GUAM POWER AUTHORITY
ATURIDÅT ILEKTRESEDÅT GUÅHAN
P.O.BOX 2977 • HAGÅTÑA, GUAM U.S.A. 96932-2977

May 19, 2021

AMENDMENT NO.: IV

TO

INVITATION FOR BID NO.: RE-BID GPA-009-21

FOR

FM-200 SYSTEM REPAIRS

Prospective Bidders are hereby notified of the following change and response to an inquiry received from Bidder No.: 2 dated April 22, 2021:

QUESTION:

1. We request for a soft copy of the As-Built Drawings for both GPA Tenjo Vista Diesel Plant and Tyian Substation. The drawings are required to get pricing to refill the FM-200 tanks.

ANSWER:

Kindly see attached drawing.

QUESTION:

2. We would like to request the FM-200 weight for each tank at each site and the certified date. (Note: Usually this information i s stamped on top of the tank)

ANSWER:

Kindly see attached pictures.

QUESTION:

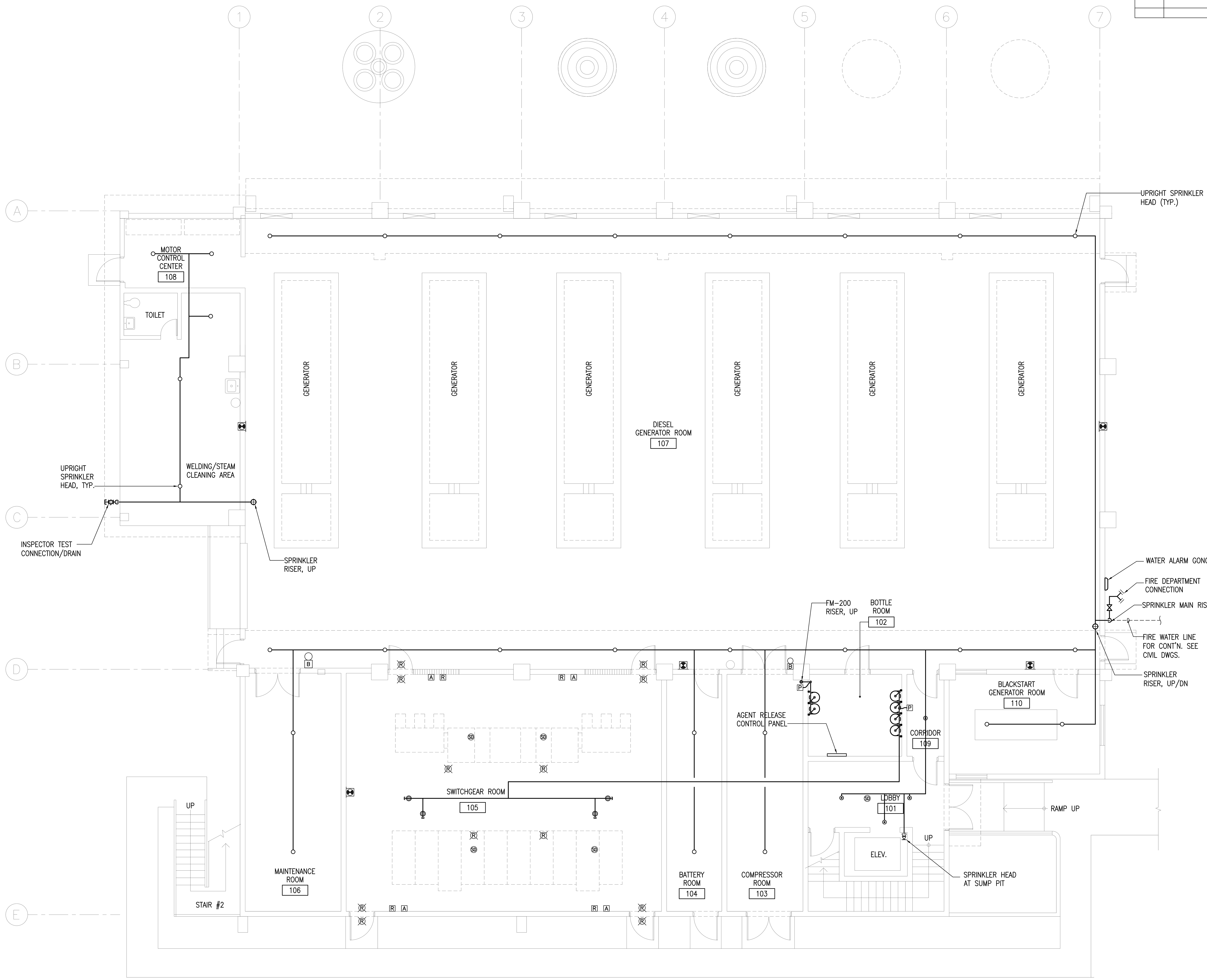
3. We would also like to request a two (2) week bid extension from the date the drawing are received.

ANSWER:

Refer to Amendment No.: III, dated May 18, 2021.

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

for JOHN M. BENAVENTE, P.E.
General Manager



REVISIONS				
SYMBOL	DESCRIPTION	INT.	DATE	APP'D.

1 FIRE PROTECTION PLAN - FIRST FLOOR

FP6.1 SCALE 3/16"=1'-0"

AS-BUILT DRAWINGS FP7.1

GRAPHIC SCALE

BME & SONS INC.

GENERAL CONTRACTOR & EQUIPMENT RENTAL

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.

GUAM POWER AUTHORITY

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

DRAWING NO. FP7.1

UPGRADE OF FIRE PROTECTION AND SMOKE ALARM SYSTEMS AT TENJO VISTA DIESEL POWER PLANT

TENJO VISTA DIESEL POWER PLANT - FM-200 FIRE SUPPRESSION SYSTEM RE-COMMISSIONING PLAN

DESIGNED
DRAWN
CHECKED

ENGINEER SUPERVISOR PERRY B. TALADOC

MANAGER OF ENGINEERING JOVEN G. ACOSTA, P.E.

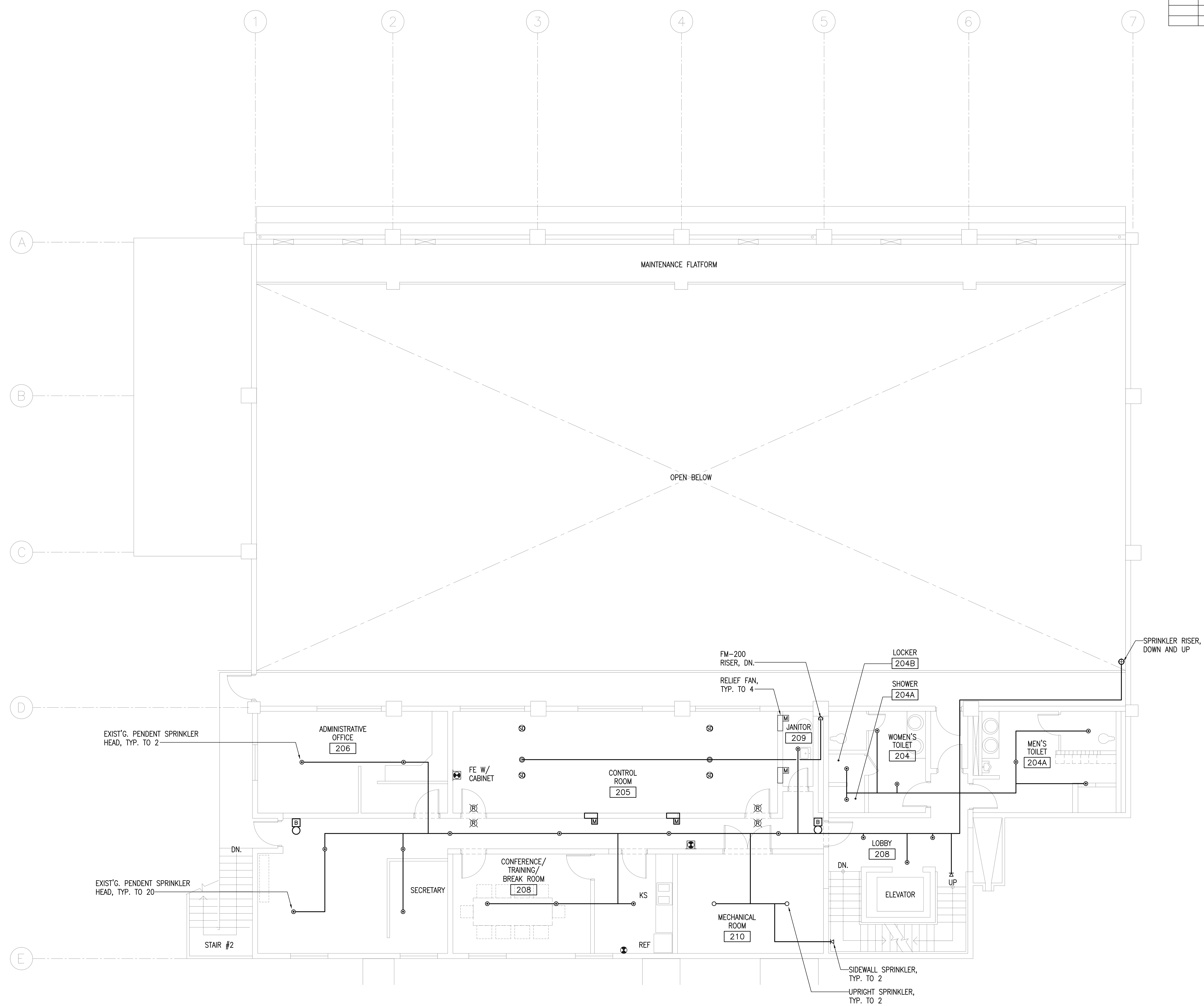
J.O. NO. 100055

SCALE AS SHOWN

SHEET 12 OF 22

GENERAL MANAGER JOAQUIN C. FLORES, P.E.

REVISIONS				
SYMBOL	DESCRIPTION	INT.	DATE	APP'D.



1 FIRE PROTECTION PLAN - SECOND FLOOR

FP7.2 SCALE 3/16"=1'-0"

AS-BUILT DRAWINGS FP7.2

GRAPHIC SCALE

4' 2' 1' 0 2' 4'

SCALE: 3/16"=1'-0"

BME & SONS INC.

GENERAL CONTRACTOR & EQUIPMENT RENTAL

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION

GUAM POWER AUTHORITY

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

DRAWING NO. FP7.2

UPGRADE OF FIRE PROTECTION AND SMOKE ALARM SYSTEMS AT TENJO VISTA DIESEL POWER PLANT

DESIGNED

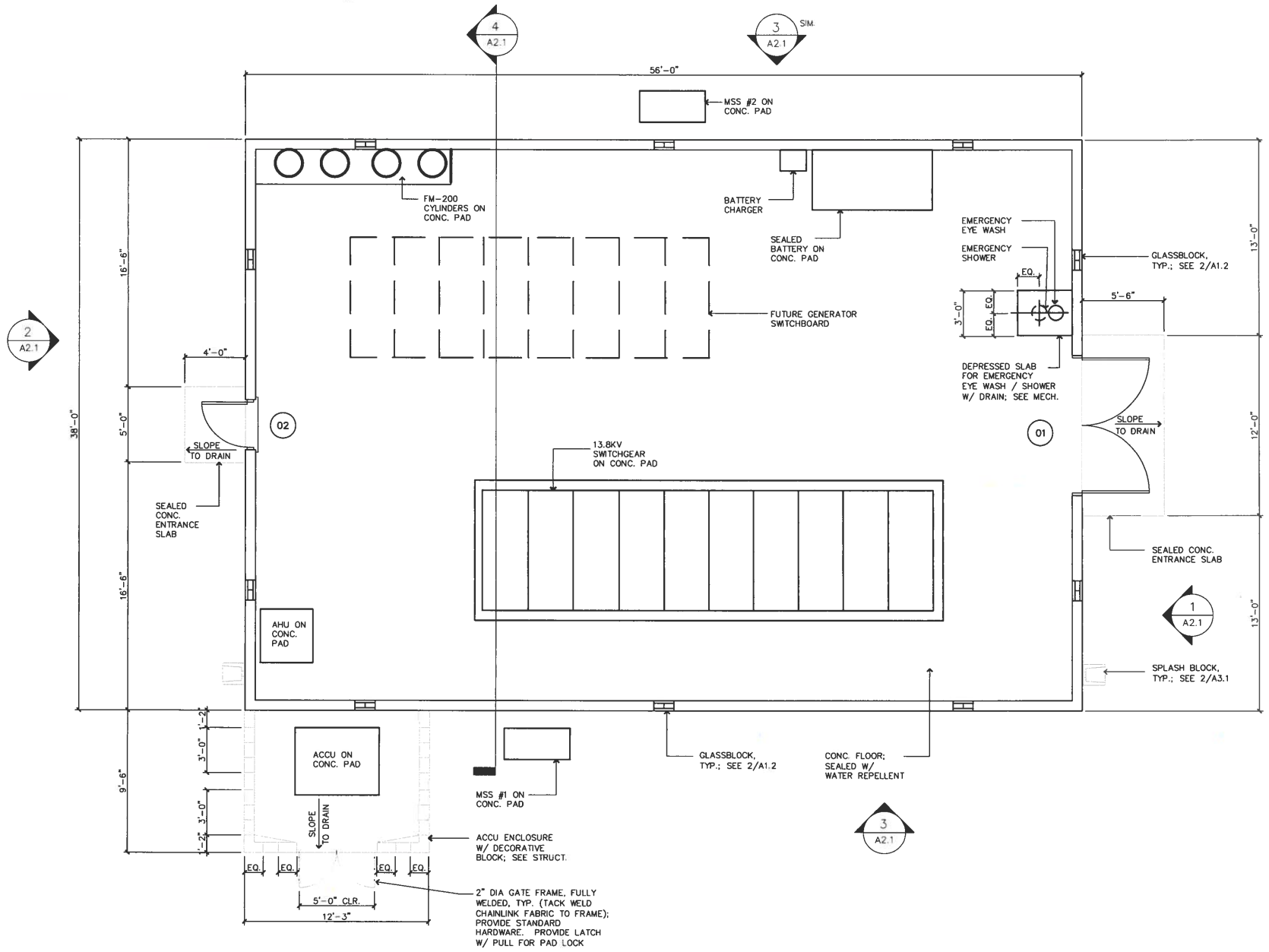
DRAWN

TENJO VISTA DIESEL POWER PLANT - FIRE PROTECTION PLAN (SECOND FLOOR)

CHECKED

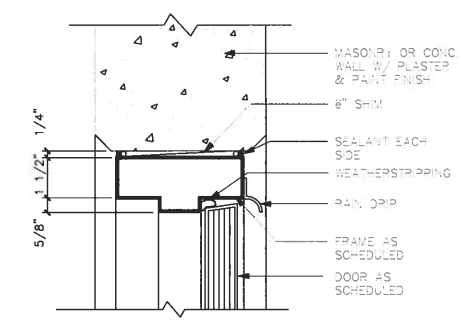
ENGINEER SUPERVISOR PERRY B. TALADOC | DATE | J.O. NO. 100055 | SCALE AS SHOWN | SHEET 13 OF 22

MANAGER OF ENGINEERING JOVEN G. ACOSTA, P.E. | DATE | GENERAL MANAGER JOAQUIN C. FLORES, P.E. | DATE



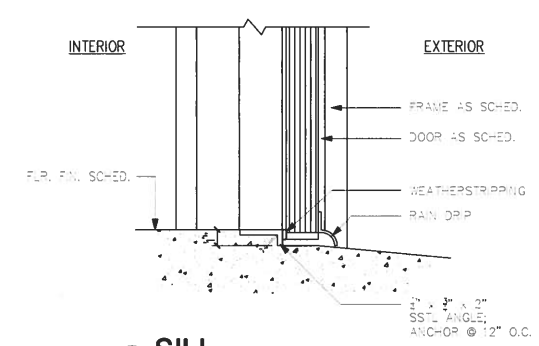
1 FLOOR PLAN

SCALE: 1/4" = 1'-0"



2 HEAD / JAMB

SCALE: 3" = 1'-0"



3 SILL

SCALE: 3" = 1'-0"

0 2' 4' 8'
SCALE: 1/4" = 1'-0"

0 2" 4" 8"
SCALE: 3" = 1'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION
M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS

No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9918 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2565
FAX: (671) 632-33-34

Project
UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title
SWITCHGEAR BUILDING
FLOOR PLAN

As-Built: PST
Checked: RPL
Supv: AMM/RPL
Scale:
Date:

Drawing No. A1.1
Sheet No. 18

Project No.

