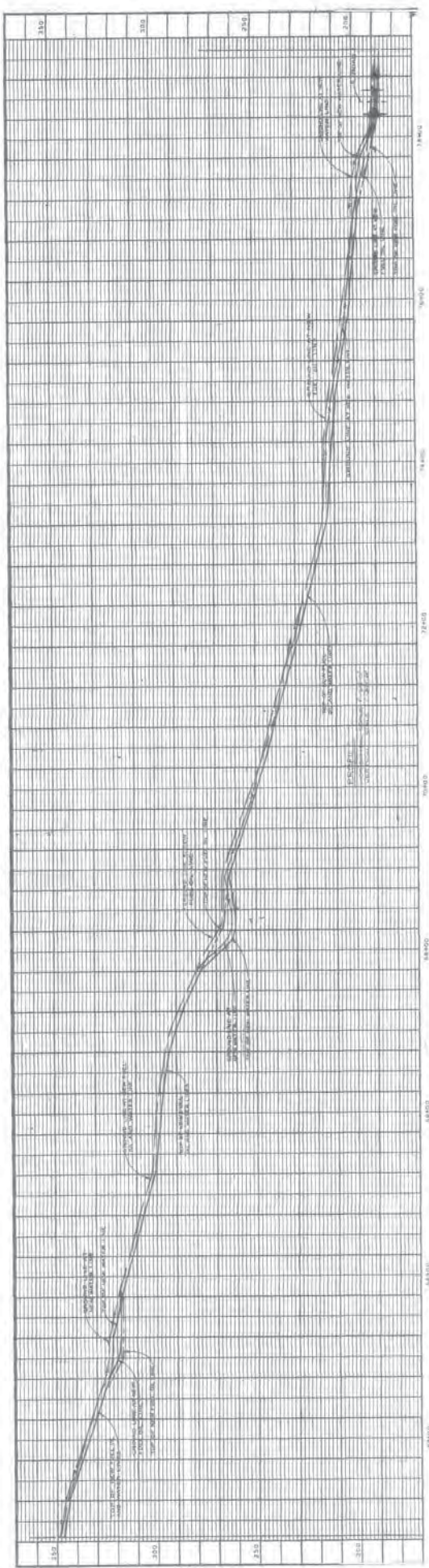
GUAM POWER AUTHORITY
 1410 N. HAWAIIAN DRIVE
 SUITE 200
 HONOLULU, HI 96817

NO.	DESCRIPTION	DATE	BY
1	ISSUED FOR PERMIT	NOV 2003	[Signature]
2	AS SHOWN	NOV 2003	[Signature]

SCALE: 1" = 100'

100 50 0 50 100

0 50 100

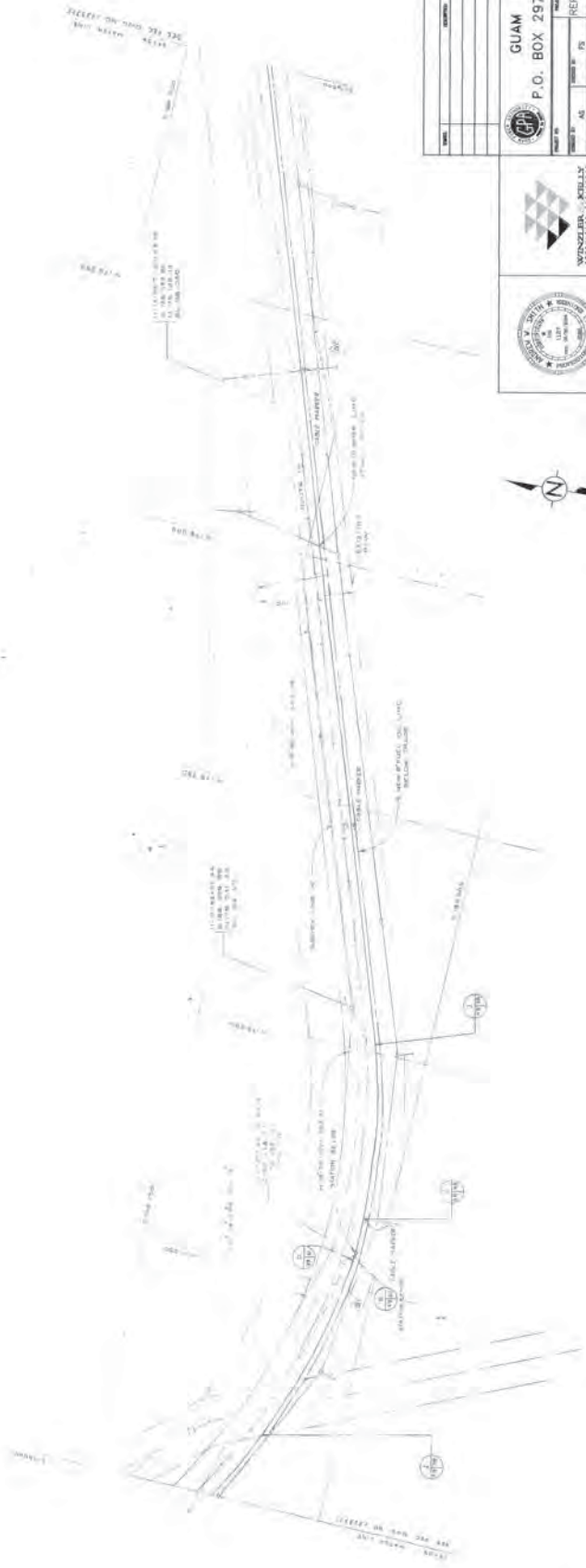
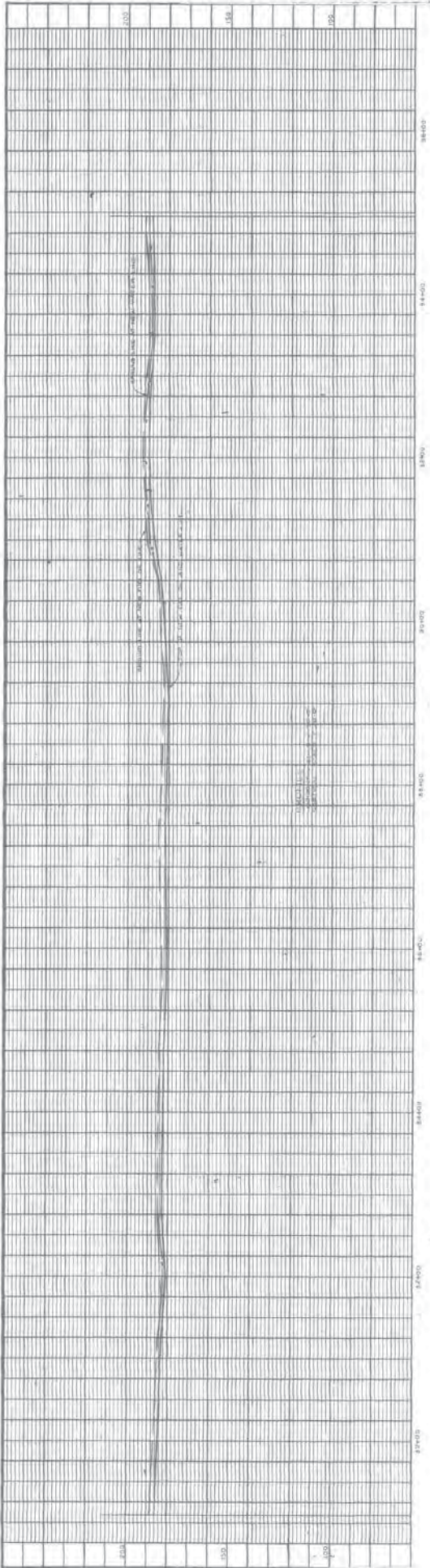


WINDYBORN, KOBLEY & ASSOCIATES, INC.
 45 WEST BARRICADE, SUITE 101
 AGANA, GUAM
 TEL: (671) 433-1111
 FAX: (671) 433-1112

DATE	DESCRIPTION	BY	CHK

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO. _____
 SHEET NO. _____ OF _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: NOV 2000
 SCALE: AS SHOWN
 PROJECT: REPAIR & MAINTENANCE OF 8" USI PIPELINE
 PLAN & PROFILE STA 60+81 TO STA 78+09
 SHEET NO. G-43
 OF 78



DATE	REVISIONS	BY	NO.

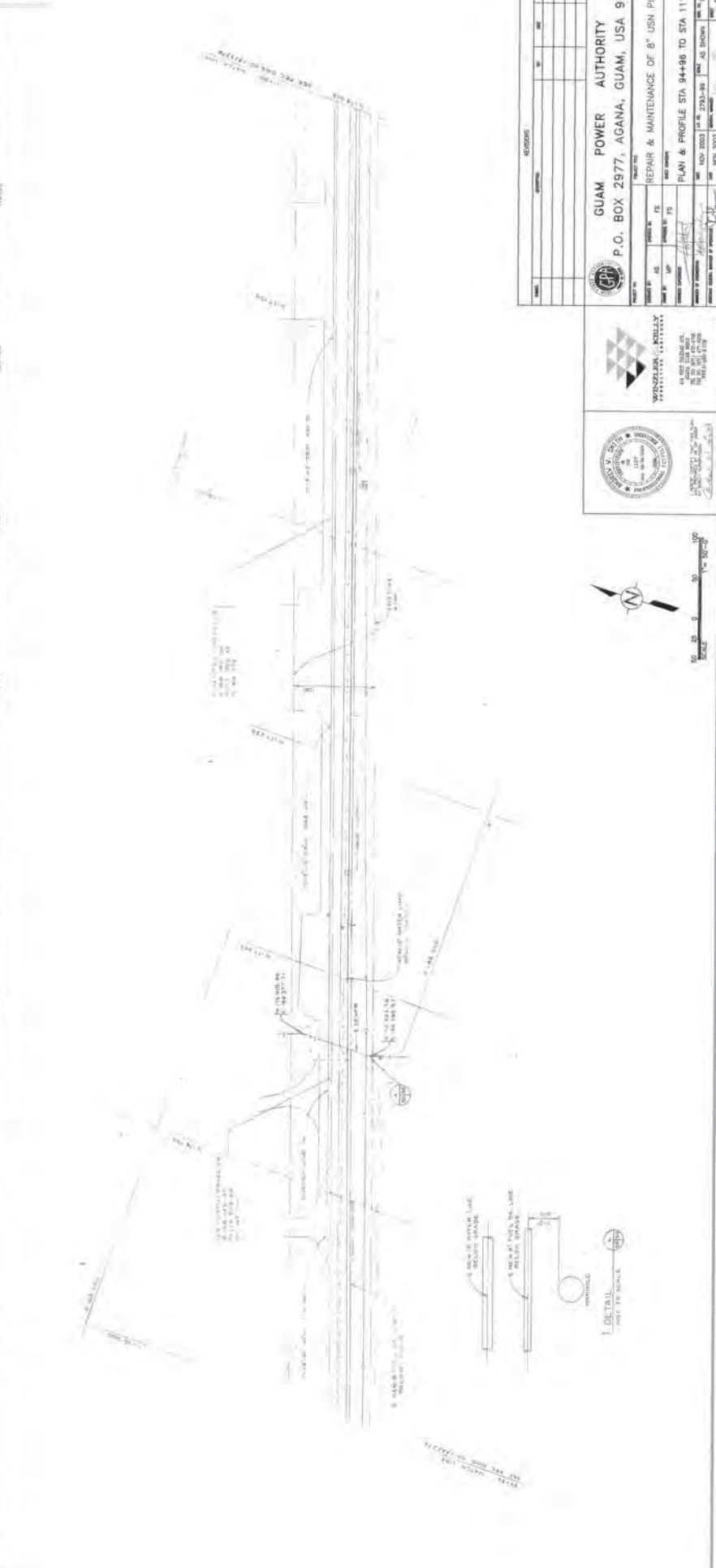
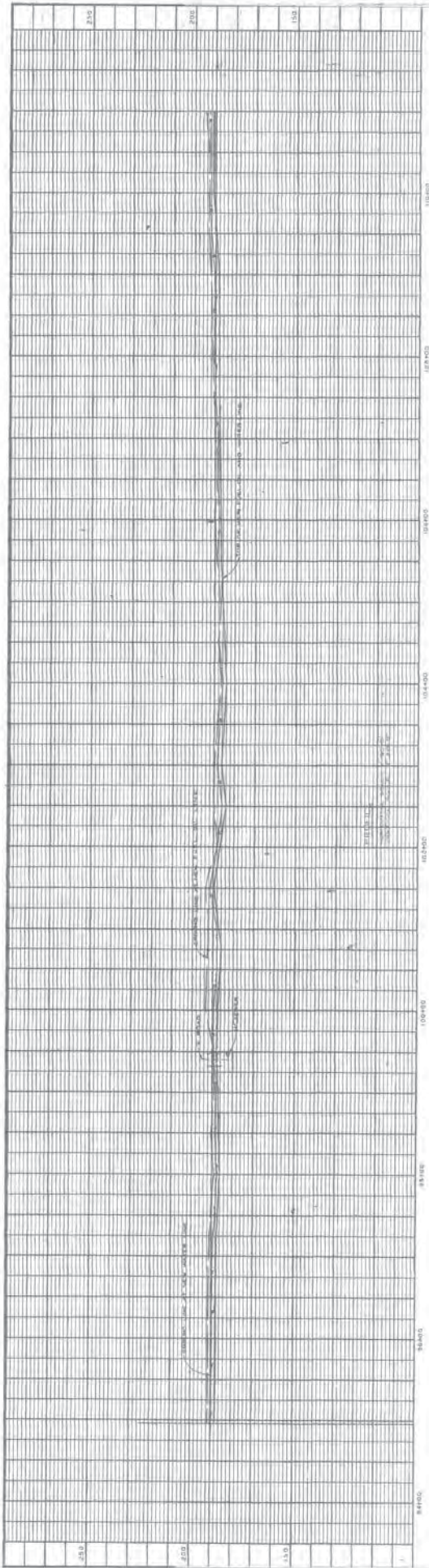
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT TITLE		
PROJECT NO.	SCALE	DATE
AS	AS	
PROJECT NO.	SCALE	DATE
AS	AS	
PROJECT NO.	SCALE	DATE
AS	AS	
PROJECT NO.	SCALE	DATE
AS	AS	

REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PLAN & PROFILE STA 79+00 TO STA 84+00
 DATE: 10/19/2003
 DRAWN: [Signature]
 CHECKED: [Signature]
 APPROVED: [Signature]

SHEET NO. 10
 OF 13





NO. 1507 2003		DATE 05/08/03		DRAWN BY [Signature]		CHECKED BY [Signature]	
PROJECT NO. 1507 2003				PROJECT NAME REPAIR & MAINTENANCE OF 8" USN PIPELINE			
DESIGNED BY [Signature]		CHECKED BY [Signature]		DATE 05/08/03		SCALE AS SHOWN	
PROJECT NO. 1507 2003				PROJECT NAME REPAIR & MAINTENANCE OF 8" USN PIPELINE			
DESIGNED BY [Signature]		CHECKED BY [Signature]		DATE 05/08/03		SCALE AS SHOWN	



1. DETAIL
 1:1 SCALE

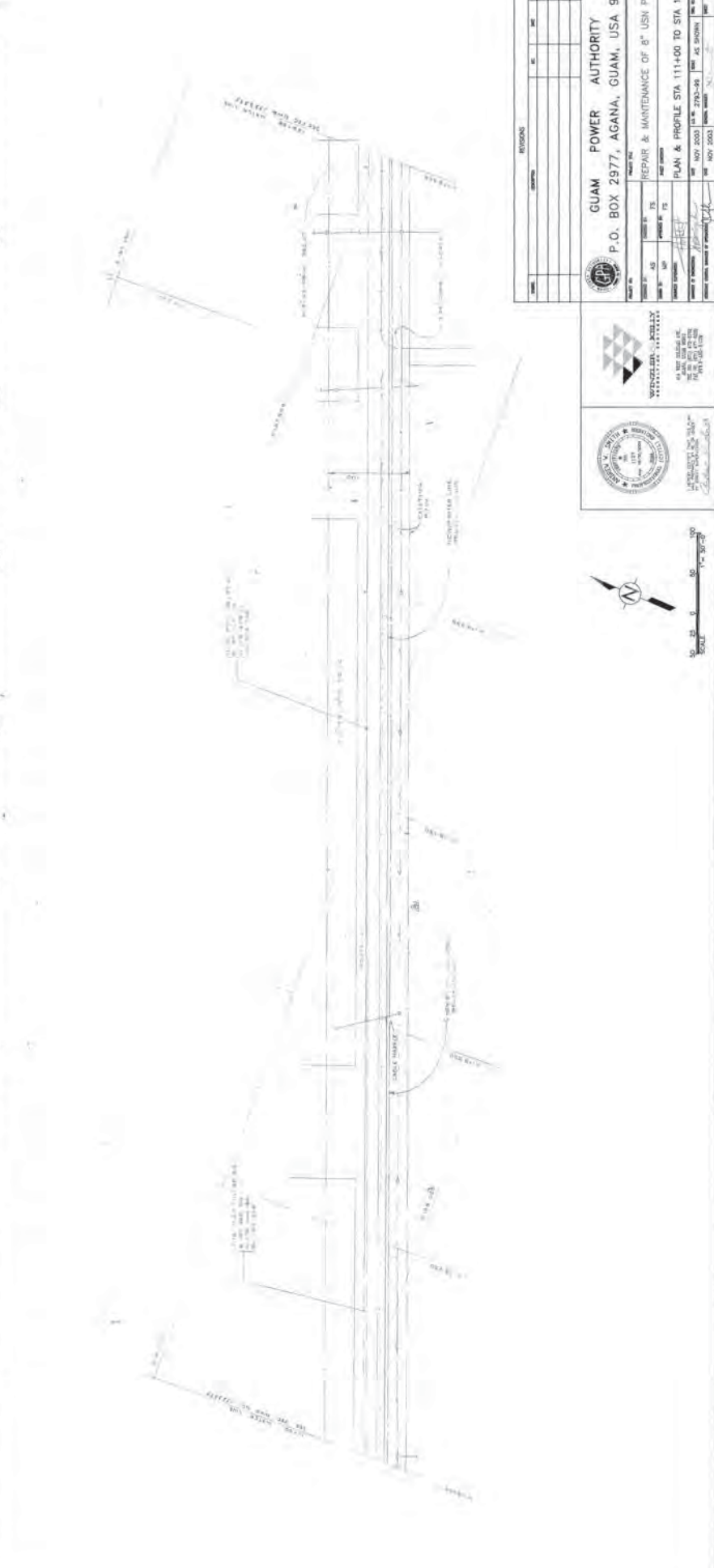
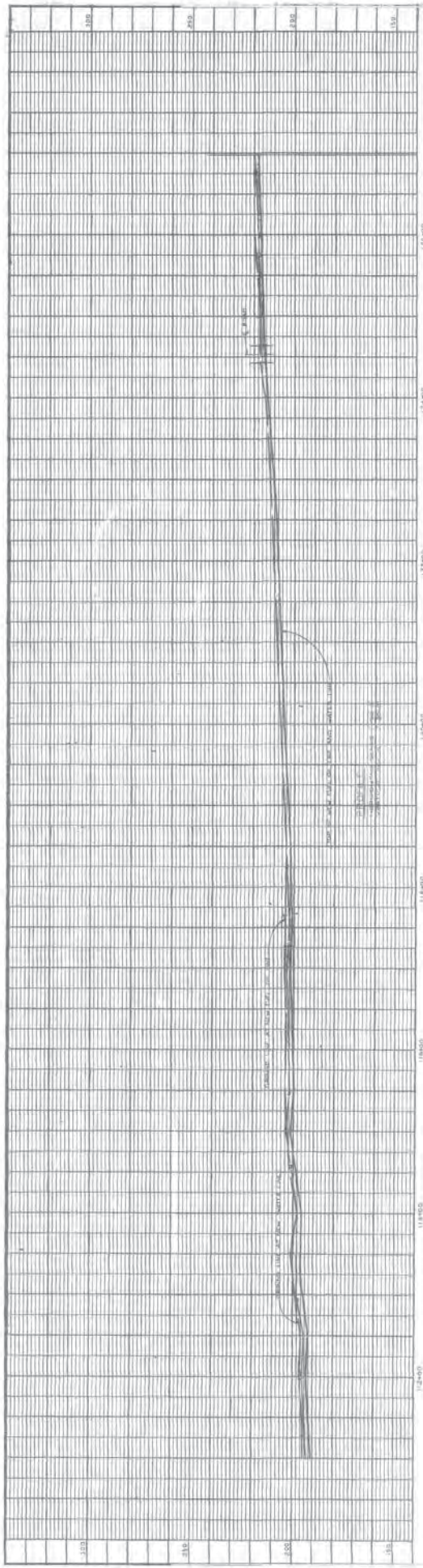
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

WENZLER-KELLY
 ENGINEERS, INC.

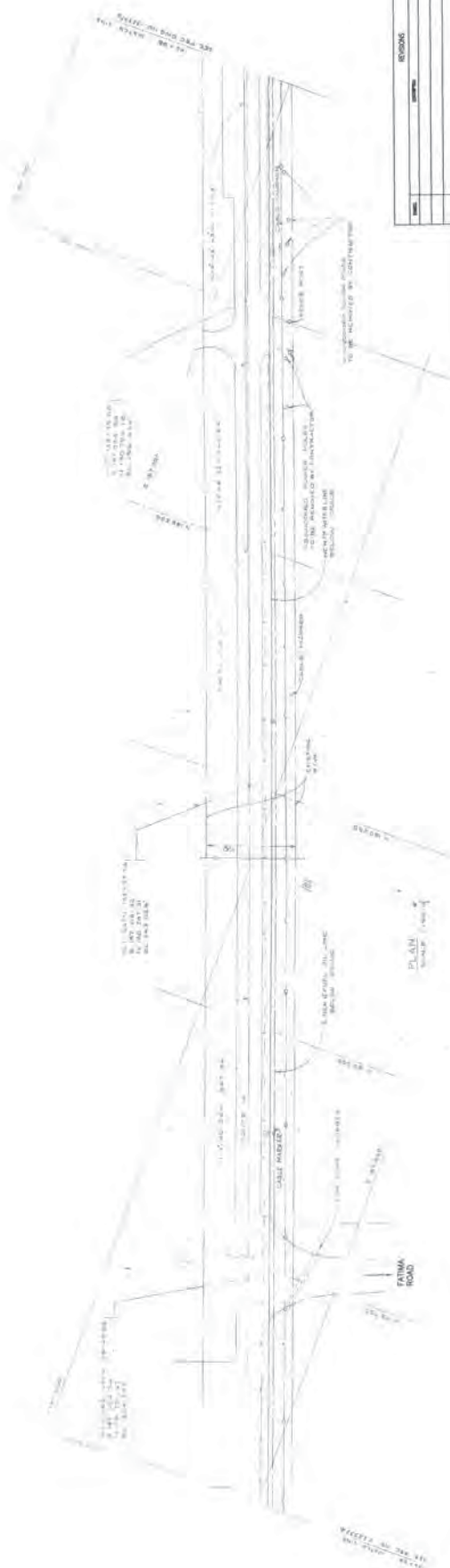
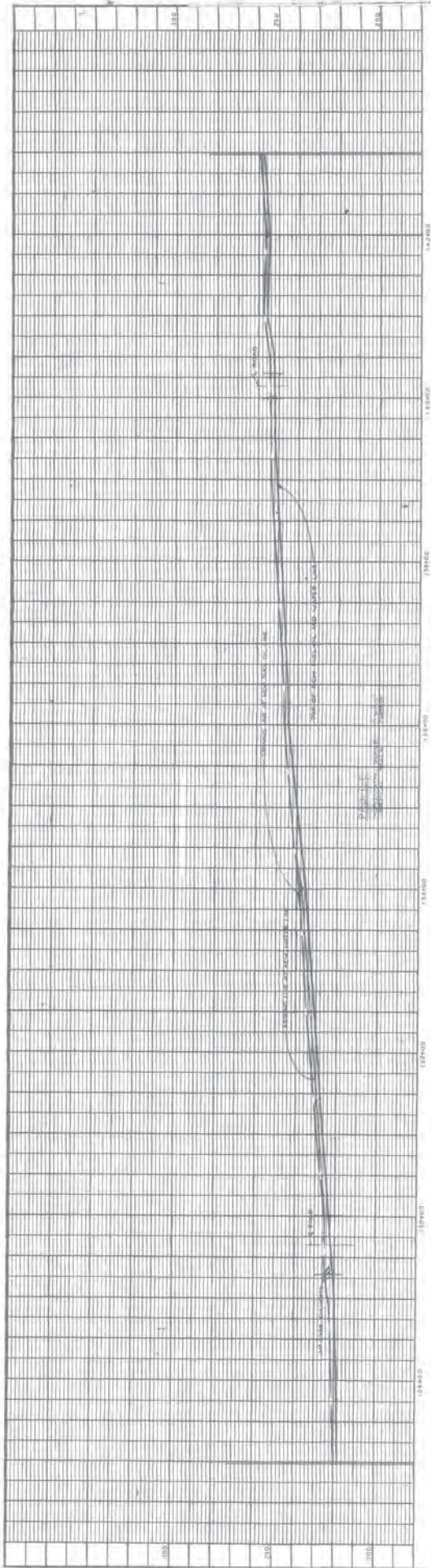
141 WEST BUNYAN AVENUE
 SUITE 100
 HONOLULU, HAWAII 96813

NOV 2003
 1507 2003

SCALE AS SHOWN



REVISIONS		NO.	DATE	BY
GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA, 96910				
PROJECT NO.	NO. 1000	DATE	NOV 2003	
PROJECT NAME	REPAIR & MAINTENANCE OF 8" USN PIPELINE	DESIGNER	AS SHOWN	
SCALE	AS SHOWN	DATE	NOV 2003	
PROJECT NO.	NO. 1000	DATE	NOV 2003	
PROJECT NAME	REPAIR & MAINTENANCE OF 8" USN PIPELINE	DESIGNER	AS SHOWN	
SCALE	AS SHOWN	DATE	NOV 2003	



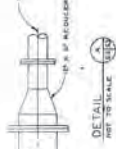
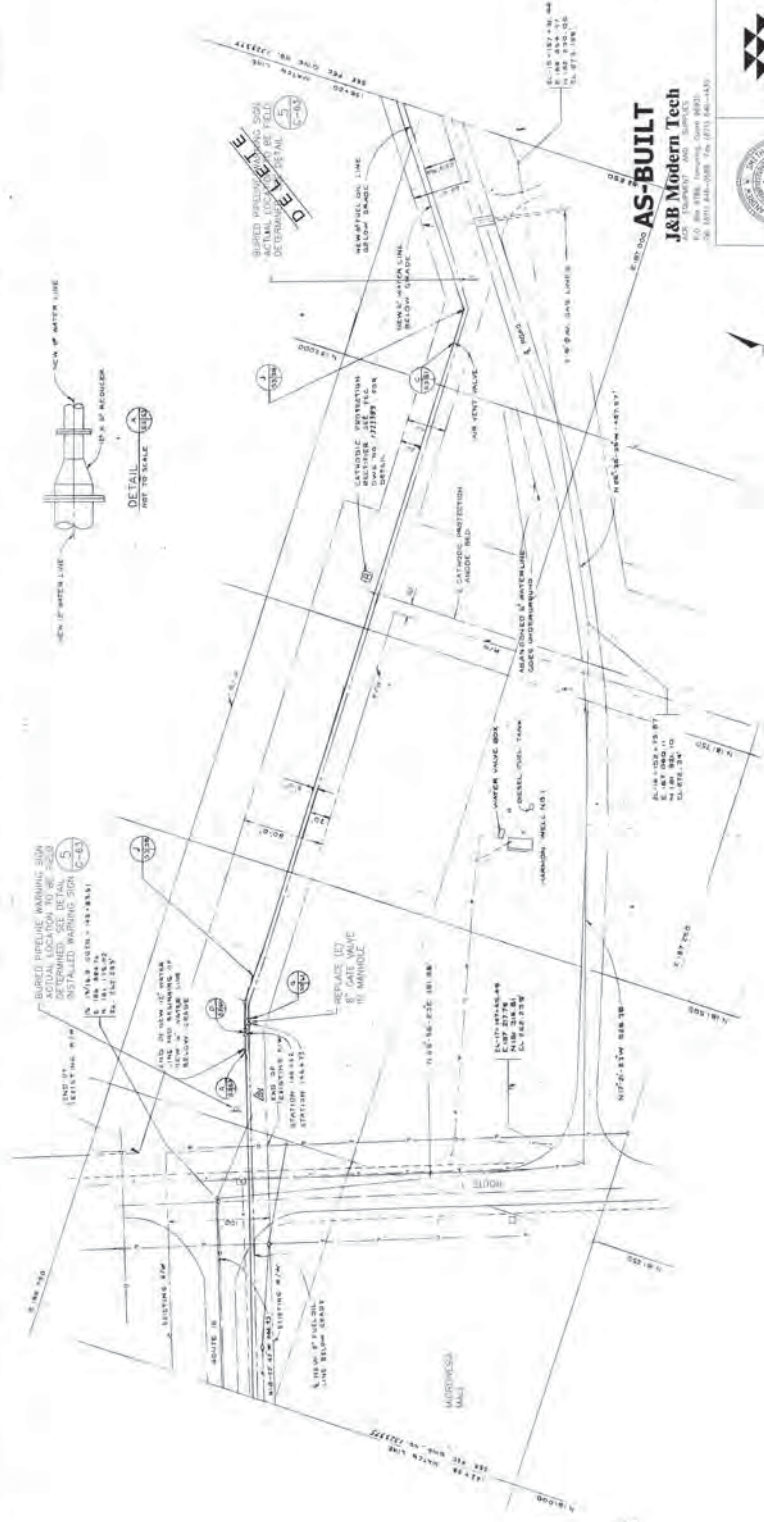
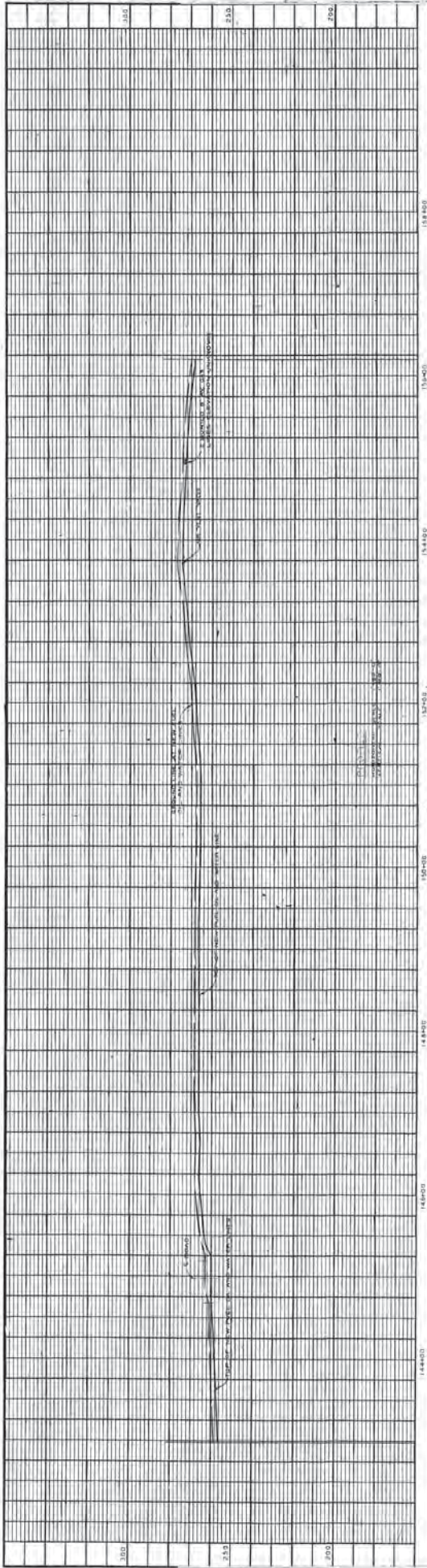
REVISIONS		DATE	
NO.	DESCRIPTION	BY	CHKD.

