ENGINEERING MANAGEMENT & PLANNING SERVICES CORPORATION
1998 ARMY DRIVE ROUTE 16, 2ND FLOOR EMPSCO , DEDEDO, GUAM 96929 PO BOX 21794 GMF, BARRIGADA, GU 96921
TEL (671) 638-4716/5716 FAX (671) 638-2136
UNIT 2117 Cityland 10 Tower 1,H.V.Dela Costa Street Makati City TEL (632)843-0918

August 17, 2017

Ms Carl V. Dominguez
Acting Director
Guam Bureau of Statistics and Plans
P.O. Box 2950
Hagatna, Guam 96932
Tel (671) 477-4201
Fax (671) 477-1812

Attention: Ms Tina Mafnas, Planner
Guam Coastal Resources Management Program

Subject: **Bayside Wastewater Pump Station Rehabilitation Project**
Including Expanded Design Scope for Bank Protection
Project- GWA Project No. S15-007-BND
Guam Coastal Management Act Federal Consistency Consultation

Dear Sir/Madam,

On behalf of Guam Waterworks Authority, we would like to initiate the needed consultation with your office to seek approval of the proposed sewage pump station rehabilitation project.

In this regards, we are submitting herewith for your review a set of the proposed project design plans and specifications which depicts the scope of the rehabilitation work as follows:

Existing Sewage Pump Station

- Building a new retaining wall to resolve the eroding area at southwest corner of site
- Provide new chain link fencing with vehicle gate around the station,
- Provide two new two new submersible pumps (one duty and one backup) in operation for the station wet well and re-configure discharge piping and valves to increase hydraulic efficiency and eliminate trip hazards
- Provide new electrical power and pump control system and components
- Provide new standby power generator with all controls
- Improve the area lighting with motion detector controls
- Restore the adequacy of the existing electrical grounding system
- Provide new exhaust ventilation system to the sanitary wet well
- Provide operable hatch cover on concrete collar for the existing sewage manhole
- Provide new vandal-proof metal grille enclosure around generator
- Provide new hollow metal door for station entry and provide one louver window
- Paint all existing and new surfaces of the existing building

Easement Entrance

- Rock revetment (after-the-fact) installed by DPW/GPA

- Provide new barricade pipe gate for vehicle access control.

Other documents included with this submission are the following:

- Guam Coastal Resources Management Form Dated August 17, 2017
- 2017 Nationwide PCN Form

During the construction of the new retaining walls at the pump station and other minor earthworks, the plans calls for the contractor to provide adequate temporary erosion and sedimentation control protection measures.

Detailed Plans and Specifications that will enable the contractor to properly provide and implement these necessary environmental protection and control systems have been included such as silt fences and soil storage systems. The contractor will be required to submit an environmental protection plan and a dewatering plan if necessary for review and approval prior to starting any construction.

We certify that the proposed activity complies with the enforceable policies of the Guam Coastal Management Program and will be conducted in a manner consistent with such Program.

If you have any immediate questions concerning this project, kindly contact me at our office number indicated herewith or my mobile 671-4827928.

Thank you very much and we look forward to your guidance.

Sincerely

Isagani Zoleta Jr., P.E.
Project Manager

Attachments:

- Proposed Plans and Specifications
- GCMP Assessment Form
- Draft USACOE PCN Application