AS BUILT

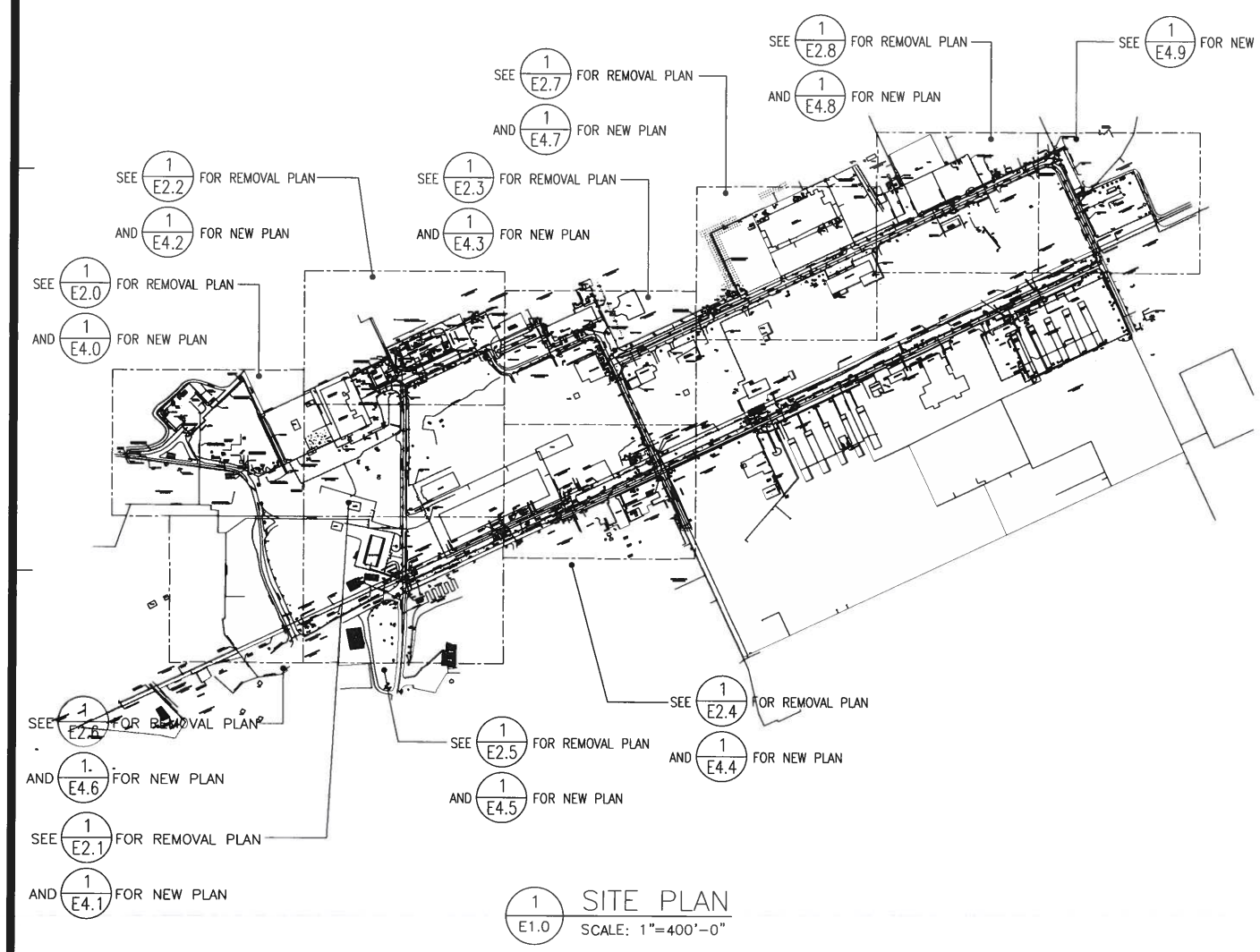
PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE



1/E1.0 SITE PLAN

SCALE: 1"=400'-0"

ELECTRICAL SYMBOL LIST

EXISTING	NEW	DESCRIPTION
WPP	CPP	POWER POLE, WPP INDICATES WOOD POLE / CPP INDICATES CONCRETE POLE
MH-1	MH-1	PRIMARY MANHOLE, SEE 1/E5.0
—EUP— — —	—UP— — —	UNDERGROUND PRIMARY
—3P13.8—	—3P13.8—	OVERHEAD PRIMARY LINE DEAD END CONFIGURATION 3P-INDICATES 3 PHASE, 13.8 INDICATES 13.8 KV
—3P13.8—		OVERHEAD PRIMARY LINE TANGENT CONFIGURATION 3P-INDICATES 3 PHASE, 13.8 INDICATES 13.8 KV
—EOS—		OVERHEAD SECONDARY CONDUCTORS
—ESL—		OVERHEAD STREETLIGHT CONDUCTORS
—G—		OVERHEAD STATIC GROUND CONDUCTOR
—GW—		GUY WIRE
—EOV—		CABLE TV OVERHEAD CABLE
—ESD—		OVERHEAD SERVICE DROP
		POLE MOUNTED TRANSFORMER, 1 PHASE/BANK OF 3-1 PHASE TRANSFORMER CONNECTED FOR 3-PHASE OPERATION
		KWHR-METER
		CT CABINET
		CIRCUIT BREAKER
		PAD MOUNTED TRANSFORMER
		PAD MOUNTED PRIMARY SWITCH WITH CMU ENCLOSURE
	A	FIRE EXTINGUISHING SYSTEM, ABORT SWITCH, WALL MOUNTED
	X	FIRE EXTINGUISHING SYSTEM, PULL STATION, WALL MOUNTED
	B	BELL, PRE-DISCHARGE ALARM, WALL MOUNTED
		FIRE EXTINGUISHING WARNING LIGHT, WALL MOUNTED
		FIRE EXTINGUISHING SYSTEM, PRE-DISCHARGE AUDIO/VISUAL ALARM, WALL MOUNTED
		HATCHMARKS DENOTES REMOVAL
	V	VOLTMETER
	A	AMMETER
	KW	KILOWATT METER
	KWHR	KILOWATT HOUR METER
	MFR	MULTIFUNCTION RELAY
	46	REVERSE PHASE
	50	INSTANTANEOUS OVERCURRENT
	51	AC TIME OVERCURRENT
	50N	(SUFFIX LETTER "N" DENOTES DEVICE CONNECTED IN NEUTRAL LINE)
	51N	(SUFFIX LETTER "N" DENOTES DEVICE CONNECTED IN NEUTRAL LINE)
	79	AC RECLOSING RELAY
	32	DIRECTIONAL POWER RELAY
	1	NOTE INDICATOR
	1A	CABLE AND CONDUIT INDICATOR
	1/E1.0	INDICATOR, DETAIL: TOP HALF-DETAIL NUMBER BOTTOM HALF-SHEET NUMBER

ABBREVIATIONS

AWG	AMERICAN WIRE GAUGE
C	CONDUIT
CLF	CURRENT LIMITING FUSE
ECB	ENCLOSED CIRCUIT BREAKER
FCO	FUSE CUT OUT
GND	GROUND
GPA	GUAM POWER AUTHORITY
GIAA	GUAM INTERNATIONAL AIRPORT AUTHORITY
HH	HANDHOLE
HV	HIGH VOLTAGE
MH	MANHOLE
KVA	KILOVOLT AMPERES

ABBREVIATIONS (CONT.)

KW	KILOWATT
LA	LIGHTNING ARRESTER
N.C.	NORMALLY CLOSED
N.O.	NORMALLY OPEN
PRIM.	PRIMARY
SEC.	SECONDARY
SD	SERVICE DROP
SL	STREET LIGHTS
UG	UNDERGROUND
WP	WEATHERPROOF
XLP	CROSS-LINKED POLYETHYLENE
PB	PULLBOX

REVISIONS

No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
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Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

GENERAL NOTES, SITE PLAN, ELEC'L SYMBOL LIST, & ABBREVIATIONS

As-Built: **PST**

Checked: **AMM**

Supv: **AMMRPL**

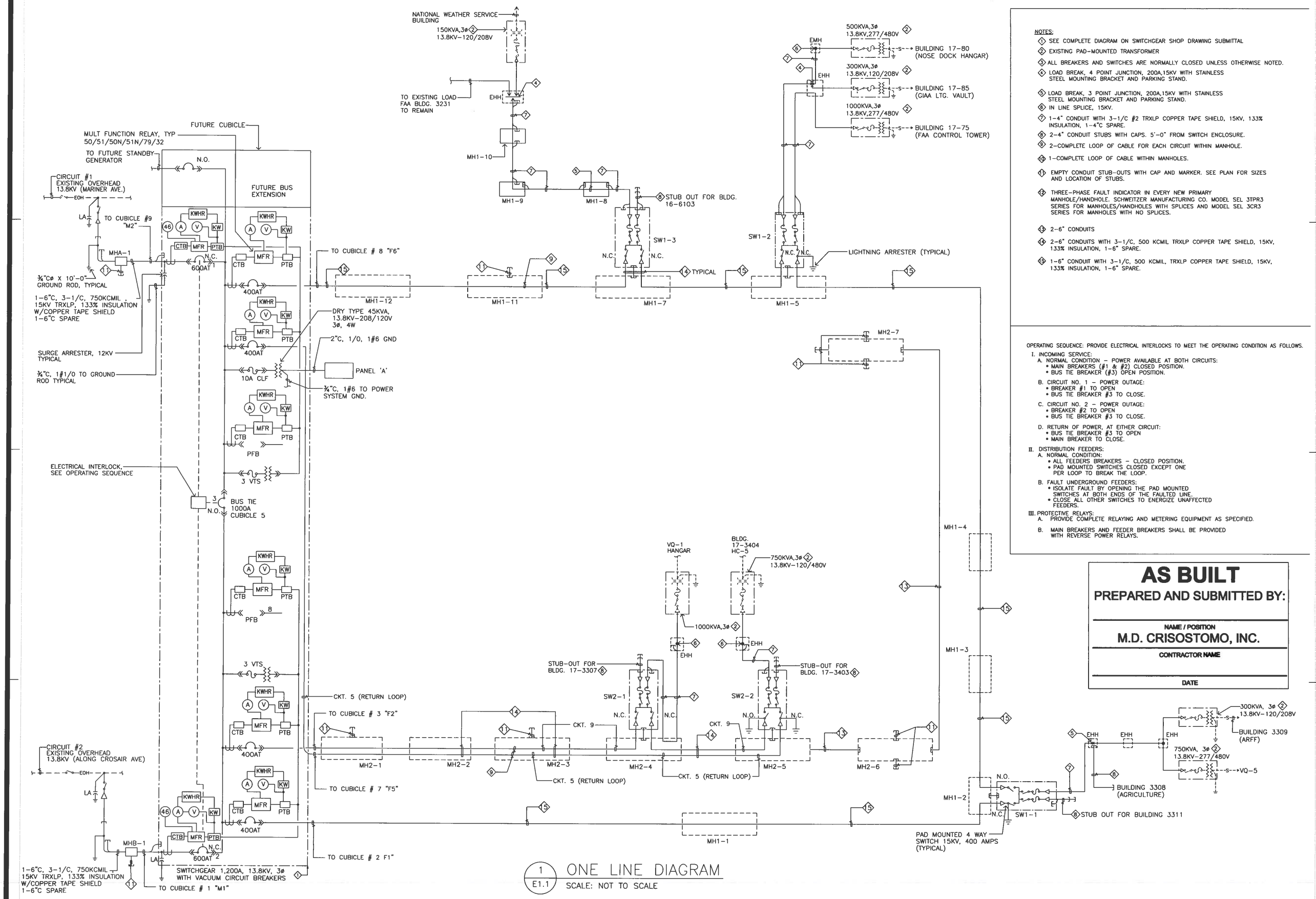
Scale: AS NOTED

Date:

Drawing No. E1.0

Sheet No. 33

Project No.



1 / E1.1 ONE LINE DIAGRAM

SCALE: NOT TO SCALE

NOTES:

1. SEE COMPLETE DIAGRAM ON SWITCHGEAR SHOP DRAWING SUBMITTAL
2. EXISTING PAD-MOUNTED TRANSFORMER
3. ALL BREAKERS AND SWITCHES ARE NORMALLY CLOSED UNLESS OTHERWISE NOTED.
4. LOAD BREAK, 4 POINT JUNCTION, 200A,15KV WITH STAINLESS STEEL MOUNTING BRACKET AND PARKING STAND.
5. LOAD BREAK, 3 POINT JUNCTION, 200A,15KV WITH STAINLESS STEEL MOUNTING BRACKET AND PARKING STAND.
6. IN LINE SPLICE, 15KV.
7. 1-4" CONDUIT WITH 3-1/C #2 TRXLP COPPER TAPE SHIELD, 15KV, 133% INSULATION, 1-4"C SPARE.
8. 2-4" CONDUIT STUBS WITH CAPS. 5'-0" FROM SWITCH ENCLOSURE.
9. 2-COMPLETE LOOP OF CABLE FOR EACH CIRCUIT WITHIN MANHOLE.
10. 1-COMPLETE LOOP OF CABLE WITHIN MANHOLES.
11. EMPTY CONDUIT STUB-OUTS WITH CAP AND MARKER. SEE PLAN FOR SIZES AND LOCATION OF STUBS.
12. THREE-PHASE FAULT INDICATOR IN EVERY NEW PRIMARY MANHOLE/HANDHOLE. SCHWEITZER MANUFACTURING CO. MODEL SEL 3TPR3 SERIES FOR MANHOLES/HANDHOLES WITH SPLICES AND MODEL SEL 3CR3 SERIES FOR MANHOLES WITH NO SPLICES.
13. 2-6" CONDUITS
14. 2-6" CONDUITS WITH 3-1/C, 500 KCMIL TRXLP COPPER TAPE SHIELD, 15KV, 133% INSULATION, 1-6" SPARE.
15. 1-6" CONDUIT WITH 3-1/C, 500 KCMIL, TRXLP COPPER TAPE SHIELD, 15KV, 133% INSULATION, 1-6" SPARE.

OPERATING SEQUENCE: PROVIDE ELECTRICAL INTERLOCKS TO MEET THE OPERATING CONDITION AS FOLLOWS.

I. INCOMING SERVICE:
- A. NORMAL CONDITION – POWER AVAILABLE AT BOTH CIRCUITS:
  - MAIN BREAKERS (#1 & #2) CLOSED POSITION.
  - BUS TIE BREAKER (#3) OPEN POSITION.
- B. CIRCUIT NO. 1 – POWER OUTAGE:
  - BREAKER #1 TO OPEN
  - BUS TIE BREAKER #3 TO CLOSE.
- C. CIRCUIT NO. 2 – POWER OUTAGE:
  - BREAKER #2 TO OPEN
  - BUS TIE BREAKER #3 TO CLOSE.
- D. RETURN OF POWER, AT EITHER CIRCUIT:
  - BUS TIE BREAKER #3 TO OPEN
  - MAIN BREAKER TO CLOSE.

II. DISTRIBUTION FEEDERS:
- A. NORMAL CONDITION:
  - ALL FEEDERS BREAKERS – CLOSED POSITION.
  - PAD MOUNTED SWITCHES CLOSED EXCEPT ONE PER LOOP TO BREAK THE LOOP.
- B. FAULT UNDERGROUND FEEDERS:
  - ISOLATE FAULT BY OPENING THE PAD MOUNTED SWITCHES AT BOTH ENDS OF THE FAULTED LINE.
  - CLOSE ALL OTHER SWITCHES TO ENERGIZE UNAFFECTED FEEDERS.

III. PROTECTIVE RELAYS:
- A. PROVIDE COMPLETE RELAYING AND METERING EQUIPMENT AS SPECIFIED.
- B. MAIN BREAKERS AND FEEDER BREAKERS SHALL BE PROVIDED WITH REVERSE POWER RELAYS.