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910
 PROJECT NO. _____
 DRAWING NO. _____
 SCALE _____
 DATE _____
 DRAWN BY _____
 CHECKED BY _____
 APPROVED BY _____



VENZONER & ASSOCIATES
 ENGINEERS & ARCHITECTS
 1000 W. WASHINGTON AVE., SUITE 100
 AGANA, GUAM
 TEL: (671) 475-2000
 FAX: (671) 475-1100

GUAM POWER AUTHORITY
 PLAN & PROFILE STA 126+98 TO STA 142+98
 REPAIR & MAINTENANCE OF 8" USN PIPELINE
 PROJECT NO. _____
 DRAWING NO. _____
 SCALE _____
 DATE _____
 DRAWN BY _____
 CHECKED BY _____
 APPROVED BY _____



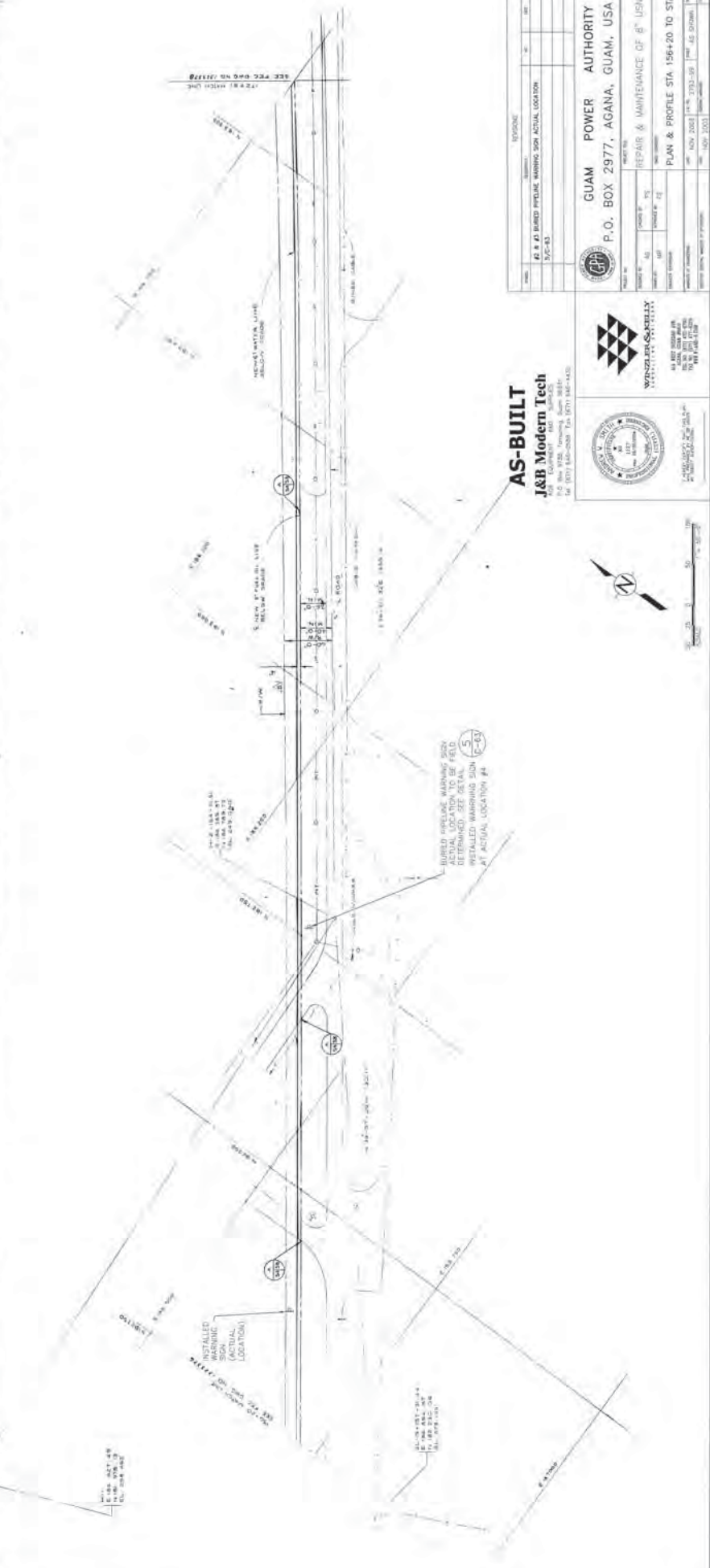
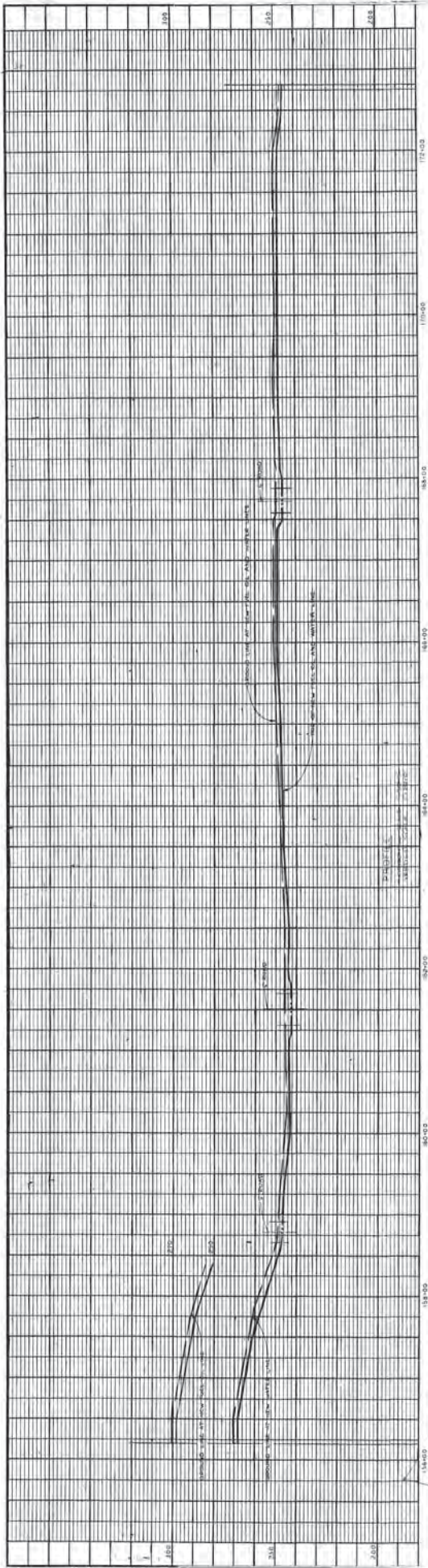
SCALE: 1" = 100'

AS-BUILT
J&B Modern Tech
 ALL CONTRACTS AND SUPPLIES
 1000 W. WASHINGTON ST. SUITE 100
 AGANA, GUAM 96910
 TEL: (671) 482-2008 FAX: (671) 482-1432



PROJECT NO.	1564-20
CONTRACT NO.	1564-20
DATE	NOV 2003
BY	J&B
CHECKED BY	J&B
APPROVED BY	J&B
DATE	NOV 2003
PROJECT NAME	REPAIR & MAINTENANCE OF 8" IPS PIPELINE
LOCATION	P.O. BOX 2977, AGANA, GUAM, USA 96910
PLAN & PROFILE STA	142+98 TO STA 156+20
SCALE	AS SHOWN
DATE	NOV 2003

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910



AS-BUILT
J&B Modern Tech
 1000 GUAYAMA, AGANA, GUAM
 TEL: 671-233-2222 FAX: 671-233-4433

DEPARTMENT OF PUBLIC WORKS
 GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

NO.	REVISION	DATE	BY	CHKD
1	AS-BUILT	11/15/05	J&B	

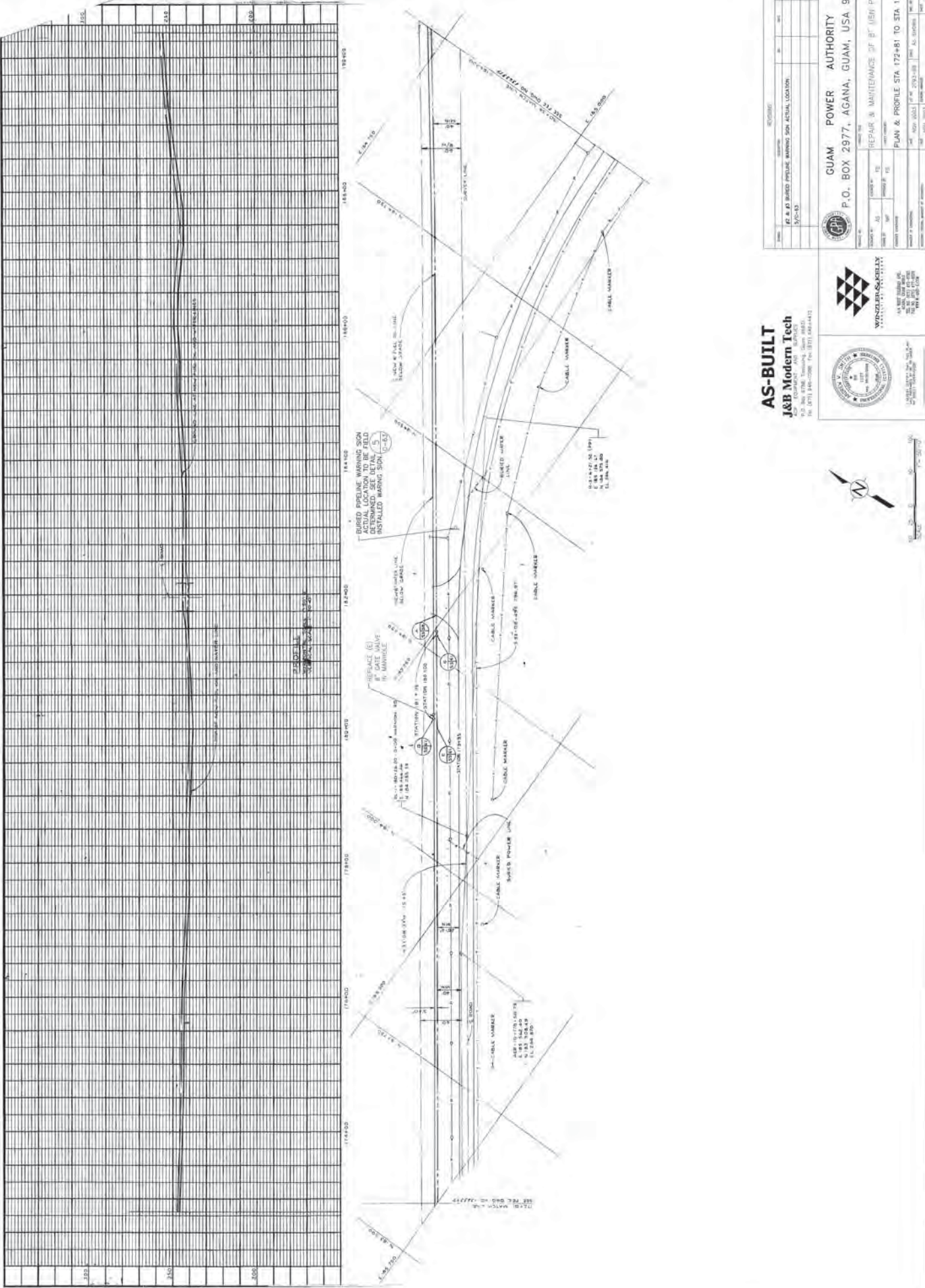
PROJECT NO.		1564-20
DATE	11/15/05	SCALE
PROJECT	REPAIR & MAINTENANCE OF 8" UGH PIPELINE	
CONTRACT NO.	1564-20	STA
CONTRACT	1564-20	172+81
CONTRACT	1564-20	172+81
CONTRACT	1564-20	172+81



INSTALLLED MARKING AT ACTUAL LOCATION TO BE DETERMINED. SEE DETAIL (C-63) AT ACTUAL LOCATION #4

INSTALLLED MARKING AT ACTUAL LOCATION TO BE DETERMINED. SEE DETAIL (C-63) AT ACTUAL LOCATION #4

INSTALLLED MARKING AT ACTUAL LOCATION TO BE DETERMINED. SEE DETAIL (C-63) AT ACTUAL LOCATION #4



AS-BUILT
J&B Modern Tech
 1100 S. K. ST. STE. 100
 AGANA, GUAM 96910
 TEL: (767) 340-2288 FAX: (767) 340-4472

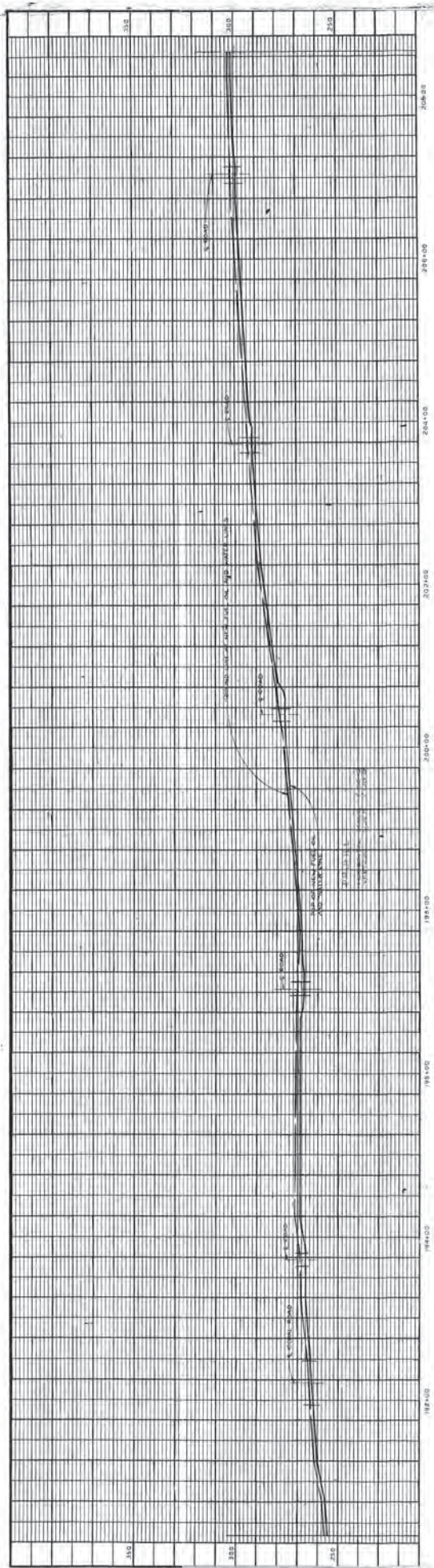


GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USM PIPELINE
 PLAN & PROFILE STA 172+81 TO STA 190+34

DATE: 05/20/2013
 DRAWN BY: J.B. MODERN
 CHECKED BY: J.B. MODERN
 PROJECT NO: 13-001





SEE P.O. BOX NO. 29777



AS-BUILT

J&B Modern Tech
 830 East 77th Street, Suite 200
 San Jose, CA 95122
 Tel: (408) 434-4444 Fax: (408) 434-4444



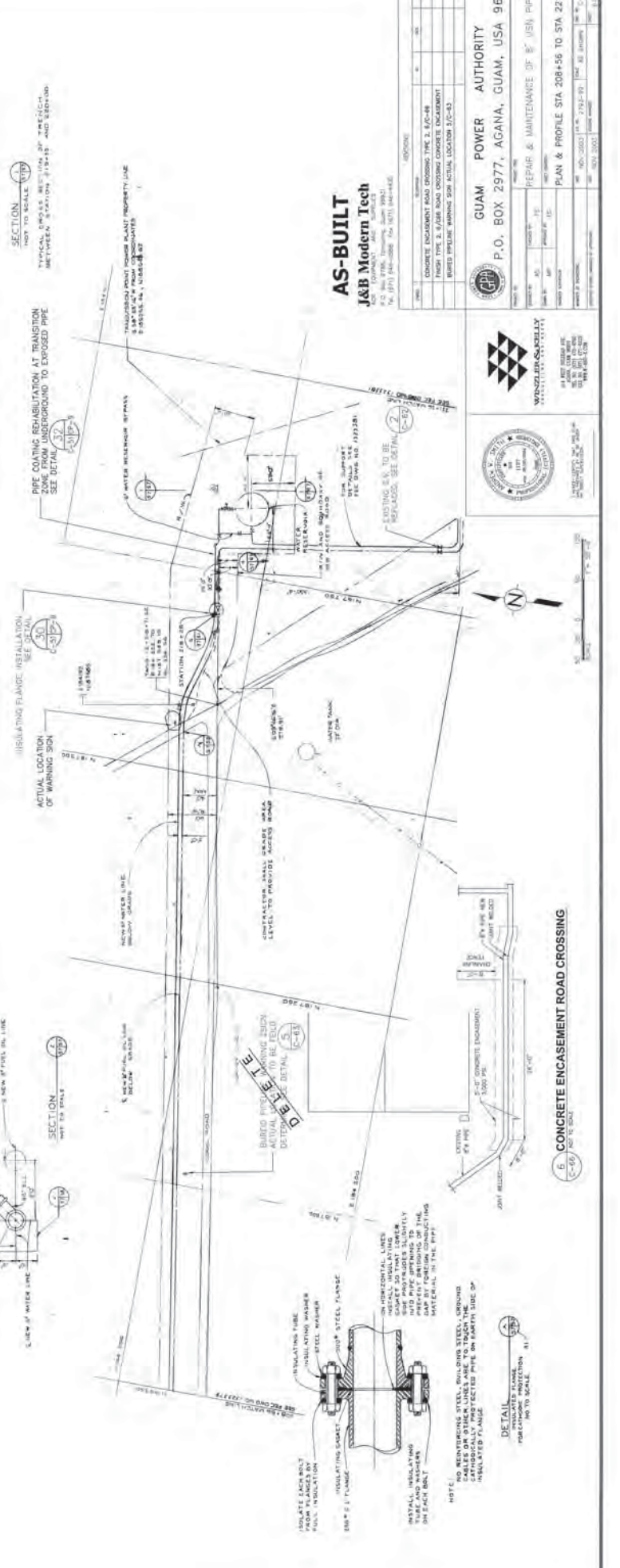
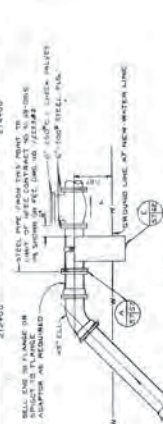
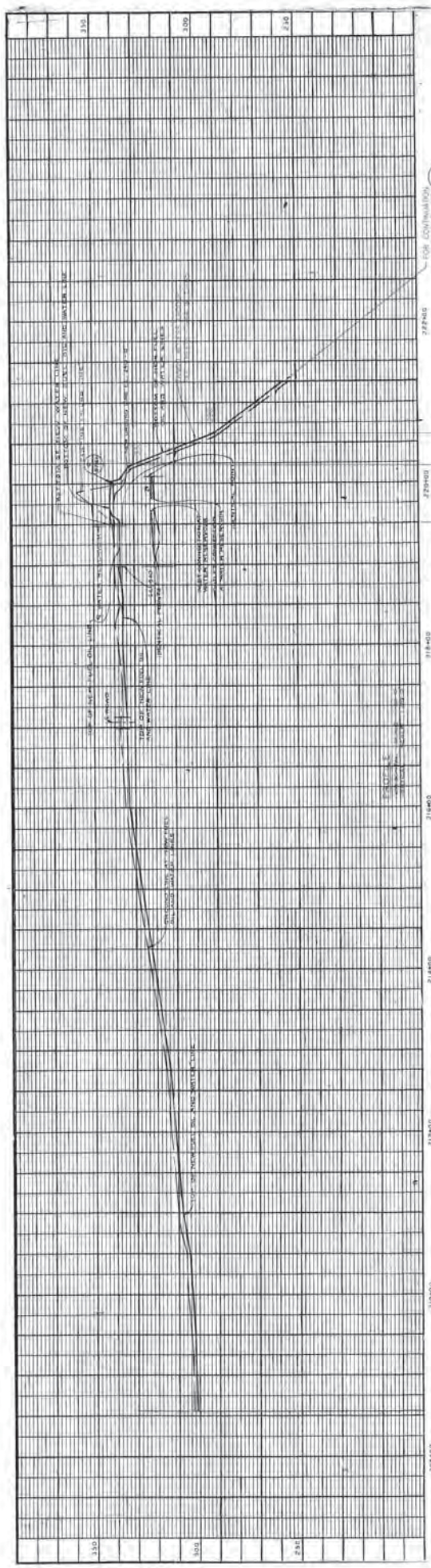
GUAM POWER AUTHORITY
 P.O. BOX 29777, AGANA, GUAM, USA 96910

NO.	DESCRIPTION	DATE

PROJECT: REPAIR & MAINTENANCE OF 8" USA PIPELINES
LOCATION: P.O. BOX 29777, AGANA, GUAM, USA 96910
DATE: 08/12/2013
SCALE: 1" = 40'

DRAWN BY: JAMES B. WINZLER
CHECKED BY: JAMES B. WINZLER
DATE: 08/12/2013

DATE: 08/12/2013
SCALE: 1" = 40'



AS-BUILT
J&B Modern Tech
 825 W. WILSON BLVD. SUITE 100
 WASHINGTON, DC 20005
 TEL: (703) 244-2222 FAX: (703) 244-4444

DATE	DESCRIPTION
08/01/00	CONCRETE ENCASUREMENT ROAD CROSSING THE E.P.W. RD FROM STA 2138 TO STA 2142
08/01/00	REPAIR & MAINTENANCE OF 8\"/>
08/01/00	PLAN & PROFILE STA 208+56 TO STA 221+26
08/01/00	AS-BUILT

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910



6. CONCRETE ENCASUREMENT ROAD CROSSING
 C-65/ NOT TO SCALE

DETAIL
 CONCRETE ENCASUREMENT
 JOINT REINFORCED WITH 4# BARS
 8\"/>

NOTE:
 NO REINFORCING STEEL BOLDING STEEL, GROUND CABLES OR OTHER LINES ARE TO TOUCH THE INSULATED FLANGE
 INSULATED FLANGE

DETAIL
 INSULATING FLANGE
 8\"/>

DETAIL
 BURIED PIPING WARNING SIGN
 ACTUAL LOCATION TO BE FIELD
 DETAIL SEE DETAIL C-61

DETAIL
 INSULATING FLANGE INSTALLATION
 SEE DETAIL C-61

DETAIL
 PIPE COATING REHABILITATION AT TRANSITION
 ZONE FROM UNDERGROUND TO EXPOSED PIPE
 SEE DETAIL C-62

DETAIL
 STA 2138+00
 BEGIN REPLACE 8\"/>

DETAIL
 ACCESS UNDER
 TRUCK #1
 20m (66') 270/145

DETAIL
 FOR CONTINUATION OF PROFILE SEE C-31/32

DETAIL
 SECTION A-A
 SCALE: 1\"/>

DETAIL
 SECTION B-B
 SCALE: 1\"/>

DETAIL
 SECTION C-C
 SCALE: 1\"/>

DETAIL
 SECTION D-D
 SCALE: 1\"/>

DETAIL
 SECTION E-E
 SCALE: 1\"/>

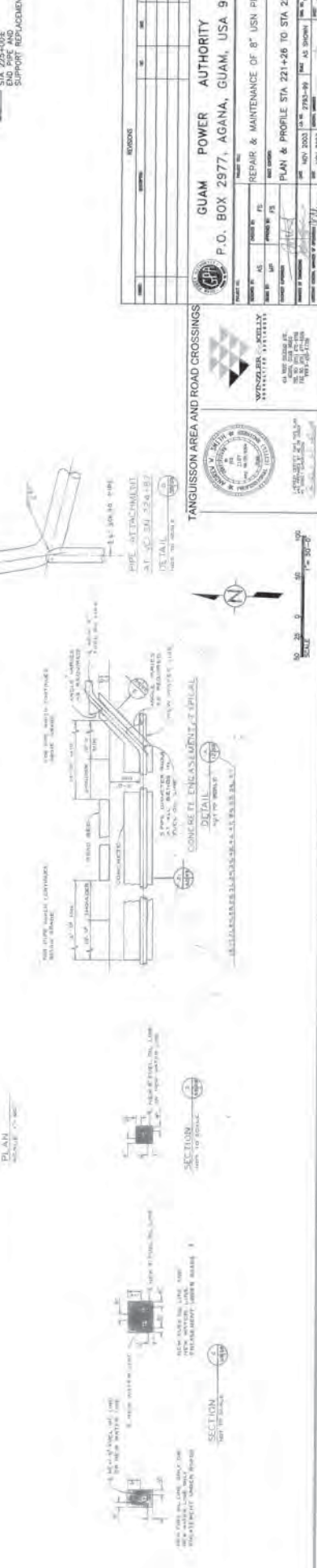
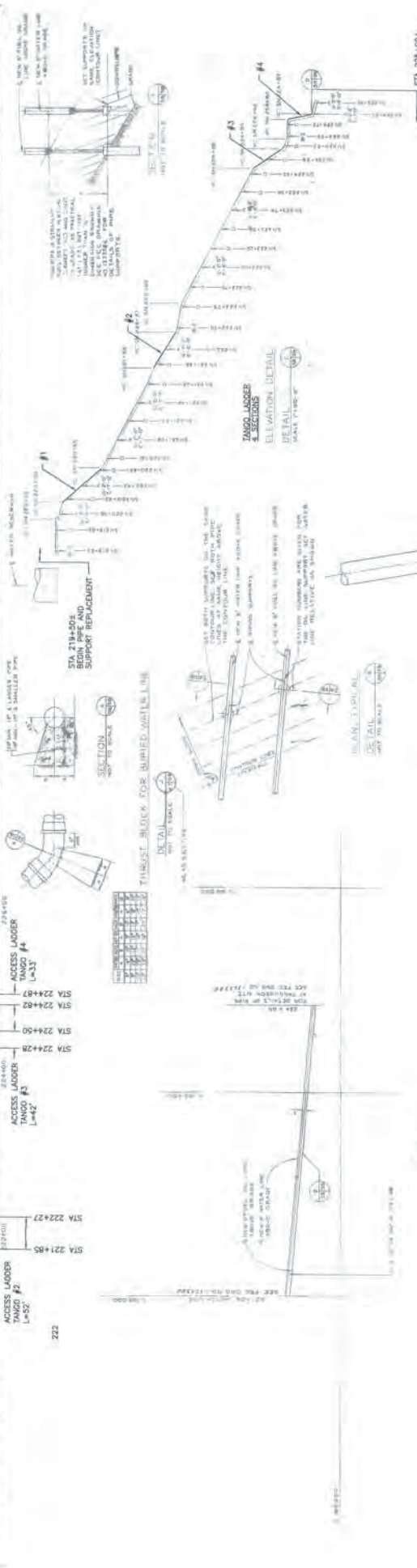
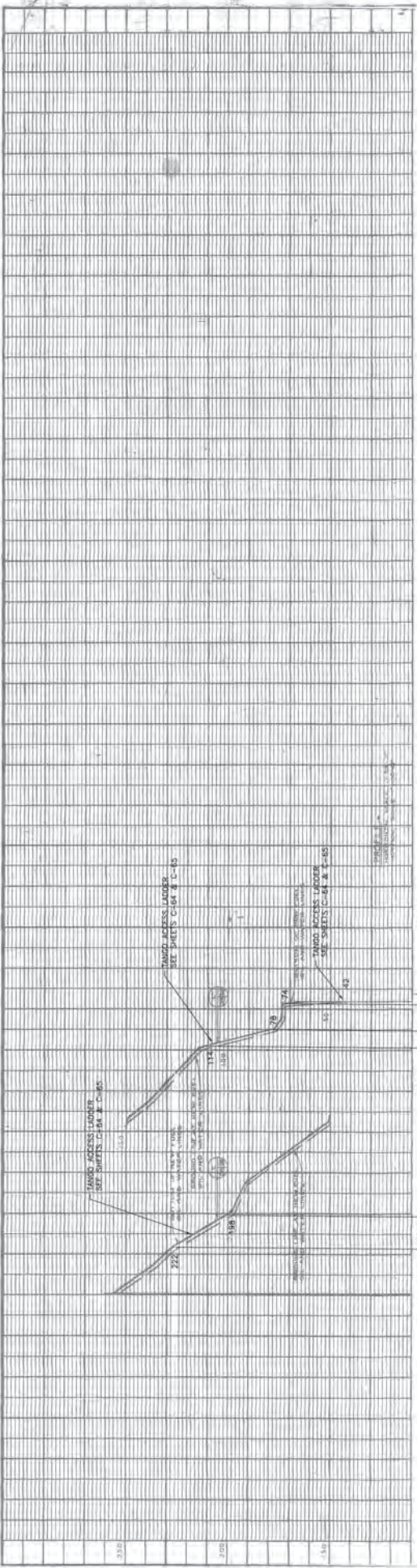
DETAIL
 SECTION F-F
 SCALE: 1\"/>

DETAIL
 SECTION G-G
 SCALE: 1\"/>

DETAIL
 SECTION H-H
 SCALE: 1\"/>

DETAIL
 SECTION I-I
 SCALE: 1\"/>

DETAIL
 SECTION J-J
 SCALE: 1\"/>



NO.	REVISION	DATE

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO. _____
 DRAWING NO. _____

DATE: _____

SCALE: _____

BY: _____

CHECKED: _____

APPROVED: _____

DATE: _____



TANGUSSION AREA AND ROAD CROSSINGS

SCALE: 1" = 20'-0"

N

STA 221+05
 STA 221+27
 STA 222+28
 STA 223+28
 STA 224+28
 STA 224+50
 STA 224+82
 STA 224+87

ACCESS LADDER TANGO #1
 ACCESS LADDER TANGO #2
 ACCESS LADDER TANGO #3
 ACCESS LADDER TANGO #4

TANGU ACCESS LADDER
 SEE SHEETS C-64 & C-65

TANGU ACCESS LADDER
 SEE SHEETS C-64 & C-65

THRUST BLOCK FOR BURIED WATER LINE

CONCRETE LADDER

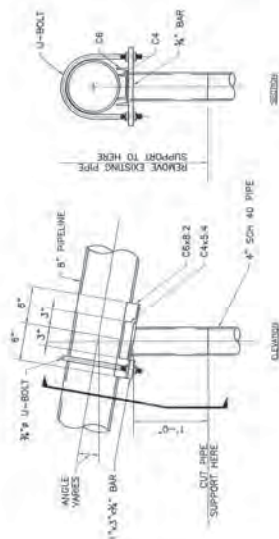
PIPE ATTACHED AT STA 224+187

SECTION 1
 SECTION 2
 SECTION 3

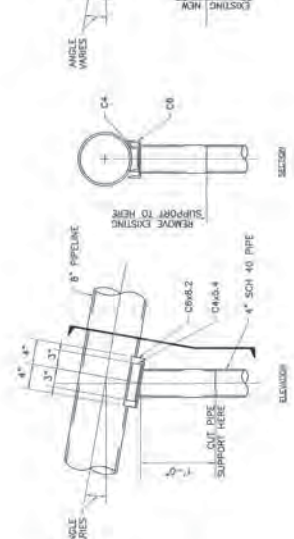
PLAN

ELEVATION DETAIL

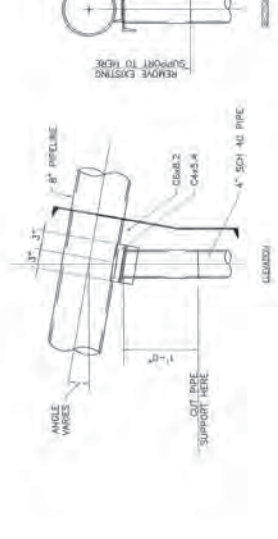
SECTION



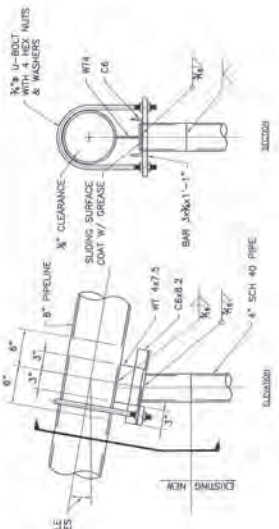
1 GUIDE TYPE "C" (EXISTING)
 C-61 SCALE: 1" = 1/2" - 1'-0"



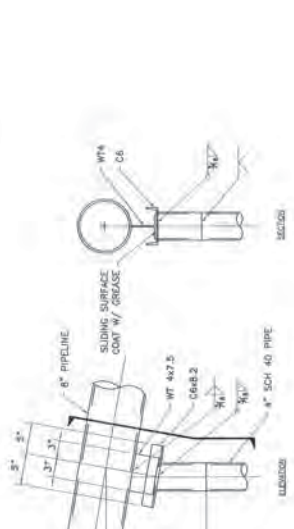
3 SUPPORT TYPE "D" (EXISTING)
 C-61 SCALE: 1" = 1/2" - 1'-0"



5 CORNER SUPPORT TYPE "F" (EXISTING)
 C-61 SCALE: 1" = 1/2" - 1'-0"



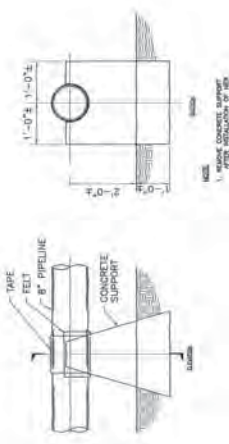
2 GUIDE TYPE "C" (MODIFIED)
 C-61 SCALE: 1" = 1/2" - 1'-0"



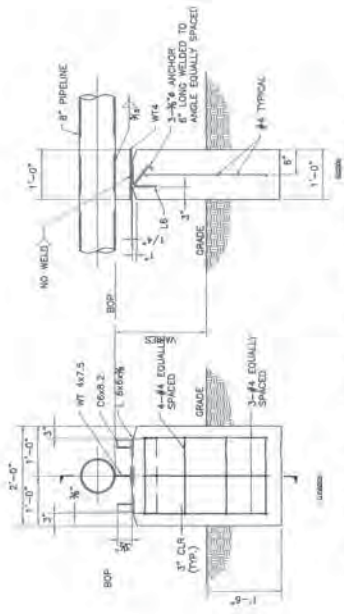
4 SUPPORT TYPE "D" (MODIFIED)
 C-61 SCALE: 1" = 1/2" - 1'-0"



6 CORNER SUPPORT TYPE "F" (MODIFIED)
 C-61 SCALE: 1" = 1/2" - 1'-0"



7 TYPE "D" ALTERNATE SUPPORT (EXISTING)
 C-61 SCALE: 1" = 1'-0"



8 TYPE "D" ALTERNATE SUPPORT (MODIFIED)
 C-61 SCALE: 1" = 1'-0"

- NOTES:**
- ROLLED STEEL SHAPES SHALL MEET THE REQUIREMENTS OF AISC A53.
 - PIPE MATERIAL SHALL BE ASTM A 53, STEEL, GRADE 40 (0.322 INCH WALL), STEEL, SCHEDULE 40 (0.322 INCH WALL).
 - ALL WELDING SHALL BE PERFORMED BY WELDERS QUALIFIED IN ACCORDANCE WITH AWS D1.1.
 - USE ONLY APPROVED WELDING PROCEDURES.
 - PROVIDE SUPPORT FOR PIPELINE BEFORE REMOVING TOP PORTION OF EXISTING PIPE SUPPORT.
 - CAREFULLY REMOVE WELD CONNECTING THE SUPPORT TO EXISTING PIPE, DAMAGING PIPELINE GROUND SURFACE SMOOTH.