Cc: Thomas F. Cruz, P.E., Guam Waterworks Authority

GOVERNMENT OF GUAM

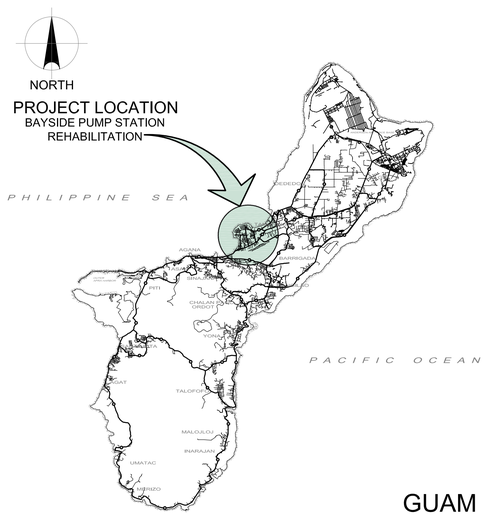
GUAM WATERWORKS AUTHORITY

BAYSIDE PUMP STATION REHABILITATION

PROJECT NUMBER S15-007-BND

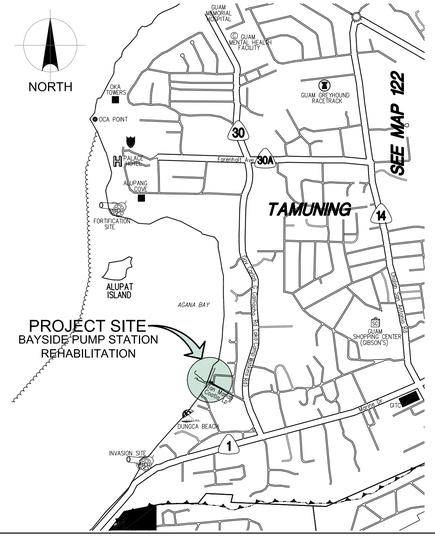
CHALAN GOVERNOR CARLOS CAMACHO, TAMUNING, GUAM

LOCATION MAP



GUAM

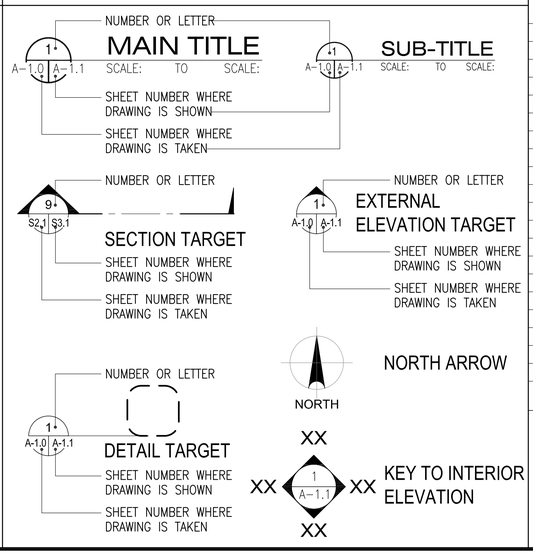
VICINITY MAP



GENERAL NOTES

1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE GOVERNMENT RULES, REGULATIONS AND LAWS, INCLUDING THE CURRENT EDITIONS OF THE INTERNATIONAL BUILDING CODE, AND INTERNATIONAL MECHANICAL CODE.
2. CONTRACTOR SHALL COORDINATE ALL WORKS WITH OWNER'S REPRESENTATIVE AND PROVIDE SUFFICIENT NOTICE OF REQUIRED ACCESS, UTILITY OUTAGES, LOCKOUT/TAGOUT REQUIREMENTS AND OTHER SPECIAL REQUIREMENTS AS ARE NECESSARY TO CONDUCT THE DEMOLITION AND CONSTRUCTION WORK.
3. CONTRACTOR SHALL PROVIDE ADEQUATE TEMPORARY FACILITIES TO SUPPORT AND PROTECT EXISTING PIPING, EQUIPMENT AND OTHER FACILITIES TO REMAIN IN PLACE DURING THE WORK. WHERE SUCH TEMPORARY FACILITIES MAY AFFECT THE OWNERS ON-GOING OPERATIONS AT THE SITE. THE CONTRACTOR SHALL COORDINATE WITH OWNERS REPRESENTATIVE AND OBTAIN OWNER'S APPROVAL PRIOR TO COMMENCING THE CONSTRUCTION OF SUCH TEMPORARY FACILITIES.
4. DURING REMOVAL/DEMOLITION WORKS AND NEW DISCHARGE PIPE CONNECTION TO EXISTING FORCE MAIN. NOTIFY OWNER'S REPRESENTATIVE IMMEDIATELY OF ANY DEFECTS OF CONDITIONS THAT AFFECT THE SAFE CONDUCT OF THE WORK.
5. EQUIPMENT CONFIGURATION, DIMENSIONS AND PIPING CONNECTIONS SHOWN ON THE DRAWINGS ARE BASED ON MANUFACTURERS DATA PROVIDED DURING DESIGN DEVELOPMENT. CONTRACTOR SHALL FIELD VERIFY ACTUAL CONDITIONS AND CONFIRM EQUIPMENT CONFIGURATION, DIMENSIONS AND CONNECTIONS WITH MANUFACTURER FOR PROPER PLACEMENT AND FIT DURING CONSTRUCTION. NOTIFY THE ENGINEER IMMEDIATELY OF ANY DISCREPANCIES FOR PROMPT RESOLUTION.
6. UNLESS OTHERWISE NOTED, ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND IN PERFECT CONDITION.
7. INSTALL NEW MATERIALS, EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, THE SPECIFICATIONS, AND APPLICABLE STANDARDS OF THE AMERICAN WATERWORKS ASSOCIATION (AWWA).