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS

No.	Description	Date
	AS – BUILT	6/11/08

M.D. CRISOSTOMO INC.
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Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

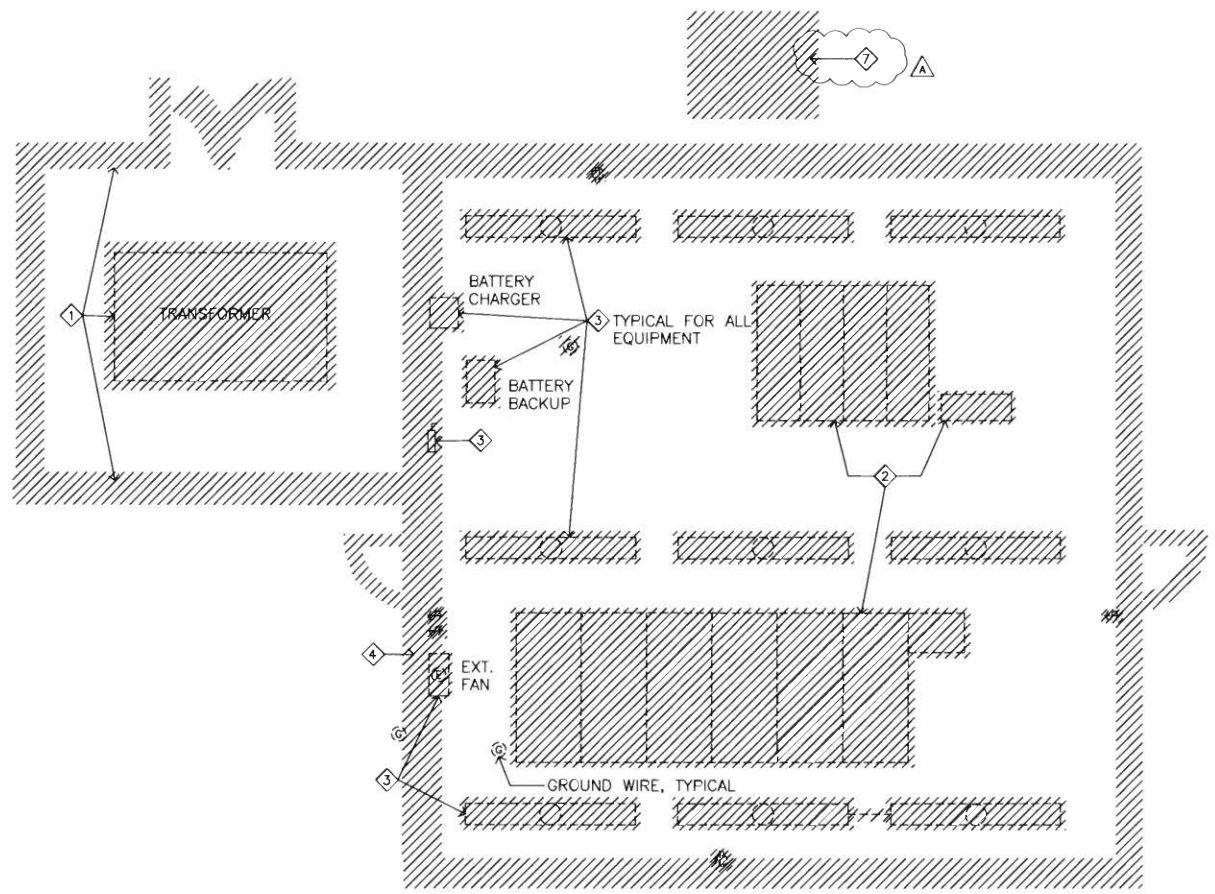
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

SINGLE LINE DIAGRAM OF ELECTRICAL NEW PLAN

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E1.01
Sheet No.	34

Project No.



NOTES:

1. REMOVE TRANSFORMER, WIRING, CONCRETE PAD AND FENCE.
2. REMOVE SWITCHGEAR AND ASSOCIATED WIRING.
3. REMOVE DEVICES, FIXTURES, CONDUIT AND WIRING.
4. COMPLETE BUILDING STRUCTURE TO BE DEMOLISHED. ENTIRE EXISTING ELECTRICAL SYSTEM WITHIN BUILDING SHALL BE REMOVED. SEE CIVIL AND ARCHITECTURAL DEMOLITION DRAWINGS.
5. PREPARE AN ABATEMENT PLAN AND CONDUCT ABATEMENT OF LEAD-BASED PAINT ON THE FOLLOWING IN ACCORDANCE WITH FEDERAL AND LOCAL REGULATIONS (SEE SECTION 13282):
   a. GREEN PAINT ON TRANSFORMER LOCATED IN INTERIOR (APPROXIMATELY 1300 SF).
   c. RED FIRE EXTINGUISHER STATION LOCATED IN INTERIOR (APPROXIMATELY 10 SF).
   d. SILVER PAINT ON TRANSFORMER IN INTERIOR (APPROXIMATELY 45 SF).
6. DISPOSE OF MINERAL OIL IN CIRCUIT BREAKERS AND TRANSFORMERS IN ACCORDANCE WITH FEDERAL AND LOCAL REGULATIONS (SEE SECTION 02120).
7. REMOVE MANHOLE AND DISPOSE AS PER NOTE 7 OF GENERAL NOTES, SHEET E1.0.

5 6

1 / E1.2 SUBSTATION BUILDING–DEMOLITION PLAN

SCALE: 1/4"=1'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

4' 2' 0' 4' 8'

SCALE: 1/4"=1'-0"

REVISIONS		
No.	Description	Date

MD C INC.

M.D. CRISOSTOMO INC.
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Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

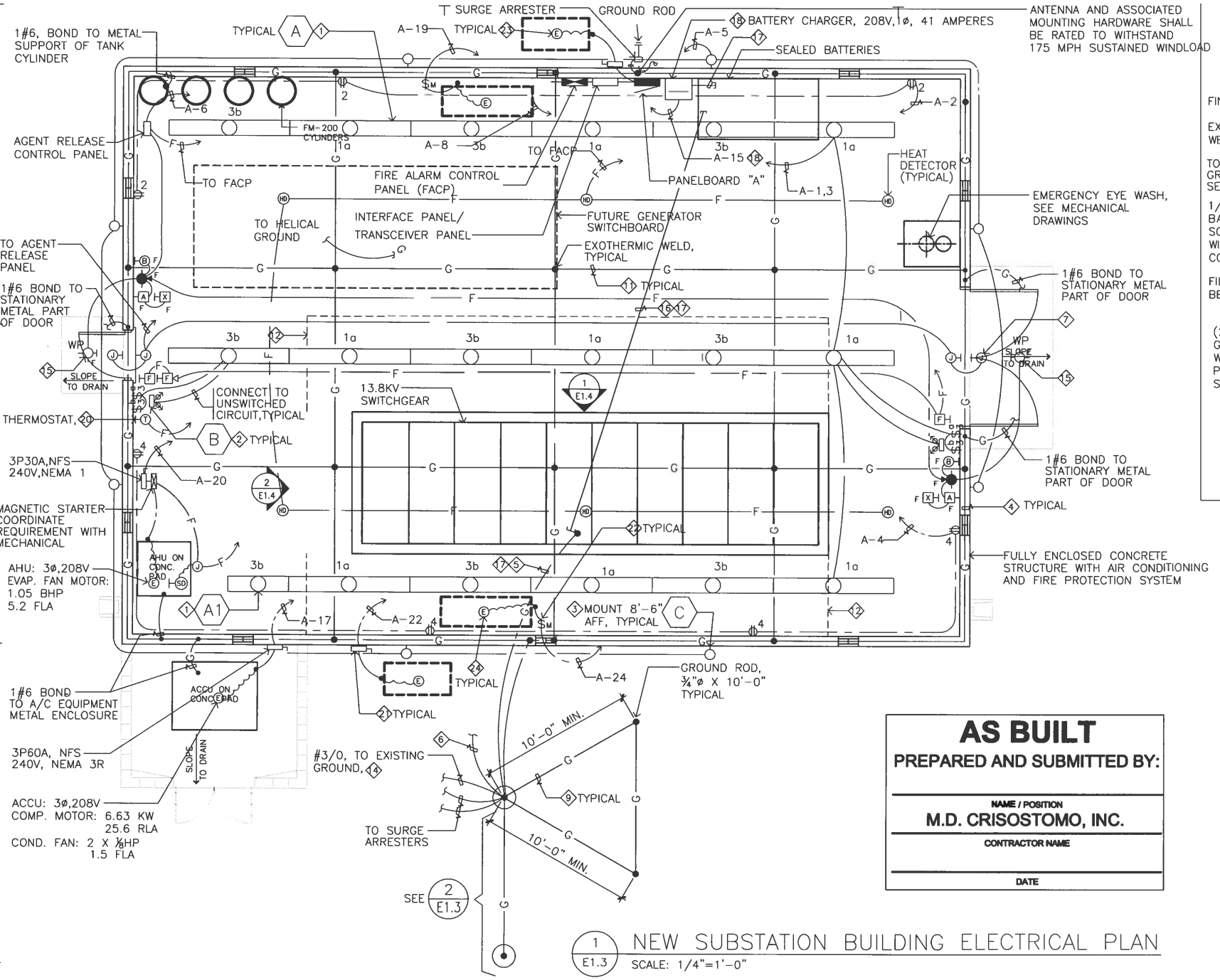
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

SUBSTATION BUILDING DEMOLITION PLAN

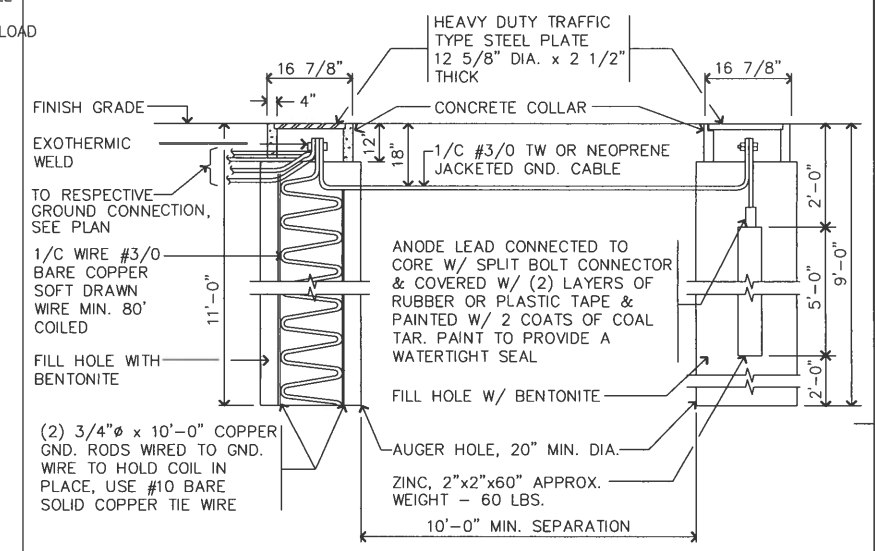
As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	
Drawing No.	E1.2
Sheet No.	35

Project No. _____



1 E1.3 NEW SUBSTATION BUILDING ELECTRICAL PLAN

SCALE: 1/4"=1'-0"



2 E1.3 HELICAL GROUND DETAIL

NOT TO SCALE

NOTES:

1. PENDANT MOUNT 10'-0" AFF.
2. MOUNT 8'-0" AFF.
3. SEE ARCHITECTURAL DRAWINGS FOR DETAILS.
4. GROUND RING #3/0 AWG BARE COPPER EMBEDDED 2" MINIMUM IN FOUNDATION FOOTING, BOND. BY MEANS OF CADWELD TO STRUCTURAL REBAR EVERY 10'-0" O.C.
5. 3/4"C, #3/0 BARE COPPER GROUND CONNECTION TO GROUND BUS IN UTILITY SWITCHGEAR.
6. GROUND CONNECTION TO TRANSFORMER SECONDARY.
7. JUNCTION BOX FOR WARNING SIGN, DRAWING SHOWS LOCATION ONLY, SEE MECHANICAL DRAWING & SPECIFICATIONS FOR DETAILS (TYPICAL)
8. PROVIDE ADDITIONAL GROUND RODS TO ATTAIN 5 OHMS RESISTANCE.
9. #3/0 AWG BARE COPPER GROUND WIRE, EXOTHERMIC CONNECTION TO GROUND ROD.
10. ¾" EMPTY CONDUIT STUB WITH CAP, FUTURE GROUND PROVISION FOR GENERATOR SWITCHBOARD.
11. GROUND GRID #3/0 AWG BARE COPPER, BOND BY EXOTHERMIC WELD TO SLAB REBAR AND TO GROUND GRID.
12. PROVIDE FLOOR MAT, SUITABLE FOR SWITCHGEAR ROOM. SUBMIT MATERIAL SPECIFICATION TO ENGINEER FOR APPROVAL.
13. SUBMIT SHOP DRAWING TO ENGINEER FOR APPROVAL SHOWING LAYOUT OF SWITCHGEAR, CONDUIT ROUTING AND GROUNDING.
14. FIELD VERIFY LOCATION OF EXISTING GROUNDING SYSTEM AND CONNECT TO NEW GROUNDING SYSTEM.
15. STROBE DEVICE MOUNTED ABOVE PARAPET.
16. 1 1/4" CONDUIT WITH 2/0 THHN WIRE FOR BATTERY CHARGER SUPPLIER.
17. POINT OF CONNECTION SHOWN ARE FOR GENERAL GUIDELINES ONLY. CONTRACTOR TO COORDINATE WITH EQUIPMENT SUPPLIER THE EXACT LOCATION OF EQUIPMENT POINT OF CONNECTION.
18. COORDINATE EQUIPMENT ELECTRICAL RATING WITH THE MANUFACTURER, IF EQUIPMENT RATING DIFFERS FROM WHAT IS SHOWN, CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENT TO THE CIRCUIT PROTECTION AND FEEDER SIZE WITHOUT ADDITIONAL COST TO THE GOVERNMENT.
19. SPACE HEATER WITH INTEGRAL THERMOSTAT.
20. REFER TO MECHANICAL DRAWING FOR EXACT LOCATION.
21. 2P-30A, 240V, NFS, NEMA 3R ENCLOSURE
22. HP RATED TOGGLE SWITCH, 2P-20A, 240V, MOUNT SWITCH SAME LEVEL AS FAN COIL UNIT (FCU).
23. ACCU, 208V, 1ø, COMP. MOTOR: 4.56 KW, CONDENSER FAN MOTOR: ¼ HP.
24. EVAPORATOR FAN: ⅙ HP, 208V, 1ø.

4' 2' 0' 4' 8'

SCALE: 1/4"=1'-0"

LIGHT FIXTURE SCHEDULE

FIXTURE TYPE	LAMP DATA NO.	LAMP DATA WATTS	MOUNTING CEILING	MOUNTING WALL	DESCRIPTION	MANUFACTURER'S CAT. NO. OR APPROVED EQUAL
A	2	59 T8	PEND.		STANDARD INDUSTRIAL FLUORESCENT STRIPLIGHT WITH SOLID REFLECTOR, WIREGUIDE, & ELECTRONIC BALLAST, 120 VOLTS.	LITHONIA L-2-96T8-120-GEB10
A1	2	32 T8	PEND.		SAME AS TYPE "A" EXCEPT 4' LENGTH	LITHONIA L-2-32T8-120-GEB10
B	LED			SURF.	CONTEMPORARY THERMOPLASTIC EMERGENCY LIGHTING UNIT, 90 MINUTES EMERGENCY LIGHTING WITH EMERGENCY BATTERY PACK, 120 VOLTS.	LITHONIA ELM2
C	1	70 HPS		SURF.	VANDAL RESISTANT LUMINAIRE, CAST HOUSING, ROUND HIGH POWER FACTOR BALLAST, INTEGRAL PHOTOCELL, WHITE FINISH, 120 VOLTS.	LITHONIA VGR5C-70S-120-DWHG-PE

PANEL: "A" | VOLTS: 208/120 | PHASE: 3 | WIRE: 4 | AIC RATING: 22,000

LOCATION: ■ INDOOR ☐ OUTDOOR ■ DRY ☐ WET | ENCL. TYPE: NEMA 1 | MTG: ■ SURF. ☐ FLUSH | AMPERE: 150 | MAINS: ■ BREAKER ☐ LUGS ONLY

■ NEUTRAL BUS ■ GROUND BUS ☐ ISOLATED GROUND BUS | NEUTRAL BUS GND. BONDING: ■ YES ☐ NO

BRANCH CIRCUIT DESCRIPTION	WIRE SIZE	POLE/BKR	CKT NO.	LOAD - KVA #A		#B		#C		CKT NO.	POLE/BKR	WIRE SIZE	BRANCH CIRCUIT DESCRIPTION
LIGHTS	#12	1/20	1	1.3	0.8					2	1/20	#12	RECEP.
LIGHTS			3			1.3	0.8			4			RECEP.
LIGHTS (EXTERIOR)			5					0.7	0.5	6			AGENT RELEASE CONTROL PANEL
SPARE	-		7	1.0	1.0					8			FACP
			9			1.0	1.0			10			TRANSCEIVER PANEL
			11					1.0	1.25	12			SPARE
			13	1.0	1.5					14			SPARE
BATTERY CHARGER	#6	2/60	15			5.1	1.0			16		-	SPARE
				3.5	0.7			5.1	1.0	18		-	SPARE
ACCU	#6	3/50	17			3.5	0.7			20	3/20	#12	AHU
								3.5	0.7				
FCU	#12	2/20	19	0.3	3.15					22	2/40	#6	ACU
						0.3	3.15						
ACU	#6	2/40	21	3.15	0.3					24	2/20	#12	FCU
								3.15	0.3				
SPARE	-	2/50	23			3.15	1.0			26	2/20	-	SPARE
								3.15	1.0				
		1/20	25	1.0	1.0					28	1/20		
						1.0	1.0			30			
			29					1.0	1.0	32			

TOTAL KVA/Φ: 19.70 | 24.0 | 23.35

CONNECTED KVA: 67.05 KVA

DEMAND FACTOR: 0.393 | I=73.25A

DEMAND LOAD: 26.36 KVA

REMARKS:

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS		
No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9018 TAMUNING, GUAM 96931 USA
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FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