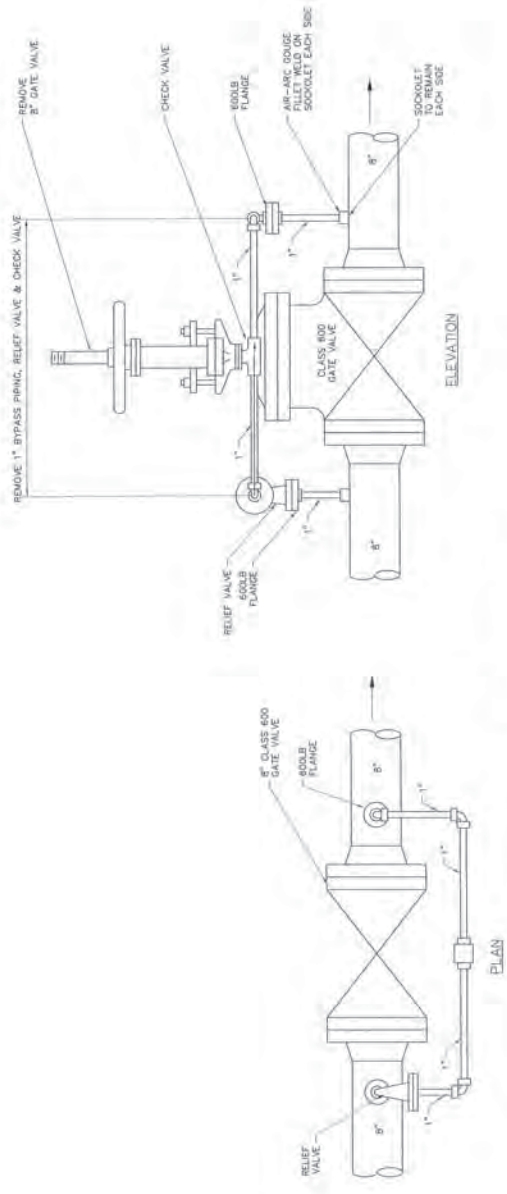
TANQUISSON AREA AND ROAD CROSSINGS

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

NO.	DATE	REVISION

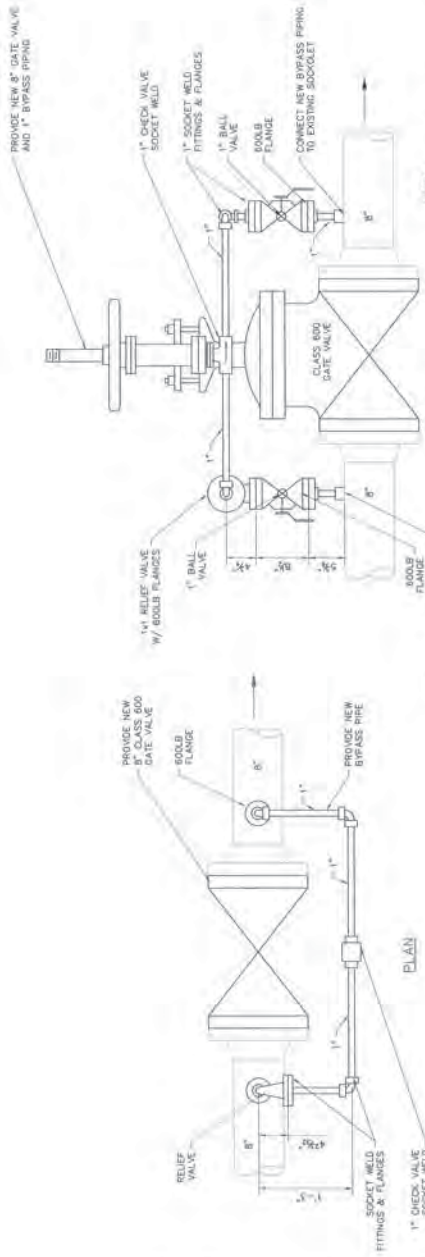
REPAIR & MAINTENANCE OF 8" USN PIPELINE
 CIVIL DETAILS 2 - MODIFIED PIPE SUPPORTS

DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 DATE: MAY 2005
 DRAWN BY: [Signature]
 DATE: MAY 2005



1 EXISTING GATE VALVE DETAIL
SCALE: 1-1/2"=1'-0"

3 PITI VALVE PIT DETAIL
SCALE: 1-1/2"=1'-0"



2 NEW GATE VALVE DETAIL
SCALE: 1-1/2"=1'-0"

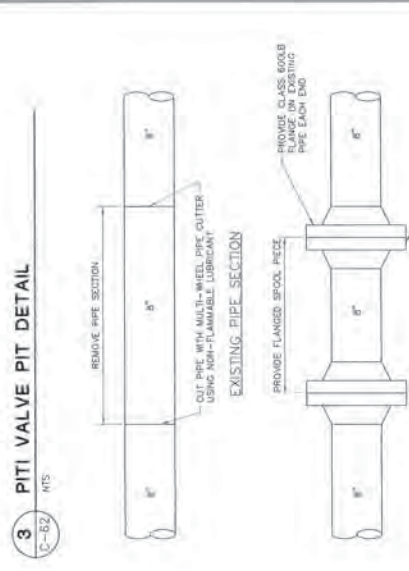
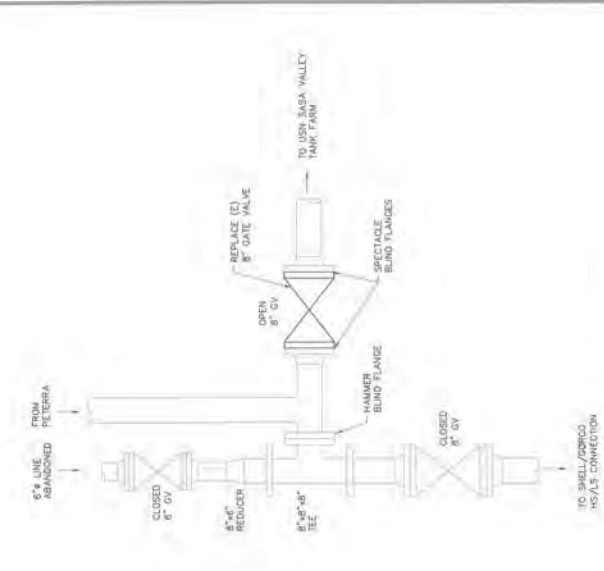
4 PIPE REPLACEMENT DETAIL
SCALE: 1-1/2"=1'-0"

- NOTES:**
- PIPE MATERIAL SHALL BE ASTM A53, TYPE E OR S, GRADE B, BLACK STEEL, SCHEDULE 40 (0.322 NOM WALL).
 - WELDING NECK FLANGES SHALL BE CLASS 600, RAISED FACE TYPE, ASTM A65.
 - REMOVE ALL FUEL FROM PIPELINE PRIOR TO CUTTING.
 - PROVIDE MEANS FOR CUTTING RESIDUAL PIPE DURING CUTTING AND PREVENT SPILLAGE ON THE GROUND.
 - DEGAS PIPELINE AT REPAIR LOCATION PER APPROVED PROCEDURE.
 - ALL WELDING SHALL BE PERFORMED BY WELDERS CERTIFIED IN ACCORDANCE WITH ASME SECTION IX OR AN EQLIVANT, OR 2 LEVEL.
 - USE ONLY APPROVED WELDING PROCEDURES.

MECHANICAL MATERIALS SCHEDULE	DESCRIPTION	QUANTITY
8" GATE VALVE CLASS 600	18 EACH	
1" BALL VALVE	32 EACH	
1" CHECK VALVE	16 EACH	
1" 90° RELIEF VALVE W/ 600LB FLANGES	16 EACH	
1" 90° SOCKET WELD FITTINGS & FLANGES	84 EACH	
8" BLIND FLANGES	1 EACH	



5 DRAIN VALVE
SCALE: 1-1/2"=1'-0"

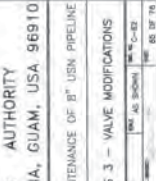


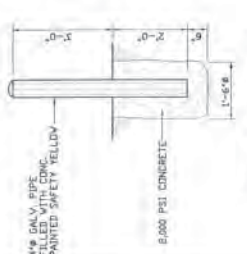
GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE

CIVIL DETAILS 3 - VALVE MODIFICATIONS

DATE: OCT 2003
BY: JAS. BISHOP
CHECKED: JAS. BISHOP
SCALE: 1-1/2"=1'-0"

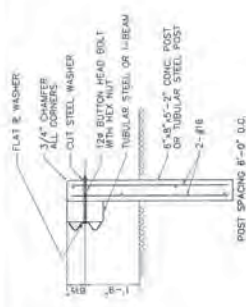




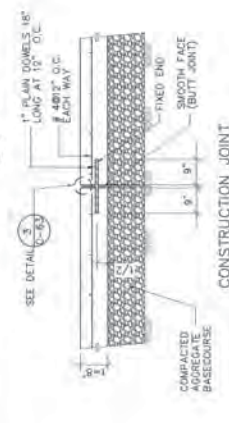
1 PIPE BOLLARD
C-63 NTS



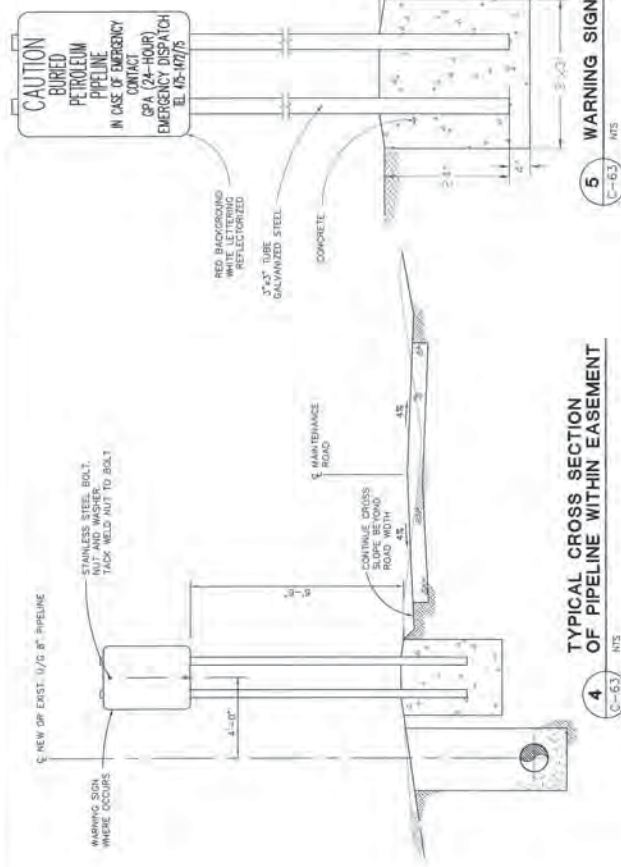
2 GUARD RAIL DETAIL
C-63 NTS



3 RAIL DETAIL
C-63 NTS



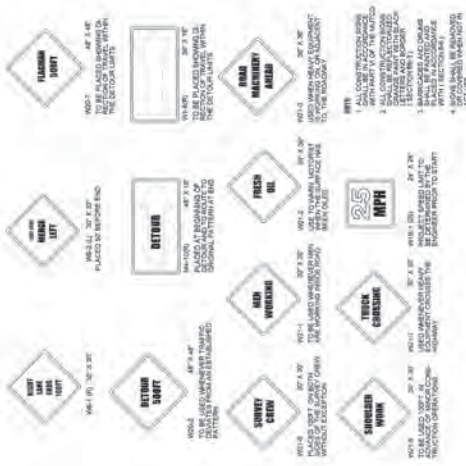
4 TYPICAL CROSS SECTION OF PIPELINE WITHIN EASEMENT
C-63 NTS



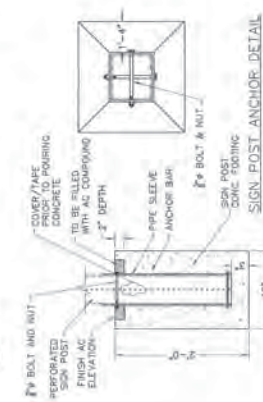
5 WARNING SIGN
C-63 NTS



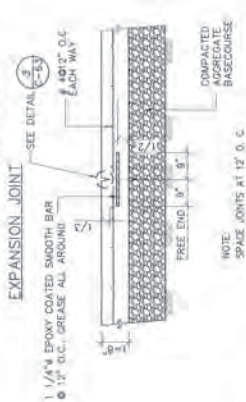
6 PERMANENT CONSTRUCTION SIGNS
C-63 NTS



7 PORTABLE CONSTRUCTION SIGNS
C-63 NTS



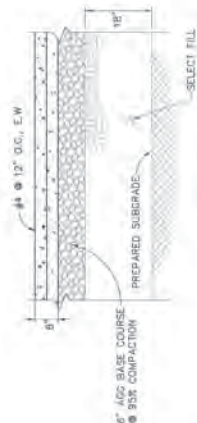
8 SIGN POST ANCHOR DETAIL
C-63 NTS



9 PCC PAVEMENT JOINT DETAIL
C-63 NTS



10 CONCRETE PAVEMENT JOINT SEALING DETAIL
C-63 NTS



11 PCC PAVEMENT
C-63 NTS

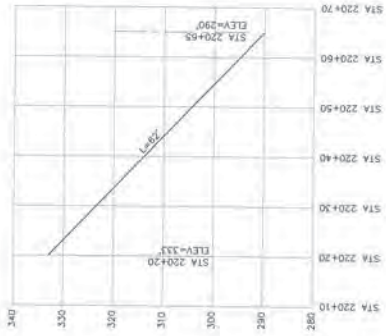
- NOTES:**
1. LOCATE EXPANSION JOINTS @ AT 60 FT. MAXIMUM SPACING.
 2. CONTRACTION JOINTS TO BE LOCATED AT THE FOLLOWING LOCATIONS:
 - a. AT THE END OF THE EASEMENT.
 - b. AT THE END OF THE ROADWAY.
 - c. AT THE END OF THE CURB.
 - d. AT THE END OF THE SIDEWALK.
 - e. AT THE END OF THE DRIVEWAY.
 - f. AT THE END OF THE PAVEMENT.
 3. SEALANT SHALL BE SELF-HEALING, MS-POUR POLYMER ASPHALT BASED JOINT SEALANT AND CONFORM TO ASTM M-173.
 4. CONTRACTION JOINTS TO BE LOCATED AT 12'-0\"/>

TANGIUSSON AREA AND ROAD CROSSINGS

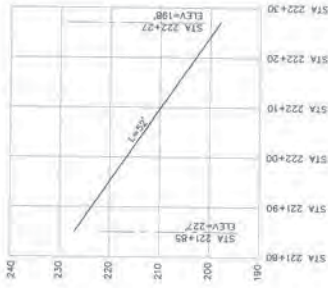
GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

REPAIR & MAINTENANCE OF 8" USN PIPELINE
CIVIL DETAILS 4 - SIGNS, POSTS & GUARDRAILS

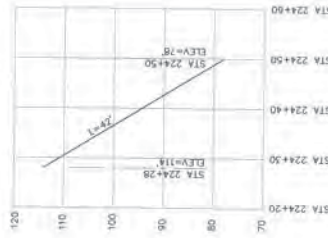
NOV 2023
NOV 2023



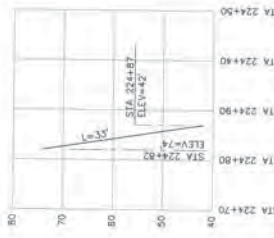
1
TANGO LADDER
SECTION #1
SCALE: C-6A



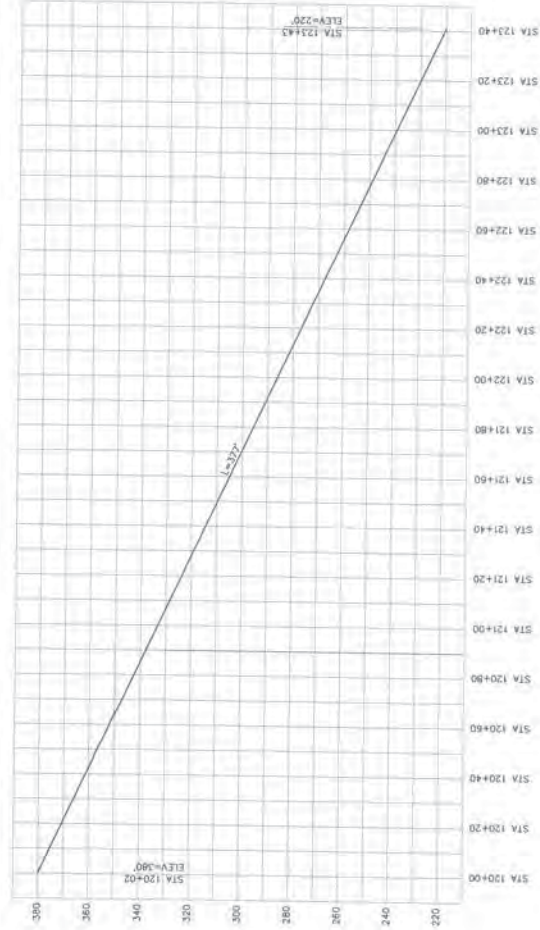
2
TANGO LADDER
SECTION #2
SCALE: C-6A



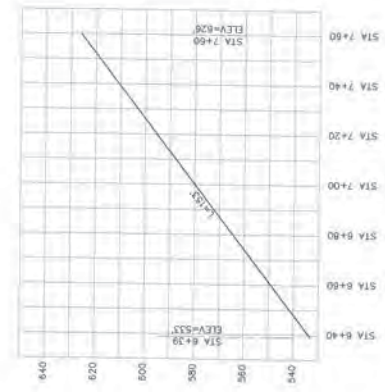
3
TANGO LADDER
SECTION #3
SCALE: C-6A



4
TANGO LADDER
SECTION #4
SCALE: C-6A



6
NIMITZ LADDER
SECTION
SCALE: C-6A

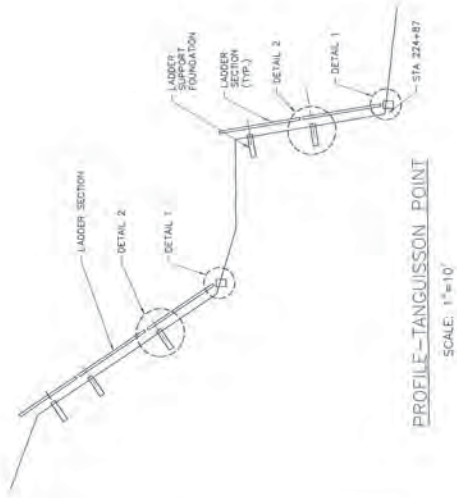


5
SASA LADDER
SECTION
SCALE: C-6A

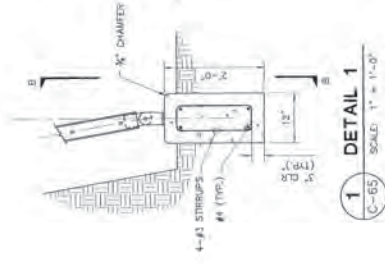
TANGUSSION AREA AND ROAD CROSSINGS

Logos for the Guam Power Authority and other related organizations, including the Department of Public Works and Engineering.

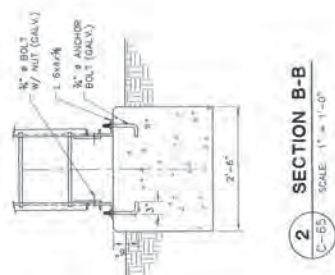
PROJECT NO.	GUAM POWER AUTHORITY
OWNER	GUAM POWER AUTHORITY
DESIGNER	PP&A ENGINEERING, INC.
DATE	NOV 2003
DRAWING NO.	203-03
TITLE	CIVIL DETAILS 5 - LADDER PROFILE
SCALE	AS SHOWN
DATE	NOV 2003
BY	AS SHOWN
CHECKED	AS SHOWN
DATE	AS SHOWN
PROJECT	REPAIR & MAINTENANCE OF 8" USK PIPELINE
LOCATION	P.O. BOX 2977, AGANA, GUAM, USA 96910



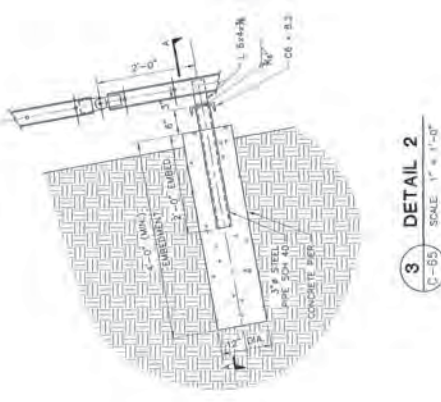
PROFILE-TANGUISSON POINT
SCALE: 1" = 10'



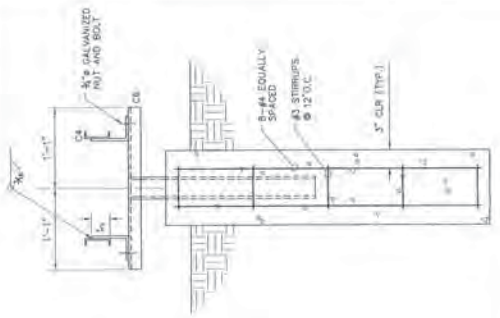
1 DETAIL 1
SCALE: 1" = 1'-0"



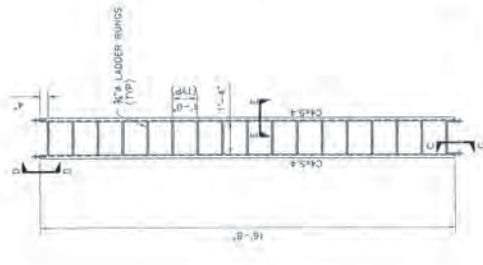
2 SECTION B-B
SCALE: 1" = 1'-0"



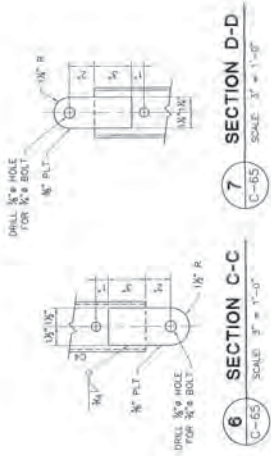
3 DETAIL 2
SCALE: 1" = 1'-0"



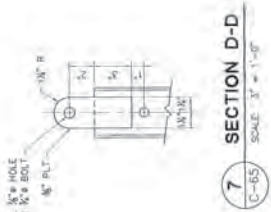
4 SECTION A-A
SCALE: 1" = 1'-0"



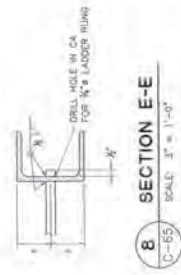
5 LADDER SECTION DETAIL 3
SCALE: 1/2" = 1'-0"



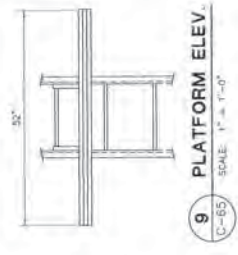
6 SECTION C-C
SCALE: 3" = 1'-0"



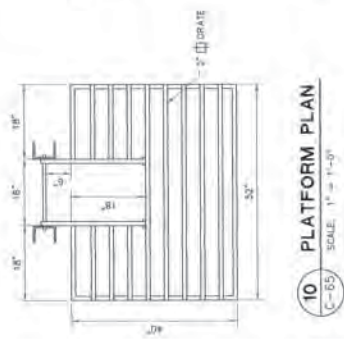
7 SECTION D-D
SCALE: 3" = 1'-0"



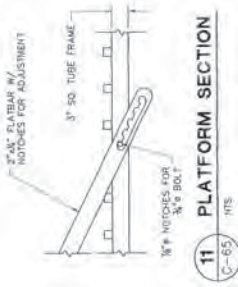
8 SECTION E-E
SCALE: 3" = 1'-0"



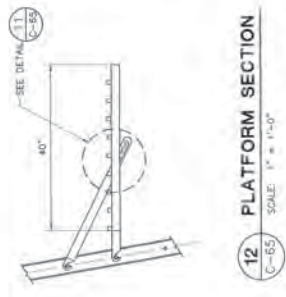
9 PLATFORM ELEV.
SCALE: 1" = 1'-0"



10 PLATFORM PLAN
SCALE: 1" = 1'-0"



11 PLATFORM SECTION
SCALE: 1" = 1'-0"



12 PLATFORM SECTION
SCALE: 1" = 1'-0"

TANGUISSON AREA AND ROAD CROSSINGS

GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

REVISIONS

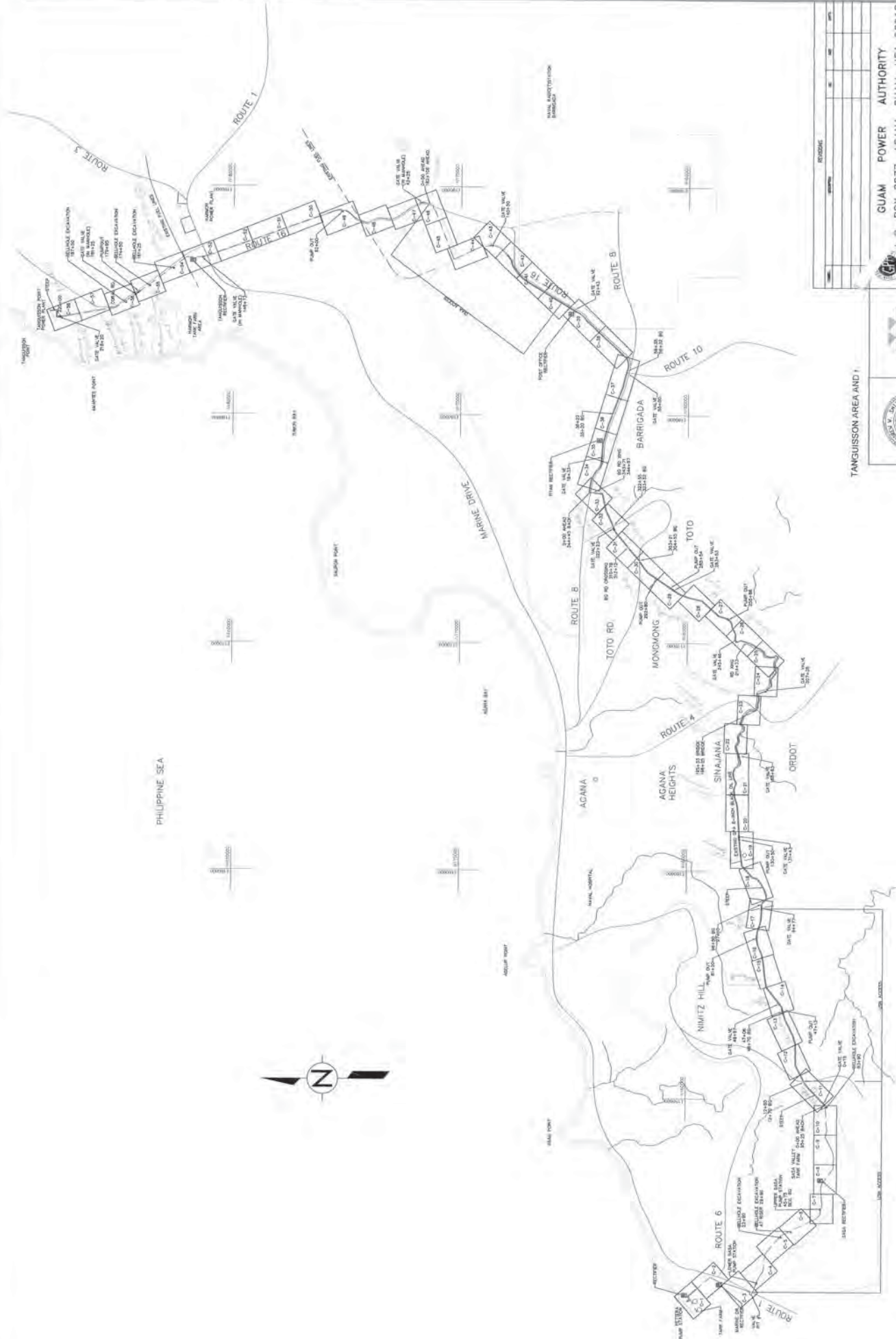
NO.	DATE	DESCRIPTION

DESIGNED BY: [Signature]
CHECKED BY: [Signature]
DATE: [Date]

REPAIR & MAINTENANCE OF 8" USN PIPELINE
CNIL DETAILS 6 - LADDER DETAILS

NO. 2001
NO. 2002
NO. 2003
NO. 2004
NO. 2005
NO. 2006
NO. 2007
NO. 2008
NO. 2009
NO. 2010
NO. 2011
NO. 2012
NO. 2013
NO. 2014
NO. 2015
NO. 2016
NO. 2017
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NO. 2074
NO. 2075





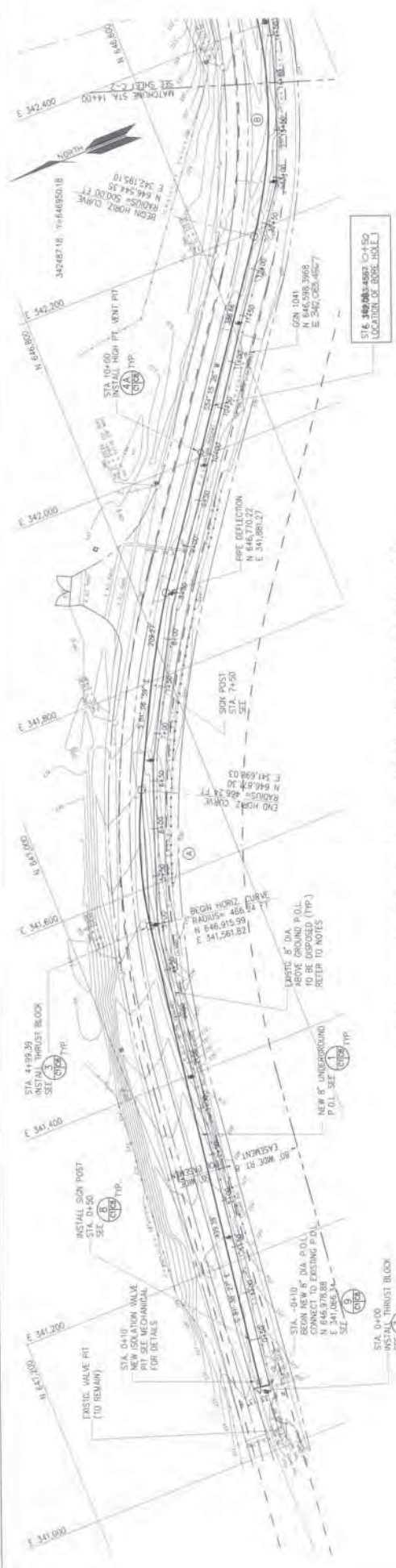
GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA, 96910	
PROJECT NO. 100-100-100-100	DRAWING NO. 100-100-100-100
DATE 10/10/10	SCALE AS SHOWN
GENERAL PLAN B" FUEL OIL PIPELINE REPAIRS	
DESIGNED BY J. J. J.	CHECKED BY J. J. J.
DATE 10/10/10	DATE 10/10/10
SHEET NO. 100-100-100-100	TOTAL SHEETS 100-100-100-100