LEGEND AND SYMBOLS



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27 OF 27	E-2.2	DETAILS.

RECOMMEND APPROVAL

THOMAS CRUZ, P.E.
GWA Chief Engineer

Date:

"FINAL SUBMITTAL"

IF SHEET IS LESS THAN 24"x36" REDUCED PRINT – USE GRAPHIC SCALES

DESIGNER

EMPSCO
Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING
ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 638.5716 / 638.4716 Fax (671) 638.2136

CONSULTANTS

EMPSCO Engineering Management & Planning Services Corporation
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albert h. tsutsui, a.i.a., inc.
julale center, suite 213, box 2993, hagatna guam, 96932

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CIVIL

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

DATE: 05/17/17

ARCHITECTURAL

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

DATE: 05/17/17

STRUCTURAL

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

DATE: 05/17/17

MECHANICAL

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

DATE:

ELECTRICAL

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

DATE:

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REV	DATE	BY	DESCRIPTION	APPROVED BY

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

DATE: 05-17-2017

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .
. .

DES. BY: kje
DRN. BY: jl
CHK. BY: rmca
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
TITLE, LOCATION MAP, VICINITY MAP, GENERAL NOTES, LEGEND & SYMBOLS, DRAWING INDEX, CONTRACTOR AND CONSULTANTS

DRAWING NO. T-1.0

SHT. 1 OF 27

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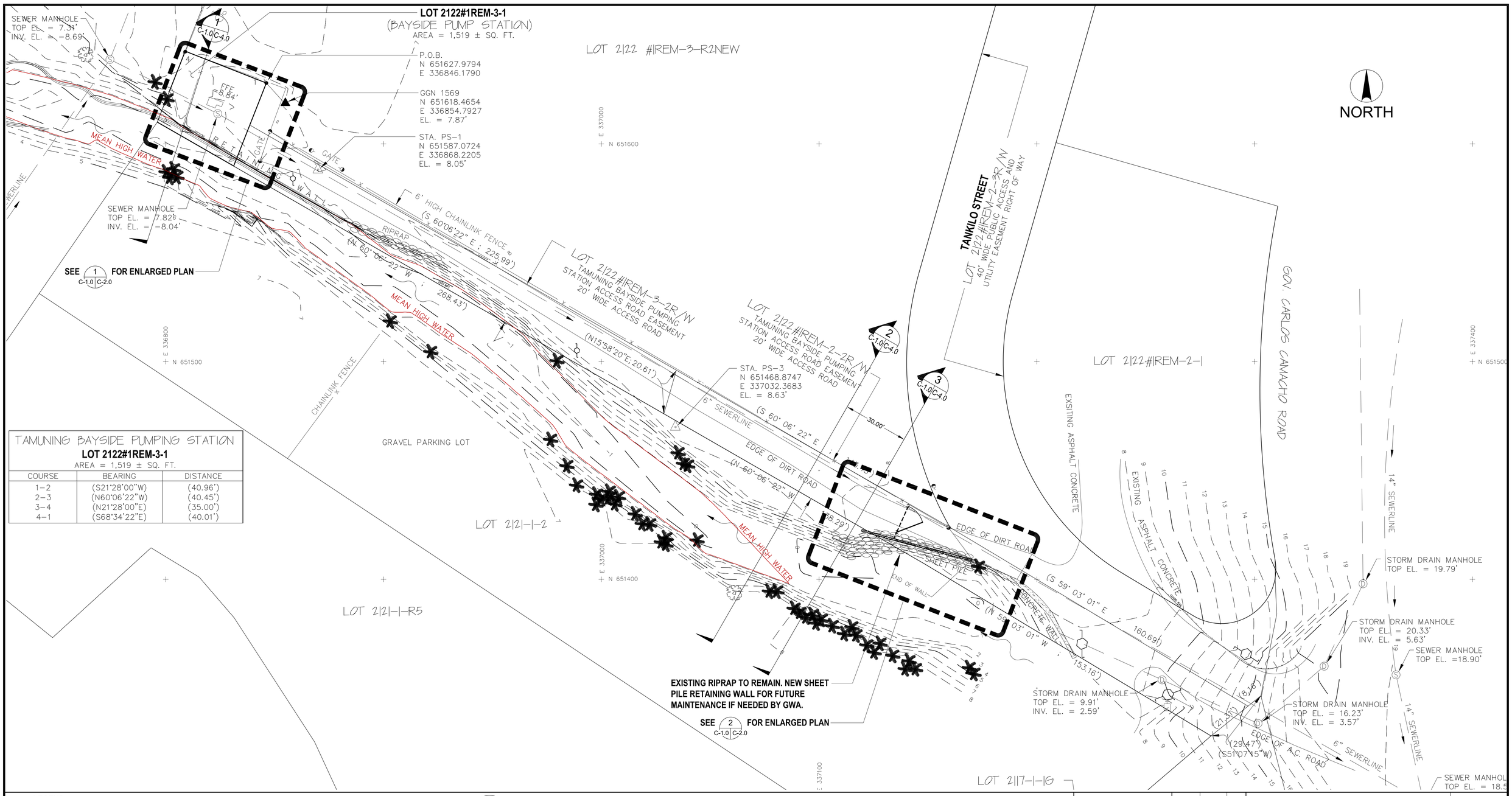