NEW SUBSTATION BLDG. ELEC'L PLAN & MISC. SCHEDULES

As-Built: **PST**

Checked: **AMM**

Supv: **AMMRPL**

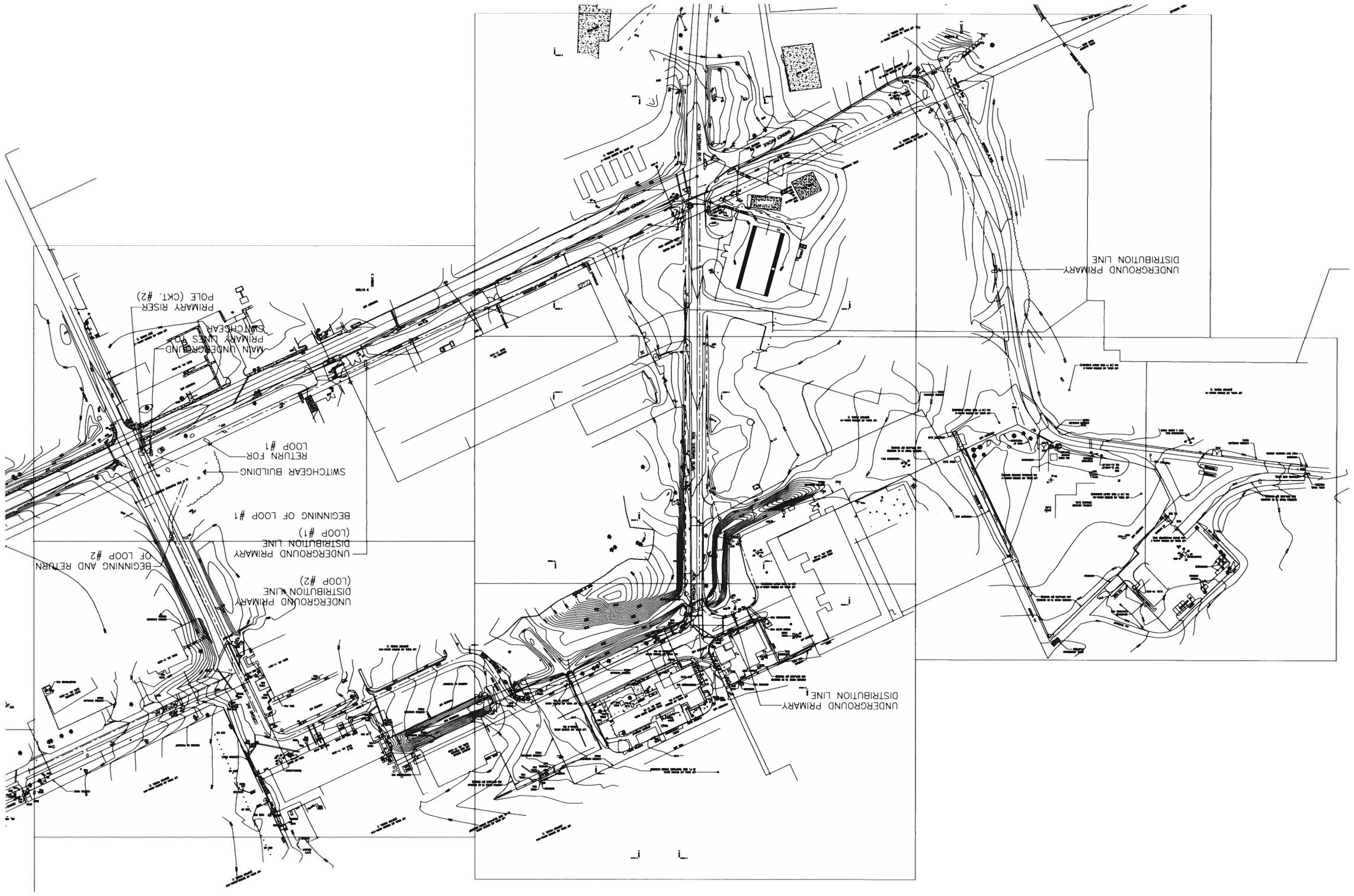
Scale: AS NOTED

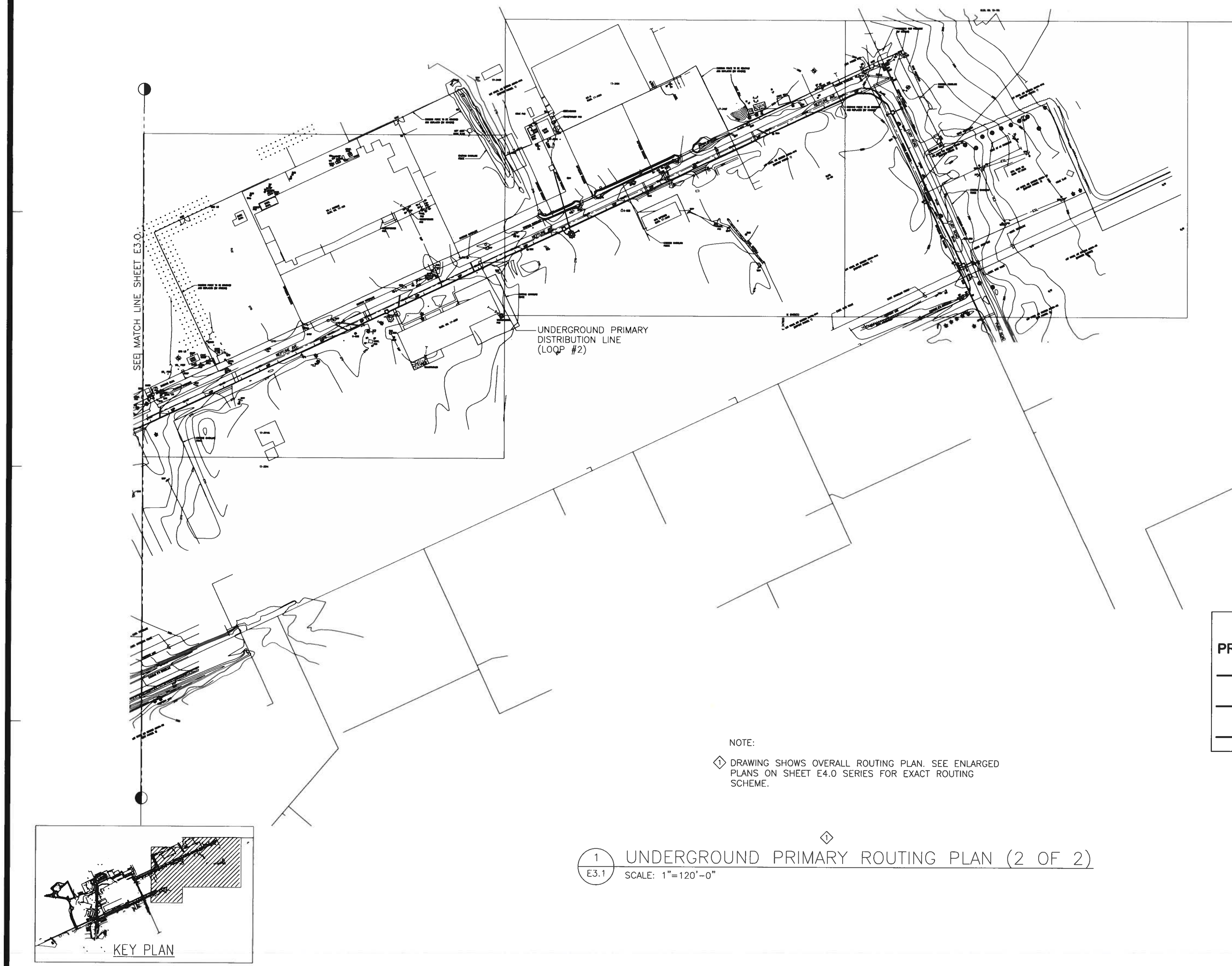
Date:

Drawing No. E1.3

Sheet No. 36

Project No.


UNDERGROUND PRIMARY DISTRIBUTION LINE
PRIMARY RISER POLE (CKT. #2)
MAIN UNDERGROUND PRIMARY LINES TO SWITCHGEAR
SWITCHGEAR BUILDING
RETURN FOR LOOP #1
BEGINNING OF LOOP #1
UNDERGROUND PRIMARY DISTRIBUTION LINE (LOOP #1)
BEGINNING AND RETURN OF LOOP #2
UNDERGROUND PRIMARY DISTRIBUTION LINE (LOOP #2)
UNDERGROUND PRIMARY DISTRIBUTION LINE



NOTE:

1. DRAWING SHOWS OVERALL ROUTING PLAN. SEE ENLARGED PLANS ON SHEET E4.0 SERIES FOR EXACT ROUTING SCHEME.

1 / E3.1 UNDERGROUND PRIMARY ROUTING PLAN (2 OF 2)

SCALE: 1"=120'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

GRAPHIC SCALE: 120' 0' 120' 240'

SCALE: 1"=120'-0"

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

MD INC.
M.D. CRISOSTOMO INC.
P.O. BOX 9018 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2885
FAX: (671) 632-33-34

Project: UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

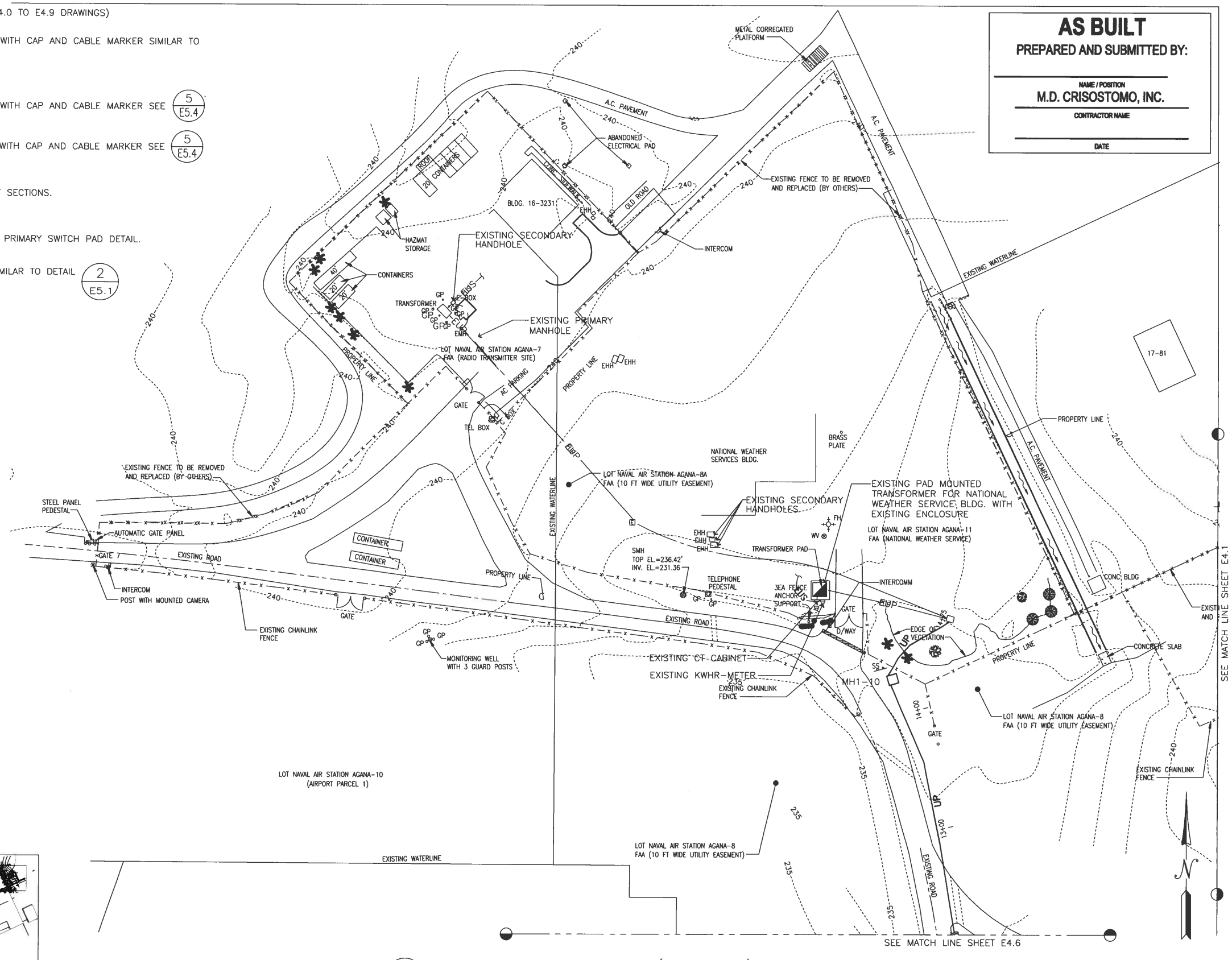
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

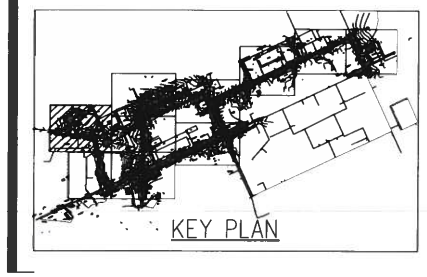
Title: UNDERGROUND PRIMARY ROUTING PLAN (2 OF 2)

As-Built: PST
Checked: AMM
Supv: AMMRPL
Scale: AS NOTED
Date:
Drawing No.: E3.1
Sheet No.: 38
Project No.

NOTES: (APPLICABLE TO SHEETS E4.0 TO E4.9 DRAWINGS)

1. 3-6" EMPTY CONDUIT STUB WITH CAP AND CABLE MARKER SIMILAR TO GPA STANDARD, SEE 5/E5.4
2. 2-6" EMPTY CONDUIT STUB WITH CAP AND CABLE MARKER SEE 5/E5.4
3. 2-4" EMPTY CONDUIT STUB WITH CAP AND CABLE MARKER SEE 5/E5.4
4. REFER TO 2/E5.0 FOR DUCT SECTIONS.
5. REFER TO 1/E5.1 FOR NEW PRIMARY SWITCH PAD DETAIL.
6. PRIMARY RISER CONDUITS, SIMILAR TO DETAIL 2/E5.1





1/E4.0 ELECTRICAL NEW PLAN (1 OF 10) 4
SCALE: 1"=40'-0"

AS BUILT
PREPARED AND SUBMITTED BY:

NAME / POSITION
M.D. CRISOSTOMO, INC.
CONTRACTOR NAME

DATE

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

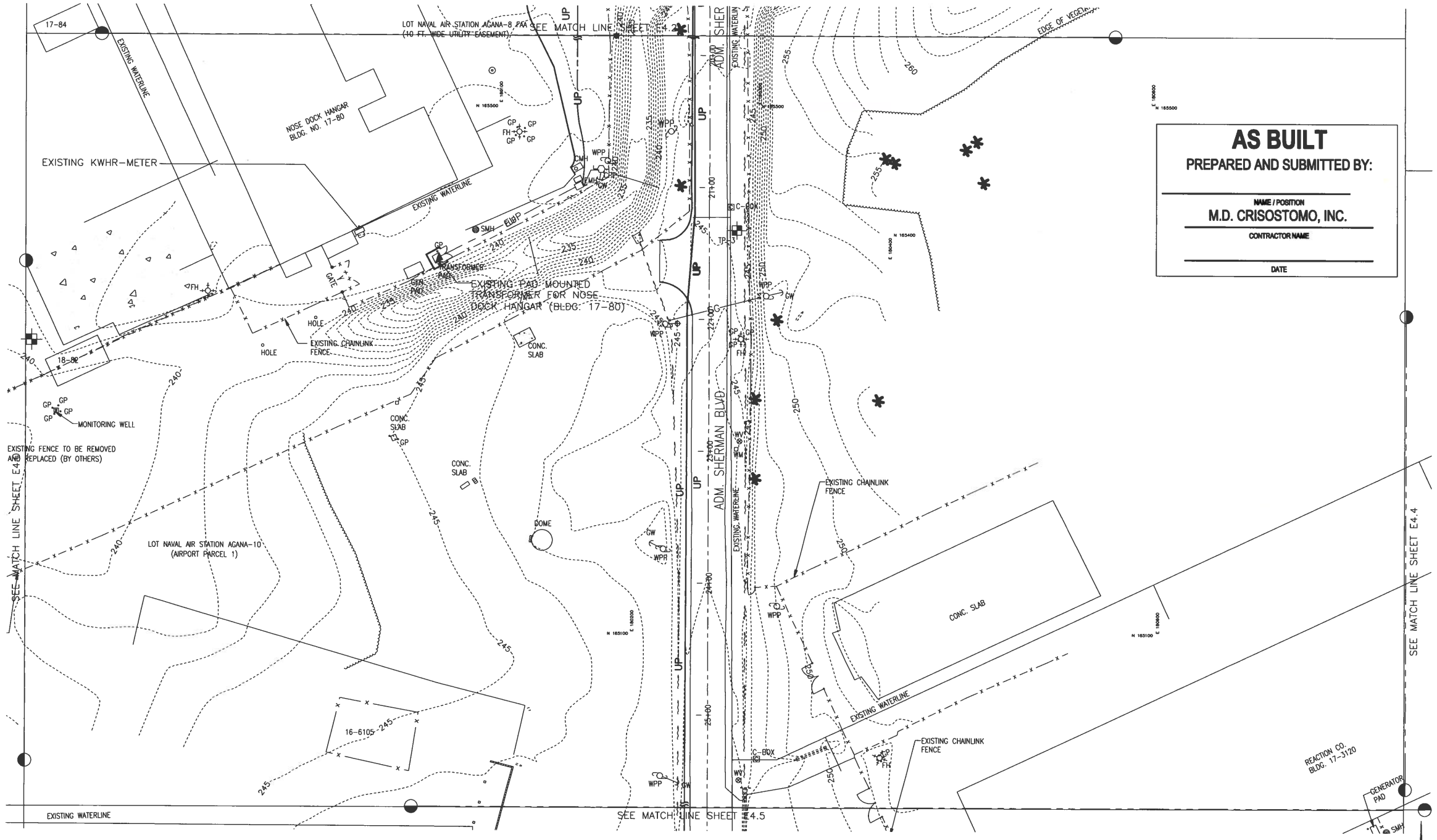
M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2986
FAX: (671) 632-33-34

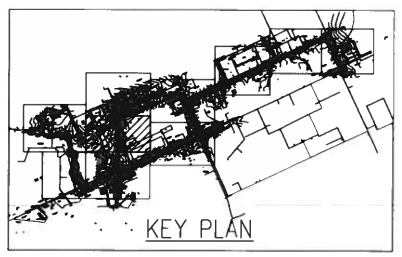
Project
UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title
ELECTRICAL NEW PLAN (1 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.0
Sheet No.	39

Project No.