TANGUISSON AREA AND I

J. J. J.
Professional Engineer
No. 100-100-100-100
Guam, P.R.

W. W. W.
Professional Engineer
No. 100-100-100-100
Guam, P.R.

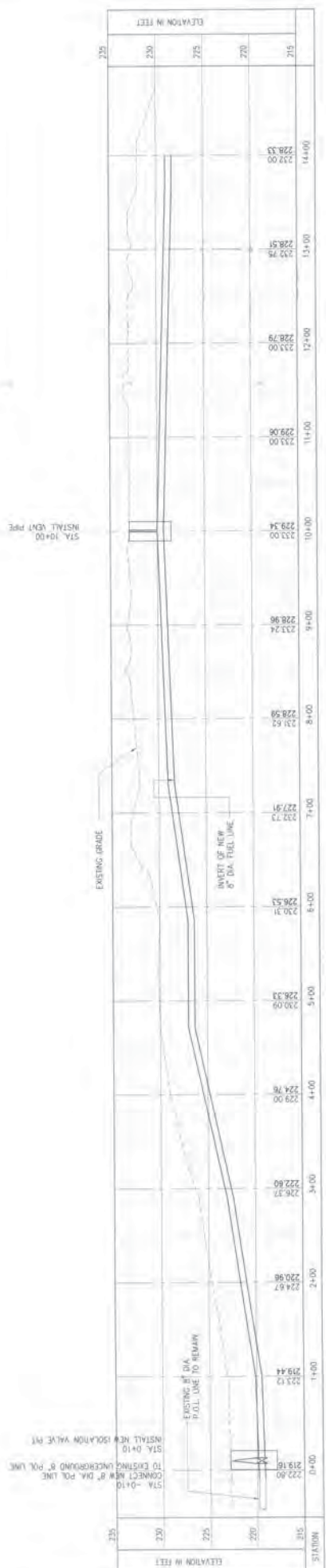
PROJECT NO. 100-100-100-100	DRAWING NO. 100-100-100-100
DATE 10/10/10	SCALE AS SHOWN
GENERAL PLAN B" FUEL OIL PIPELINE REPAIRS	
DESIGNED BY J. J. J.	CHECKED BY J. J. J.
DATE 10/10/10	DATE 10/10/10
SHEET NO. 100-100-100-100	TOTAL SHEETS 100-100-100-100



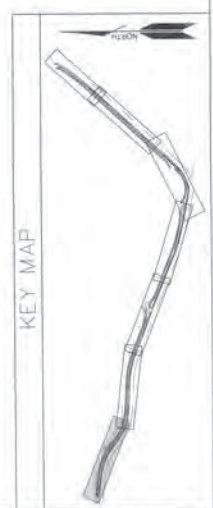
ST 6 486243-4862 (M+50)
LOCATION OF BORE HOLE

R	Δ	L	C	ONB
(A)	466.24'	20° 31' 28"	143.96'	S 71° 50' 17" E
(B)	500.00'	30° 52' 28"	269.43'	S 69° 41' 40" E

1 SITE UTILITY PLAN - STA. 0+00 TO 14+00
SCALE: 1" = 50'-0"



2 PROFILE - STA. 0+00 TO 14+00
SCALE: HORIZ. 1" = 30'-0"
VERT. 1" = 5'-0"



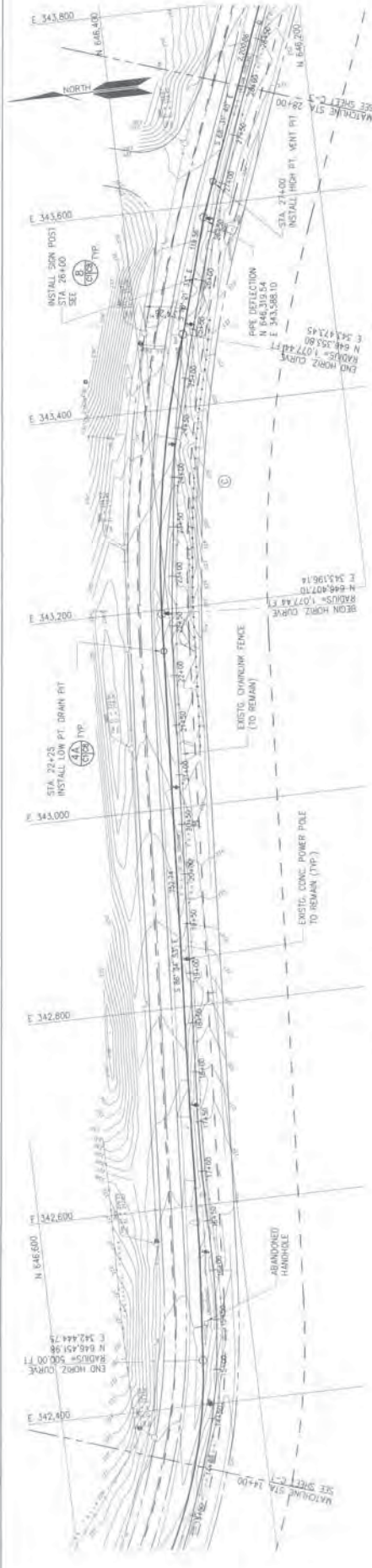
GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE STA. 0+00 TO STA. 14+00

PROJECT: E7/AC
DESIGNER: JCT/ET
CONTRACT: NCM

DATE: 2/11/15
SCALE: AS NOTED

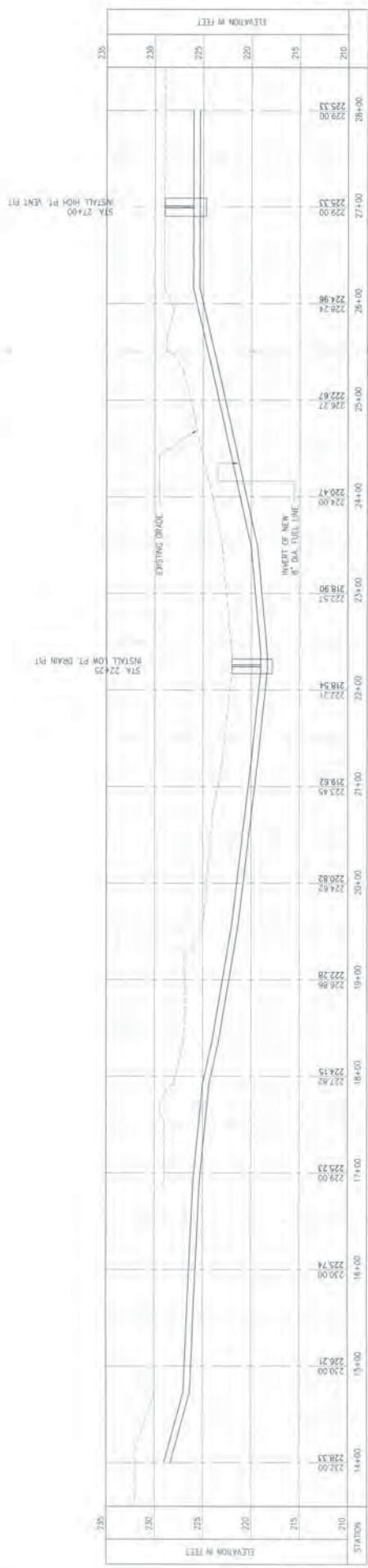
APPROVED BY: [Signature]



1 SITE UTILITY PLAN - STA. 14+00 TO 28+00
 1" = 30'-0"
 C-2 SCALE

CURVE DATA

R	Δ	L	C	CHB
1,077.44'	3° 04' 26"	294.59'	282.38'	S 79° 07' 17" E



2 PROFILE - STA. 14+00 TO 28+00
 HORIZ. 1" = 30'-0"
 VERT. 1" = 5'-0"
 C-2 SCALE



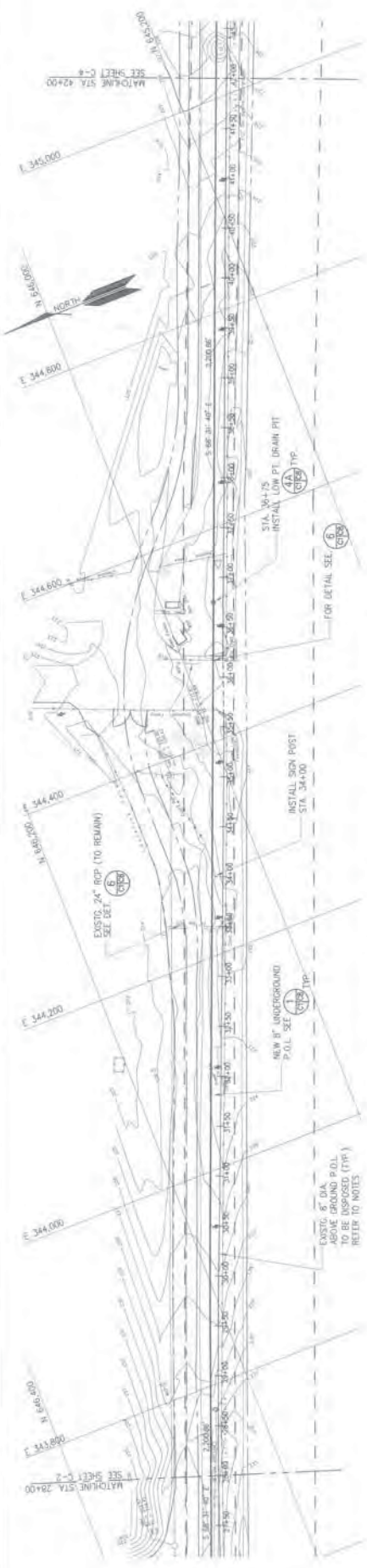
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

GUAM ASSOCIATED ENGINEERS AND ARCHITECTS, INC.
 1000 TIAO TIAO DRIVE, SUITE 200, AGANA, GUAM 96910

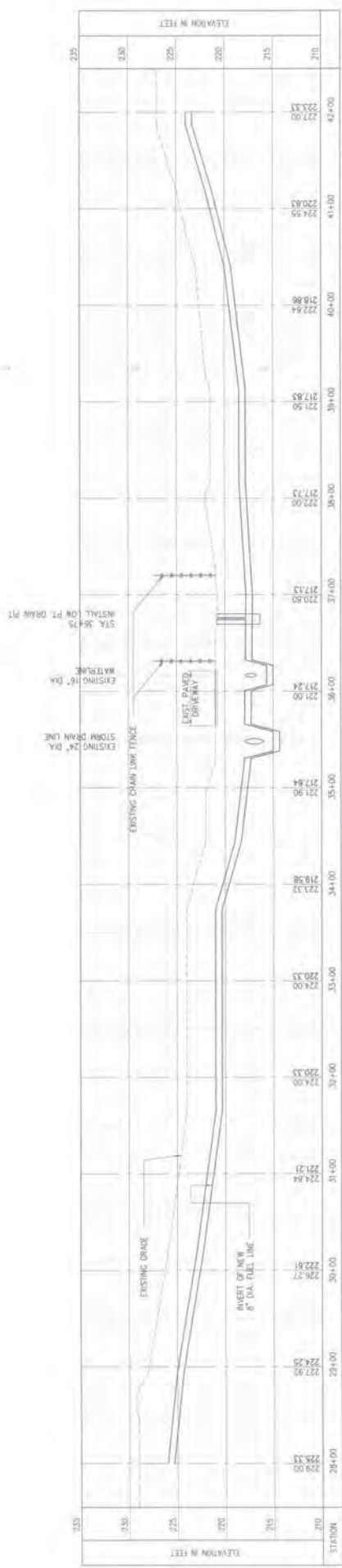
UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE STA. 14+00 TO STA. 28+00

PROJECT	UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE STA. 14+00 TO STA. 28+00
DATE	08/11/15
SCALE	AS NOTED
BY	AS NOTED
CHECKED	AS NOTED
APPROVED	AS NOTED

ET/CC: [Signature]
 JC/ET: [Signature]
 NCM: [Signature]



1 SITE UTILITY PLAN - STA. 28+00 TO 42+00
 SCALE: 1" = 30'-0"



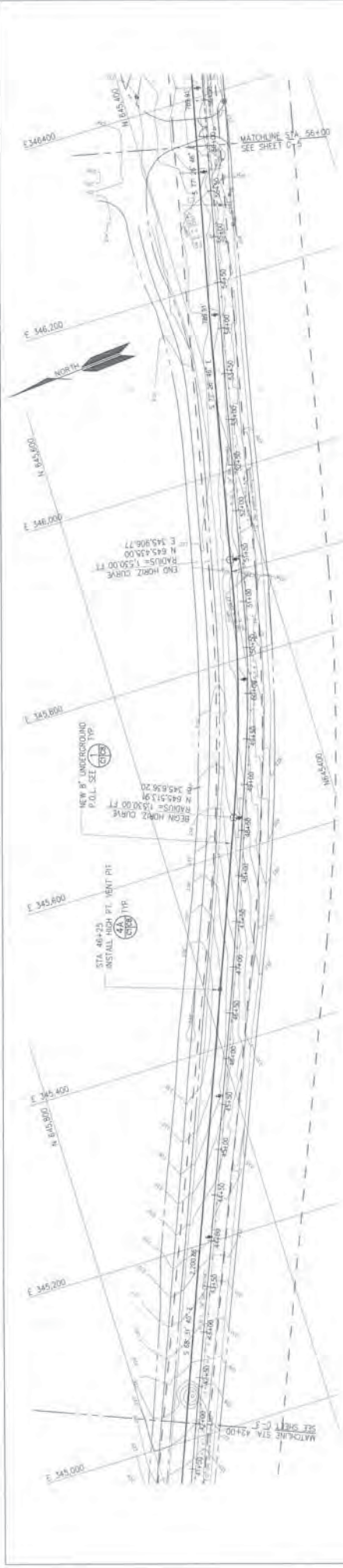
2 PROFILE - STA. 28+00 TO 42+00
 SCALE: 1" = 5'-0"
 REF. 1" = 30'-0"



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

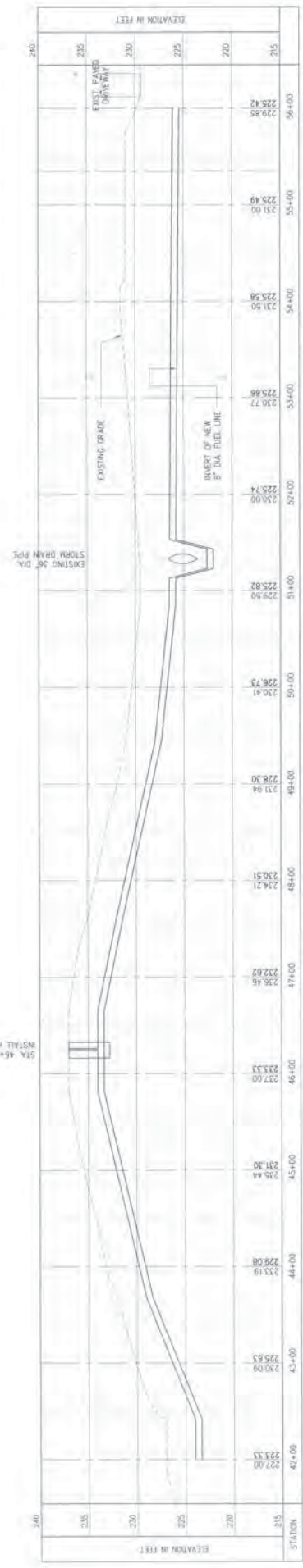
PROJECT NO.	ET/AC
ISSUE NO.	JC/ET
DATE	NCM
DESIGNED BY	
CHECKED BY	
INVESTIGATED BY	
APPROVED BY	
DATE OF APPROVAL	
DATE OF REVISION	
REVISION	
BY	
DATE	
AS NOTED	

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE
 STA. 28+00 TO STA. 42+00



1. SITE UTILITY PLAN - STA. 42+00 TO 56+00
 1" = 50'-0"

STA 45+25
 INSTALL HIGH PT. VENT PIT



2. PROFILE - STA. 42+00 TO 56+00
 1" = 50'-0"
 C-4 SCALE

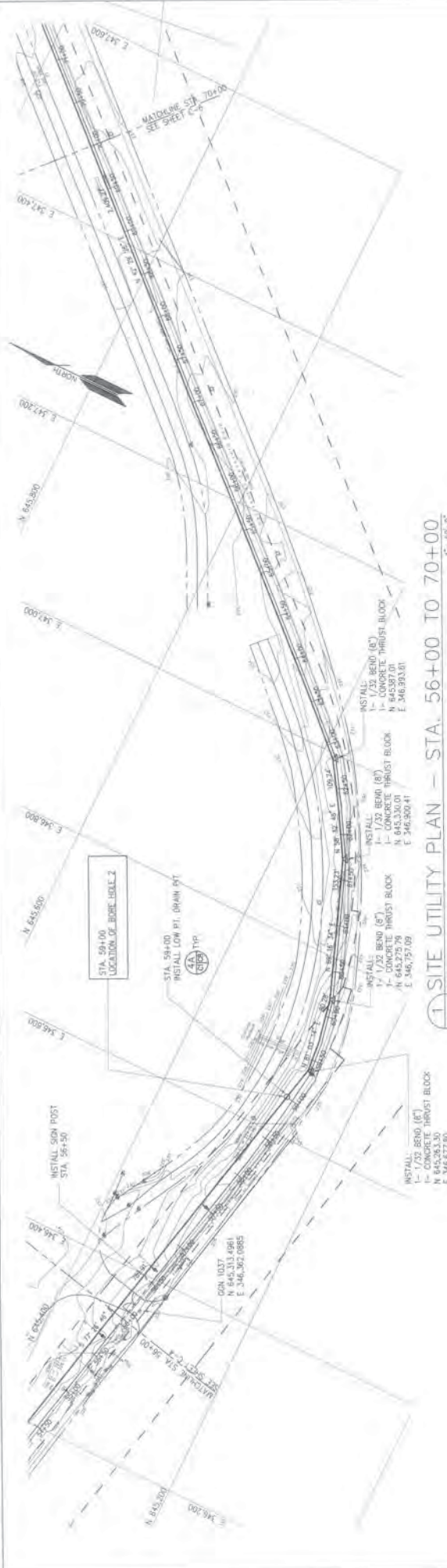


GUYTON ASSOCIATES, INC.
 1000 W. BARRAGADA AVE., SUITE 200
 AGANA, GUAM
 (671) 485-1111
 www.guytonassoc.com

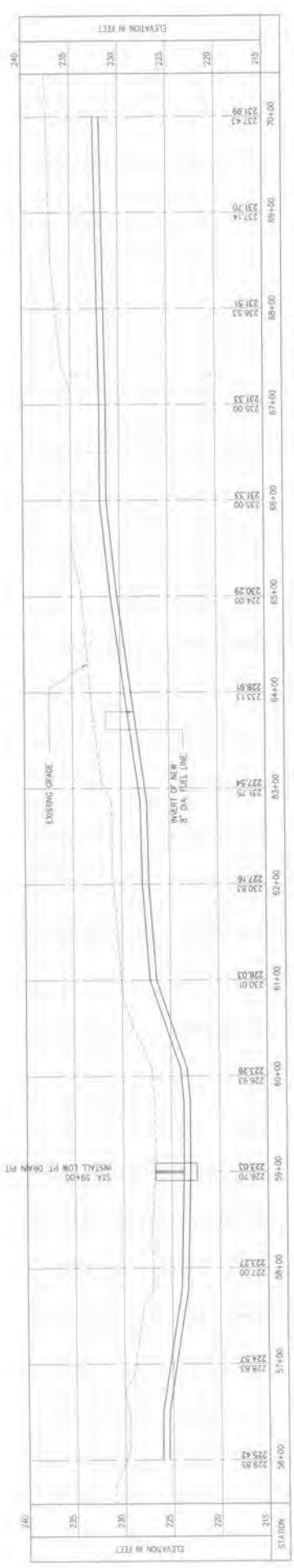
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

DATE: 2/1/15	BY: JHC	CHECKED: JHC	SCALE: AS NOTED
PROJECT: ET/AC	DRAWN: JHC	DATE: 2/1/15	PROJECT: C-4
DESIGNER: ET/AC	PROJECT: JHC	DATE: 2/1/15	PROJECT: C-4
REVISION: NDM	PROJECT: JHC	DATE: 2/1/15	PROJECT: C-4
PROJECT: JHC	PROJECT: JHC	DATE: 2/1/15	PROJECT: C-4

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRAGADA POST OFFICE
 STA. 42+00 TO STA. 56+00



1 SITE UTILITY PLAN - STA. 56+00 TO 70+00
 1" = 50'-0"
 C-5 SCALE



2 PROFILE - STA. 56+00 TO 70+00
 1" = 50'-0"
 1" = 5'-0"
 C-5 SCALE



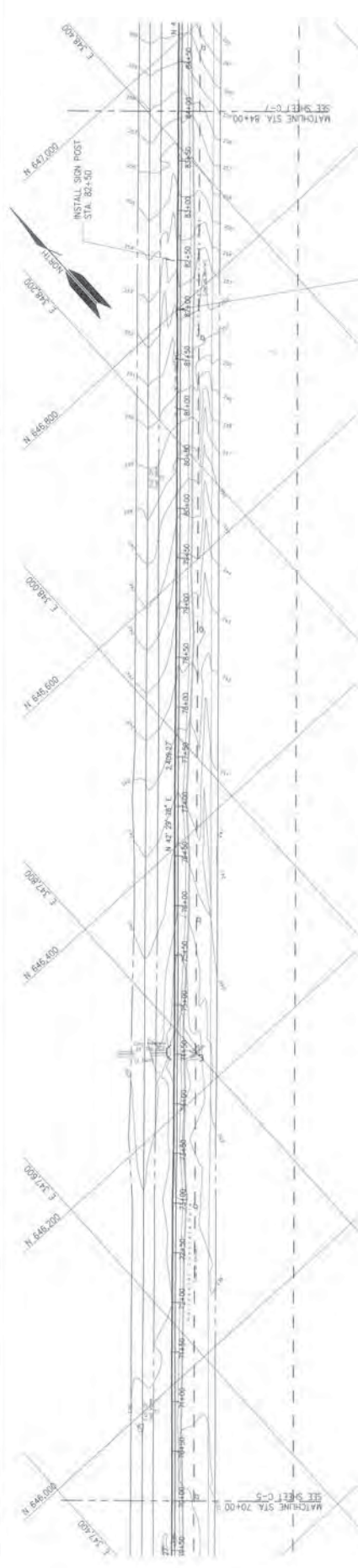
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

ENGINEER: ET/AC
 CHECKED: JC/ET
 DESIGNED: NCM

PROJECT: UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE
 STA. 56+00 TO STA. 70+00

DATE: 2/11/15
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 DESIGNED BY: [Signature]

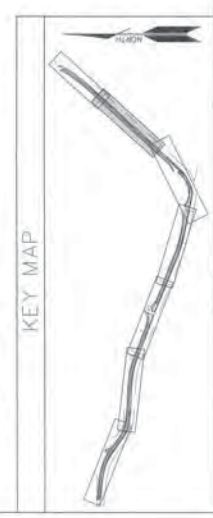
SHEET NO. AS NOTED
 TOTAL SHEETS: C-5



1 SITE UTILITY PLAN - STA. 70+00 TO 84+00
 C-5 SCALE 1" = 30'-0"



2 PROFILE - STA. 70+00 TO 84+00
 C-6 SCALE 1" = 5'-0"



GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

GUAM ELECTRIC POWER CORPORATION
 P.O. BOX 2977, AGANA, GUAM, USA 96910

ET/AC
 JC/ET
 NOM

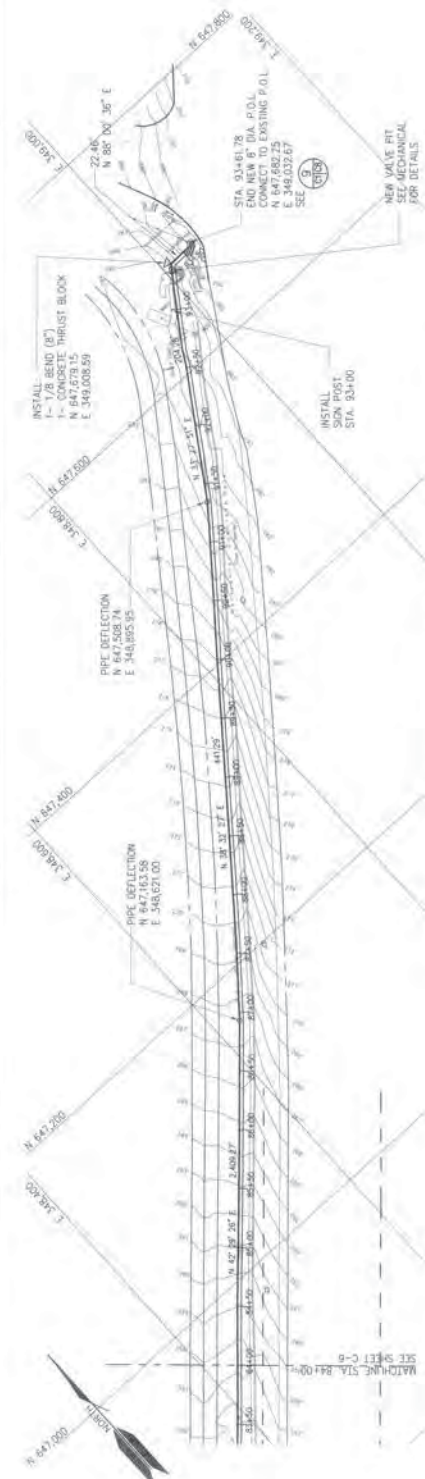
UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE
 STA. 70+00 TO STA. 84+00

DATE: 2/11/15
 DRAWN BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

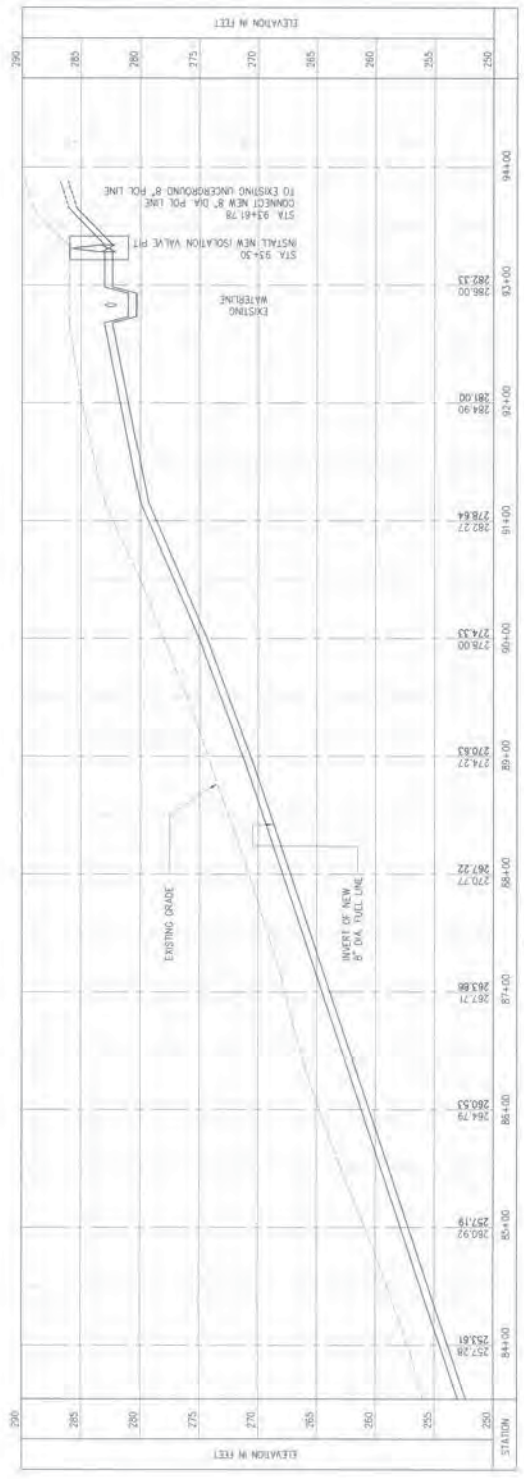
GRAPHIC SCALE:
 HORIZ. 1" = 50'-0"
 VERT. 1" = 5'-0"

STA. 70+00
 STA. 84+00

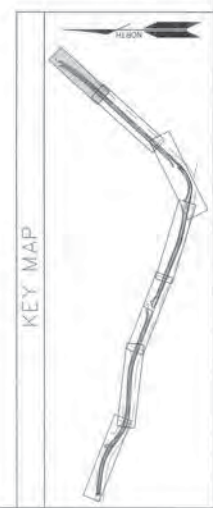
AS NOTED
 C-5



1 SITE UTILITY PLAN - STA. 84+00 TO 93+62
 SCALE: 1" = 30'-0"

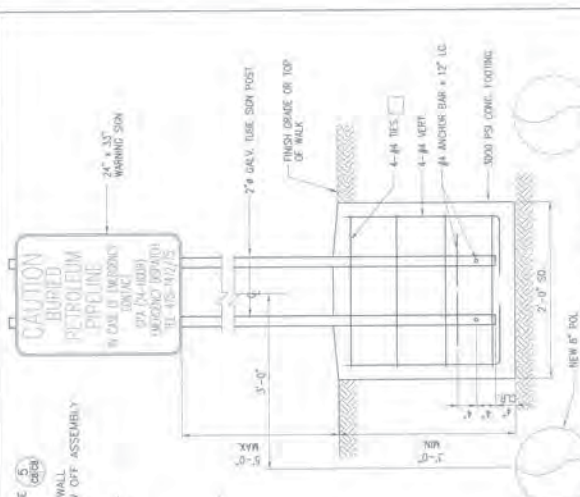


2 PROFILE - STA. 84+00 TO 93+62
 SCALE: 1" = 5'-0" (VERT) 1" = 30'-0" (HORIZ)

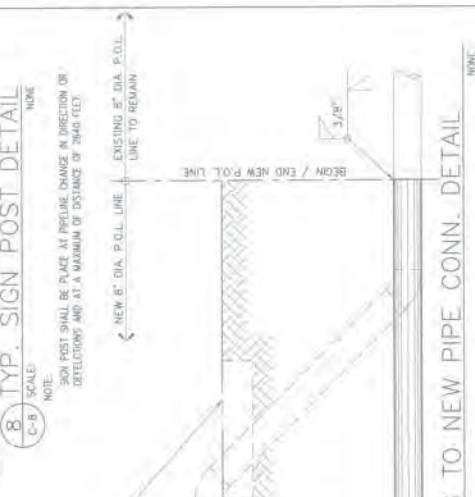


GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

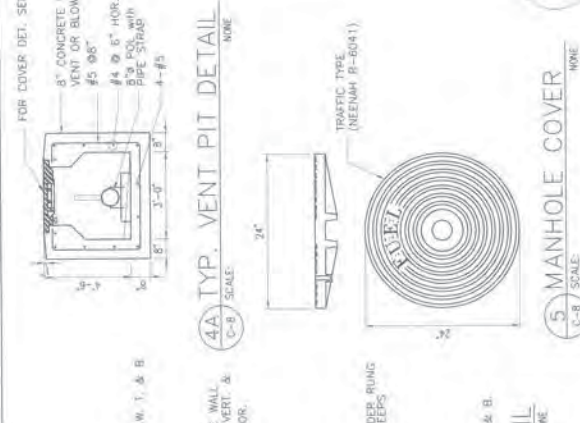
PROJECT NO.	ET/JC	DATE	SCALE
DRAWN BY	JC/ET	DATE	SCALE
CHECKED BY	NCM	DATE	SCALE
APPROVED BY		DATE	SCALE
PROJECT LOCATION	UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE STA. 84+00 TO STA. 93+62		
PROJECT NUMBER	211115E	DATE	SCALE
REVISIONS	AS NOTED	DATE	SCALE



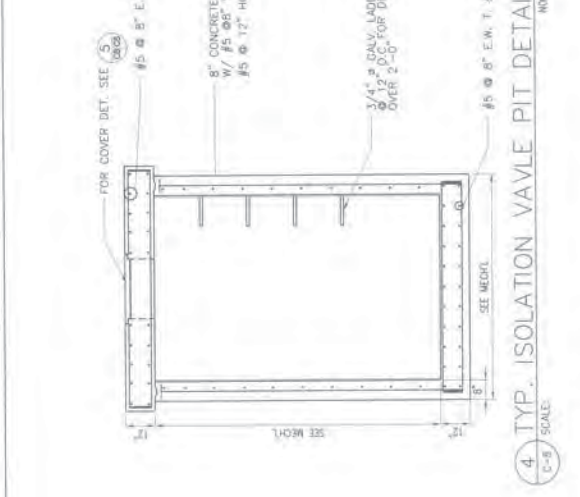
1 TYP. PIPE TRENCH SECTION
SCALE: C-8 NONE



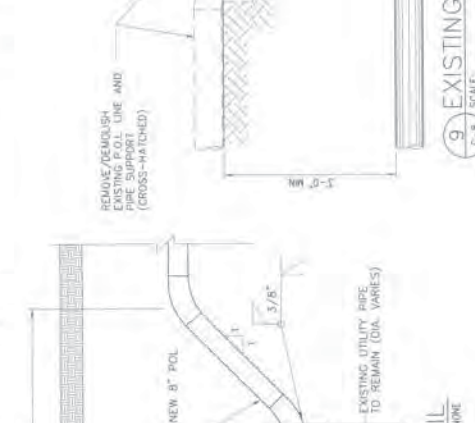
2 TYP. PIPE JOINT DET.
SCALE: C-8 NONE



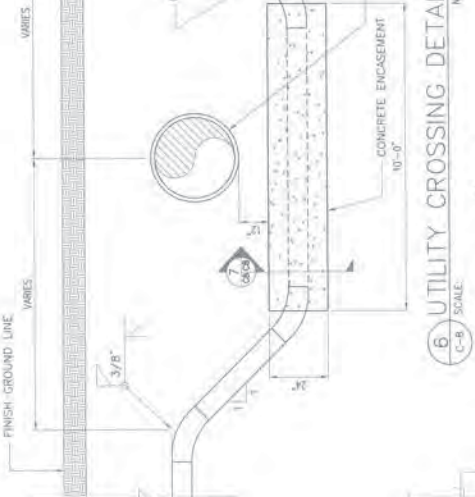
3 TYP. ISOLATION VALVE PIT DETAIL
SCALE: C-8 NONE



4 TYP. VENT PIT DETAIL
SCALE: C-8 NONE



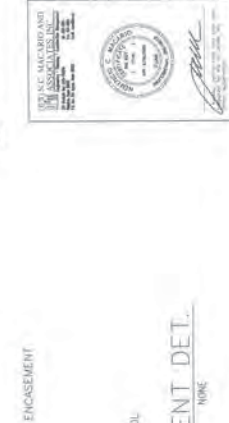
5 MANHOLE COVER
SCALE: C-8 NONE



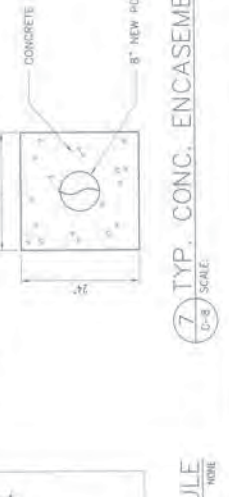
6 UTILITY CROSSING DETAIL
SCALE: C-8 NONE



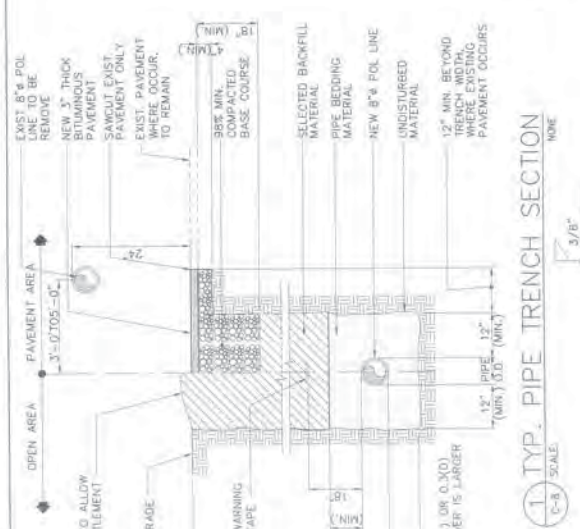
7 TYP. CONC. ENCASEMENT DET.
SCALE: C-8 NONE



8 TYP. SIGN POST DETAIL
SCALE: C-8 NONE



9 EXISTING TO NEW PIPE CONN. DETAIL
SCALE: C-8 NONE



10 TYP. THRUST BLOCK DETAIL & SCHEDULE
SCALE: C-8 NONE

GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96810

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE
MISCELLANEOUS DETAIL

DATE: 2/1/07
SCALE: AS NOTED
DRAWN BY: [Signature]

FOR COVER DET. SEE (S) (A-2)

8" CONCRETE WALL
#5 95'
#4 @ 6" HOR.
#5 POL WITH
PIPE STRAP
4-#5

FOR COVER DET. SEE (S) (A-2)

8" CONCRETE WALL
#5 @ 8" VERT. &
#5 @ 12" HOR.