TAMUNING BAYSIDE PUMPING STATION
LOT 2122#1REM-3-1
AREA = 1,519 ± SQ. FT.

COURSE	BEARING	DISTANCE
1–2	(S21°28'00"W)	(40.96')
2–3	(N60°06'22"W)	(40.45')
3–4	(N21°28'00"E)	(35.00')
4–1	(S68°34'22"E)	(40.01')

LEGEND

- PROPERTY LINE
- RIGHT OF WAY
- A.C. ASPHALT CONCRETE
- CHAIN LINK FENCE
- COCONUT TREE
- CONCRETE POWER PLE
- GATE POST
- GUY WIRE
- PALM TREE
- PLANTS
- SEWER CLEAN OUT
- S24"ø SEWER LINE WITH SIZE IN INCHES
- SEWER MANHOLE
- STORM DRAIN MANHOLE
- TELEPHONE BOX
- WATER METER
- WATER VALVE
- FOUND 1993 GGN MONUMENT AS NOTED
- FOUND #4 REBAR WITH CAP, MARKED "PLS62"
- CORNER NOT RETRACED
- SUBJECT PROPERTY LIMITS
- ( ) RECORD DATA PER REFERENCE NO. 1

1 C-1.0 C-1.0 **OVERALL SITE PLAN**
SCALE: 1" = 20'-0"

GRAPHIC SCALE:
20' 15 10 5 0 20' 40' 60'
SCALE: 1"=20'-0"

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TEL: (671) 638.5714 / 638.4714 FAX (671) 638.2136

ERNESTO A. CAPULONG JR. CERTIFICATE NO. 649 (CIVIL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.
DATE: 07-17-2017

REV	DATE	BY	DESCRIPTION	APPROVED BY

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .
DES. BY: ju
DRN. BY: ju
CHK. BY: rmca
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
OVERALL SITE PLAN AND LEGEND