SEE NOTES ON SHEET E4.0.

1 9

1 / E4.1 ELECTRICAL NEW PLAN (2 OF 10)

SCALE: 1"=40'-0"

GRAPHIC SCALE:
40' 20' 0' 40' 80'
SCALE: 1"=40'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

MD INC.

M.D. CRISOSTOMO INC.
P.O. BOX 9018 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2666
FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

CIAA PROJ. NO. : CIAA-FY05-06-5;
HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

ELECTRICAL NEW PLAN (2 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.1
Sheet No.	40

Project No. _____

AS BUILT

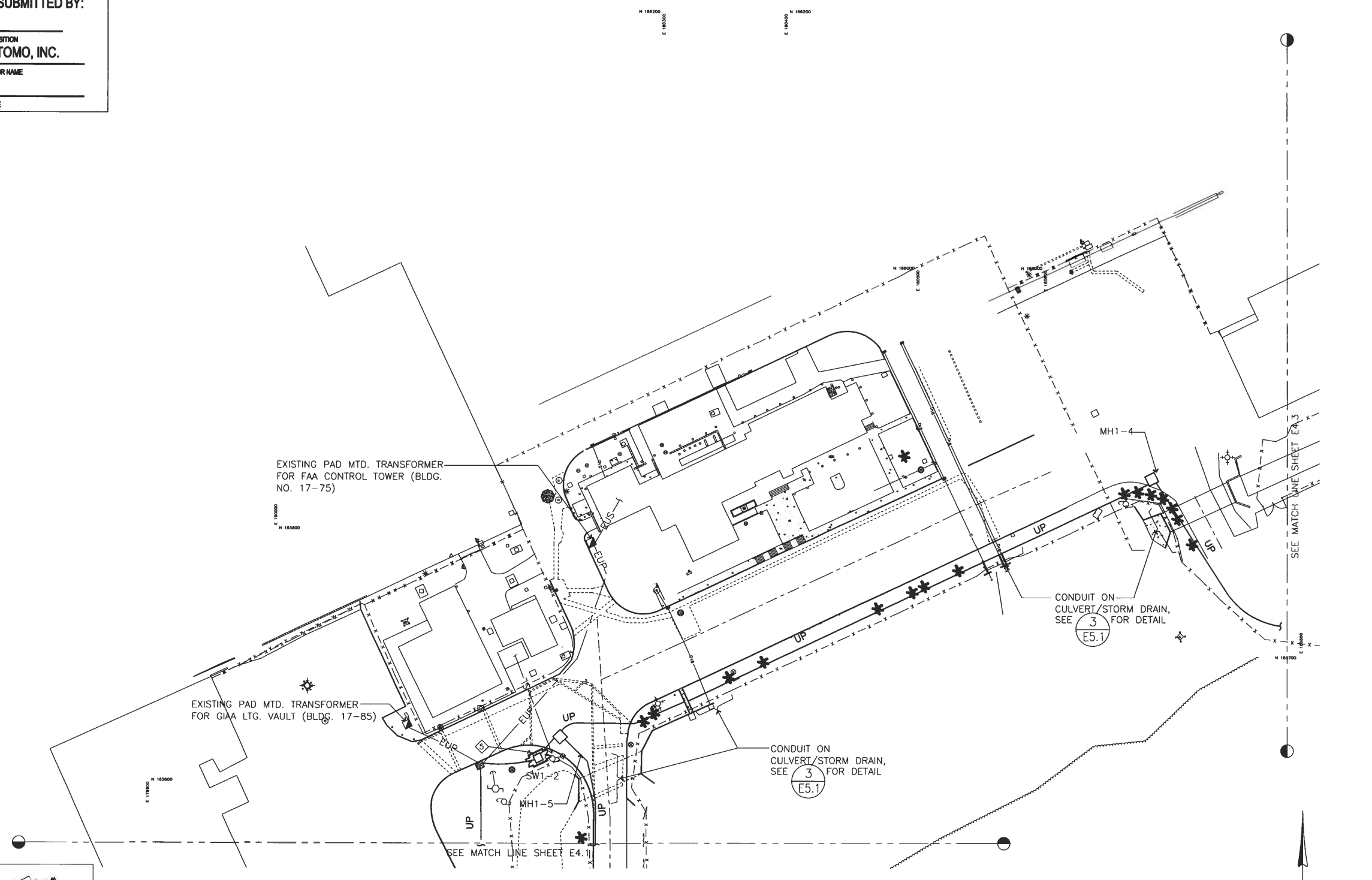
PREPARED AND SUBMITTED BY:

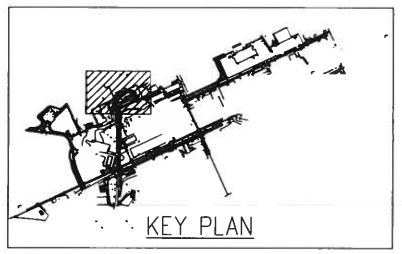
NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE





SEE NOTES ON SHEET E4.0

1/E4.2 ELECTRICAL NEW PLAN (3 OF 10) ◇4

SCALE: 1"=40'-0"

GRAPHIC SCALE: 40' 20' 0' 40' 80'

SCALE: 1"=40'-0"

REVISIONS		
No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2665
FAX: (671) 633-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

ELECTRICAL NEW PLAN (3 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.2
Sheet No.	41

Project No.

AS BUILT

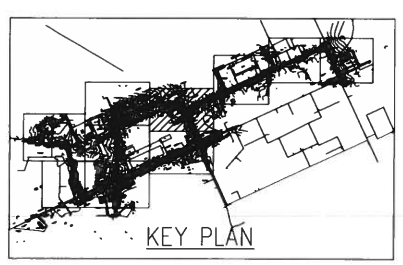
PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE



1 / E4.3 ELECTRICAL NEW PLAN (4 OF 10) ◊4

SCALE: 1"=40'-0"

GRAPHIC SCALE: 40' 20' 0' 40' 80'

SCALE: 1"=40'-0"

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
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FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

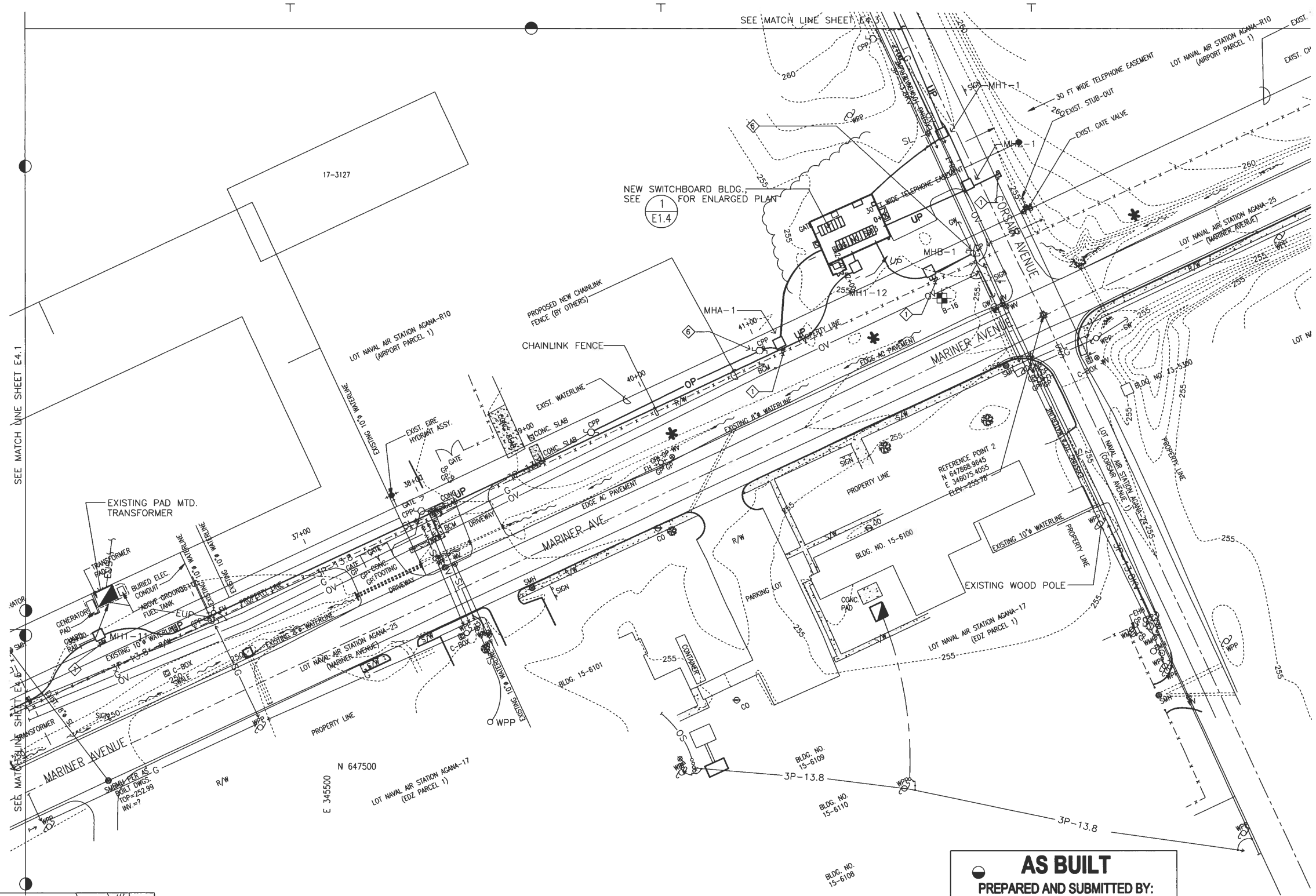
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

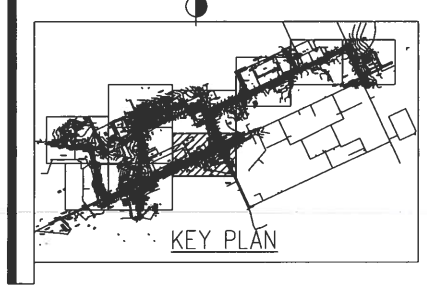
Title

ELECTRICAL NEW PLAN (4 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.3
Sheet No.	42

Project No.





1/E4.4 ELECTRICAL NEW PLAN (5 OF 10) ◈
SCALE: 1"=40'-0"

AS BUILT
PREPARED AND SUBMITTED BY:

NAME / POSITION
M.D. CRISOSTOMO, INC.
CONTRACTOR NAME

DATE

GRAPHIC SCALE: 40' 20' 0' 40' 80'
SCALE: 1"=40'-0"

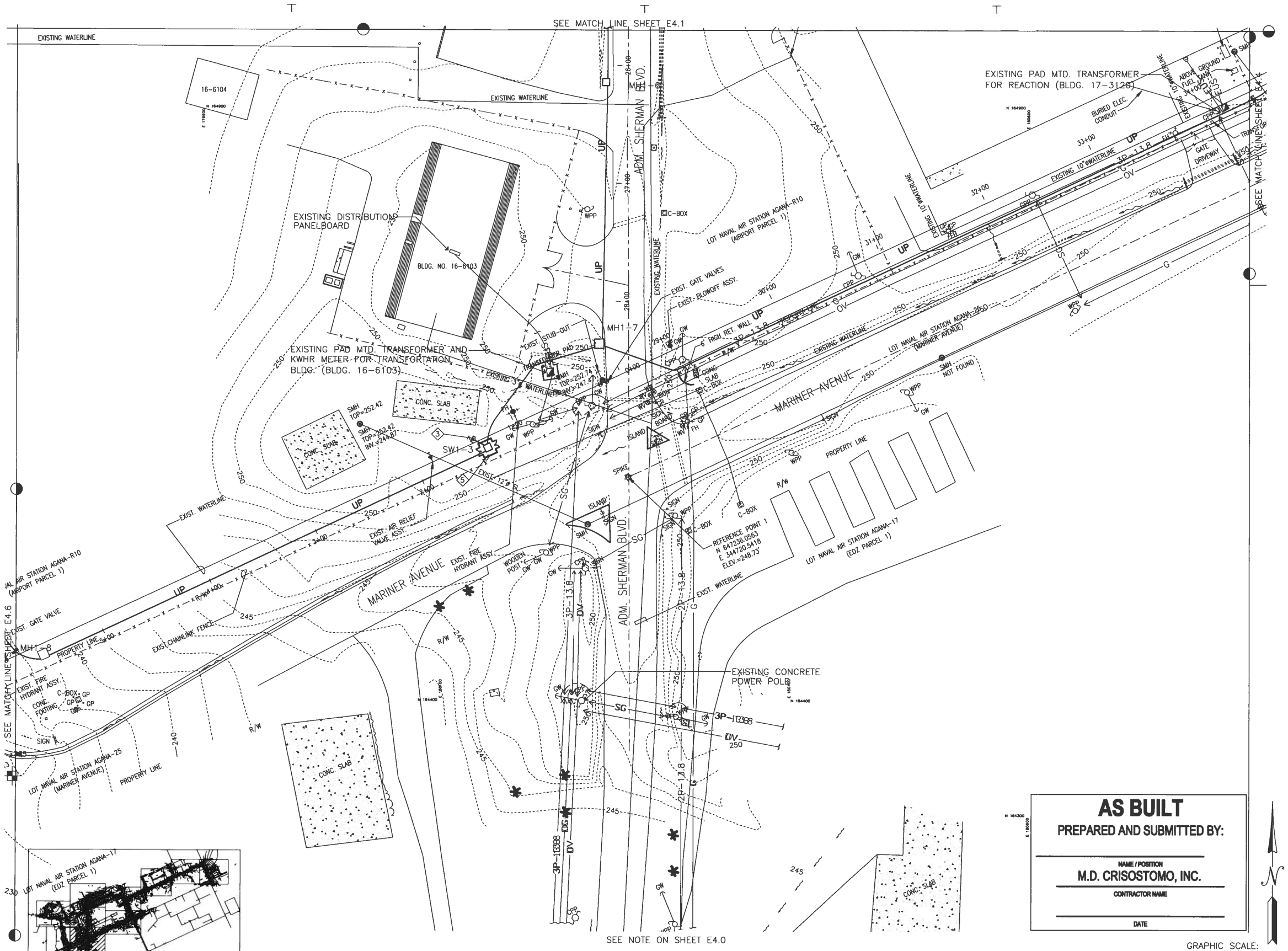
REVISIONS		
No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9918 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2695
FAX: (671) 633-33-34

Project
UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title
ELECTRICAL NEW PLAN (5 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.4
Sheet No.	43
Project No.	