3/4" @ 2 DAILY LADDER RUNG
@ 12" O.C. FOR DEEPS
OVER 2'-0"

8" CONCRETE WALL
#5 @ 8" E.W. T. & B.

FOR COVER DET. SEE (S) (A-2)

8" CONCRETE WALL
#5 @ 8" VERT. &
#5 @ 12" HOR.

3/4" @ 2 DAILY LADDER RUNG
@ 12" O.C. FOR DEEPS
OVER 2'-0"

8" CONCRETE WALL
#5 @ 8" E.W. T. & B.

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

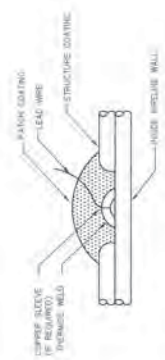
NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

REMOVE/DEMOLISH
EXISTING POL LINE AND
STRAP (CROSS-MATCHED)

NEW 8" DIA. P.O.L. LINE
EXISTING 8" DIA. P.O.L.
LINE TO REMAIN

GENERAL NOTES:

1. CONTRACTOR SHALL OBTAIN PERMITS TO LOCATE TO INTERFERE WITH AND TO THE CONTRACTING OFFICE PRIOR TO STARTING WORK. MAINTAIN EXISTING UTILITIES, DRAINAGE, AND EQUIPMENT WITHIN THE PROJECT AREA, AND NOT OTHERWISE SHOWN.
2. PAINT FINISH ALL NEW EXPOSED SURFACES, GULCH BIRDS AND JUNCTION POINTS TO MATCH ADJACENT SURFACES.
3. ALL WORK SHALL BE NEW UNLESS OTHERWISE INDICATED.
4. CONDUITS SHALL BE MINIMUM #2, UNLESS OTHERWISE INDICATED.
5. INSTALL ALL ANODES & WIRING AT 4 FEET FROM THE PERIPHERY AND 6 IN FROM UNDERGROUND METALLIC STRUCTURES.
6. INITIAL REFERENCE CELLS A MAXIMUM OF 15 FEET FROM THE TUG, PULPING, AND FLOOD ALL ANODES AND REFERENCE CELLS WITH MINIMUM OF 20 FEET FRESH WATER PROOF TO COMPLETION OF BACKFILLING.
7. IF IT IS NECESSARY FOR CONTRACTOR TO VERIFY THAT PIPING IS ELECTRICALLY ISOLATED FROM METALLIC SYSTEM ARRANGES FOR LOCATIONS OF INCLUDING INSULATING FLANGES AT TANK TANGS AND REPAIRING STATIONS.
8. LOCATIONS OF ANODES AND TEST STATIONS SHOWN ON THESE DRAWINGS IS SCHEMATIC. LOCATE TEST STATION AND ANODES WITH ZONE OF PRELIMINARY CONSTRUCTION. MAKE NECESSARY ADJUSTMENTS TO PRELIMINARY CONSTRUCTION.
9. ALL WIRING SHALL BE NEW UNLESS OTHERWISE INDICATED. LOCATIONS OF WIRING SHALL BE TURNED UP WITH CONNECTING NEW WIRING.

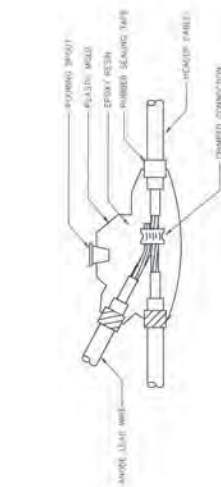


- THERMITE WELDING INSTRUCTIONS:**
1. REMOVE PIPE COATING APPROXIMATELY 4" DIAMETER SPOT FROM THERMITE.
 2. CLEAN AREA APPROXIMATELY 2" DIAMETER TO BRIGHT METAL.
 3. REMOVE 1/2" OF INSULATION FROM END OF PIPE.
 4. WELD CONDUIT TO PIPE, USE APPROXIMATELY GRAPHITE WELD AND CARTRIDGE CHANGE SIZE.
 5. TEST THE THERMITE WELD CONDUCTOR BY STRIKING THE WELD WITH A HAMMER. TOP OF WELD MAY BE TRIMMED IF A RECORD IS REQUIRED.
 6. APPLY A CONDENSIBLE COAT OF COATING MATERIAL FOLLOWED BY A PROPOSED SHEATH. PATCH COATING SHALL VISUALLY MATCH PIPE COATING.
 7. REFER TO MANUFACTURER FOR RECOMMENDED CARTRIDGE SIZE.

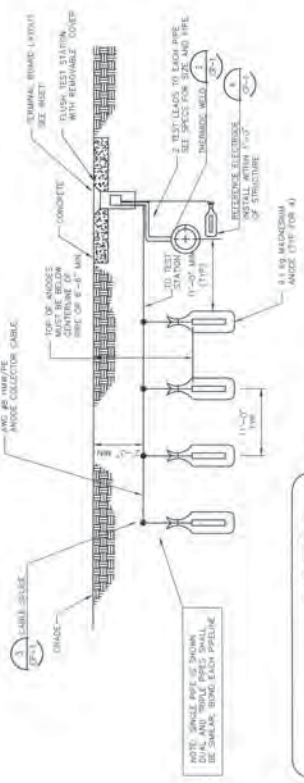
THERMITE WELD DETAIL



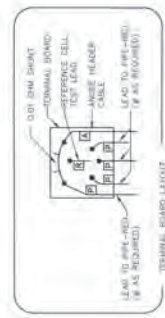
REFERENCE ELECTRODE DETAIL



CABLE SPLICING DETAIL



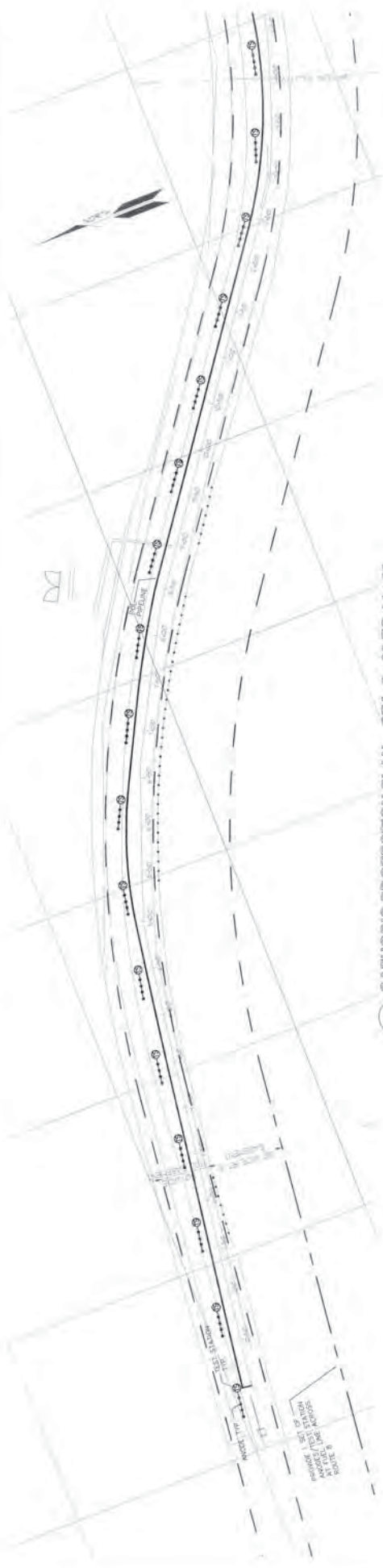
ANODE TEST STATION DETAIL



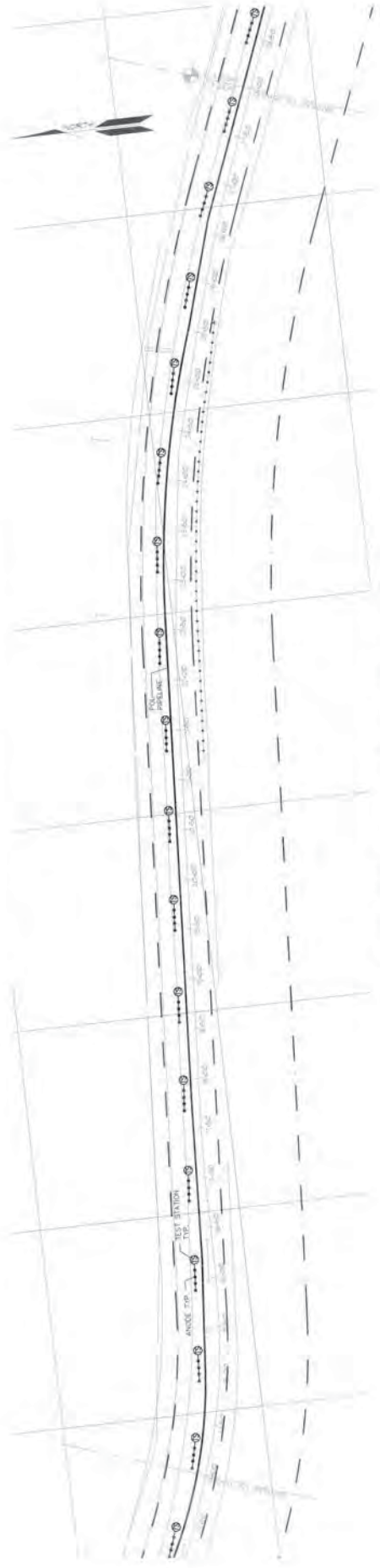
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA, 96910

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE
 GENERAL NOTES, DETAILS

PROJECT NO: 11-11-517
 DRAWING NO: 11-11-517-1
 SHEET NO: 11-11-517-1
 DATE: 11-11-517



1 CATHODIC PROTECTION PLAN - STA. 0+00 TO 14+00
 CP-2 SCALE 1"=50'-0"



2 CATHODIC PROTECTION PLAN - STA. 14+00 TO 28+00
 CP-2 SCALE 1"=50'-0"



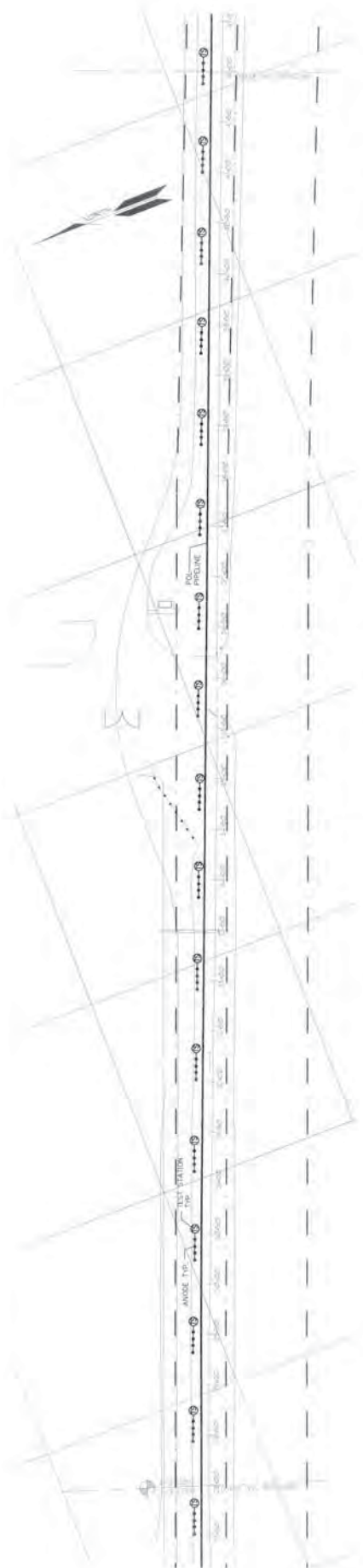
Engineering Company, Inc.
 1000 GARDEN AVENUE
 SUITE 100
 SAN JOSE, CALIFORNIA 95128
 (408) 298-1100
 FAX (408) 298-1101

PROJECT NO. _____
 DRAWN: JEB
 CHECKED: EDI
 PROJECT: CP-2
 DIRECT SUPERVISOR: [Signature]
 FIELD SUPERVISOR: [Signature]

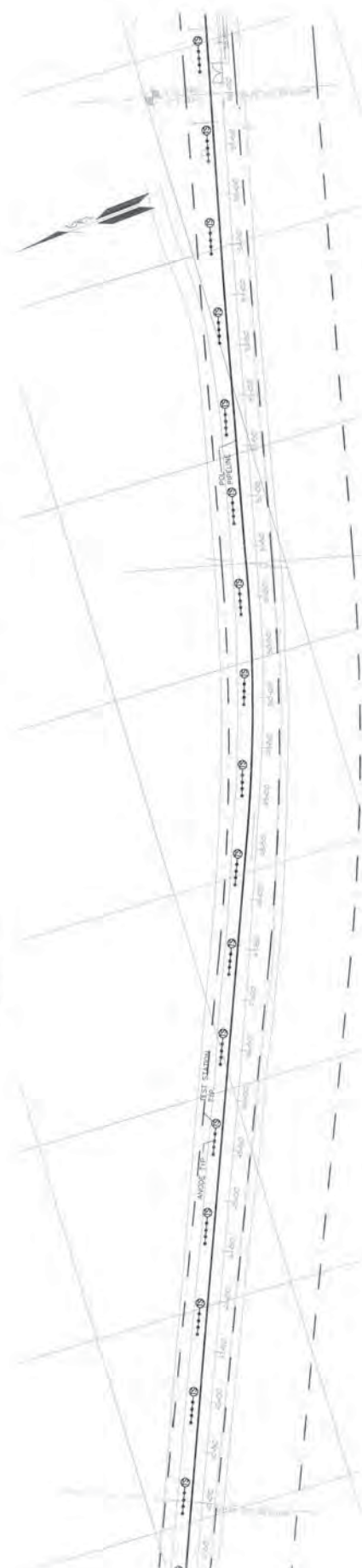
DATE: 11/11/01
 SHEET: CP-2-2
 OF: 2

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

UNDERGROUND
 FUEL OIL PIPELINE FROM TIYAN
 TO BARRIGADA POST OFFICE
 CATHODIC PROTECTION PLAN -
 STA. 0+00 TO
 STA. 28+00

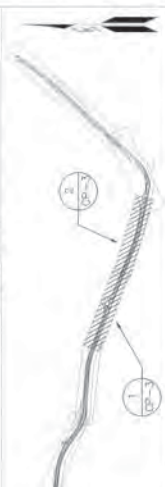


1 CATHODIC PROTECTION PLAN III - STA. 28+00 TO 42+00
 CP-3 SCALE: 1"=50'-0"



2 CATHODIC PROTECTION PLAN IV - STA. 42+00 TO 58+00
 CP-3 SCALE: 1"=50'-0"

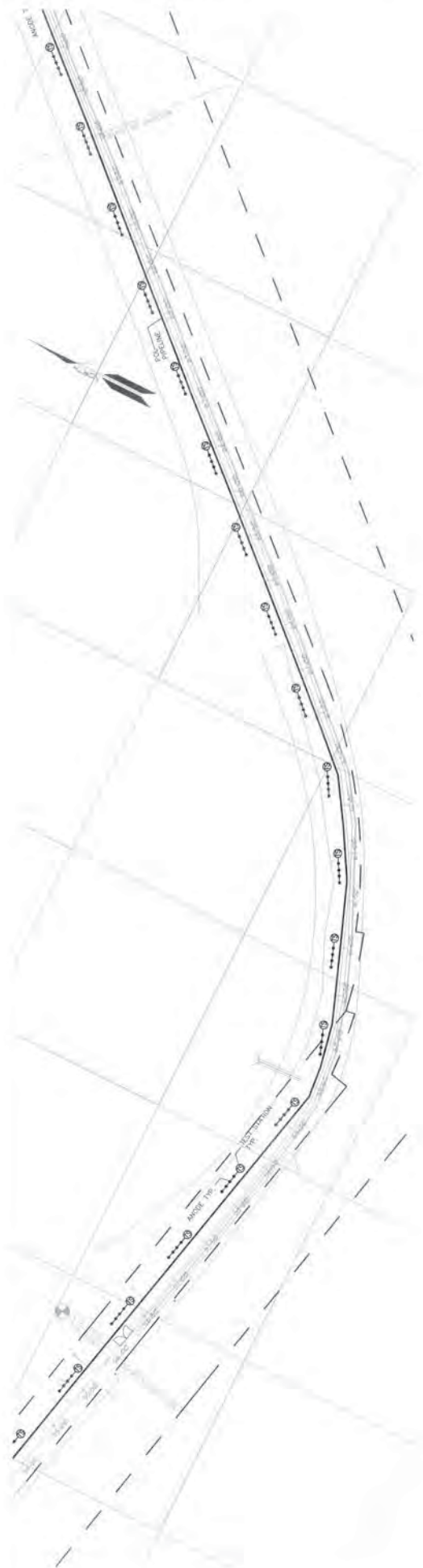
KEY PLAN



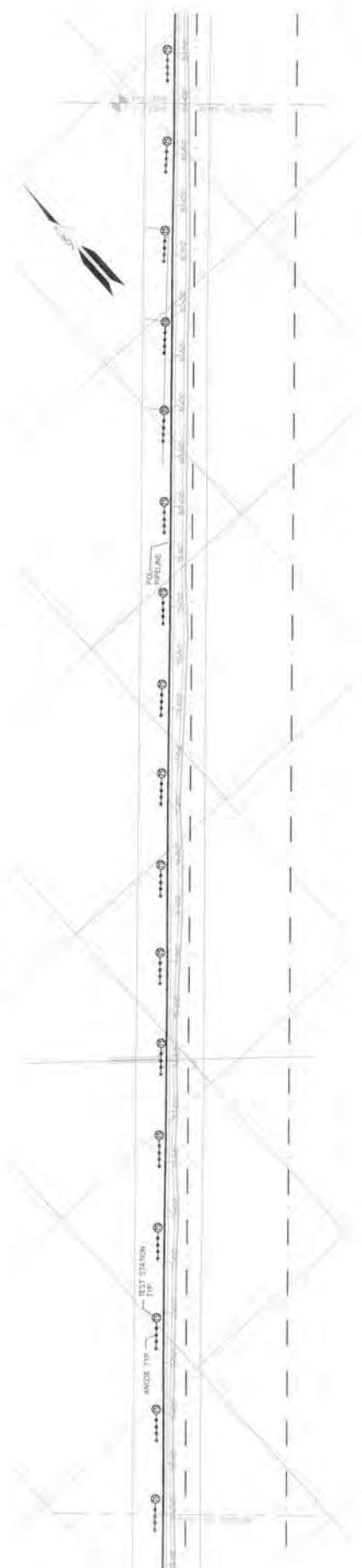
		GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910	
DRAWN BY JBB	CHECKED BY ED	DATE 11/15/13	PROJECT NO. 13001 CP-3-8
PROJECT CATHODIC PROTECTION PLAN - STA. 28+00 TO STA. 58+00	DRAWN BY JBB	CHECKED BY ED	PROJECT NO. 13001 CP-3-8
PROJECT APPROVED BY 	DATE 11/15/13	DRAWN BY JBB	PROJECT NO. 13001 CP-3-8
PROJECT APPROVED BY 	DATE 11/15/13	CHECKED BY ED	PROJECT NO. 13001 CP-3-8

Engineering Authority, Inc.
 1000 F. STREET
 SUITE 100
 WASHINGTON, DC 20004
 (202) 462-1000
 www.eaia.com

Registering Particulars, Inc.
 1000 F. STREET
 SUITE 100
 WASHINGTON, DC 20004
 (202) 462-1000
 www.rpi.com




1 CATHODIC PROTECTION PLAN V - STA. 56+00 TO 70+00
 SCALE: 1"=50'-0"



2 CATHODIC PROTECTION PLAN VI - STA. 70+00 TO 84+00
 SCALE: 1"=50'-0"



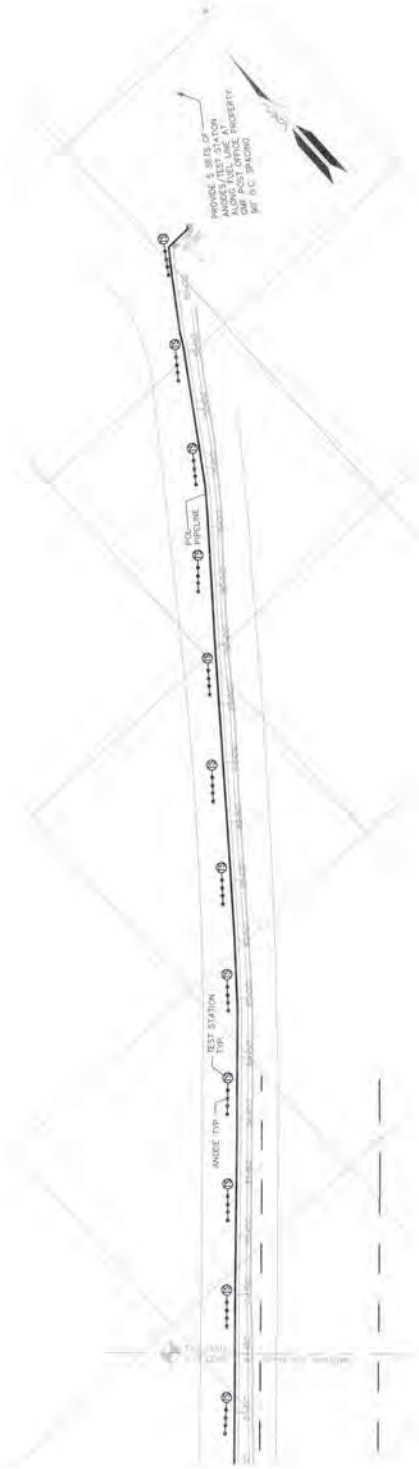
KEY PLAN

 GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910		UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE CATHODIC PROTECTION PLAN - STA. 56+00 TO STA. 84+00	
DESIGN NO.	DESIGNER	DATE	SCALE
ED	JBB	11/11/07	AS SHOWN
PROJECT MANAGER	APPROVED	DATE	SCALE
APPROVED	JBY	11/11/07	AS SHOWN
APPROVED	APPROVED	DATE	SCALE
APPROVED	APPROVED	DATE	SCALE



REVISIONS

NO.	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	11/11/07



(1) CATHODIC PROTECTION PLAN VII - STA. 84+00 TO 93+62

(UP-5) SCALE: 1"=50'-0"



G Engineering Services, Inc.
 1275 K. STREET, SUITE 200
 HONOLULU, HAWAII 96813
 Telephone: (808) 551-7711
 Fax: (808) 551-7712
 www.ess-inc.com

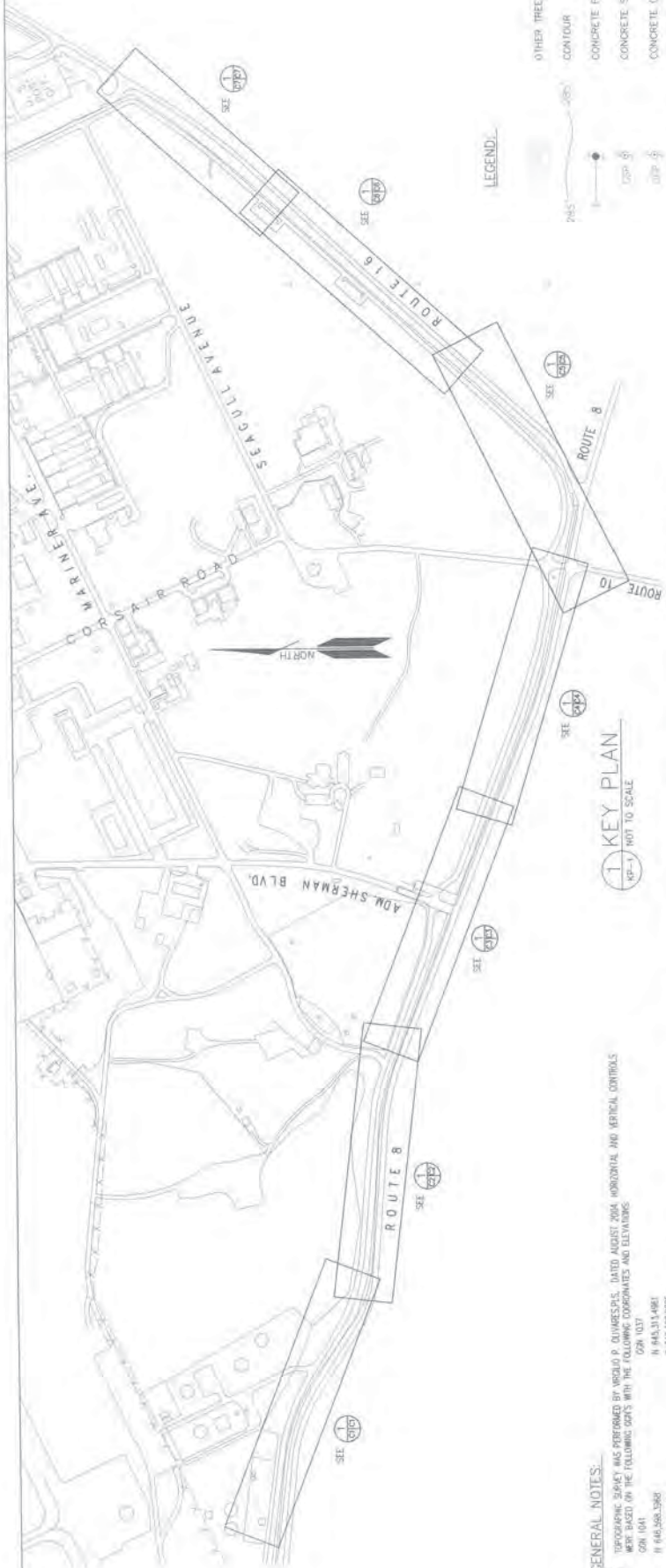


GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

PROJECT NO. _____
 LOCATION: JBB
 DRAWN: EDI
 CHECKED: NBY
 DATE: 11/15/08
 DESIGNED BY: [Signature]
 CHECKED BY: [Signature]
 APPROVED BY: [Signature]

UNDERGROUND
 FUEL OIL PIPELINE FROM TIYAN
 TO BARRIGADA POST OFFICE
 CATHODIC PROTECTION PLAN - STA. 84+00 TO
 STA. 93+62

DATE	11/15/08
BY	EDI
CHECKED	NBY
APPROVED	[Signature]
SCALE	AS SHOWN
PROJECT NO.	
LOCATION	JBB
DRAWN	EDI
CHECKED	NBY
DATE	11/15/08



GENERAL NOTES:

1. TOPOGRAPHIC SURVEY WAS PERFORMED BY WISLDO P. OLIVERA, P.E., DATED AUGUST 2004. HORIZONTAL AND VERTICAL CONTROLS WERE BASED ON THE FOLLOWING COPTS WITH THE FOLLOWING COORDINATES AND ELEVATIONS:
 COPT 1041 N 145,315.484 E 246,827.085
 COPT 1042 N 146,598.586 E 242,083.657
 COPT 1043 N 145,315.484 E 246,827.085
 COPT 1044 N 146,598.586 E 242,083.657
2. THIS INVESTIGATION WAS PERFORMED BY ENGRG. SOLO ENGINEERING & TESTING. BORING LOGS SHOWN ON THE DRAWINGS ARE ALSO CONTAINED IN THEIR ENGINEERING REPORT, DATED NOVEMBER, 2004 AND IS AVAILABLE FOR REFERENCE BY THE CONTRACTOR(S) @ ENGINEERING DIVISION, GUAM POWER AUTHORITY, UPPER TUMON, GUAM.
3. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE PLANS FOR THIS PROJECT AND ACTUAL FIELD CONDITIONS WHICH MAY INTERFERE WITH THIS PROJECT.
4. ALL FITTINGS SUCH AS BENDS AND VALVES, AS WELL AS ALL OTHER PIPELINE APPURTENANCES WHICH ARE SUBJECT TO UNLANSATED THRUST SHALL BE INSTALLED AND FIELD CONDITIONS. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS FROM ALL APPROPRIATE FEDERAL, AND LOCAL GOVERNMENT AGENCIES BEFORE ANY WORK ON ANY PORTION OF A PUBLIC STREET OR HIGHWAY MAY BEGIN. ALL FEES FOR SUCH PERMITS SHALL BE PAID FOR BY THE CONTRACTOR. ALL TRAFFIC CONTROL, SIGNS, BARRICADES, AND DELINEATION SHALL BE IN ACCORDANCE TO THE LATEST EDITION OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
5. LAY PIPE TO UNIFORM GRADE BETWEEN INDICATED ELEVATION POINTS.
6. SIZES OF FITTINGS SHOWN ON PLANS SHALL CORRESPOND TO ADJACENT STRAIGHT RUN OF PIPE UNLESS OTHERWISE NOTED. TYPE OF JOINT AND FITTING MATERIALS SHALL BE THE SAME AS SHOWN FOR ADJACENT STRAIGHT RUN OF PIPE.
7. THE CONTRACTOR SHALL COORDINATE AND OBTAIN THE NECESSARY CLEARANCES FROM LAND MANAGEMENT, DWA, AND GUAM POWER AUTHORITY PRIOR TO ANY WORK ACTIVITY WITHIN THE GOUGLAM EASEMENT OR RIGHT OF WAY. DAMAGES DONE BY THE CONTRACTOR TO EXISTING GOUGLAM UTILITY LINES DURING THE DURATION OF THIS PROJECT SHALL BE REPAIRED BY THE CONTRACTOR AT NO COST TO THE GOVERNMENT. REPAIR WORK SHALL BE PER GOVERNMENT STANDARDS AND APPROVAL.
8. ALL UNDERGROUND UTILITY LINES SHOWN ON THIS PROJECT INCLUDES: TELEPHONE CABLES, WIRE BASES ON CONDUITS, AND ALL OTHER UTILITIES. THE CONTRACTOR SHALL VERIFY ACTUAL LOCATIONS. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DPA REPRESENTATIVE OF ANY DISCREPANCIES BETWEEN THE PLANS FOR THIS PROJECT AND ACTUAL FIELD CONDITIONS THAT MAY INTERFERE WITH THIS PROJECT.
9. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION DURING CONSTRUCTION WORK IN ORDER NOT TO DISRUPT EXISTING UTILITY SERVICES. IN THE EVENT THAT THE CONTRACTOR DISRUPT SUCH UTILITY SERVICES, IT SHALL BE REPAIRED AS SOON AS POSSIBLE AT NO ADDITIONAL COST TO THE GOVERNMENT.
10. THE CONTRACTOR SHALL CONDUCT CONSTRUCTION OPERATIONS WITH MINIMUM INTERFERENCE TO ROADS, SIDEWAYS, PARKING AREAS, SIDEWALKS AND OTHER VEHICULAR AND PEDESTRIAN FACILITIES.
11. INTERRUPTION ON EXISTING UTILITY SERVICES AS A RESULT OF THE CONSTRUCTION WORK SHALL BE REQUESTED IN WRITING TO THE APPROPRIATE AGENCIES AND SECURE A WRITTEN PERMIT(S) PRIOR TO THE DESIRED DATE OF INTERRUPTION.
12. ALL NEW FUEL LINES SHALL HAVE A MINIMUM COVER OF THREE(3) FEET.