DRAWING NO. C-1.0
SHT. 2 OF 27

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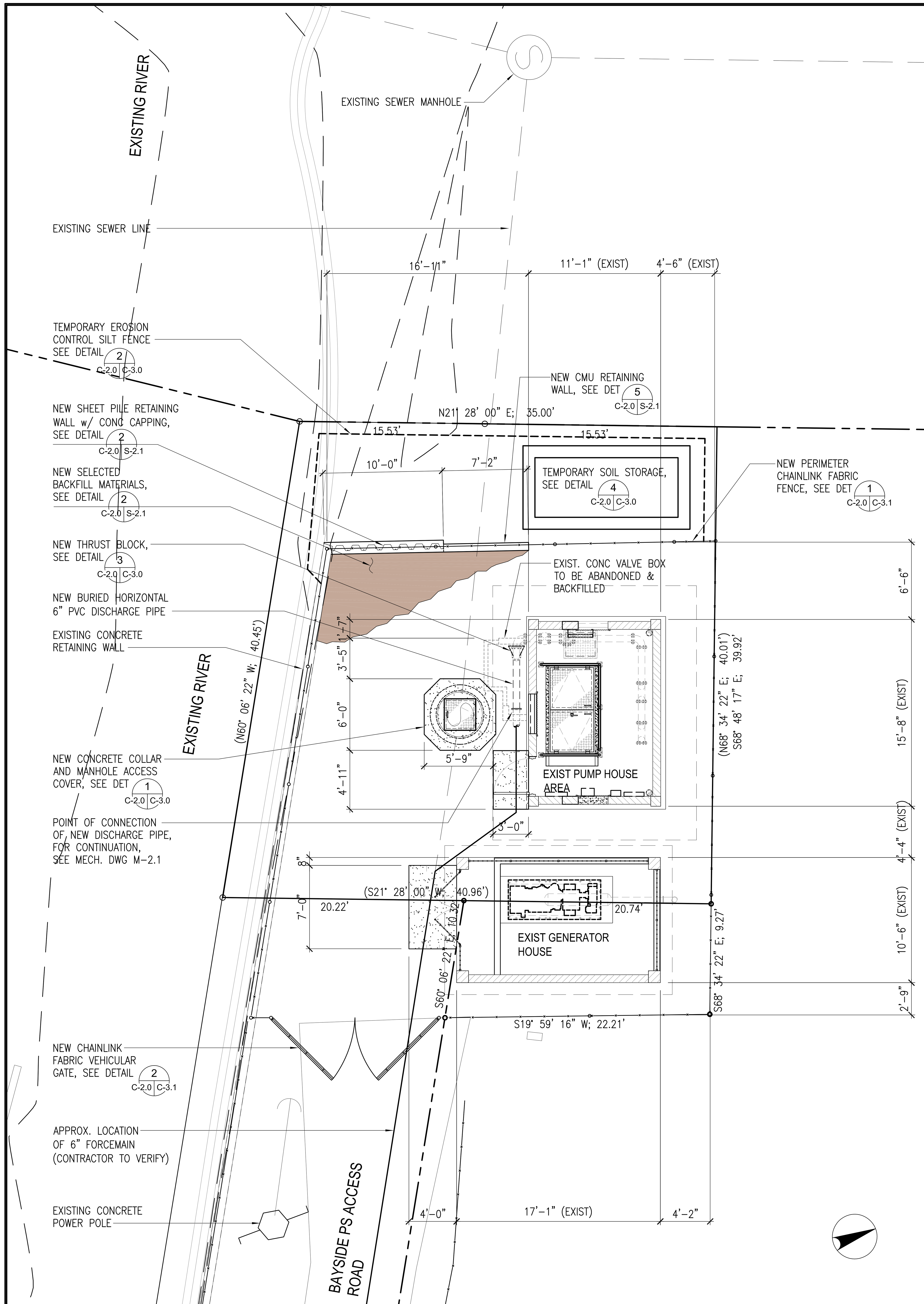
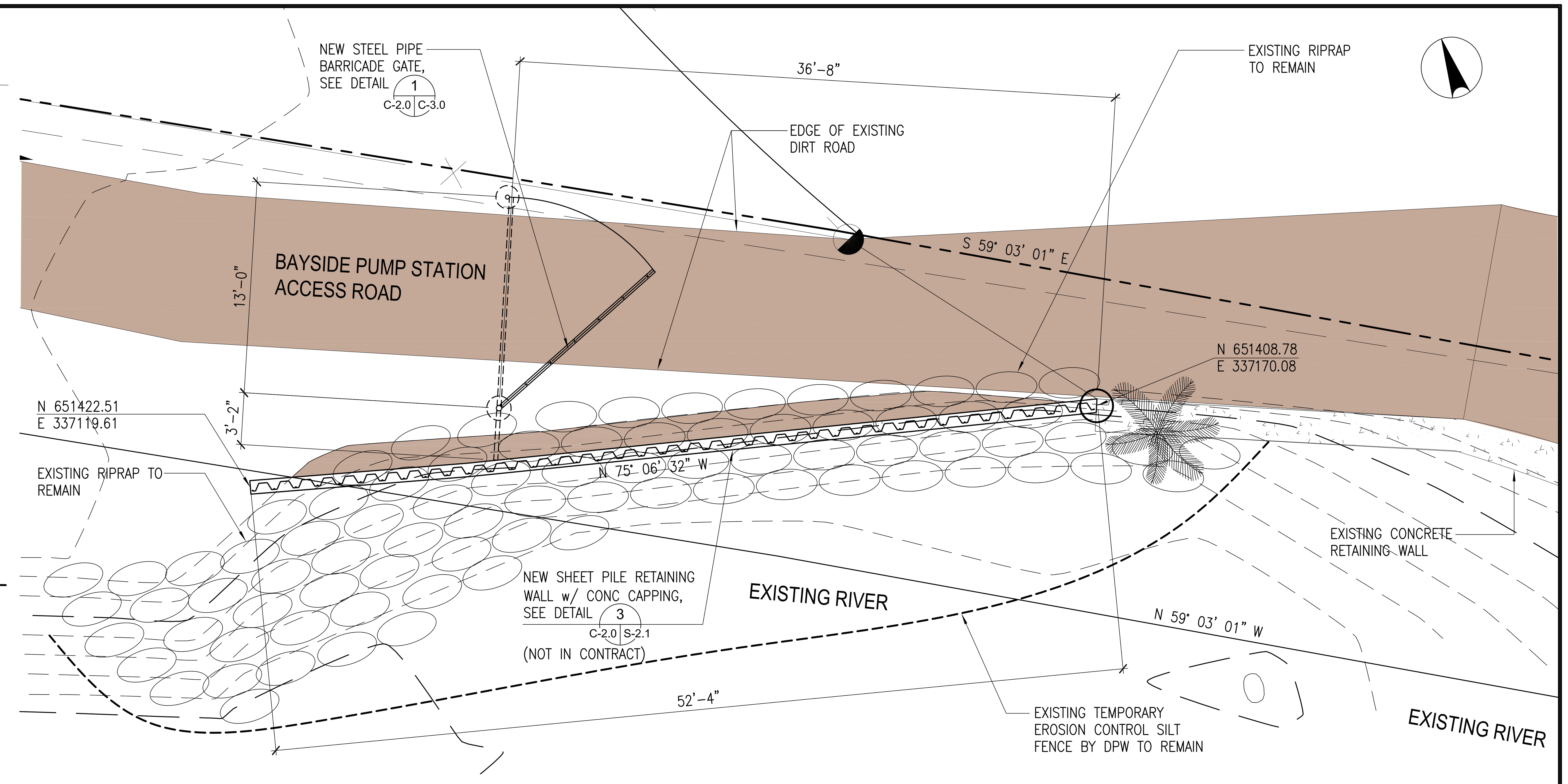