1 / E4.5 ELECTRICAL NEW PLAN (6 OF 10)

SCALE: 1"=40'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

GRAPHIC SCALE: 40' 20' 0' 40' 80'

SCALE: 1"=40'-0"

REVISIONS		
No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2686
FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

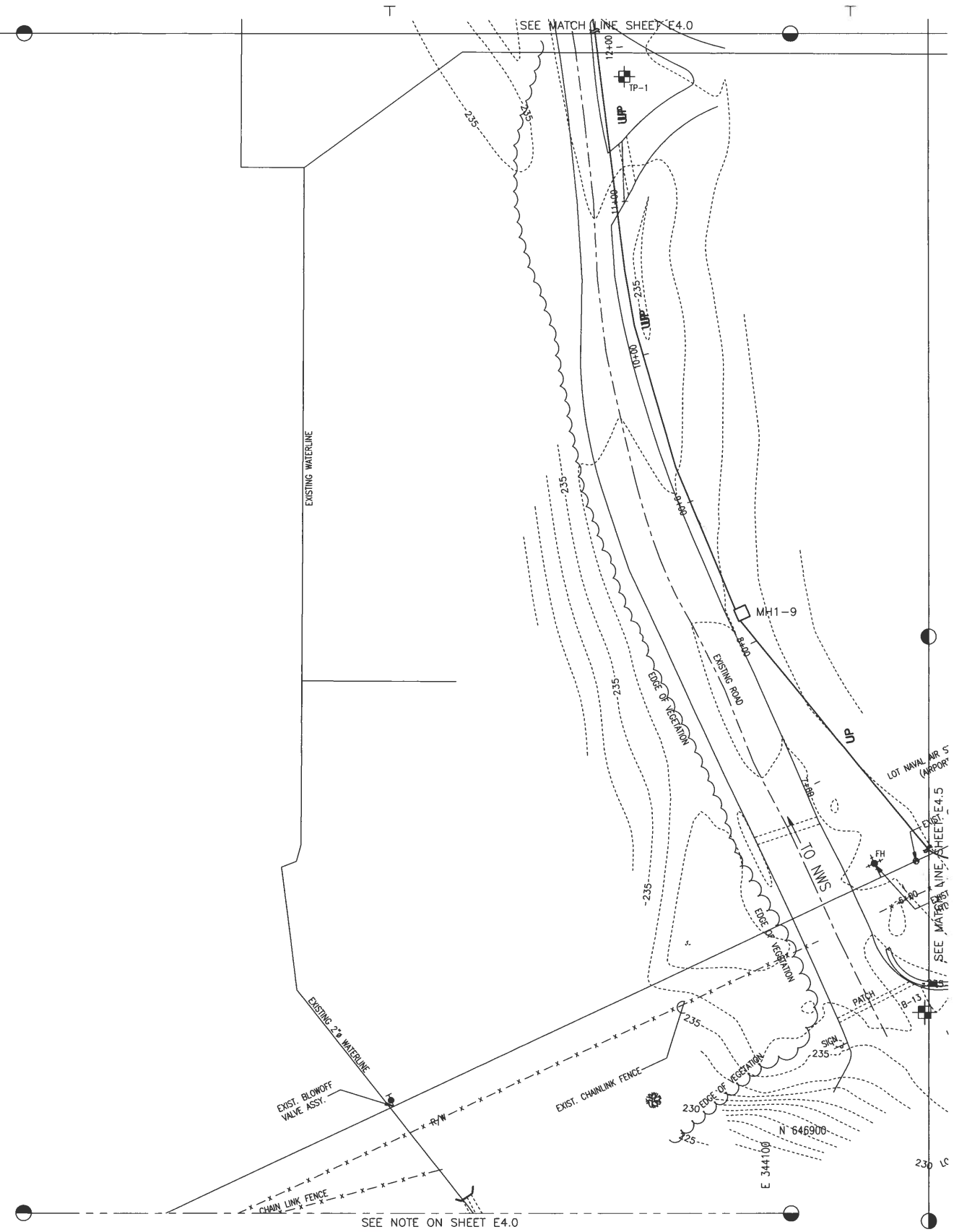
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

ELECTRICAL NEW PLAN (6 OF 10)

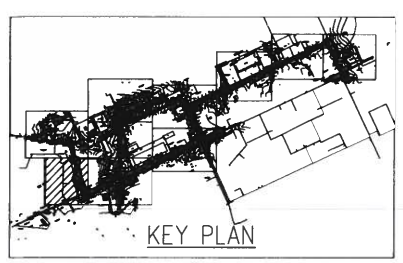
As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.5
Sheet No.	44

Project No. _____



1 / E4.6 ELECTRICAL NEW PLAN (7 OF 10) ④

SCALE: 1"=40'-0"



GRAPHIC SCALE:
40' 20' 0' 40' 80'
SCALE: 1"=40'-0"

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS		
No.	Description	Date
	AS - BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 8016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2886
FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

ELECTRICAL NEW PLAN (7 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.6
Sheet No.	45

Project No.

AS BUILT

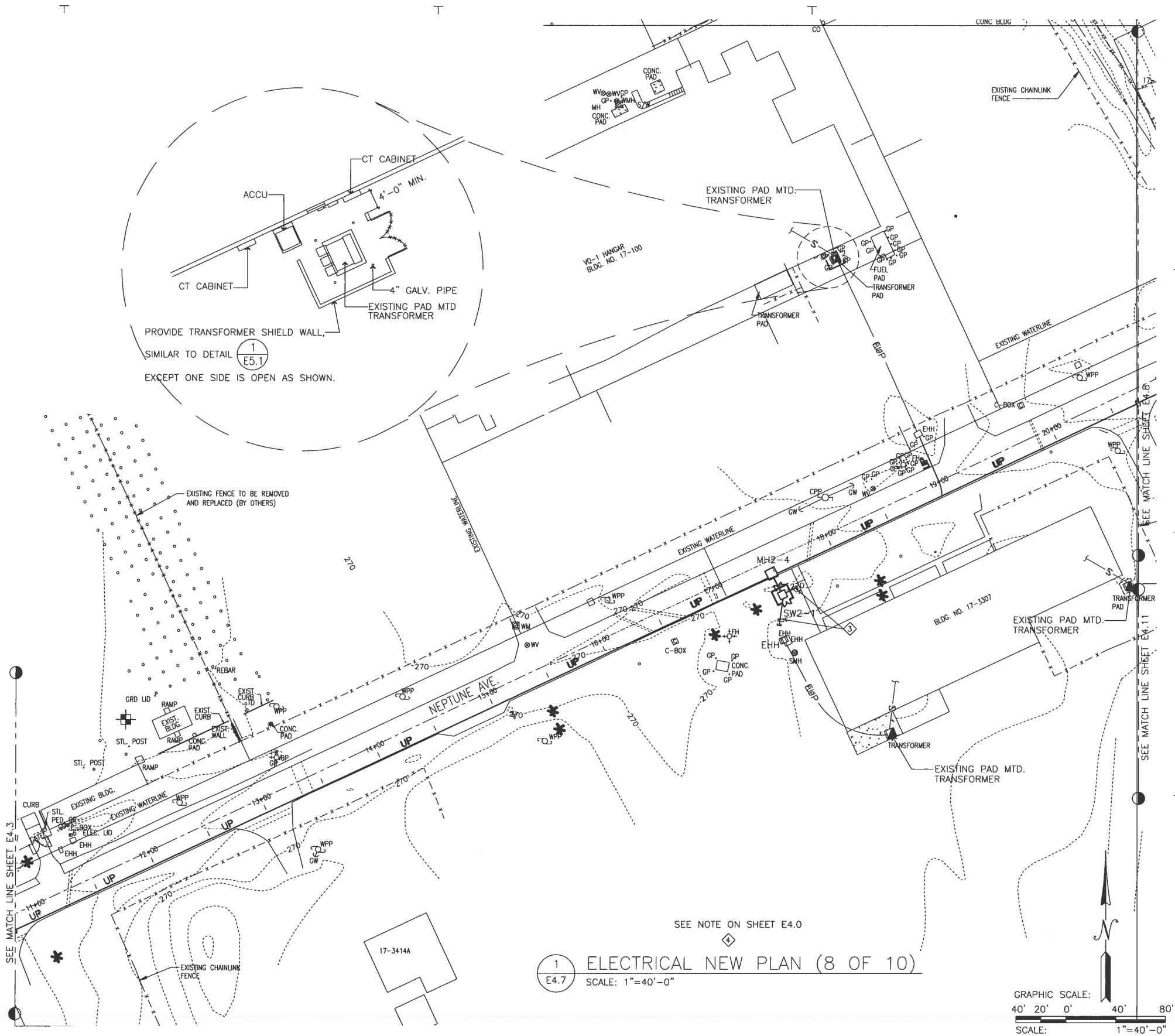
PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

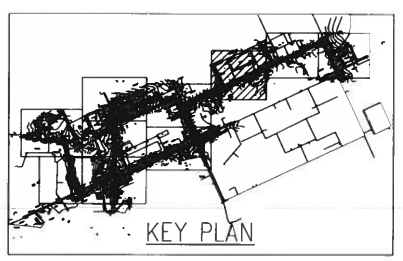
DATE



SEE NOTE ON SHEET E4.0 (4)

1/E4.7 ELECTRICAL NEW PLAN (8 OF 10)

SCALE: 1"=40'-0"



REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9018 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2868
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Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

GIAA PROJ. NO. : GIAA-FY05-06-5;
HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

ELECTRICAL NEW PLAN (8 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.7
Sheet No.	46

Project No.

AS BUILT

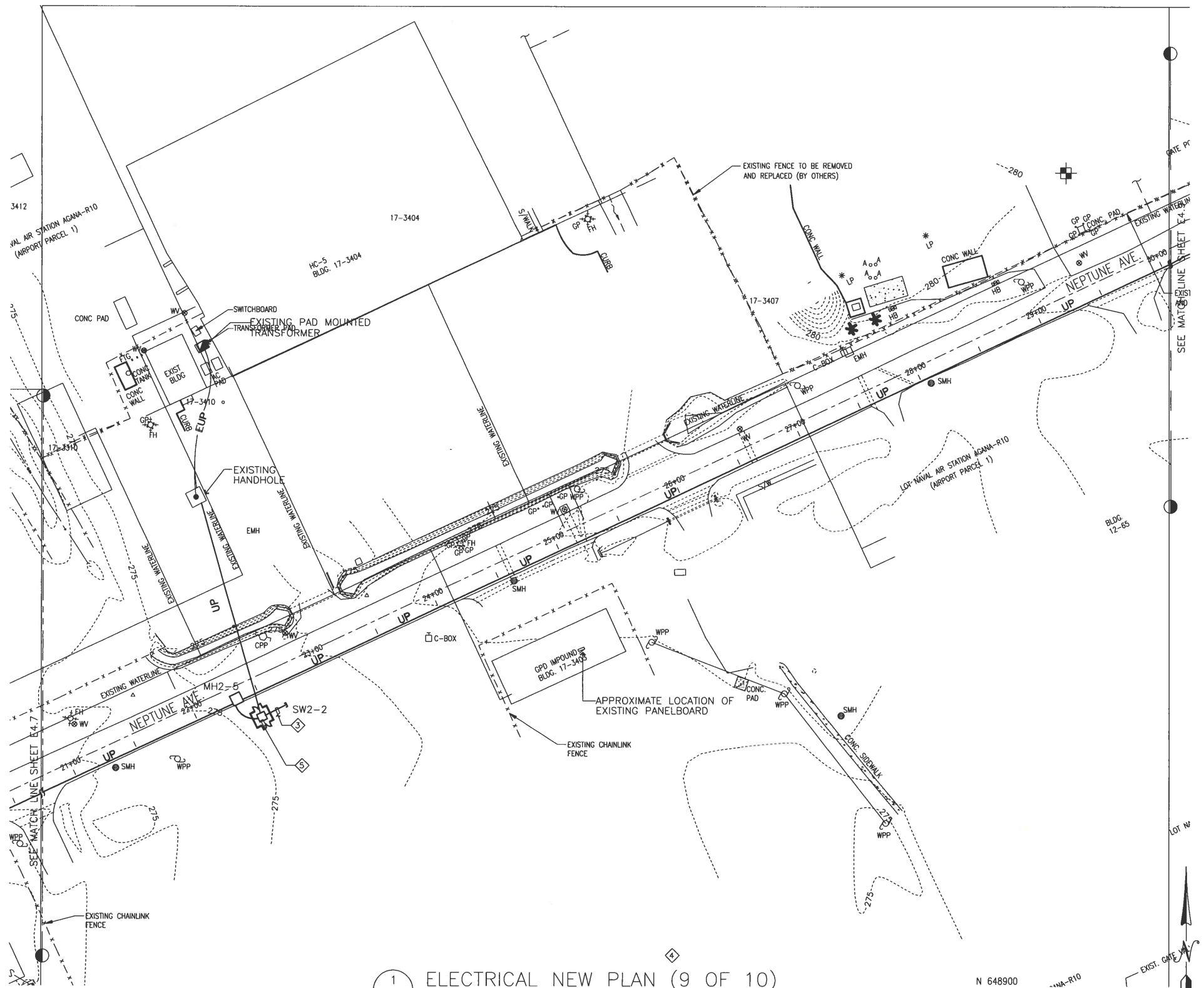
PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

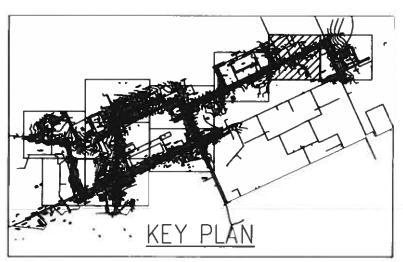


1 E4.8 ELECTRICAL NEW PLAN (9 OF 10)

SCALE: 1"=40'-0"

GRAPHIC SCALE: 40' 20' 0' 40' 80'

SCALE: 1"=40'-0"



KEY PLAN

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2586
FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

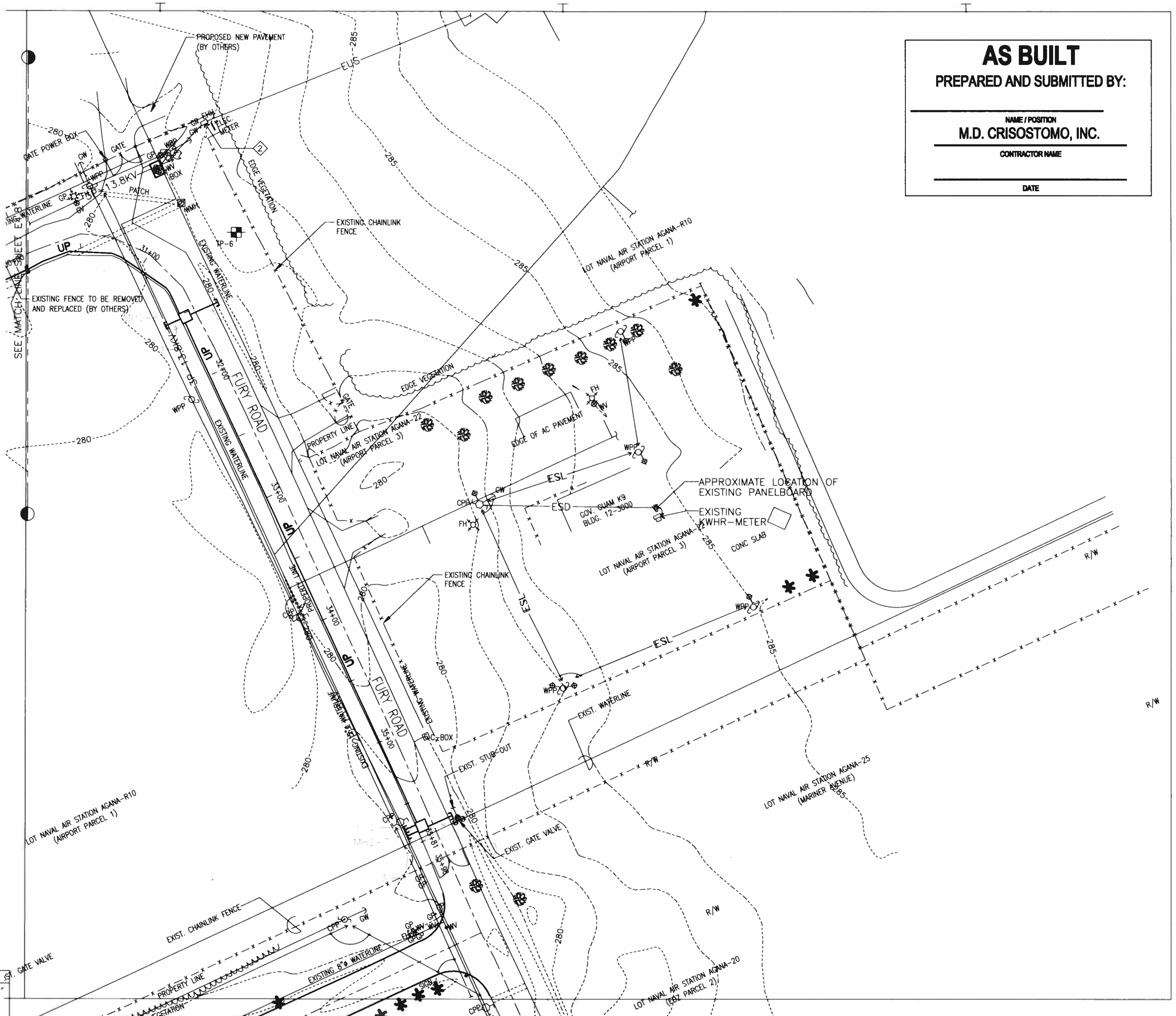
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

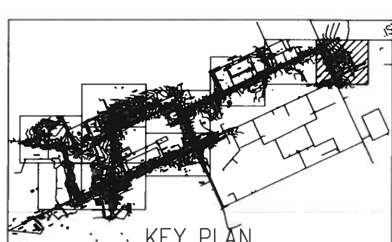
Title

ELECTRICAL NEW PLAN (9 OF 10)

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	AS SHOWN
Date:	07-07-08
Drawing No.	E4.8
Sheet No.	47

Project No.