KEY PLAN
 NOT TO SCALE

13. TRENCH EXCAVATION WITH UNSTABLE MATERIALS AND/OR WITH DEPTHS GREATER THAN FIVE(5) FEET SHALL BE BRACED AND SHORED FOR SAFETY. CONTRACTOR IS RESPONSIBLE FOR THE PROPER BRACING AS PER EM 385 SAFETY MANUAL OF THE ACE.
14. FOR FUEL LINE EXCAVATION AFFECTING THE STABILITY OF THE EXISTING CONCRETE POLES, THE CONTRACTOR SHALL SUBMIT A SHORING AND OR BRACING PLAN FOR APPROVAL BY THE ENGINEER PRIOR TO ACTUAL CONSTRUCTION.
15. THE CONTRACTOR SHALL REQUEST FOR UNDERGROUND WORK CLEARANCE FROM GUAM, DPA AND ALL OTHER APPROPRIATE OFFICES INVOLVE PRIOR TO ANY EXCAVATION WORK.
16. CONCRETE THRUST BLOCKING SHALL BE POURED AGAINST UNDISTURBED EARTH.
17. KEEP CONCRETE CLEAR FROM JOINTS AND JOINT ACCESSORIES.
18. REQUIRED VOLUMES OF BEARING AREAS @ FITTINGS SHALL BE ADJUSTED, IF NECESSARY, TO CONFORM TO THE TEST PRESSURES AND ALLOWABLE BEARING STRESS STATED IN THE SPECIFICATIONS.
19. ALL WORK SHALL BE SCHEDULED TO PREVENT UNNECESSARY OR EXTENDED INTERRUPTION IN EXISTING UTILITIES OR DAMAGE TO THE EXISTING UTILITIES AND APPURTENANCES.
20. THE CONTRACTOR SHALL LOCATE AND VERIFY THE ACTUAL CONDITION OF EXISTING WATERBURE CONNECTION POINT AND MAKE NECESSARY ADJUSTMENT IN THE FIELD BEFORE TRENCH EXCAVATIONS.
21. CONTRACTOR SHALL RESTORE ALL DAMAGES AS A RESULT OF CONSTRUCTION INCLUDING BUT NOT LIMITED TO: PAVEMENT, EMBANKMENT, CURBS, SIDEWALKS, TRAFFIC CONTROL DEVICES, MANHOLES, AND UTILITIES AT NO ADDITIONAL COST TO THE GOVERNMENT.
22. CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL OF SILT AND DEBRIS AS A RESULT OF CONSTRUCTION.
23. CONTRACTORS TO REMOVE AND DISPOSE EXISTING ABOVEGROUND FUEL LINE AND PIPE SUPPORT INCLUDING FOUNDATIONS. REMOVAL AND DISPOSAL SHALL CONFORM TO GUAM ENVIRONMENTAL PROTECTION AGENCY(RULES AND REGULATIONS) RESTORE GRADE TO MATCH EXISTING. THE TOTAL PIPE LENGTH TO BE REMOVED IS 9,361 FEET (±). DISPOSAL OR TO SALVAGE EXISTING VALVE SHALL BE COORDINATED TO DPA.

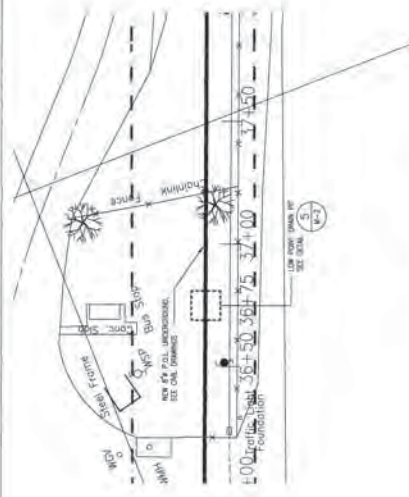
LEGEND:

- OTHER TREE
- CONTOUR
- CONCRETE POWER POLE WITH GUY WIRE
- CONCRETE SERVICE POLE
- CONCRETE GUY POLE
- WOODEN GUY POLE
- STEEL POWER POLE
- FIRE HYDRANT
- SIGN
- SEWER MANHOLE
- WATER MANHOLE
- STORM DRAIN MANHOLE
- SEWERLINE WITH 24" PIPE
- STORM DRAINAGE LINE WITH 36" PIPE
- WATER GATE VALVE
- GATE VALVE

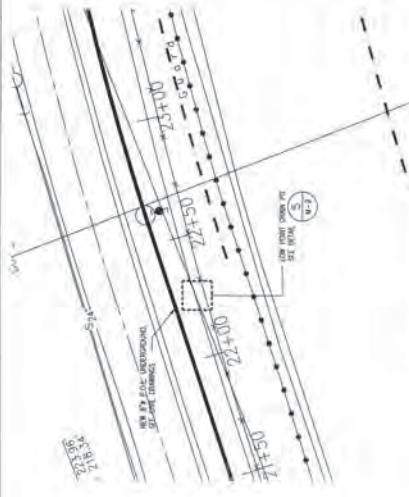
GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

DATE	2/10/15	BY	AS NOTED
DESIGNED BY	AS NOTED	CHECKED BY	AS NOTED
DRAWN BY	AS NOTED	APPROVED BY	AS NOTED
TITLE	UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE KEY PLAN, GENERAL NOTES AND LEGEND		

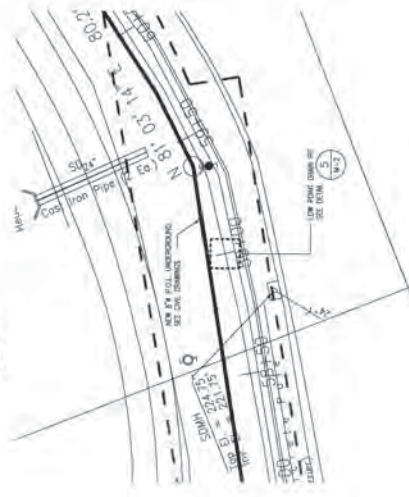
THE U.S. MARSHALS SERVICE
 GUAM ASSOCIATION
 GUAM ENVIRONMENTAL PROTECTION AGENCY



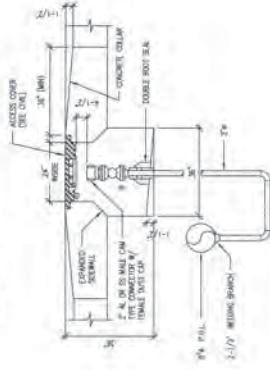
3 ENLARGED PLAN
M-2 SCALE
NONE



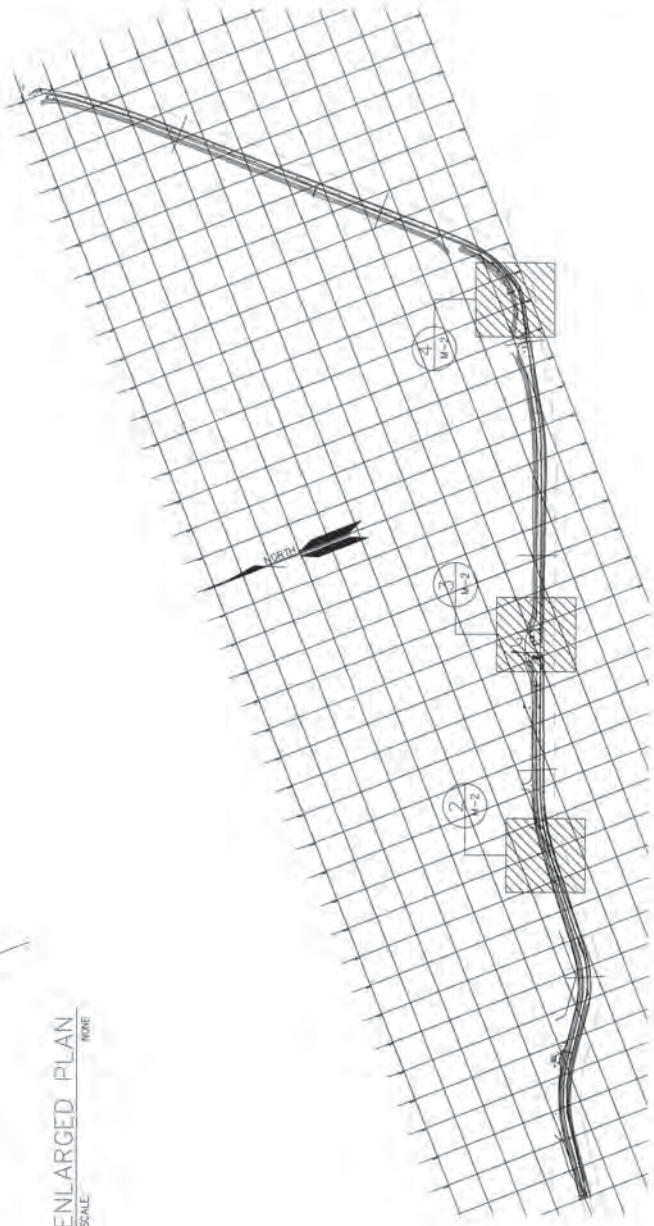
2 ENLARGED PLAN
M-2 SCALE
NONE



4 ENLARGED PLAN
M-2 SCALE
NONE



5 LOW POINT DRAIN PIT DETAIL
M-2 SCALE
NONE



1 KEY PLAN
M-2 SCALE
NONE



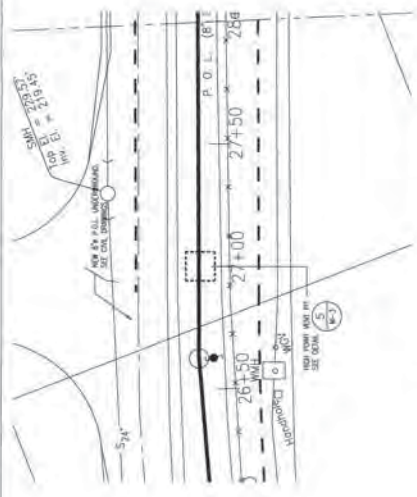
GUAM POWER AUTHORITY
P.O. BOX 2977, AGANA, GUAM, USA 96910

UNDERGROUND FUEL OIL PIPELINE
FROM TIYAN
TO BARRIGADA POST OFFICE
KEY PLAN, ENLARGED PLANS, DETAIL

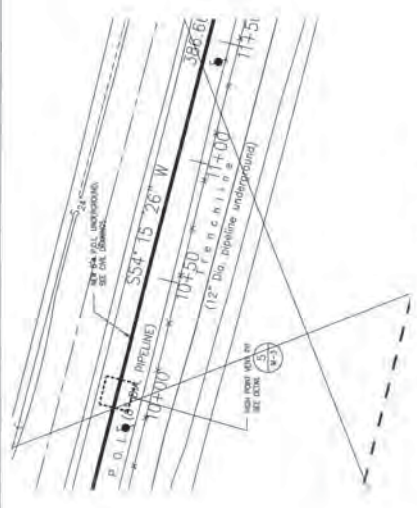
PROJECT NO.	DATE	SCALE	DATE
DESIGNED BY	DATE	SCALE	DATE
CHECKED BY	DATE	SCALE	DATE
APPROVED BY	DATE	SCALE	DATE



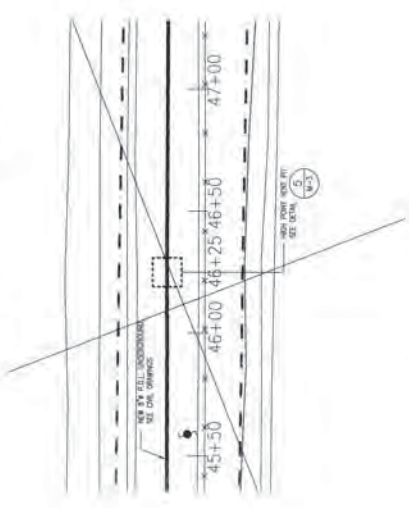
ENGINEERING SERVICES
STATE OF GUAM
Professional Engineer
No. 12345
Date of Expiration: 12/31/2025



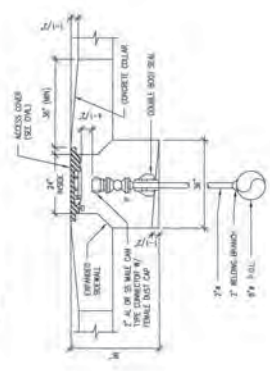
3 ENLARGED PLAN
SCALE: NONE



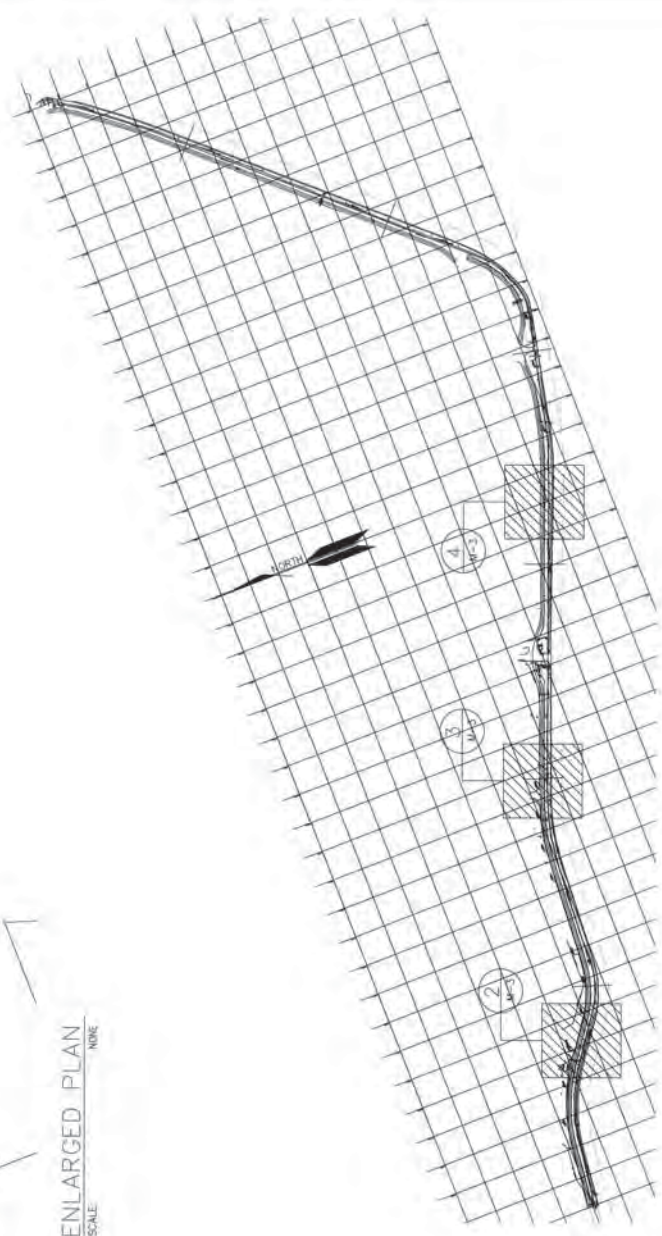
2 ENLARGED PLAN
SCALE: NONE



4 ENLARGED PLAN
SCALE: NONE



5 HIGH POINT VENT PIT DETAIL
SCALE: NONE



1 KEY PLAN
SCALE: NONE


TMM ENGINEERING SERVICES
 1000 W. WILSON BLVD., SUITE 100
 AGANA, GUAM 96910
 TEL: (671) 253-1111
 FAX: (671) 253-1112
 WWW: WWW.TMM-ENR.COM

GUAM POWER AUTHORITY P.O. BOX 2977, AGANA, GUAM, USA 96910	
PROJECT NO.: SHEETS: WM DRAWING: EN DRAWING: WM PROJECT DESCRIPTION: UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE DRAWING TITLE: KEY PLAN, ENLARGED PLANS, DETAIL	DATE: 01-21-05 SHEET: M-3 TOTAL SHEETS: 1

UNDERGROUND FUEL OIL PIPELINE FROM TIYAN TO BARRIGADA POST OFFICE GUAM POWER AUTHORITY

LOCATION MAP



ISLAND OF GUAM

VICINITY MAP



INDEX OF DRAWINGS

SHEET NO.	MARK	DESCRIPTION
T-1	1 OF 18	PROJECT TITLE, LOCATION MAP, VICINITY MAP, INDEX OF DRAWINGS & ABBREVIATIONS AND SYMBOLS
RP-1	2 OF 18	KEY PLAN, LEGEND, AND GENERAL NOTES
C-1	3 OF 18	SITE PLAN - STA. 0+00 TO STA. 14+00
C-2	4 OF 18	SITE PLAN - STA. 14+00 TO STA. 28+00
C-3	5 OF 18	SITE PLAN - STA. 28+00 TO STA. 42+00
C-4	6 OF 18	SITE PLAN - STA. 42+00 TO STA. 56+00
C-5	7 OF 18	SITE PLAN - STA. 56+00 TO STA. 70+00
C-6	8 OF 18	SITE PLAN - STA. 70+00 TO STA. 84+00
C-7	9 OF 18	SITE PLAN - STA. 84+00 TO STA. 93+62
C-8	10 OF 18	MISCELLANEOUS DETAILS
M-1	11 OF 18	LEGEND AND ABBREVIATIONS, GENERAL NOTES, DIELECTRIC FLANGE DETAIL & INSTALLATION NOTES, ENLARGED PLANS, AND SECTIONS
M-2	12 OF 18	ENLARGED PLANS, LOW POINT DRAIN PIT DETAIL
M-3	13 OF 18	ENLARGED PLANS, HIGH POINT VENT PIT DETAIL
CP-1	14 OF 18	GENERAL NOTES, DETAILS
CP-2	15 OF 18	CATHODIC PROTECTION PLAN - STA. 0+00 TO STA. 28+00
CP-3	16 OF 18	CATHODIC PROTECTION PLAN - STA. 28+00 TO STA. 56+00
CP-4	17 OF 18	CATHODIC PROTECTION PLAN - STA. 56+00 TO STA. 84+00
CP-5	18 OF 18	CATHODIC PROTECTION PLAN - STA. 84+00 TO STA. 93+62

GUAM POWER AUTHORITY
 P.O. BOX 2977, AGANA, GUAM, USA 96910

UNDERGROUND
 FUEL OIL PIPELINE FROM TIYAN
 TO BARRIGADA POST OFFICE
 PROJECT LOCATION MAP, VICINITY MAP,
 INDEX OF DRAWINGS & GENERAL NOTES

DATE	11/13/18	AS NOTED	1-1
PROJECT SUPERVISOR	<i>[Signature]</i>	DATE	11/13/18
DESIGNER	<i>[Signature]</i>	DATE	11/13/18
CHECKER	<i>[Signature]</i>	DATE	11/13/18

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved:
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR INF/MONTHLY
Influent Structure

GU0020141 PERMIT NUMBER
INF-A DISCHARGE NUMBER

FROM MM/DD/YYYY TO MM/DD/YYYY
10/1/2017 10/31/2017

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	SAMPLE MEASUREMENT	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO.EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-day, 20 deg. C	00310 G 0	6780	8872	lb/day	*****	130	177		4/31	COMPOS
Raw Sewage Influent Solids, total suspended	00530 G 0	7371	11504	lb/day	*****	149	242		Weekly	COMPOS
		Req. Mon. MO AVG	Req. Mon. HI WK AV			Req. Mon. MO AVG	Req. Mon. HI WK AV			
		Req. Mon. MO AVG	Req. Mon. HI WK AV			Req. Mon. MO AVG	Req. Mon. HI WK AV			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
	MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	Month	Day
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA CODE	Month	Day
TYPED OR PRINTED		NUMBER	Year	
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)				
VIOLATIONS				
INFLUENT BOD RESULTS UNAVAILABLE 10/11 & 10/25. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION).				

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004
DMR Mailing ZIP CODE: 96932
MAJOR

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
10/1/2017 TO 10/31/2017

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	*****	*****	*****	*****			
00010 1 Effluent Gross	*****	*****	26.1	deg. C		4/31	DISCRT
BOD, 5-day, 20 deg. C	*****	*****	Req. Mon. MO AVG	deg. C		Weekly	DISCRT
00310 1 0 Effluent Gross	3767	lb/d	74	mg/L	6	12/31	COMP24
pH	3002	lb/d	30	mg/L		Weekly	COMP24
00400 1 0 Effluent Gross	MO AVG	*****	MO AVG	*****			
Solids, total suspended	*****	*****	*****	*****			
00530 1 0 Effluent Gross	1046	lb/d	21	mg/L		12/31	COMP24
Solids, settleable	3002	lb/d	30	mg/L		Weekly	COMP24
00545 1 0 Effluent Gross	MO AVG	*****	MO AVG	*****			
Oil and grease	*****	*****	1.5	mL/L	2	4/31	DISCRT
03582 1 0 Effluent Gross	*****	*****	1	mL/L		Weekly	DISCRT
Oil & grease	*****	*****	MO AVG	DAILY MX			
03582 1 0 Effluent Gross	*****	*****	2.5	mg/L	1	3/31	DISCRT
Oil & grease	*****	*****	10	mg/L		Weekly	DISCRT
05050 1 0 Effluent Gross	6.05	MGD	MO AVG	DAILY MX			
Oil & grease	12	MGD	*****	*****		31/31	METER
	MO AVG	DAILY MX	*****	*****		Continuous	METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	Month	Year
TYPED OR PRINTED	AREA	NUMBER	Day	
	CODE			

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)
VIOLATIONS
EFFLUENT BOD RESULTS UNAVAILABLE 10/20. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (UNDERDEPLETION).
BOD (mg/l) WEEKLY MAX (4/4) AND MONTHLY AVERAGE
BOD (lbs/day) MONTHLY AVERAGE
SETTLABLE SOLIDS DAILY MAX (1/4) AND MONTHLY AVERAGE
OIL & GREASE NOT ANALYZED ON 10/25. ANALYSIS NOT AVAILABLE DUE TO PENDING SUPPLY ORDER.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY

ADDRESS: NORTHERN DISTRICT STP

FACILITY: HARMON ANNEX, GU 96912

LOCATION: NORTHERN DISTRICT STP

DEDEDO, GU 96912

Form Approved,
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

ATTN: PAUL J. KEMP

No Discharge

GU0020141 PERMIT NUMBER	001-A DISCHARGE NUMBER
----------------------------	---------------------------

MM/DD/YYYY 10/1/2017	TO	MM/DD/YYYY 10/31/2017
-------------------------	----	--------------------------

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	NODI (C)	mg/L		0/31	DISCRT
50060 1 0	*****	*****	1.5	mg/L		WEEKLY	DISCRT
Effluent Gross	*****	*****	MO AVG	DAILY MX			
Enterococci	*****	*****	76320	MPN/100mL	5	4/31	DISCRT
61211 1 0	*****	*****	35	CFU/100mL		WEEKLY	DISCRT
Effluent Gross	*****	*****	MO AVG	DAILY MX			
BOD, 5-day, percent removal	*****	*****	43%	%	1	2/31	COMP24
81010 K 0	*****	*****	Req. Mon. MO AV MN	%		WEEKLY	COMP24
Percent Removal	*****	*****	86%	%		4/31	COMP24
Solids, suspended percent removal	*****	*****	Req. Mon. MO AV MN	%		WEEKLY	COMP24
81011 K 0	*****	*****	24.3	mg/L		12/14/16	COMP24
Percent Removal	*****	*****	MO AVG	DAILY MX		ANNUAL	COMP24
Ammonia & Ammonium	*****	*****	24.3	mg/L			
Total	*****	*****	MO AVG	DAILY MX			
82230 1 0	*****	*****	Req. Mon. MO AVG	mg/L			
Effluent Gross	*****	*****	MO AVG	DAILY MX			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
	MIGUEL C. BORDALLO, PE GENERAL MANAGER		671 300-6885	Month Day Year
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA CODE	

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
BOD BELOW 85% REMOVAL
ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE
NODI (C)- EFFLUENT NOT CHLORINATED

INFLUENT										EFFLUENT									
DATE	pH	SUSP. SOLIDS mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD mg/l	SETTL. SOLID ml/l	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV
1							6.0												
2							5.1												
3							5.1												
4	8.18	182	9.0	9087	8872	9.0	6.0	8.50	28	70	0.0	1427	3595	26.2	173290	19	74	955	3696
5							5.6		17	76		846	3759						
6							5.5		12	76		590	3734						
7							5.9												
8							4.0												
9							6.6												
10							7.0												
11	6.61	126	2.5	6285		2.5	6.0	8.02	25	69	0.0	1324	3640	25.4	72700	30	79	1527	3975
12							5.6		29	87		1437	4286						
13							5.6		36	80		1821	3991						
14							6.0												
15							6.3												
16							5.9												
17							5.8												
18	7.01	46	3.0	2609	4688	3.0	6.8	7.67	21	44	0.0	1224	2589	26.2	34480	18	67	964	3893
19							6.8		9	90		501	5196						
20							5.9		23			1166							
21							5.4												
22							7.1												
23							5.7												
24							5.9												
25	7.26	242	4.0	11504		4.0	5.7	7.92	26	50	6.1	1214	2348	26.7	24610	16	75	739	3547
26							5.5		12	80		550	3648						
27							5.8		9	96		451	4646						
28							5.7												
29							5.5												
30							5.5												
31							6.5												
AVG	7.27	149	4.63	7371	6780	4.63	5.88	8.03	21	74	1.5	1046	3767	26.1	76320	30	79	1527	3975
MIN	6.61	46	2.50	2609	4688	2.50	4.00	7.67	9	44	0.0	451	2348	25.4	24810	16	67	739	3547
MAX	8.18	242	9.0	11504	8872	9.0	7.10	8.50	36	96	6.1	1821	5196	26.7	173260	30	79	1527	3975
Running Averages										Running Averages									
monthly avg										monthly avg									
MAX 12										MAX 15									
PERMIT REQUIREMENTS										PERMIT REQUIREMENTS									
6.5MIN										6.5MIN									
8.5MAX										8.5MAX									

VIOLATIONS

INFLUENT BOD RESULTS UNAVAILABLE 10/11 & 10/25. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION).
 EFFLUENT BOD RESULTS UNAVAILABLE 10/20. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (UNDERDEPLETION).
 OIL & GREASE NOT ANALYZED ON 10/25. ANALYSIS NOT AVAILABLE DUE TO PENDING SUPPLY ORDER.
 BOD (mg/l) WEEKLY MAX (4/4) AND MONTHLY AVERAGE
 BOD (lbs/day) MONTHLY AVERAGE
 SETTLEABLE SOLIDS DAILY MAX (1/4) AND MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

INF/MONTHLY
Influent Structure

GU0020141 PERMIT NUMBER
INF-A DISCHARGE NUMBER

FROM 11/1/2017 TO 11/30/2017
MONITORING PERIOD

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	MINIMUM	AVERAGE			
BOD, 5-day, 20 deg. C	9169	16284	*****	206		5/30	COMPOS
00310 G 0 Raw Sewage Influent	Req. Mon. MO. AVG	Req. Mon. HI WK AV	*****	Req. Mon. MO. AVG		Weekly	COMPOS
Solids, total suspended			*****				
00530 G 0 Raw Sewage Influent	14236	27525	*****	319		5/30	COMPOS
	Req. Mon. MO. AVG	Req. Mon. HI WK AV	*****	Req. Mon. MO. AVG		Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
	MIGUEL C. BORDALLO, PE GENERAL MANAGER		671 300-6885	Day Year
TYPED OR PRINTED		AREA CODE	NUMBER	Month Day Year
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		
VIOLATIONS				
INFLUENT BOD RESULTS UNAVAILABLE 11/08 BECAUSE SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)				

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
 ADDRESS: NORTHERN DISTRICT STP
 HARMON ANNEX, GU 96912
 FACILITY: NORTHERN DISTRICT STP
 LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
MAJOR

FROM 11/1/2017 TO 11/30/2017
 MONITORING PERIOD
 MM/DD/YYYY MM/DD/YYYY

001/MONTHLY
External Outfall

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	SAMPLE MEASUREMENT PERMIT REQUIREMENT	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	MEASUREMENT	*****	*****	27.3	deg. C		5/30	DISCRT
	PERMIT REQUIREMENT	*****	*****	Req. Mon. MO AVG	deg. C		Weekly	DISCRT
BOD, 5-day, 20 deg. C	MEASUREMENT	2966	lb/d	64	mg/L	6	9/30	COMP24
	PERMIT REQUIREMENT	3002 MO AVG	lb/d	30 MO AVG	mg/L		Weekly	COMP24
pH	MEASUREMENT	*****	*****	*****	HI WK AV			
	PERMIT REQUIREMENT	*****	*****	7.2	SU	2	5/30	DISCRT
Solids, total suspended	MEASUREMENT	*****	*****	*****	SU		Weekly	DISCRT
	PERMIT REQUIREMENT	*****	*****	6.5 MINIMUM	*****			
Effluent Gross	MEASUREMENT	811	lb/d	17	mg/L		10/30	COMP24
	PERMIT REQUIREMENT	3002 MO AVG	lb/d	30 MO AVG	mg/L		Weekly	COMP24
Solids, settleable	MEASUREMENT	*****	*****	*****	HI WK AV			
	PERMIT REQUIREMENT	*****	*****	0.0	mL/L		4/30	DISCRT
Oil and grease	MEASUREMENT	*****	*****	*****	mL/L		Weekly	DISCRT
	PERMIT REQUIREMENT	*****	*****	1 MO AVG	DAILY MX			
Effluent Gross	MEASUREMENT	*****	*****	*****	NODI E	5	0/30	DISCRT
	PERMIT REQUIREMENT	*****	*****	10 MO AVG	mg/L		Weekly	DISCRT
Effluent Gross	MEASUREMENT	5.78	MGD	*****	*****		30/30	METER
	PERMIT REQUIREMENT	12 MO AVG	MGD	*****	*****		Continuous	METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	
TYPED OR PRINTED	AREA NUMBER	Day Year
	CODE	Month

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 NODI E- OIL & GREASE ANALYSIS NOT CONDUCTED DUE TO PENDING RECEIPT OF ANALYTICAL SUPPLIES
 pH ABOVE MAXIMUM (2/5)

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP

FACILITY: HARMON ANNEX, GU 96912
LOCATION: NORTHERN DISTRICT STP

DEDEDO, GU 96912

Form Approved,
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
11/1/2017 TO 11/30/2017

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		UNITS	NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS				
Chlorine, total residual	*****	*****	*****	*****				
50060 1 0 Effluent Gross Enterococci	*****	*****	NODI (C) 1.5 MO AVG	mg/L	mg/L	0/30	WEEKLY	DISCRT DISCRT
61211 1 0 Effluent Gross BOD, 5-day, percent removal	*****	*****	87712 35 MO AVG	MPN/100mL	CFU/100mL	5/30	WEEKLY	DISCRT DISCRT
81010 K 0 Percent Removal Solids, suspended percent removal	*****	*****	*****	%	%	4/30	WEEKLY	COMP24 COMP24
81011 K 0 Percent Removal Ammonia & Ammonium Total	*****	*****	*****	%	%	5/30	WEEKLY	COMP24 COMP24
82230 1 0 Effluent Gross	*****	*****	24.3 Req. Mon. MO AVG	mg/L	mg/L	12/14/16	ANNUAL	COMP24 COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	
TYPED OR PRINTED	AREA NUMBER	Month Day Year
	CODE	