1 C-2.0 C-2.0 SITE PLAN
SCALE: 1" = 5'-0"



2 C-2.0 C-2.0 OFFSITE BARRICADE GATE
SCALE: 1" = 5'-0"

GRAPHIC SCALE:
5' 4 3 2 1 0 5' 10' 15'
SCALE: 1"=5'-0"

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Ernesto A. Capulong Jr.

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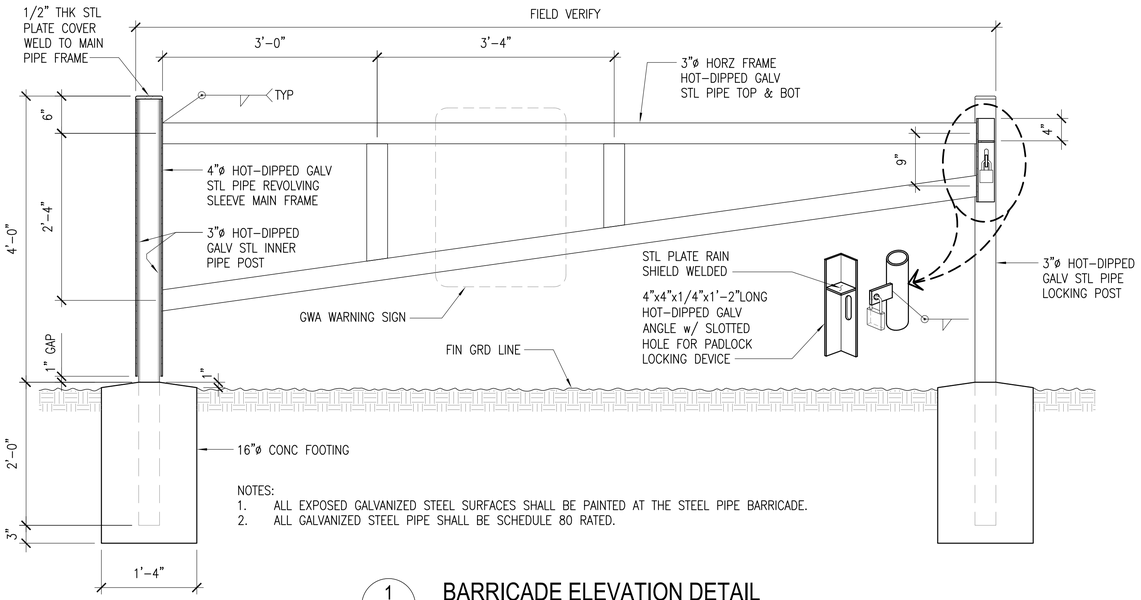
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: ju
DRN. BY: ju
CHK. BY: rmca
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

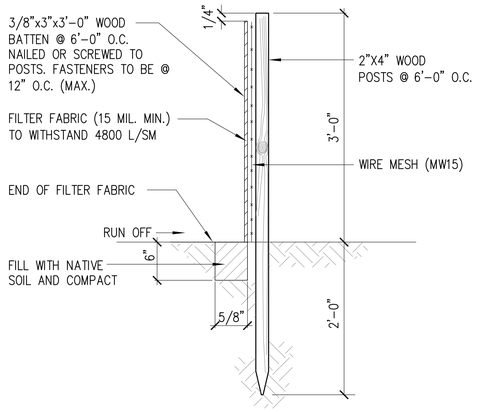
CONTENTS:
SITE PLAN, OFFSITE BARRICADE GATE AND NEW SHEET PILE RETAINING WALL PLAN

DRAWING NO.
C-2.0
SHT. 3 OF 27

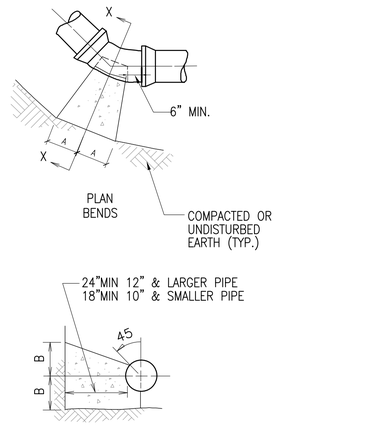


NOTES:
1. ALL EXPOSED GALVANIZED STEEL SURFACES SHALL BE PAINTED AT THE STEEL PIPE BARRICADE.
2. ALL GALVANIZED STEEL PIPE SHALL BE SCHEDULE 80 RATED.