SEE NOTE ON SHEET E4.0

1 / E4.9 ELECTRICAL NEW PLAN (10 OF 10)
SCALE: 1"=40'-0"

GRAPHIC SCALE: 40' 20' 0' 40' 80'
SCALE: 1"=40'-0"

AS BUILT
PREPARED AND SUBMITTED BY:

NAME / POSITION
M.D. CRISOSTOMO, INC.
CONTRACTOR NAME

DATE

REVISIONS

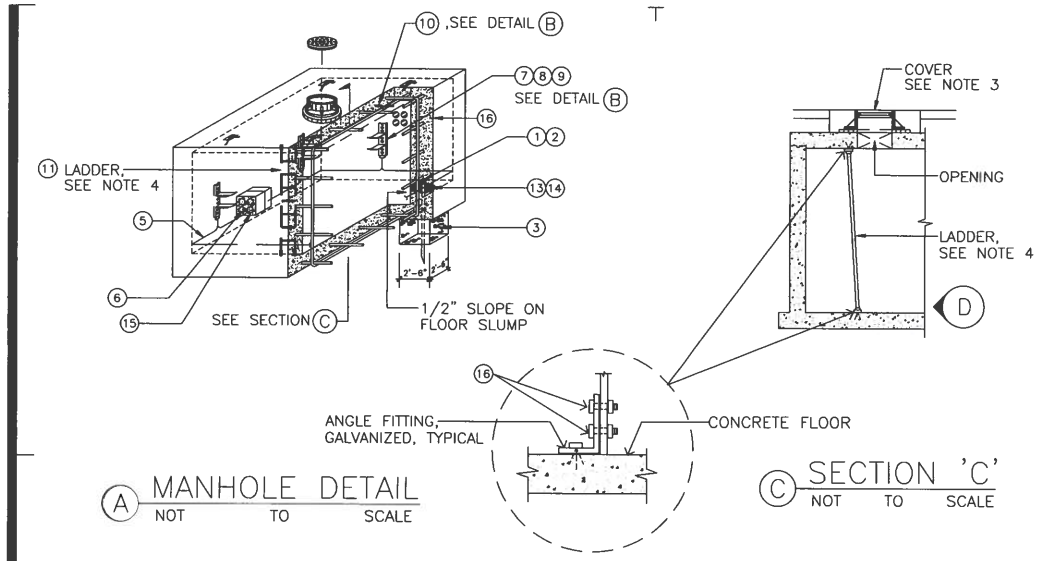
No.	Description	Date
	AS - BUILT	6/11/08

MD INC.
M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM 96931 USA
TEL: (671) 637-44-33 / 2695
FAX: (671) 633-33-34

Project
UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title
ELECTRICAL NEW PLAN (10 OF 10)

As-Built: PST
Checked: AMM
Supv: AMMRPL
Scale: AS SHOWN
Date: 07-07-08
Drawing No.: E4.9
Sheet No.: 48
Project No.



Ⓐ MANHOLE DETAIL
NOT TO SCALE

Ⓒ SECTION 'C'
NOT TO SCALE

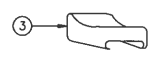
Ⓓ SECTION 'D'
NOT TO SCALE

ITEM	BILL OF MATERIALS (MANHOLE)
1	3/4"ø X 10'-0" COPPER WELD GROUND ROD
2	5/3"ø COPPER GROUND ROD CLAMP
3	3/4"ø MAXIMUM GRAVEL SIZE, FILL TO FINISH FLOOR
5	#6 COPPER WIRE (SOLID) FOR GROUNDING HARDWARES
6	CONDUIT WITH END BELL, SIZE AND QUANTITY AS REQUIRED
7	CABLE RACK HOT DIP GALVANIZED
8	HOOK TYPE INSULATOR
9	INSULATOR WELDED SUPPORT
10	PULLING IRON 7/8"ø (GALV.) OPPOSITE END OF EACH CONDUIT ENTRANCE
11	5/8"ø STEEL GALVANIZED LADDER, 6'-6" LENGTH
13	7 1/2"ø DRAIN (CAST IRON)
14	7 1/2"ø PERFORATED COVER (CAST IRON)
15	3" THICK CONCRETE ALL AROUND WHEN REQUIRED
16	GALVANIZED NUTS AND BOLTS, SIZE AS REQUIRED.

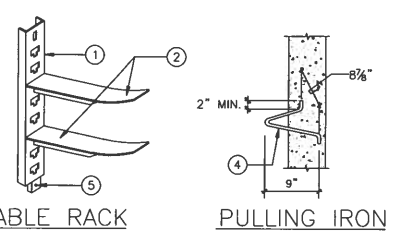
AS BUILT
PREPARED AND SUBMITTED BY:

NAME / POSITION
M.D. CRISOSTOMO, INC.
CONTRACTOR NAME

DATE



HOOK TYPE INSULATOR



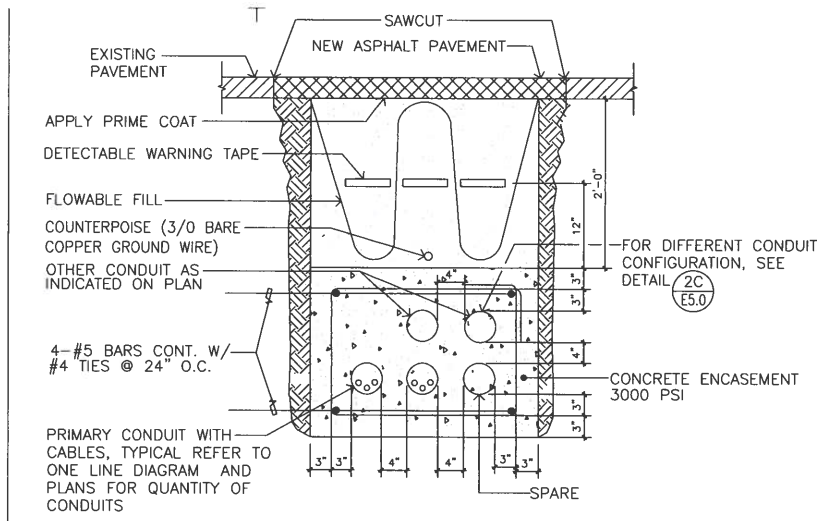
CABLE RACK PULLING IRON

ITEM	BILL OF MATERIALS (CABLE RACK INSULATOR)
1	CABLE RACK HOT DIP GALVANIZED
2	INSULATOR WELDED SUPPORT
3	HOOK TYPE INSULATOR
4	PULLING IRON 7/8"ø GALVANIZED
5	SLOT FOR 1/2" BOLT AND LEAD ANCHOR

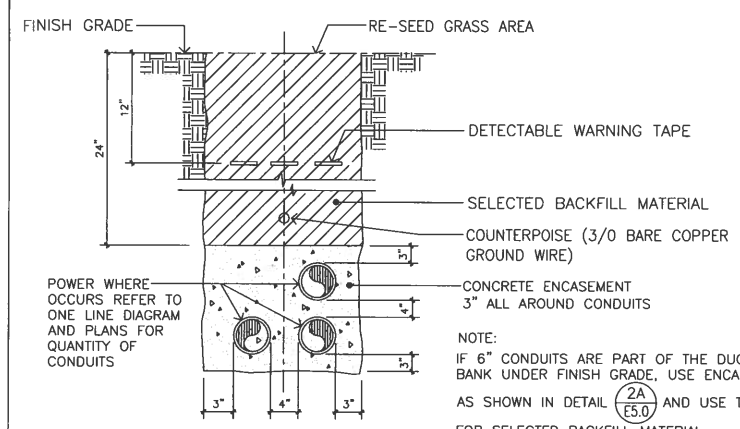
Ⓑ CABLE RACK, INSULATOR AND PULLING IRON DETAILS
NOT TO SCALE

REFER TO CIVIL/STRUCTURAL DRAWING MD1.3 FOR MANHOLE COMPLETE COMPONENTS, CONCRETE AND REINFORCEMENT DETAILS.

1 / E5.0 8' X 8' X 6' CONCRETE PRIMARY MANHOLE
NOT TO SCALE

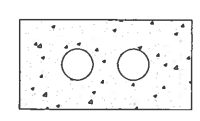


2A / E5.0 TYPICAL DUCT SECTION (UNDER PAVED AREAS AND ALL INSTALLATIONS WITH 6"C)

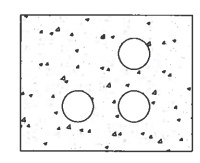


NOTE:
IF 6" CONDUITS ARE PART OF THE DUCT BANK UNDER FINISH GRADE, USE ENCASEMENT AS SHOWN IN DETAIL 2A / E5.0 AND USE THIS DETAIL FOR SELECTED BACKFILL MATERIAL.

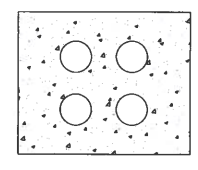
2B / E5.0 TYPICAL DUCT SECTION (UNDER FIN. GRADE)



2-CONDUIT CONFIGURATION



3-CONDUIT CONFIGURATION

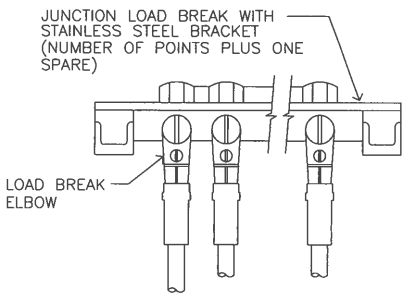


4-CONDUIT CONFIGURATION

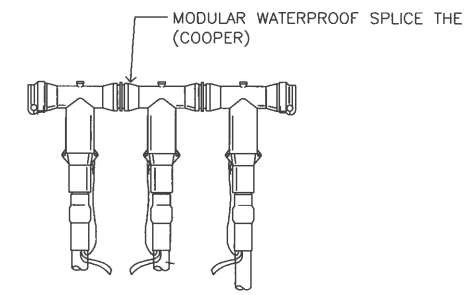
NOTES:
1. REBARS AND DIMENSIONS NOT SHOWN FOR CLARITY.
2. FOR OTHER CONFIGURATION, SUBMIT SHOP DRAWING FOR REVIEW AND APPROVAL.

2C / E5.0

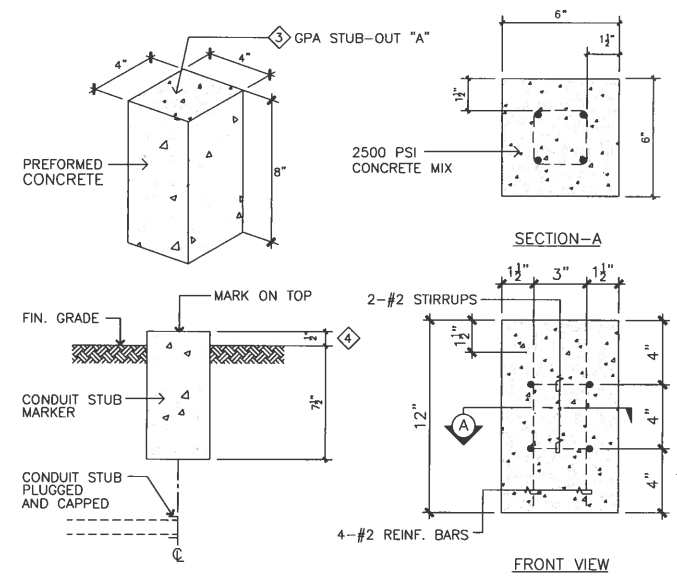
2 / E5.0 DUCT SECTION DETAILS
SCALE: NTS



3 / E5.0 LOAD BREAK JUNCTION DET.
SCALE: NTS



4 / E5.0 MODULAR SPLICE DETAIL
SCALE: NTS



NOTES:
1. SIGN ON TOP OF MARKER SHALL BE MADE WITH LETTERS 3/4" IN LENGTH AND WIDTH OF 1/2".
2. ALL LETTERS SHALL BE SPACED 1/8" APART AND ENGRAVED 1/4".
3. "A"=4"C, OR 6"C DEPENDING ON THE SIZE OF THE CONDUIT STUB-OUT.
4. FOR PAVEMENT AREAS, INSTALL MARKER FLUSH WITH PAVEMENT.

5 / E5.0 CONDUIT STUB-OUT MARKER DETAIL
SCALE: NTS

REVISIONS		
No.	Description	Date
	AS BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9018 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2686
FAX: (671) 633-33-34

Project
UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title
MISCELLANEOUS DETAILS

As-Built: **PST**
Checked: **AMM**
Supv: **AMMRPL**
Scale: NONE
Date:

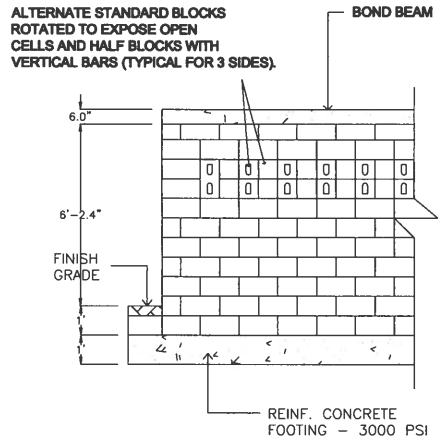
Drawing No. E5.0
Sheet No. 49

Project No.