I certify under penalty of law that this document and all attachments were prepared under the direction and supervision of the person whose name and title appear on this report and that I am a duly qualified person to prepare and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE
BOD BELOW 85% REMOVAL
NODI (C) - EFFLUENT NOT CHLORINATED

TO: NDSS STP
 Fax: 637-2592
 NORTHERN DISTRICT TREATMENT PLANT WASTEWATER RESULTS
 FOR THE MONTH OF NOVEMBER 2017

EFFLUENT										INFLUENT																														
DATE	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	DATE	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD lbs/day	ENTEROCOCCI MPN/100ML	TEMP °C	OIL & GREASE mg/l	BOD (MGL) WEEKLY AV	TSS (MGL) WEEKLY AV	BOD (lbs/day) WEEKLY AV	TSS (lbs/day) WEEKLY AV																	
1	5.2	7.18	8	52	0.0	2239	2239	5.2	1	8.06	95	119	4134	11.0	4134	5148	120330	28.7		59	19	941	2762																	
2	6.0		31	66		3285		6.0	2																															
3	6.0							6.0	3																															
4	5.7							5.7	4																															
5	6.2							6.2	5																															
6	5.8							5.8	6																															
7	5.9							5.9	7																															
8	5.4	8.44	29	65	0.0	2949	2949	5.4	8	7.53	315		14201	7.5	14201		98040	26.4		74	23	1061	3529																	
9	6.0		16	82		4109		6.0	9																															
10	6.2							6.2	10																															
11	5.8							5.8	11																															
12	5.7							5.7	12																															
13	6.0							6.0	13																															
14	5.6							5.6	14																															
15	5.3	8.33	12	86	0.0	3807	3807	5.3	15	7.79	623	368	27525	3.0	27525	16284	68670	27.2		74	17	824	3328																	
16	5.6		8	61		2848		5.6	16																															
17	5.8		32			1567		5.8	17																															
18	5.7							5.7	18																															
19	6.5							6.5	19																															
20	5.6							5.6	20																															
21	5.6	8.70	7	48	0.0	2237	2237	5.6	21	7.97	177	176	8257	5.0	8257	8229	86640	27.0		48	7	336	2237																	
22	5.9							5.9	22																															
23	5.8							5.8	23																															
24	5.7							5.7	24																															
25	6.1							6.1	25																															
26	5.8							5.8	26																															
27	5.6							5.6	27																															
28	5.9							5.9	28																															
29	5.3	8.59	23	70	0.0	3090	3090	5.3	29	8.49	386	159	17062	6.0	17062	7015	64880	27.4		67	15	651	2610																	
30	5.7		6	45		2131		5.7	30																															
AVG	5.78	8.25	17	64	0.0	2966	2966	5.78	AVG	7.97	319	206	14236	6.50	14236	9169	87712	27.3																						
MIN	5.20	7.18	6	45	0.0	2131	2131	5.20	MIN	7.53	95	119	4134	3.00	4134	5148	64880	26.4																						
MAX	6.50	8.70	32	86	0.0	1567	4109	6.50	MAX	8.49	623	368	27525	11.0	27525	16284	120330	28.7																						
Running Averages																	18	66				851	3068																	
monthly avg																	30	30	1	3002	85%	3002	3002	10	35															
daily max																	45	45	2	6760	85%	6760	6760	15	104															

PERMIT REQUIREMENTS	MAX	MIN	AVG
ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE	10	35	35
BOD BELOW 85% REMOVAL	15	104	104

VIOLATIONS

INFLUENT BOD RESULTS UNAVAILABLE 11/08 BECAUSE SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)
 EFFLUENT BOD RESULTS UNAVAILABLE 11/17 DUE TO TECH ERROR
 OIL & GREASE ANALYSIS NOT CONDUCTED DUE TO PENDING ANALYTICAL SUPPLIES
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE
 PH ABOVE MAX (2/5)

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved:
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932

GU0020141 PERMIT NUMBER

INF-A DISCHARGE NUMBER

FROM MM/DD/YYYY TO MM/DD/YYYY

12/1/2017 12/31/2017

ATTN: PAUL J. KEMP

No Discharge

MAJOR INF/MONTHLY Influent Structure

PARAMETER	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-day, 20 deg. C	12920	17384	lb/day	*****	294	386		4/31	COMPOS
00310 G 0 Raw Sewage Influent	Req. Mon. MO. AVG	Req. Mon. HI WK AV	lb/day	*****	Req. Mon. MO. AVG	Req. Mon. HI WK AV		Weekly	COMPOS
Solids, total suspended	15728	25400	lb/day	*****	381	564		4/31	COMPOS
00530 G 0 Raw Sewage Influent	Req. Mon. MO. AVG	Req. Mon. HI WK AV	lb/day	*****	Req. Mon. MO. AVG	Req. Mon. HI WK AV		Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.			TELEPHONE		DATE	
				SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		671	300-6885
MIGUEL C. BORDALLO, PE GENERAL MANAGER		TYPED OR PRINTED		AREA CODE	NUMBER	Month	Day
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)							
VIOLATIONS							
INFLUENT BOD RESULTS UNAVAILABLE 12/21 & 12/28. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)							

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

GU0020141 PERMIT NUMBER
001-A DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
12/1/2017 TO 12/31/2017

ATTN: PAUL J. KEMP

FROM

No Discharge

PARAMETER	SAMPLE MEASUREMENT PERMIT REQUIREMENT	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade 00010 1 Effluent Gross	MEASUREMENT PERMIT	*****	*****	26.5	deg. C		4/31	DISCRT
	REQUIREMENT	*****	*****	Req. Mon. MO AVG	deg. C		Weekly	DISCRT
BOD, 5-day, 20 deg. C 000310 1 Effluent Gross	MEASUREMENT PERMIT	3141	lb/d	68	mg/L	7	10/31	COMP24
	REQUIREMENT	3002	lb/d	30	mg/L		Weekly	COMP24
pH 00400 1 Effluent Gross	MEASUREMENT PERMIT	*****	*****	*****	HI WK AV		4/31	DISCRT
	REQUIREMENT	*****	*****	7.2	SU		Weekly	DISCRT
Solids, total suspended 00530 1 Effluent Gross	MEASUREMENT PERMIT	569	lb/d	12	mg/L		10/31	COMP24
	REQUIREMENT	3002	lb/d	30	mg/L		Weekly	COMP24
Solids, settleable 00545 1 Effluent Gross	MEASUREMENT PERMIT	*****	*****	0.0	mL/L		4/31	DISCRT
	REQUIREMENT	*****	*****	0.0	mL/L		Weekly	DISCRT
Oil and grease 03582 1 Effluent Gross	MEASUREMENT PERMIT	5.79	MGD	6.3	mg/L		2/31	DISCRT
	REQUIREMENT	12	MGD	10	mg/L		Weekly	DISCRT
Effluent Gross 50050 1 Effluent Gross	MEASUREMENT PERMIT	*****	*****	*****	DAILY MIX		31/31	METER
	REQUIREMENT	*****	*****	*****	DAILY MIX		Continuous	METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	300-6885	
TYPED OR PRINTED	AREA NUMBER	Month Day Year
	671	
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	
VIOLATIONS		
BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE		
BOD (lbs/day) MONTHLY AVERAGE		
OIL & GREASE ANALYSIS NOT AVAILABLE ON 12/06 & 12/13. SAMPLES EXCEEDED HOLDING TIME DUE TO PENDING ANALYTICAL SUPPLIES		

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

GU0020141 PERMIT NUMBER

001-A DISCHARGE NUMBER

MONITORING PERIOD

MM/DD/YYYY TO MM/DD/YYYY

12/1/2017 TO 12/31/2017

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	NODI (C)	mg/L		0/31	DISCRT
50060 1 0 Effluent Gross Enterococci	*****	*****	1.5 MO AVG	mg/L		WEEKLY	DISCRT
61211 1 0 Effluent Gross BOD, 5-day, percent removal	*****	*****	113420 MO AVG	MPN/100mL	5	4/31	DISCRT
81010 K 0 Percent Removal	*****	*****	35 MO AVG	CFU/100mL		WEEKLY	DISCRT
Solids, suspended percent removal	*****	*****	77%	%	1	2/31	COMP24
81011 K 0 Percent Removal	*****	*****	Req. Mon. MO AV MIN	%		WEEKLY	COMP24
Ammonia & Ammonium Total	*****	*****	97%	%		4/31	COMP24
82230 1 0 Effluent Gross	*****	*****	24.9 MO AVG	mg/L		12/06/17	COMP24
	*****	*****	Req. Mon. DAILY MX	mg/L		ANNUAL	COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	300-6885	
TYPED OR PRINTED	571 NUMBER	Month Day Year
	AREA CODE	
	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER	
	OFFICER OR AUTHORIZED AGENT	

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE
BOD BELOW 85% REMOVAL
NODI (C) - EFFLUENT NOT CHLORINATED

TO: NDSS STP
 Northern District Treatment Plant Wastewater Results
 FOR THE MONTH OF DECEMBER 2017
 Fax: 637-2592

INFLUENT										EFFLUENT														
DATE	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lb/day	BOD lb/day	SUSP. SOLIDS %removal	BOD %removal	OIL & GREASE mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV	
1							4.9	5.7		19	79		903	3768						19	79	903	3768	
2							5.0	6.4																
3							5.6	6.4																
4							5.2	6.0																
5							4.9	5.8																
6	7.83	564	386	12.0	25400	17384	5.4	6.1	7.16	18	66	0.0	916	3375	97%	83%		27.5		12	55	603	2756	
7							5.4	5.8		6	44		290	2136										
8							4.8	5.5																
9							5.3	6.0																
10							5.6	6.3																
11							5.3	5.9																
12							4.7	5.5																
13	7.96	140	203	14.0	5855	8457	5.0	5.5	8.33	16	59	0.0	716	2718	89%	71%		27.0		10	68	456	3235	
14							5.0	5.9		9	75		463	3707										
15							5.1	5.7		4	69		190	3279										
16							4.9	5.7																
17							5.9	6.8																
18							4.8	5.4																
19							5.2	5.8																
20	8.66	530		15.0	19906		5.2	6.1	7.86	20	75	0.0	910	3357	96%		4.5	25.6		13	74	554	2797	
21							4.5	5.4		6	73		197	2237										
22							3.3	3.7																
23							5.3	6.1																
24							5.1	5.8																
25							5.6	6.0																
26							4.6	5.5																
27							4.9	5.8																
28	8.12	288		25.0	11753		4.9	5.6	8.36	19	70	0.0	901	3279	93%		8.1	25.7		12	70	552	3415	
29							5.3	6.1		4	70		203	3551										
30							5.1	5.7																
31							5.7	6.2																
AVG	8.14	381	294	16.50	15728	12920	5.08	5.79	7.93	12	68	0.0	569	3141	97%	77%	6	26.5		19	79	903	3768	
MIN	7.83	140	203	12.00	5855	8457	3.30	3.70	7.16	4	44	0.0	190	2136	89%	71%	5	25.6		10	68	456	3235	
MAX	8.66	564	386	25.0	25400	17384	5.90	6.80	8.36	20	79	0.0	916	3768	97%	83%	8	27.5		13	74	554	2797	
Running Averages							monthly avg	3002	3002	1	3002	3002	3002	3002	3002	85%	85%	10	35		19	79	903	3768
daily max							daily max	6760	6760	2	6760	6760	6760	6760	6760	85%	85%	15	104		19	79	903	3768

PERMIT REQUIREMENTS	MAX 12	6.5MIN	30	30	1	3002	3002	10	35
		8.5MAX	45	45	2	6760	6760	15	104

VIOLATIONS

INFLUENT BOD RESULTS UNAVAILABLE 12/21 & 12/28. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)

BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE

BOD (lbs/day) MONTHLY AVERAGE

BOD BELOW 85% REMOVAL

ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE

OIL & GREASE SAMPLES NOT AVAILABLE ON 12/06 & 12/13. SAMPLES EXCEEDED HOLDING TIME DUE TO PENDING ANALYTICAL SUPPLIES

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR INF/MONTHLY Influent Structure

GU0020141 PERMIT NUMBER
INF-A DISCHARGE NUMBER

FROM 1/1/2018 TO 1/31/2018
MONITORING PERIOD

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-day, 20 deg. C	16149	26151	lb/day	*****	380	603	mg/L	5/31	COMPOS
00310 G 0 Raw Sewage Influent	Req. Mon. MO. AVG	Req. Mon. HI WK AV	lb/day	*****	Req. Mon. MO. AVG	Req. Mon. HI WK AV	mg/L	Weekly	COMPOS
Solids, total suspended	14700	21684	lb/day	*****	345	505	mg/L	5/31	COMPOS
00530 G 0 Raw Sewage Influent	Req. Mon. MO. AVG	Req. Mon. HI WK AV	lb/day	*****	Req. Mon. MO. AVG	Req. Mon. HI WK AV	mg/L	Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE			DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	NUMBER	Day Year
TYPED OR PRINTED	AREA	CODE	MONTH	Day Year
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		MONTH	Day Year
VIOLATIONS			MONTH	Day Year

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
 ADDRESS: NORTHERN DISTRICT STP
 HARMON ANNEX, GU 96912
 FACILITY: NORTHERN DISTRICT STP
 LOCATION: DEDEDO, GU 96912

Form Approved.
 OMB No. 2040-0004
 DMR Mailing ZIP CODE: 96932
 MAJOR

GU0020141
 PERMIT NUMBER

001-A
 DISCHARGE NUMBER

FROM MM/DD/YYYY TO MM/DD/YYYY
 1/1/2018 TO 1/31/2018

001/MONTHLY
 External Outfall

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	*****	*****	*****	*****			
00010 1 0 Effluent Gross	*****	*****	26.0	deg. C		5/31	DISCRT
BOD, 5-day, 20 deg. C	*****	*****	Req. Mon. DAILY MX	deg. C		Weekly	DISCRT
00310 1 0 Effluent Gross	3430	lb/d	73	mg/L	7	11/31	COMP24
pH	3002	lb/d	30	mg/L		Weekly	COMP24
00400 1 0 Effluent Gross	MO AVG	*****	MO AVG	*****			
Solids, total suspended	*****	*****	*****	*****		5/31	DISCRT
00530 1 0 Effluent Gross	*****	*****	7.4	SU		Weekly	DISCRT
Solids, settleable	*****	*****	6.5	SU		Weekly	DISCRT
00545 1 0 Effluent Gross	*****	*****	MINIMUM	*****			
Oil and grease	621	lb/d	13	mg/L		13/31	COMP24
03582 1 0 Effluent Gross	3002	lb/d	30	mg/L		Weekly	COMP24
Flow, in conduit or into treatment	MO AVG	*****	MO AVG	*****			
00050 1 0 Effluent Gross	*****	*****	0.0	mL/L		5/31	DISCRT
Flow, in open channel	*****	*****	1	mL/L		Weekly	DISCRT
00050 1 0 Effluent Gross	*****	*****	MO AVG	*****			
Flow, in open channel	*****	*****	5.9	mg/L		5/31	DISCRT
00050 1 0 Effluent Gross	*****	*****	10	mg/L		Weekly	DISCRT
Flow, in open channel	*****	*****	MO AVG	*****			
00050 1 0 Effluent Gross	5.83	MGD	*****	*****		31/31	METER
Flow, in open channel	12	MGD	*****	*****		Continuous	METER
Flow, in open channel	MO AVG	DAILY MX	*****	*****			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER MIGUEL C. BORDALLO, PE GENERAL MANAGER	TELEPHONE		DATE	
	671	300-6885	Month	Year
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA	NUMBER	Month	Year
	CODE	*****	Day	*****

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)
 VIOLATIONS
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 BOD (lbs/day) MONTHLY AVERAGE

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved,
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
1/1/2018 TO 1/31/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	NODI (C)	mg/L		0/31	DISCRT
50060 1 0	*****	*****	MO AVG	mg/L		WEEKLY	DISCRT
Effluent Gross	*****	*****	*****	*****	6	4/31	DISCRT
Enterococci	*****	*****	*****	*****		WEEKLY	DISCRT
61211 1 0	*****	*****	*****	*****	1	5/31	COMP24
Effluent Gross	*****	*****	*****	*****		WEEKLY	COMP24
BOD, 5-day, percent removal	*****	*****	*****	*****		5/31	COMP24
81010 K 0	*****	*****	*****	*****		12/06/17	COMP24
Percent Removal	*****	*****	*****	*****		ANNUAL	COMP24
Solids, suspended percent removal	*****	*****	*****	*****			
81011 K 0	*****	*****	*****	*****			
Percent Removal	*****	*****	*****	*****			
Ammonia & Ammonium	*****	*****	*****	*****			
Total	*****	*****	*****	*****			
82230 1 0	*****	*****	*****	*****			
Effluent Gross	*****	*****	*****	*****			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	
TYPED OR PRINTED	AREA NUMBER	Month Day Year
	CODE	

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information included. Based on my inquiry of the person(s) who prepared the information, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE
BOD BELOW 85% REMOVAL
NODI (C) - EFFLUENT NOT CHLORINATED

EFFLUENT										INFLUENT									
DATE	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lb/day	BOD lb/day	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MGL) WEEKLY AV	BOD (MGL) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV						
1	6.2									18	78	878	3753						
2	6.1	8.13	21	79	0.0	1067	4042	28.1	81840										
3	6.1		29	71		1295	3211												
4	5.4		6	83		271	4005												
5	5.8																		
6	6.0																		
7	5.9																		
8	6.1																		
9	6.0																		
10	5.7	7.35	11	60	0.0	509	2864	25	46310	10	56	475	2661						
11	5.6		9	45		406	2116												
12	5.7		11	63		509	3004												
13	5.7																		
14	6.2																		
15	6.0																		
16	5.7																		
17	5.7	8.09	7	84	0.0	319	3969	25.0	92080	15	67	695	3109						
18	5.3		22	57		972	2528												
19	5.7		17	69		794	2829												
20	5.6																		
21	6.0																		
22	6.1																		
23	5.9																		
24	5.6	7.83	13	111	0.0	621	5196	25.2	43520	10	111	463	5196						
25	6.0		15			736													
26	5.6		1			33													
27	5.9																		
28	6.2																		
29	5.7																		
30	5.8																		
31	5.4	8.33	12	88	0.0	540	3967	26.8	36540	12	88	540	3967						
AVG	5.83	7.95	13	73	0.0	621	3430	26.0	69878	18	111	878	5196						
MIN	5.30	7.35	1	45	0.0	33	2116	25.0	36540										
MAX	6.20	8.33	29	111	0.0	1295	5196	28.1	92080										
Running Averages			15	67		662	3174												
monthly avg		6.5MIN	30	30	1	3002	3002	85%	35										
daily max		8.5MAX	45	45	2	6760	6760	85%	104										

PERMIT REQUIREMENTS	MAX	MIN	AVG
ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE	12	35	104
BOD (lbs/day) MONTHLY AVERAGE	3002	2116	3174
BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE	111	73	111
BOD BELOW 85% REMOVAL	10	3	14
ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE	15	1	15

VIOLATIONS

BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 BOD (lbs/day) MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved:
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

INF-A
DISCHARGE NUMBER

INF/MONTHLY
Influent Structure

GU0020141
PERMIT NUMBER

MM/DD/YYYY TO MM/DD/YYYY
2/7/2018 TO 2/28/2018
MONITORING PERIOD

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-day, 20 deg. C	8127	11042	lb/day	*****	286	414		4/28	COMPOS
00310 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	Req. Mon. MO AVG	Req. Mon. HI, WK AV		Weekly	COMPOS
Solids, total suspended	14245	29123	lb/day	*****	477	873		4/28	COMPOS
00530 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	Req. Mon. MO AVG	Req. Mon. HI, WK AV		Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER				671 300-6885	
TYPED OR PRINTED	AREA CODE	NUMBER	MONTH	DAY	YEAR
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report) VIOLATIONS					

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
 ADDRESS: NORTHERN DISTRICT STP
 HARMON ANNEX, GU 96912
 FACILITY: NORTHERN DISTRICT STP
 LOCATION: DEDEDO, GU 96912

Form Approved.
 OMB No. 2040-0004

GU0020141
 PERMIT NUMBER

001-A
 DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
 MAJOR

MONITORING PERIOD
 FROM MM/DD/YYYY TO MM/DD/YYYY
 2/1/2018 TO 2/28/2018

001/MONTHLY
 External Outfall

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	*****	*****	*****	*****			
	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****		4/28 Weekly	DISCRT
00010 10 Effluent Gross BOD, 5-day, 20 deg. C	2285	lb/d	25.7	deg. C			DISCRT
	3002 MO AVG	lb/d	Req. Mon. MO AVG	deg. C	6	10/28 Weekly	COMP24
00310 10 Effluent Gross pH	*****	*****	*****	*****			
	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****		4/28 Weekly	DISCRT
00400 10 Effluent Gross Solids, total suspended	684	lb/d	*****	*****			
	3002 MO AVG	lb/d	*****	*****		10/28 Weekly	COMP24
00530 10 Effluent Gross Solids, settleable	*****	*****	*****	*****			
	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****		4/28 Weekly	DISCRT
00545 10 Effluent Gross Oil and grease	*****	*****	*****	*****			
	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****		4/28 Weekly	DISCRT
03582 10 Effluent Gross Flow, in conduit or into treatment	4.51	MGD	*****	*****			
	12 MO AVG	MGD	*****	*****	4	28/28 Continuous	METER
50050 10 Effluent Gross	*****	*****	*****	*****			
	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****		28/28 Continuous	METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER MIGUEL C. BORDALLO, PE GENERAL MANAGER	TELEPHONE		DATE	
	671	300-6885	Month	Year
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE		Area	Code
	OFFICER OR AUTHORIZED AGENT		Month	Day

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)
 VIOLATIONS
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 OIL & GREASE DAILY MAX (3/4) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
2/1/2018 TO 2/28/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	*****	*****			
50060 1 0 Effluent Gross Enterococci	*****	*****	NODI (C) 1.5 MO AVG	mg/L		0/28 WEEKLY	DISCRT DISCRT
61211 1 0 Effluent Gross BOD, 5-day, percent removal	*****	*****	37618 35 MO AVG	MPN/100mL CFU/100mL	5	4/28 WEEKLY	DISCRT DISCRT
81010 K 0 Percent Removal	*****	*****	*****	%	1	4/28 WEEKLY	COMP24 COMP24
Solids, suspended percent removal	*****	*****	79% Req. Mon. MO. AV. MIN	%			
81011 K 0 Percent Removal	*****	*****	*****	%		4/28 WEEKLY	COMP24 COMP24
Ammonia & Ammonium	*****	*****	*****	%			
Total	*****	*****	24.9 Req. Mon. MO AVG	mg/L		12/06/17 ANNUAL	COMP24 COMP24
82230 1 0 Effluent Gross	*****	*****	*****	mg/L			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
	MIGUEL C. BORDALLO, PE GENERAL MANAGER		671 300-6885	
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA	Month
			CODE	Day
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)		YEAR		

ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE
BOD BELOW 85% REMOVAL
NODI (C) - EFFLUENT NOT CHLORINATED

TO: NDSS STP
 Fax: 637-2592
 NORTHERN DISTRICT TREATMENT PLANT WASTEWATER RESULTS
 FOR THE MONTH OF FEBRUARY 2018

INFLUENT										EFFLUENT														
DATE	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lb/day	BOD lb/day	%removal	OIL & GREASE mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV			
1							5.2		31	94		1542	4635					23	30		4366			
2							5.0		14	86		666	4096											
3							3.1																	
4							3.5																	
5							4.1																	
6							3.1																	
7	8.47	167	414	6.0	4326	10704	3.1	8.53	9	58	0.0	296	1829	86%	19.9	24.9		9	58	296	1829			
8							3.2																	
9							3.2																	
10							3.4																	
11							3.4																	
12							3.8																	
13							3.1																	
14	8.20	418	189	10.0	11504	5204	3.3	8.06	5	40	0.0	167	1442	99%	4.2	27.1		21	46	693	1549			
15							3.2																	
16							3.2																	
17							3.2																	
18							3.1																	
19							3.4																	
20							3.3																	
21	8.51	451	208	6.0	12027	5556	3.2	7.65	6	49	0.0	195	1591	99%	18.3	24.2		18	48	581	1576			
22							3.0																	
23							3.2																	
24							5.1																	
25							5.6																	
26							5.6																	
27							5.1																	
28	7.81	873	331	9.0	29123	11042	4.0	8.21	12	65	0.0	518	2914	99%	17.7	26.5		12	65	518	2914			
AVG	8.25	477	286	7.75	14245	8127	3.76	8.11	18	59	0.0	684	2285	96%	15	25.7		23	90	1104	4366			
MIN	7.81	167	189	6.00	4326	5204	3.00	7.65	5	40	0.0	167	1442	94%	4	24.2		23	90	1104	4366			
MAX	8.51	873	414	10.0	29123	11042	5.60	8.53	46	94	0.0	1542	4635	99%	20	27.1		23	90	1104	4366			
Running Averages							3.76	8.11	18	59	0.0	684	2285	96%	15	25.7		23	90	1104	4366			
PERMIT REQUIREMENTS							MAX 12	6.5MIN	30	30	1	3002	3002	85%	10	35		35						
							12	8.5MAX	45	45	2	6760	6760	85%	15	104		104						

VIOLATIONS
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 OIL & GREASE DAILY MAX (3/4) AND MONTHLY AVERAGE
 ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

INF/MONTHLY
Influent Structure

GU0020141 PERMIT NUMBER
INF-A DISCHARGE NUMBER

MM/DD/YYYY TO MM/DD/YYYY
3/17/2018 TO 3/31/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM			
BOD, 5-day, 20 deg. C	11618	15148	lb/day	*****		4/31	COMPOS
00310 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	273	Weekly	COMPOS
Solids, total suspended	8191	14025	lb/day	*****	Req. Mon. MO AVG	4/31	COMPOS
00530 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	194	Weekly	COMPOS
					Req. Mon. HI, WK AV		

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	
TYPED OR PRINTED	AREA	NUMBER	Month
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	CODE		Day
VIOLATIONS	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		Year
INFLUENT BOD RESULTS UNAVAILABLE 03/14. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION).			

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
MAJOR

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
3/1/2018 TO 3/31/2018

001/MONTHLY
External Outfall

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	SAMPLE MEASUREMENT PERMIT REQUIREMENT	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	MEASUREMENT PERMIT	*****	*****	*****	*****			
00010 1 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****		4/31 Weekly	DISCRT DISCRT
BOD, 5-day, 20 deg. C	MEASUREMENT PERMIT	3312	lb/d	25.6	deg. C			
00310 1 0 Effluent Gross	PERMIT REQUIREMENT	3002	lb/d	Req. Mon. MO AVG	deg. C	7	12/31 Weekly	COMP24 COMP24
pH	SAMPLE MEASUREMENT PERMIT	*****	*****	*****	*****			
00400 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****	1	4/31 Weekly	DISCRT DISCRT
Solids, total suspended	SAMPLE MEASUREMENT PERMIT	545	lb/d	*****	*****			
00530 1 0 Effluent Gross	PERMIT REQUIREMENT	3002	lb/d	*****	*****		14/31 Weekly	COMP24 COMP24
Solids, settleable	SAMPLE MEASUREMENT PERMIT	*****	*****	*****	*****			
00545 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****		4/31 Weekly	DISCRT DISCRT
Oil and grease	SAMPLE MEASUREMENT PERMIT	*****	*****	*****	*****			
03582 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****		4/31 Weekly	DISCRT DISCRT
Flow, in conduit or into treatment	SAMPLE MEASUREMENT PERMIT	5.76	MGD	*****	*****			
00050 1 0 Effluent Gross	PERMIT REQUIREMENT	*****	*****	*****	*****		31/31 Continuous	METER METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	
TYPED OR PRINTED	AREA	NUMBER	Month
	CODE		Day
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		Year
VIOLATIONS BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE BOD (lbs/day) MONTHLY AVERAGE pH DAILY MAX (1/4)			

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage this system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
 ADDRESS: NORTHERN DISTRICT STP
 HARMON ANNEX, GU 96912
 FACILITY: NORTHERN DISTRICT STP
 LOCATION: DEDEDO, GU 96912

Form Approved.
 OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
 MAJOR

001/MONTHLY
 External Outfall

No Discharge

001-A
 DISCHARGE NUMBER

MONITORING PERIOD
 FROM MM/DD/YYYY 3/1/2018 TO MM/DD/YYYY 3/31/2018

ATTN: PAUL J. KEMP

PARAMETER	SAMPLE MEASUREMENT PERMIT REQUIREMENT	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	VALUE	UNITS				
Chlorine, total residual	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	NODI (C)	2.46	mg/L	0/31	WEEKLY	DISCRT
50060 1 0 Effluent Gross Enterococci	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	MO AVG	DAILY MX	mg/L	3/31	WEEKLY	DISCRT
61211 0 Effluent Gross	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	46680	52470	MPN/100mL	4	WEEKLY	DISCRT
BOD, 5-day, percent removal	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	35	104	CFU/100mL	1	WEEKLY	DISCRT
81010 K 0 Percent Removal	MEASUREMENT PERMIT REQUIREMENT	*****	*****	74% Req. Mon. MO AV MN	*****	*****	%	1	WEEKLY	COMP24
Solids, suspended percent removal	MEASUREMENT PERMIT REQUIREMENT	*****	*****	94% Req. Mon. MO AV MN	*****	*****	%	4/31	WEEKLY	COMP24
81011 K 0 Percent Removal Ammonia & Ammonium	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	*****	*****	%	12/06/17	ANNUAL	COMP24
Total 82230 1 0 Effluent Gross	MEASUREMENT PERMIT REQUIREMENT	*****	*****	*****	24.9	24.9	mg/L			COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE	DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	
TYPED OR PRINTED	AREA NUMBER	Month Day Year
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	Code
VIOLATIONS ENTEROCOCCI RESULTS UNAVAILABLE 03/28 DUE TO TECH ERROR. ENTEROCOCCI DAILY MAX (3/3) AND MONTHLY AVERAGE BOD BELOW 85% REMOVAL NODI (C) - EFFLUENT NOT CHLORINATED		

NORTHERN DISTRICT TREATMENT PLANT WASTEWATER RESULTS
FOR THE MONTH OF MARCH 2018

INFLUENT										EFFLUENT														
DATE	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lb/day	BOD lb/day	SUSP. SOLIDS %removal	BOD %removal	Oil & GREASE mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV		
1							5.9	60	69		827	2933							11	64		523	3183	
2							6.0	60	69		220	3433												
3							5.6																	
4							6.0																	
5							5.8																	
6							6.3																	
7	8.75	317	343	10.0	14025	15148	5.9	9.22	79	0.0	427	3882		97%	77%	3.8	26.7	46840	8	80	392	3748		
8							5.4		82		216	3673												
9							5.5		30		552	3668												
10							5.6																	
11							6.1																	
12							5.3																	
13							5.5																	
14	6.90	126		12.0	5133		4.9	6.57	82	0.5	605	3752		89%		5.1	25.2	52470	11	70	498	3194		
15							5.1		53		834	2237												
16							4.9		77		56	3592												
17							4.9																	
18							5.4																	
19							6.9																	
20							5.2																	
21	7.50	68	272		2819	11330	5.0	6.97	70	0.8	112	3279		96%	74%	0.5	24.8	38730	18	70	865	3279		
22							5.0				355													
23							5.0				2128													
24							5.0																	
25							5.4																	
26							5.1																	
27							5.0																	
28	6.82	264	205	17.0	10789	8376	4.9	6.45	66	0.0	589	3118		95%	68%	2.6	25.5		9	66	437	3090		
29							4.9		60		514	2732												
30							4.9		72		209	3421												
31							5.9																	
AVG	7.49	194	273	13.00	8191	11618	5.20	7.30	71	0.3	545	3312		94%	74%	3	25.6	46680						
MIN	6.82	68	205	10.00	2819	8376	4.90	6.45	53	0.0	56	2237		89%	68%	1	24.8	38730						
MAX	8.75	317	343	17.0	14025	15148	6.90	9.22	82	0.8	2128	3882		97%	77%	5	26.7	52470	18	80	865	3748		
Running Averages																								
monthly avg							5.76	7.30	30	1	3002	3002		85%	85%	10	35							
daily max							6.30	9.22	45	2	6760	6760				15	104							

PERMIT REQUIREMENTS	MAX 12	6.5MIN	30	30	1	3002	3002	85%	85%	10	35
		8.5MAX	45	45	2	6760	6760			15	104

VIOLATIONS

ENTEROCOCCI RESULTS UNAVAILABLE 03/28 DUE TECH ERROR. (TECH DID NOT READ SAMPLE AFTER 24 HRS)
 INFLUENT BOD RESULTS UNAVAILABLE 03/14. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)
 INFLUENT SETTLEABLE SOLIDS RESULTS UNAVAILABLE 03/21 DUE TO TECH ERROR.
 BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
 BOD (lbs/day) MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 ENTEROCOCCI DAILY MAX (3/3) AND MONTHLY AVERAGE
 pH DAILY MAX (1/4)

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

INF/MONTHLY
Influent Structure

GU0020141
PERMIT NUMBER

INF-A
DISCHARGE NUMBER

FROM: MM/DD/YYYY TO: MM/DD/YYYY
4/17/2018 4/30/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	SAMPLE MEASUREMENT REQUIREMENT	QUANTITY OR LOADING			QUANTITY OR CONCENTRATION			NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM			
BOD, 5-day, 20 deg. C	00310 G 0	9731	15421	lb/day	*****	252	370		4/30	COMPOS
Raw Sewage Influent Solids, total suspended		Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	Req. Mon. MO AVG	Req. Mon. HI, WK AV		Weekly	COMPOS
		39052	120192	lb/day	*****	1120	3515		4/30	COMPOS
		Req. Mon. MO AVG	Req. Mon. HI, WK AV	lb/day	*****	Req. Mon. MO AVG	Req. Mon. HI, WK AV		Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE	
MIGUEL C. BORDALLO, PE GENERAL MANAGER		671 300-6885			
TYPED OR PRINTED		AREA CODE		Month Day Year	
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		NUMBER		Month Day Year	
<p>I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.</p>					
<p>COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)</p> <p>VIOLATIONS</p> <p>INFLUENT BOD SAMPLES UNAVAILABLE 04/04. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION).</p>					

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
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Form Approved
 OMB No. 2040-0004
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GU0020141
 PERMIT NUMBER

001-A
 DISCHARGE NUMBER

001/MONTHLY
 External Outfall

MONITORING PERIOD
 FROM MM/DD/YYYY TO MM/DD/YYYY
 4/1/2018 TO 4/30/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Temperature, water, deg. centigrade	MEASUREMENT	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
00010 1 Effluent Gross	SAMPLE	3147	4149	24.6	6	4/30 Weekly	DISCRT
	PERMIT REQUIREMENT	3002	6760	Req. Mon. MO AVG			DISCRT
BOD, 5-day, 20 deg. C	SAMPLE	3147	4149	71	6	10/30 Weekly	COMP24
	PERMIT REQUIREMENT	3002	6760	30			COMP24
pH	SAMPLE	*****	*****	*****	2	4/30 Weekly	DISCRT
	PERMIT REQUIREMENT	*****	*****	*****			DISCRT
00400 1 0 Effluent Gross	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
Solids, total suspended	SAMPLE	819	1138	18		12/30 Weekly	COMP24
	PERMIT REQUIREMENT	3002	6760	30			COMP24
00530 1 0 Effluent Gross	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
Solids, settleable	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
00545 1 0 Effluent Gross	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
Oil and grease	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			
03582 1 0 Effluent Gross	SAMPLE	5.89	7.30	4.4		4/30 Weekly	DISCRT
	PERMIT REQUIREMENT	12	Req. Mon. DAILY MX	10			DISCRT
50050 1 0 Effluent Gross	SAMPLE	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER MIGUEL C. BORDALLO, PE GENERAL MANAGER	TELEPHONE		DATE	
	671	300-6885	Month	Day
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	AREA CODE		NUMBER	Year
	*****		300-6885	
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)				
VIOLATIONS				
pH BELOW MINIMUM (2/4)				
BOD (mg/l) WEEKLY MAX (4/4) AND MONTHLY AVERAGE				
BOD (lbs/day) MONTHLY AVERAGE				

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
4/1/2018 TO 4/30/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	*****	*****			
50060 1 0 Effluent Gross Enterococci	*****	*****	NODI (C) 1.5 MO AVG	mg/L		0/30 WEEKLY	DISCRT DISCRT
61211 1 0 Effluent Gross	*****	*****	>241960 104 DAILY MX	MPN/100mL CFU/100mL	5	4/30 WEEKLY	DISCRT DISCRT
BOD, 5-day, percent removal	*****	*****	*****	%	1	3/30 WEEKLY	COMP24 COMP24
81010 K 0 Percent Removal	*****	*****	72% Req. Mon. MO AV MN	%			
Solids, suspended percent removal	*****	*****	*****	%			
81011 K 0 Percent Removal	*****	*****	98% Req. Mon. MO AV MN	%			
Ammonia & Ammonium	*****	*****	*****	mg/L			
92230 1 0 Effluent Gross	*****	*****	24.9 Req. Mon. MO AVG	mg/L		12/06/17 ANNUAL	COMP24 COMP24

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, the information submitted hereon is true and accurate. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.		TELEPHONE	DATE
	MIGUEL C. BORDALLO, PE GENERAL MANAGER	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	671 300-6885 AREA NUMBER	Month Day Year
TYPED OR PRINTED	OFFICER OR AUTHORIZED AGENT	CODE		

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)

VIOLATIONS
BOD BELOW 85% REMOVAL
ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE
NODI (C) - EFFLUENT NOT CHLORINATED

TO: NDSS STP
Fax: 637-2592

NORTHERN DISTRICT TREATMENT PLANT WASTEWATER RESULTS
FOR THE MONTH OF APRIL 2018

INFLUENT										EFFLUENT													
DATE	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID m/l	SUSP. SOLIDS lb/day	BOD lb/day	SUSP. SOLIDS %removal	BOD %removal	OIL & GREASE mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV	
1							5.9																
2							5.9																
3							5.3																
4	7.00	3515		10.0	120192		4.1	6.04	32	104	2.0	1281	4149	99%		7.1	25.2	104620	18	104	768	4149	
5							4.7		6			275											
6							4.9		16			747											
7							6.4																
8							5.7																
9							5.3																
10							5.8																
11	5.94	341	187	10.0	10238	5611	3.6	6.82	19	87	0.0	692	3124	94%	53%	2.6	25.2	41080	14	69	583	2928	
12							5.0		6	58		290	2825										
13							4.8		17	52		766	2835										
14							5.0																
15							5.6																
16							5.8																
17							6.0																
18	6.41	399	370	7.5	16626	15421	5.0	6.17	25	75	0.0	1236	3738	94%	80%	4.8	24.3	241960	23	69	1138	3430	
19							5.2		19	71		982	3623										
20							5.0		25	61		1195	2930										
21							5.4																
22							4.6																
23							5.2																
24							5.0																
25	7.40	224	200	2.5	9154	8160	4.9	7.32	26	59	0.0	1063	2394	88%	71%	3.2	23.6	34480	18	63	789	2749	
26							5.0		15	59		710	2841										
27							4.8		14	71		595	3013										
28							4.8																
29							5.0																
30							5.2																
AVG	6.69	1120	252	7.5	39052	9731	5.12	6.59	18	71	0.5	819	3147	98%	72%	4	24.6	105530	23	104	1138	4149	
MIN	5.94	224	187	2.5	9154	5611	3.60	6.04	6	58	0.0	275	2394	88%	55%	3	23.6	34480	14	69	583	2928	
MAX	7.40	3515	370	10.0	120192	15421	6.40	7.32	32	104	2.0	1281	4149	99%	80%	7	25.2	>241960	23	104	1138	4149	

PERMIT REQUIREMENTS		Running Averages		monthly avg		daily max	
MAX	12	30	45	3002	6760	3002	6760
VIOLATIONS		10	15	85%	85%	85%	85%
ENTEROCOCCI	35	104					

INFLUENT BOD RESULTS UNAVAILABLE 04/04. SAMPLES DID NOT MEET QC DEPLETION CRITERIA (OVERDEPLETION)

FLOW READINGS ON 04/02 & 04/03 ESTIMATED

ENTEROCOCCI ON 04/18 => 241960 MPN/100mL

PH BELOW MINIMUM (2/4)

BOD (mg/l) WEEKLY MAX (4/4) AND MONTHLY AVERAGE

BOD (lbs/day) MONTHLY AVERAGE

BOD BELOW 85% REMOVAL

ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
 NAME: GUAM WATERWORKS AUTHORITY
 ADDRESS: NORTHERN DISTRICT STP
 HARMON ANNEX, GU 96912
 FACILITY: NORTHERN DISTRICT STP
 LOCATION: DEDEDO, GU 96912

Form Approved.
 OMB No. 2040-0004

GU0020141
 PERMIT NUMBER

INF-A
 DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
 MAJOR

FROM MM/DD/YYYY TO MM/DD/YYYY
 5/17/2018 5/31/2018

INF/MONTHLY
 Influent Structure

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM			
BOD, 5-day, 20 deg. C	10856	11952	lb/day	*****			
00310 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI-WK AV	lb/day	*****	250	287	mg/L
Solids, total suspended	14448	19035	lb/day	*****	Req. Mon. MO AVG	Req. Mon. HI-WK AV	mg/L
00530 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI-WK AV	lb/day	*****	340	486	mg/L
					Req. Mon. MO AVG	Req. Mon. HI-WK AV	mg/L
						5/31	Weekly
						5/31	Weekly
							COMPOS
							COMPOS
							COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	
TYPED OR PRINTED	AREA	NUMBER	Month
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report) VIOLATIONS	CODE		Day
SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			Year

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004
DMR Mailing ZIP CODE: 96932
MAJOR

GU0020141 PERMIT NUMBER
001-A DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
5/1/2018 TO 5/31/2018

ATTN: PAUL J. KEMP

FROM

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	*****	*****	*****	*****			
00010 1 Effluent Gross	*****	*****	26.3 Req. Mon. MO AVG	deg. C		5/31 Weekly	DISCRT DISCRT
BOD, 5-day, 20 deg. C	3518	lb/d	84 Req. Mon. DAILY MX	deg. C	7	14/31 Weekly	COMP24 COMP24
000310 1 Effluent Gross	3002 MO AVG	lb/d	76 30 MO AVG	mg/L			
pH	*****	*****	*****	*****			
00400 1 Effluent Gross	*****	*****	6.8 *****	SU		5/31 Weekly	DISCRT DISCRT
Solids, total suspended	*****	*****	6.5 MINIMUM *****	SU			
00530 1 Effluent Gross	1076	lb/d	23 30 MO AVG	mg/L		14/31 Weekly	COMP24 COMP24
Solids, settleable	*****	*****	*****	*****			
00545 1 Effluent Gross	*****	*****	0.1 *****	mL/L		5/31 Weekly	DISCRT DISCRT
Oil and grease	*****	*****	1 MO AVG	mL/L			
03582 1 Effluent Gross	*****	*****	3.6 10 MO AVG	mg/L		5/31 Weekly	DISCRT DISCRT
***** *****	*****	*****	*****	*****			
50050 1 Effluent Gross	5.68 12 MO AVG	MGD	7.10 Req. Mon. DAILY MX	MGD		31/31 Continuous	METER METER

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671 300-6885	AREA NUMBER	Day Year
TYPED OR PRINTED	CODE	MONTH	Year
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

VIOLATIONS

BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE
BOD (lbs/day) MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

GU0020141 PERMIT NUMBER

001-A DISCHARGE NUMBER

MONITORING PERIOD

MM/DD/YYYY TO MM/DD/YYYY

5/1/2018 TO 5/31/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	NODI (C)	mg/L		0/31	DISCRT
50060 1 0	*****	*****	MO AVG	mg/L		WEEKLY	DISCRT
Effluent Gross	*****	*****	96352	MPN/100mL	6	5/31	DISCRT
Enterococci	*****	*****	35	CFU/100mL		WEEKLY	DISCRT
61211 1 0	*****	*****	MO AVG				
Effluent Gross	*****	*****	70% Req. Mon. MO AV MN		1	5/31	COMP24
BOD, 5-day, percent removal	*****	*****	93% Req. Mon. MO AV MN			WEEKLY	COMP24
81010 K 0	*****	*****	24.9	mg/L		12/06/17	COMP24
Percent Removal	*****	*****	MO AVG	mg/L		ANNUAL	COMP24
Solids, suspended percent removal	*****	*****	24.9	mg/L			
81011 K 0	*****	*****	Req. Mon. MO AV MN				
Percent Removal	*****	*****	*****				
Ammonia & Ammonium	*****	*****	*****				
Total	*****	*****	*****				
92230 1 0	*****	*****	*****				
Effluent Gross	*****	*****	*****				

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
	MIGUEL C. BORDALLO, PE GENERAL MANAGER		300-6885	Month Day Year
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		AREA	CODE
	TYPED OR PRINTED		671	300-6885
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.				
VIOLATIONS ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE BOD BELOW 85% REMOVAL NODI (C) - EFFLUENT NOT CHLORINATED				

TO: NDSS STP
 Fax: 637-2592
 NORTHERN DISTRICT TREATMENT PLANT WASTEWATER RESULTS
 FOR THE MONTH OF MAY 2018

INFLUENT										EFFLUENT													
DATE	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD lbs/day	FLOW mgd	pH	SUSP. SOLIDS mg/l	BOD mg/l	SETTL. SOLID ml/l	SUSP. SOLIDS lbs/day	BOD lbs/day	SUSP. SOLIDS %removal	BOD %removal	OIL & GREASE mg/l	TEMP °C	ENTEROCOCCI MPN/100ML	TSS (MG/L) WEEKLY AV	BOD (MG/L) WEEKLY AV	TSS (lbs/day) WEEKLY AV	BOD (lbs/day) WEEKLY AV	
1																							
2	6.90	419	287	40.0	17109	11733	5.4	7.06	51	83	0.0	2391	3867	88%	71%		25.4	155310	34	78	1608	3730	
3							4.9		26	75		1238	3611										
4							4.9		25	77		1195	3712			2.0							
5							5.3																
6							5.3																
7							5.3																
8							4.8																
9	6.28	486	261	9.0	19035	10212	4.7	6.83	13	66	0.0	544	2828	97%	74%	2.4	28.4	26030	19	69	871	3139	
10							4.6																
11							4.7																
12							4.9																
13							5.7																
14							5.7																
15							5.7																
16	6.92	343	238		15144	10506	5.3	7.67	31	80	0.3	1368	3515	91%	67%	2.32	26.9	141360	27	71	1286	3325	
17							4.9																
18							7.1																
19							5.5																
20							5.0																
21							5.3																
22							5.3																
23							5.3																
24							5.0																
25	7.81	257	237	9.0	10709	9879	5.0	7.66	23	72		967	3012	91%	70%	5.54	25.8	120330	21	84	893	3571	
26							5.7																
27							5.7																
28							5.7																
29							5.4																
30	7.38	195	227	13.0	10246	11952	6.3	6.95	13	102	0.0	694	5377	93%	55%	5.8	25.2	38730	11	79	546	3982	
31							5.3																
AVG	7.06	340	250	17.75	14448	10856	5.32		23	76	0.1	1076	3518	93%	70%	4	26.3	96352					
MIN	6.28	195	227	9.0	10246	9879	4.60	6.83	9	52	0.0	398	2587	88%	55%	2	25.2	26030					
MAX	7.81	486	287	>40.0	19035	11952	7.10	7.67	51	102	0.3	2391	5377	97%	74%	6	28.4	155310	34	84	1608	3982	

PERMIT REQUIREMENTS		VIOLATIONS	
MAX	daily	monthly avg	daily max
12	6.5MIN	30	1
	8.5MAX	45	2
		3002	6760
		35	104

INFLUENT SETTLEABLE SOLIDS RESULTS UNAVAILABLE 5/16 DUE TO TECH ERROR.
 BOD (mg/l) WEEKLY MAX (9/5) AND MONTHLY AVERAGE
 BOD (lbs/day) MONTHLY AVERAGE
 BOD BELOW 85% REMOVAL
 ENTEROCOCCI DAILY MAX (5/5) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY

ADDRESS: NORTHERN DISTRICT STP

HAFMON ANNEX, GU 96912

FACILITY: NORTHERN DISTRICT STP

LOCATION: DEDEDO, GU 96912

Form Approved.

OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932

MAJOR

INF/MONTHLY
Influent Structure

No Discharge

GU0020141
PERMIT NUMBER

INF-A
DISCHARGE NUMBER

MM/DD/YYYY TO
6/17/2018 TO 6/30/2018

MM/DD/YYYY
6/17/2018

ATTN: PAUL J. KEMP

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	AVERAGE	MAXIMUM	UNITS	MINIMUM			
BOD, 5-day, 20 deg. C	10411	13191	lb/day	*****			
00310 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI-WK AV	lb/day	*****		4/30	COMPOS
Solids, total suspended	12682	19486	lb/day	*****		Weekly	COMPOS
00530 G 0 Raw Sewage Influent	Req. Mon. MO AVG	Req. Mon. HI-WK AV	lb/day	*****		4/30	COMPOS
						Weekly	COMPOS

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER		TELEPHONE		DATE	
MIGUEL C. BORDALLO, PE GENERAL MANAGER		671	300-6885	Month	Year
TYPED OR PRINTED		AREA CODE	NUMBER	Day	
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)		SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT			
VIOLATIONS					

NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

Form Approved.
OMB No. 2040-0004

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)
NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
6/1/2018 TO 6/30/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	SAMPLE MEASUREMENT PERMIT REQUIREMENT	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		VALUE	UNITS	VALUE	UNITS			
Temperature, water deg. centigrade	MEASUREMENT	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****	*****			
00010 10 Effluent Gross BOD, 5-day, 20 deg. C	MEASUREMENT	2711	3913 lb/d	26.5	deg. C	6	4/30 Weekly	DISCRT
	PERMIT REQUIREMENT	3002	6760 lb/d	Req. Mon. MO AVG	deg. C			DISCRT
00310 10 Effluent Gross pH	MEASUREMENT	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****	*****			
00400 10 Effluent Gross Solids, total suspended	MEASUREMENT	1037	1458 lb/d	22	mg/L			
	PERMIT REQUIREMENT	3002	6760 lb/d	30	mg/L			
00530 10 Effluent Gross Solids, settleable	MEASUREMENT	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****	*****			
00545 10 Effluent Gross Oil and grease	MEASUREMENT	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****	*****			
03582 10 Effluent Gross Flow, treatment or end treatment	MEASUREMENT	5.78	6.60 MGD	3.7	mg/L			
	PERMIT REQUIREMENT	12	Req. Mon. DAILY MX	10	mg/L			
50050 10 Effluent Gross	MEASUREMENT	*****	*****	*****	*****			
	PERMIT REQUIREMENT	*****	*****	*****	*****			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER MIGUEL C. BORDALLO, PE GENERAL MANAGER	I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE	DATE
			671 AREA CODE	300-6885 NUMBER

COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)
VIOLATIONS
BOD (mg/l) WEEKLY MAX (5/5) AND MONTHLY AVERAGE

**NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)**

PERMITTEE NAME/ADDRESS (Include Facility Name/Location if Different)

NAME: GUAM WATERWORKS AUTHORITY
ADDRESS: NORTHERN DISTRICT STP
HARMON ANNEX, GU 96912
FACILITY: NORTHERN DISTRICT STP
LOCATION: DEDEDO, GU 96912

Form Approved.
OMB No. 2040-0004

DMR Mailing ZIP CODE: 96932
MAJOR

001/MONTHLY
External Outfall

GU0020141
PERMIT NUMBER

001-A
DISCHARGE NUMBER

MONITORING PERIOD
MM/DD/YYYY TO MM/DD/YYYY
6/1/2018 TO 6/30/2018

ATTN: PAUL J. KEMP

No Discharge

PARAMETER	QUANTITY OR LOADING		QUANTITY OR CONCENTRATION		NO. EX	FREQUENCY OF ANALYSIS	SAMPLE TYPE
	VALUE	UNITS	VALUE	UNITS			
Chlorine, total residual	*****	*****	NODI (C)	mg/L		0/30	DISCRT
50060 1 0	*****	*****	MO AVG	mg/L		WEEKLY	DISCRT
Effluent Gross	*****	*****	92728	MPN/100mL	5	4/30	DISCRT
Enterococci	*****	*****	35	CFU/100mL		WEEKLY	DISCRT
61211 1 0	*****	*****	MO AVG	*****	1	4/30	COMP24
Effluent Gross	*****	*****	74%	%		WEEKLY	COMP24
BOD, 5-day, percent removal	*****	*****	Req. Mon.	%			
81010 K 0	*****	*****	MO AV MN	*****			
Percent Removal	*****	*****	92%	*****			
Solids, suspended percent removal	*****	*****	Req. Mon.	*****			
81011 K 0	*****	*****	MO AV MN	*****			
Percent Removal	*****	*****	24.9	mg/L		12/06/17	COMP24
Ammonia & Ammonium	*****	*****	Req. Mon.	mg/L		ANNUAL	COMP24
Total	*****	*****	MO AVG	*****			
82230 1 0	*****	*****	Req. Mon.	*****			
Effluent Gross	*****	*****	MO AVG	*****			

NAME/TITLE PRINCIPAL EXECUTIVE OFFICER	TELEPHONE		DATE	
MIGUEL C. BORDALLO, PE GENERAL MANAGER	671	300-6885	Month	Year
TYPED OR PRINTED	SIGNATURE OF PRINCIPAL EXECUTIVE		Area	Code
COMMENT AND EXPLANATION OF ANY VIOLATIONS (See O & M Report)	OFFICER OF AUTHORIZED AGENT		Month	Day
VIOLATIONS NODI (C) - EFFLUENT NOT CHLORINATED ENTEROCOCCI DAILY MAX (4/4) AND MONTHLY AVERAGE BOD BELOW 85% REMOVAL			Month	Day

NWSO AGANA, Guam

WMO#: 912120

Lat: 13.47N Long: 144.78E Elev: 246 StdP: 14.57 Time Zone: 10 (PCW) Period: 86-10 WBAN: 41415

Annual Heating and Humidification Design Conditions

Coldest Month	Heating DB			Humidification DP/MCDB and HR						Coldest month WS/MCDB				MCWS/PCWD to 99.6% DB	
				99.6%			99%			0.4%		1%			
	99.6%	99%		DP	HR	MCDB	DP	HR	MCDB	WS	MCDB	WS	MCDB	MCWS	PCWD
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	
2	73.8	74.8	63.7	89.0	79.3	65.1	93.6	79.7	25.1	83.2	23.2	82.8	7.7	60	

Annual Cooling, Dehumidification, and Enthalpy Design Conditions

Hottest Month	Hottest Month DB Range	Cooling DB/MCWB						Evaporation WB/MCDB						MCWS/PCWD to 0.4% DB	
		0.4%		1%		2%		0.4%		1%		2%			
		DB	MCWB	DB	MCWB	DB	MCWB	WB	MCDB	WB	MCDB	WB	MCDB	MCWS	PCWD
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)
6	9.6	89.6	78.3	88.9	78.1	88.2	78.0	81.0	86.1	80.5	85.7	80.0	85.3	12.3	90

	Dehumidification DP/MCDB and HR									Enthalpy/MCDB						Hours 8 to 4 & 55/69
	0.4%			1%			2%			0.4%		1%		2%		
	DP	HR	MCDB	DP	HR	MCDB	DP	HR	MCDB	Enth	MCDB	Enth	MCDB	Enth	MCDB	
(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)	
3	79.4	153.9	83.7	78.9	151.6	83.4	78.4	148.7	83.1	45.0	86.4	44.4	86.1	43.8	85.3	0

Extreme Annual Design Conditions

Extreme Annual WS			Extreme Max WB	Extreme Annual DB						n-Year Return Period Values of Extreme DB							
1%	2.5%	5%		Mean		Standard deviation		n=5 years		n=10 years		n=20 years		n=50 years			
(a)	(b)	(c)		(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)	(n)	(o)	(p)		
22.7	20.5	18.7	90.1	70.7	92.3	1.7	2.9	69.5	94.4	68.5	96.1	67.5	97.7	66.3	99.7		

Monthly Climatic Design Conditions

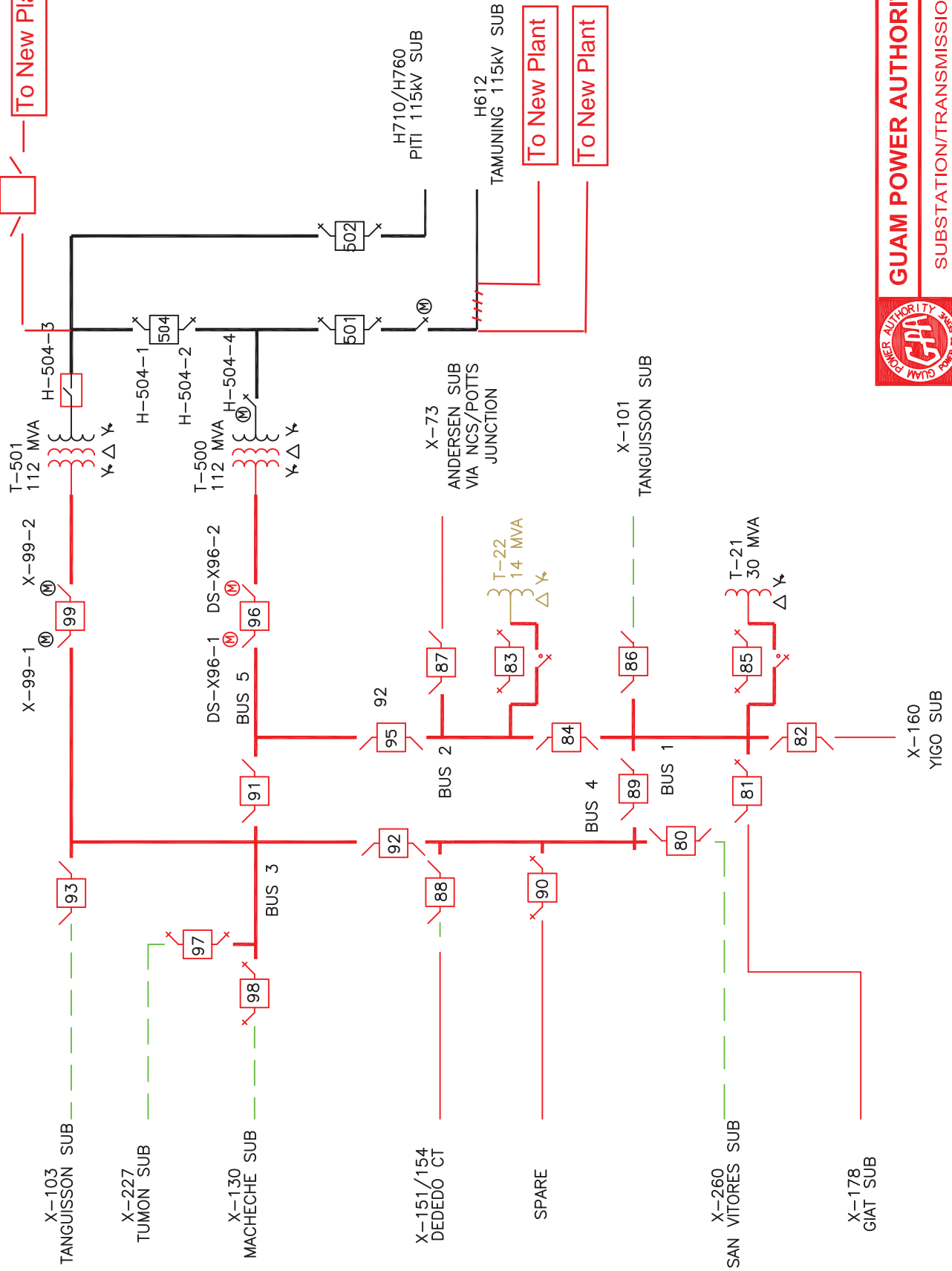
		Annual (d)	Jan (e)	Feb (f)	Mar (g)	Apr (h)	May (i)	Jun (j)	Jul (k)	Aug (l)	Sep (m)	Oct (n)	Nov (o)	Dec (p)
(5) Temperatures, Degree-Days and Degree-Hours	Tavg	81.8	80.5	80.4	81.1	82.3	83.0	83.1	82.3	81.8	81.7	82.1	82.3	81.5
	Sd		1.46	1.37	1.37	1.25	1.24	1.60	1.68	1.87	1.78	1.69	1.50	1.47
	HDD50	0	0	0	0	0	0	0	0	0	0	0	0	0
	HDD65	0	0	0	0	0	0	0	0	0	0	0	0	0
	CDD50	11623	945	850	964	968	1023	993	1001	986	952	996	968	977
	CDD65	6148	480	430	499	518	558	543	536	521	502	531	518	512
	CDH74	63790	4351	3794	4760	5477	6286	6270	5841	5493	5184	5623	5553	5158
CDH80	18205	941	846	1220	1636	2078	2167	1800	1580	1453	1635	1585	1264	
(13) Precipitation	PrecAvg	75.9	3.0	2.0	2.6	2.0	4.1	4.8	9.3	10.0	13.6	11.9	8.4	4.2
	PrecMax	273.1	27.6	34.6	25.3	18.0	22.5	31.7	26.9	58.8	31.1	45.1	32.6	26.8
	PrecMin	58.1	0.2	0.3	0.8	0.0	1.0	1.3	5.2	3.9	8.7	6.5	4.8	1.9
	PrecSD	69.3	6.6	7.9	7.4	5.0	6.3	8.1	6.2	15.9	6.0	10.6	9.6	7.1
(17) Monthly Design Dry Bulb and Mean Coincident Wet Bulb Temperatures	0.4%	DB	87.9	87.8	88.2	89.4	89.9	90.4	89.8	89.9	89.7	89.6	89.3	88.1
		MCWB	76.3	75.8	75.7	76.5	77.6	78.0	78.2	79.4	79.5	79.4	78.7	77.7
	2%	DB	86.4	86.4	87.3	88.2	89.0	89.3	88.6	88.2	88.4	88.1	87.2	87.2
		MCWB	75.8	75.4	75.5	76.4	77.5	78.1	78.2	79.0	79.2	79.1	78.4	77.4
	5%	DB	85.6	85.7	86.4	87.6	88.0	88.2	87.8	87.6	87.5	87.7	87.4	86.2
		MCWB	75.6	75.2	75.2	76.4	77.4	78.0	78.4	78.9	79.0	78.9	78.3	77.2
	10%	DB	84.6	84.6	85.6	86.6	87.3	87.6	86.8	86.4	86.3	86.6	86.4	85.4
		MCWB	75.3	74.9	75.1	76.2	77.3	78.0	78.4	78.7	78.9	78.8	78.2	77.0
(25) Monthly Design Wet Bulb and Mean Coincident Dry Bulb Temperatures	0.4%	WB	79.5	79.2	79.6	80.0	80.8	81.0	81.0	81.8	81.6	81.8	81.2	80.4
		MCDB	83.7	84.2	84.1	85.3	85.8	86.3	86.2	87.5	86.9	86.6	85.6	84.5
	2%	WB	78.1	78.1	78.2	79.0	79.8	80.0	80.1	80.6	80.6	80.7	80.3	79.2
		MCDB	82.9	83.0	83.3	84.7	85.3	86.0	85.6	86.1	85.9	85.9	85.0	83.9
	5%	WB	77.3	77.3	77.2	78.2	79.1	79.3	79.6	79.8	79.9	79.9	79.6	78.6
		MCDB	82.3	82.2	82.9	84.1	84.9	85.5	85.1	85.2	85.1	85.2	84.5	83.5
	10%	WB	76.6	76.4	76.4	77.6	78.5	78.9	79.0	79.1	79.2	79.2	79.0	78.0
		MCDB	81.7	81.6	82.4	83.5	84.4	85.2	84.7	84.4	84.4	84.5	84.1	82.9
(33) Mean Daily Temperature Range	5% DB	MDBR	9.3	9.7	10.1	10.1	9.7	9.6	9.6	9.7	9.8	9.7	9.1	8.9
		MCDBR	10.3	10.7	10.8	10.8	10.4	10.4	10.5	11.0	10.9	10.8	9.9	9.6
		MCWBR	4.7	4.9	4.5	4.2	4.0	4.3	5.0	5.3	5.2	5.0	4.6	4.5
	5% WB	MCDBR	8.9	9.5	9.7	9.8	9.6	9.7	9.9	10.2	10.1	10.0	9.1	8.6
		MCWBR	4.8	5.1	4.7	4.4	4.4	4.6	5.2	5.4	5.4	5.3	5.0	4.7
(38) Clear Sky Solar Irradiance	taub	0.436	0.424	0.410	0.402	0.384	0.371	0.361	0.370	0.383	0.410	0.428	0.426	
	taud	2.590	2.573	2.556	2.541	2.554	2.576	2.627	2.640	2.664	2.645	2.642	2.645	
	Ebn,noon	275	283	288	287	288	289	292	293	291	283	275	275	
	Edh,noon	31	32	33	34	33	32	30	30	30	30	29	29	

New H503 Bkt

To New Plant

To New Plant

To New Plant



GUAM POWER AUTHORITY

SUBSTATION/TRANSMISSION

SUBSTATION BREAKER TO BREAKER
REFERENCE DRAWING
HARMON SUBSTATION

DATE:	DRAWN BY:	CHECKED BY:	APPROVED BY:	SHEET NO.
11/30/2017	MPO/NCG	IBL	JGA	14 OF 31

HARMON SUBSTATION