PRIMARY SWITCH SHIELD WALL AND CONCRETE PAD DETAIL

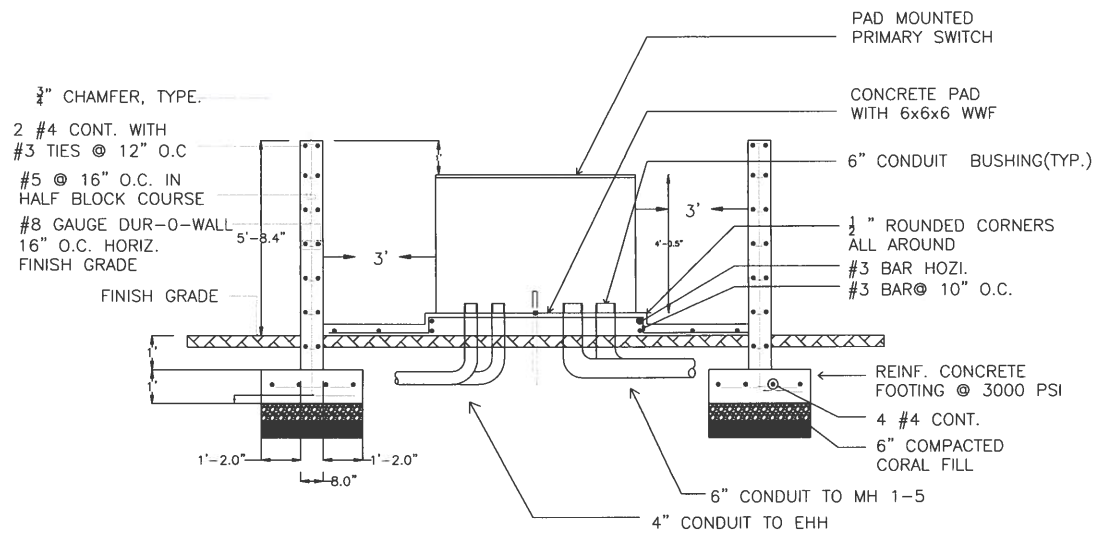
1 / E5.1

SCALE: NTS



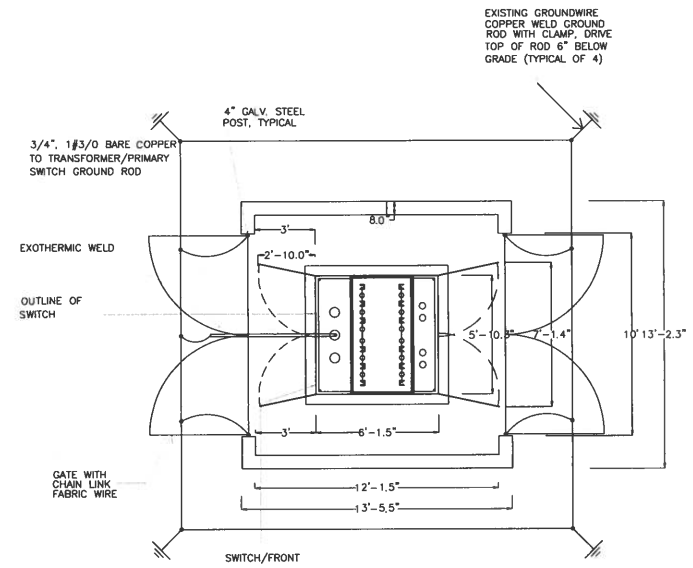
1A / E5.1 ELEVATION

SCALE: NTS



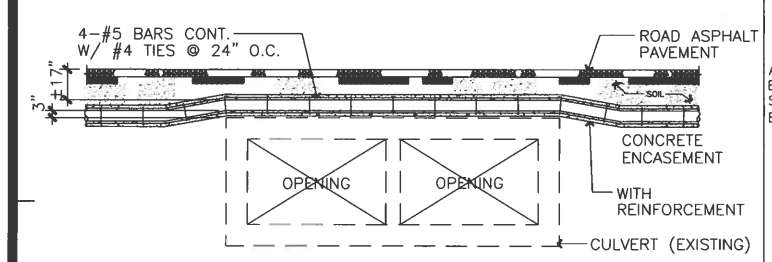
1B / E5.1 SECTION

SCALE: NTS



1C / E5.1 PLAN

SCALE: NTS

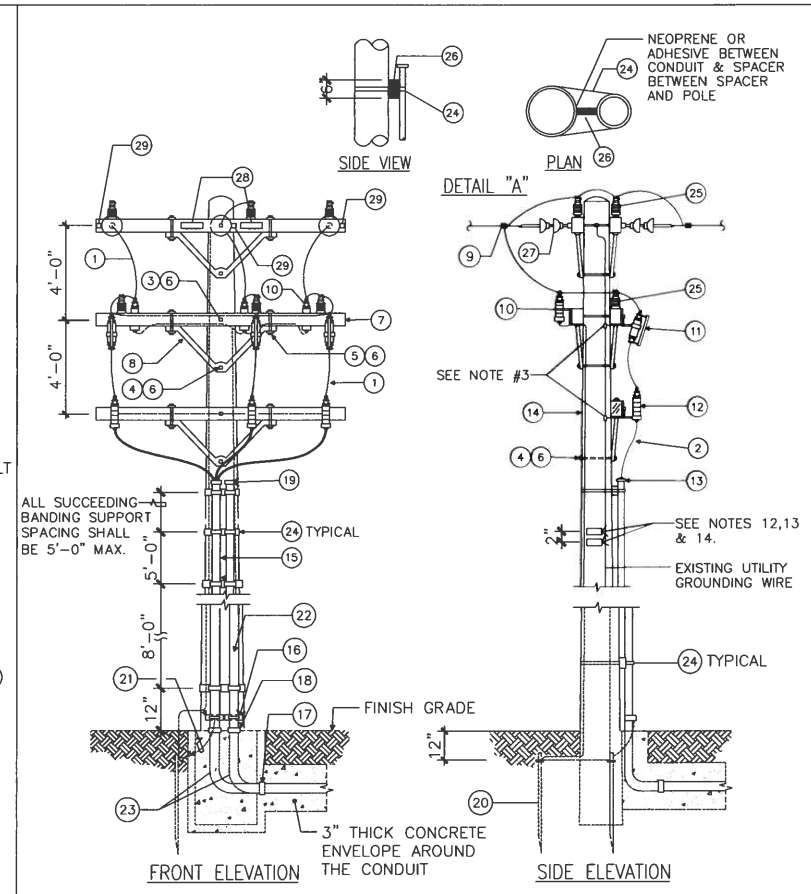


NOTE:
CONTRACTOR TO VERIFY EXACT MEASUREMENT ON SITE.

DUCTLINE ABOVE CULVERT/ STORM DRAIN DETAIL

3 / E5.1

SCALE: NTS



ITEM	BILL OF MATERIALS
1	3/0 BARE COPPER WIRE BARE
2	750 MCM TRXLPE COPPER TAPE SHIELD 15KV, 133% INSULATION
3	BOLT MACHINE, 5/8"ø WITH NUT, LENGTH AS REQUIRED.
4	BOLT MACHINE, 5/8"ø WITH NUT, LENGTH AS REQUIRED.
5	BOLT MACHINE, 1/2" X 6" WITH NUT.
6	WASHER SQUARE, 11/16" HOLE.
7	CROSSARM, 4-3/4" X 3-3/4" X 8'-0"
8	CROSSARM, BRACE, ANGLE, 48"
9	STIRRUP CONNECTOR 15KV
10	ARRESTER LIGHTNING, 15KV
11	CUT-OUT FUSE, 15KV , FUSE LINK, AS REQUIRED.
12	TERMINATOR, 15KV
13	DUCT SEAL COMPOUND
14	POWER POLE, CONCERETE, FIELD VERIFY SIZE
15	RIGID ALUMINUM PRIMARY CONDUIT
16	COPPER GROUND CLAMP
17	ELECTRICAL PVC COUPLING, SCHEDULE 40
18	ELECTRICAL PVC ADAPTER, SCHEDULE 40
19	ELECTRICAL RIGID CONDUIT BUSHING GALV. DIAMETER
20	3/4"ø X 10'-0" COPPER GROUND ROD WITH 3/4"ø COPPER GROUND CLAMP.
21	#6 COPPER GROUND
22	ELECTRICAL CONDUIT CAP, ALUMINUM, 6"ø
23	PVC CONDUIT SCHEDULE 40
24	5/8" SSTL BANDING STRAP (ENCIRCLE POLE AND CONDUIT TWICE)
25	LINE POST INSULATOR, 15KV
26	NON-FERROUS OR HOT DIPPED GALVANIZED SPACER
27	DEAD END INSULATOR, 15KV
28	HIGH VOLTAGE SIGN, 3" HIGH LETTERING
29	PHASE LEVEL "A, B, C"

PRIMARY RISER POLE DETAIL

2 / E5.1

SCALE: NTS

AS BUILT

PREPARED AND SUBMITTED BY:

NAME / POSITION

M.D. CRISOSTOMO, INC.

CONTRACTOR NAME

DATE

REVISIONS		
No.	Description	Date
	AS – BUILT	6/11/08

M.D. CRISOSTOMO INC.
P.O. BOX 9016 TAMUNING, GUAM
96931 USA
TEL: (671) 637-44-33 / 2666
FAX: (671) 632-33-34

Project

UTILITY POWER HARDENING FOR CRITICAL AIRPORT FACILITIES

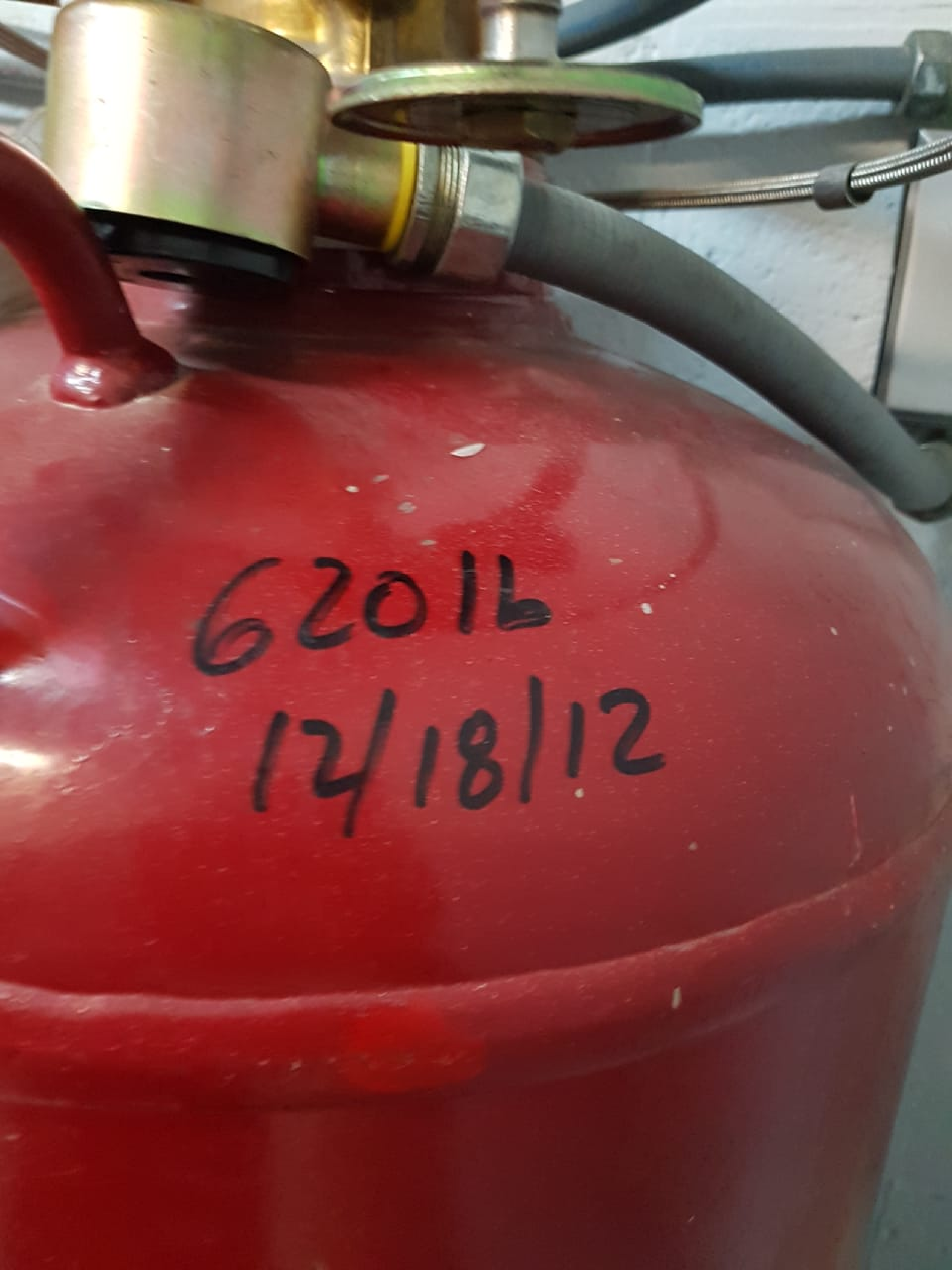
GIAA PROJ. NO. : GIAA-FY05-06-5; HMGP FEMA-1446-DR-GU, PROJECT No. 21

Title

MISCELLANEOUS DETAILS

As-Built:	PST
Checked:	AMM
Supv:	AMMRPL
Scale:	NONE
Date:	
Drawing No.	E5.1
Sheet No.	50
Project No.	

VALVE P/N 10011044
CHEMETRON
NON FLAMMABLE GAS
2
37915
12/18/12


62016
12/18/12

FM–200 CYLINDER

CYLINDER ASSY. P/N	>430983	
CHARGED WITH	319	POUNDS OF FM-200
EMPTY WEIGHT	394	POUNDS INCLUDING ATTACHMENTS
FULL WEIGHT	620.4	POUNDS FM-200 AND NITROGEN PRESSURIZED TO 360 PSI (2482 kPa) AT 70°F (21°C).
FILL STATION		

PERIODICALLY CHECK GAUGES FOR PRESSURE.
WEIGH CYLINDER AT LEAST EVERY SIX (6) MONTHS.
SEE SERVICE MANUAL FOR DETAILED INSTRUCTIONS.

STORAGE TEMPERATURE: 32°F (0°C) TO 130°F (54°C).
CYLINDER FACTORY TEST PRESSURE: 1000 PSIG (6895 kPa).

FOR SYSTEM DESIGN, USAGE, AND MAINTENANCE,
REFER TO THE INFORMATION AT RIGHT.

CHEMETRON
Fire Systems™
UNIVERSITY PARK, IL 60466

ADDITIONAL INFORMATION - 360 P
SYSTEM DESIGN

STANDARDS FOR FM-200 FIRE EXTING
CHEMETRON FM-200 OPERATION, DE
PART NO. 300000224

WARNING DAN

PERFORM THE FOLLOWING
REMOVING THE CYLINDER ASSEM
1 – REMOVE ALL OPERATING DEV
A) SOLENOID PILOT VALVE
B) MANUAL PNEUMATIC ACTU
C) BRAIDED HOSES
2 – REMOVE DISCHARGE PIPING
3 – ATTACH VALVE OUTLET CAP

OPERATION/INSTALLATION

PRIOR TO INSTALLATION, REFER TO CHEMETRON
DESIGN, AND SERVICE MANUAL FOR MORE DETAIL
DO NOT CONNECT ANY ACTUATING DEVICES UNTIL CYLINDERS ARE
SECURED IN THE RACK AND DISCHARGE CONNECTIONS
THE PIPING SYSTEM.

INSPECTION INSTRUCTIONS

THE CYLINDERS SHOULD BE INSPECTED MONTHLY
FREQUENTLY WHEN CIRCUMSTANCES REQUIRE.
PIPING AND NOZZLES SHOULD BE CHANGED TO
THEY ARE UNOBSTRUCTED.
THE CYLINDERS SHOULD BE RECHARGED IF THE
EXCEEDS 5 PERCENT OF THE CHARGE WEIGHT
THE CYLINDERS SHOULD BE RECHARGED IF THE
ADJUSTED FOR TEMPERATURE EXCEEDS
NORMAL CHARGE PRESSURE.
IF CYLINDER/VALVE ASSEMBLY IS
LOCATED, REFER TO THE CHEMETRON
AND SERVICE MANUAL FOR INSTRUCTIONS.

WARNING

THE CONCENTRATED AGENT, WHEN APPLIED
CAN PRODUCE TOXIC DECOMPOSITION PRODUCTS
TO VAPORS, FUMES, AND PRESSURE OF

FM–200 CYLINDER

CYLINDER ASSY. P/N	480983	
CHARGED WITH	319	POUNDS OF FM-200
EMPTY WEIGHT	294	POUNDS INCLUDING ATTACHMENTS
FULL WEIGHT	620.4	POUNDS FM-200 AND NITROGEN PRESSURIZED TO 360 PSI (2482 kPa) AT 70°F (21°c).
FILL STATION		

PERIODICALLY CHECK GAUGES FOR PRESSURE.
WEIGH CYLINDER AT LEAST EVERY SIX (6) MONTHS.
SEE SERVICE MANUAL FOR DETAILED INSTRUCTIONS.

STORAGE TEMPERATURE: 32°F (0°C) TO 130°F (54°C).
CYLINDER FACTORY TEST PRESSURE: 1000 PSIG (6895 kPa).

FOR SYSTEM DESIGN, USAGE, AND MAINTENANCE, REFER TO THE INFORMATION AT RIGHT.

CHEMETRON
Fire Systems™
UNIVERSITY PARK, IL 60466

ADDITIONAL INFORMATION - 360 PSI (2482 kPa) FM-200 SYSTEMS

SYSTEM DESIGN REFERENCES

STANDARDS FOR FM-200 FIRE EXTINGUISHING SYSTEMS, NFPA 2001.
CHEMETRON FM-200 OPERATION, DESIGN, AND SERVICE MANUAL, PART NO. 30000024.

WARNING/DANGER

PERFORM THE FOLLOWING STEPS PRIOR TO REMOVING THE CYLINDER ASSEMBLY FROM THE RACK.

1 – REMOVE ALL OPERATING DEVICES AS FOLLOWS:
- **A) SOLENOID PILOT VALVE.**
- **B) MANUAL PNEUMATIC ACTUATOR.**
- **C) BRAIDED HOSES.**

2 – REMOVE DISCHARGE PIPING.
3 – ATTACH VALVE OUTLET CAP.

OPERATION/INSTALLATION INSTRUCTIONS

PRIOR TO INSTALLATION, REFER TO CHEMETRON FM-200 OPERATION, DESIGN, AND SERVICE MANUAL FOR MORE DETAILED INFORMATION.
DO NOT CONNECT ANY ACTUATING DEVICES UNTIL CYLINDER IS PROPERLY SECURED IN THE RACK AND DISCHARGE CONNECTION IS SECURED TO THE PIPING SYSTEM.

INSPECTION INSTRUCTIONS

THE CYLINDERS SHOULD BE INSPECTED MONTHLY OR MORE FREQUENTLY WHEN CIRCUMSTANCES REQUIRE.
PIPING AND NOZZLES SHOULD BE EXAMINED TO DETERMINE THAT THEY ARE UNOBSTRUCTED.
THE CYLINDERS SHOULD BE RECHARGED IF LOSS IN WEIGHT EXCEEDS 5 PERCENT OF THE CHARGE WEIGHT.
THE CYLINDERS SHOULD BE RECHARGED IF LOSS IN PRESSURE, ADJUSTED FOR TEMPERATURE, EXCEEDS 10 PERCENT OF THE NORMAL CHARGE PRESSURE.
IF CYLINDER/VALVE ASSEMBLY IS PROVIDED WITH A LIQUID LEVEL LOCATOR, REFER TO THE CHEMETRON FM-200 OPERATION, DESIGN, AND SERVICE MANUAL FOR INSTRUCTIONS.

– WARNING –

THE CONCENTRATED AGENT, WHEN APPLIED TO A FIRE, CAN PRODUCE TOXIC BY-PRODUCTS. AVOID EXPOSURE TO VAPORS, FUMES, AND PRODUCTS OF COMBUSTION.

H-TEST TO	CK5 [illegible]	H-TEST DATE	08.2019
AGENT TYPE	FM200	FILL DATE	08.2019
SERIAL NO.	348017	AGENT	422.0 lbs.
WEIGHT EMPTY	376.5 lbs.	WEIGHT FULL	809.7 lbs

INSPECTION RECORD

DATE	WEIGHT	PRESSURE	INSPECTED BY	REMARKS

H-TEST TO	CKS TSI
AGENT TYPE	FM200
SERIAL NO	352780
WEIGHT EMPTY	360.3 lbs
H-TEST DATE	08.2019
FILL DATE	08.2019
AGENT	422.0 lbs.
WEIGHT FULL	792.1 lbs.

INSPECTION RECORD

DATE	WEIGHT	PRESSURE	INSPECTED BY	REMARKS