1 C-2.0 C-3.0 **BARRICADE ELEVATION DETAIL**
SCALE: 1" = 1'-0"

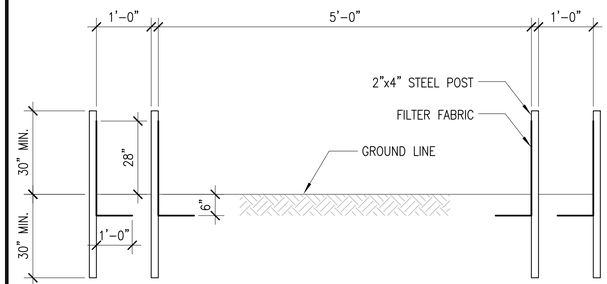


2 C-2.0 C-3.0 **SILT FENCE DETAIL**
SCALE: 1" = 1'-0"

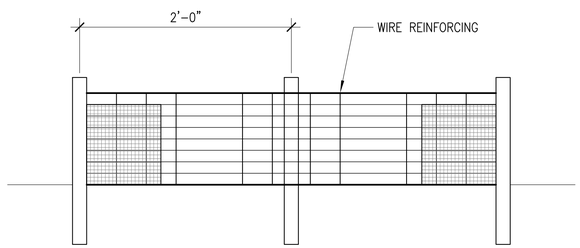


SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES		PLUGS	
	A	B	A	B	A	B	A	B	C	D
6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"

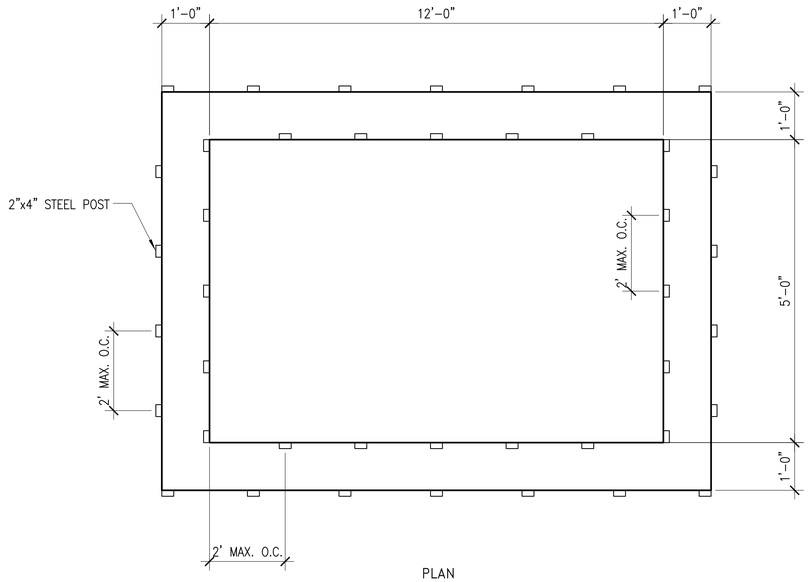
3 C-2.0 C-3.0 **THRUST BLOCK DETAIL**
SCALE: NTS



CROSS-SECTION



ELEVATION



PLAN

NOTES:

1. THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-INCH OVERLAP AND BOTH ENDS SECURELY FASTENED TO THE POST.
2. THE FENCE POSTS SHALL BE SPACED A MAXIMUM OF 2 FEET APART AND DRIVEN SECURELY INTO THE GROUND (MINIMUM OF 30 INCHES).
3. A TRENCH SHALL BE EXCAVATED, ROUGHLY 8 INCHES WIDE AND 12 INCHES DEEP, UPSLOPE AND ADJACENT TO THE STEEL POST TO ALLOW THE FILTER FABRIC TO BE BURIED.
4. FILET FABRIC SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POST USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG. THE FILTER FABRIC SHALL EXTEND INTO THE TRENCH A MINIMUM OF 12 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.
5. THE TRENCH SHALL BE BACKFILLED WITH GRAVEL BACKFILL.
6. UNLESS OTHERWISE NOTED, FILTER FABRIC SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFUL PURPOSE, BUT NOT BEFORE THE UPSLOPE AREA HAS BEEN PERMANENTLY STABILIZED.
7. FILTER FABRIC FENCES SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
8. REMOVE SEDIMENT WHEN IT REACHED 12 INCHES IN HEIGHT AND AT SUBSTANTIAL COMPLETION.

4 C-2.0 C-3.0 **TEMPORARY SOIL STORAGE**
SCALE: NTS

GRAPHIC SCALE:
0" 6" 1' 2' 3' 4'
SCALE : 1" = 1'-0"

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Ernesto A. Capulong Jr

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ENGR. SUP: .
PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS: CIVIL DETAILS

DRAWING NO. C-3.0
SHT. 4 OF 27

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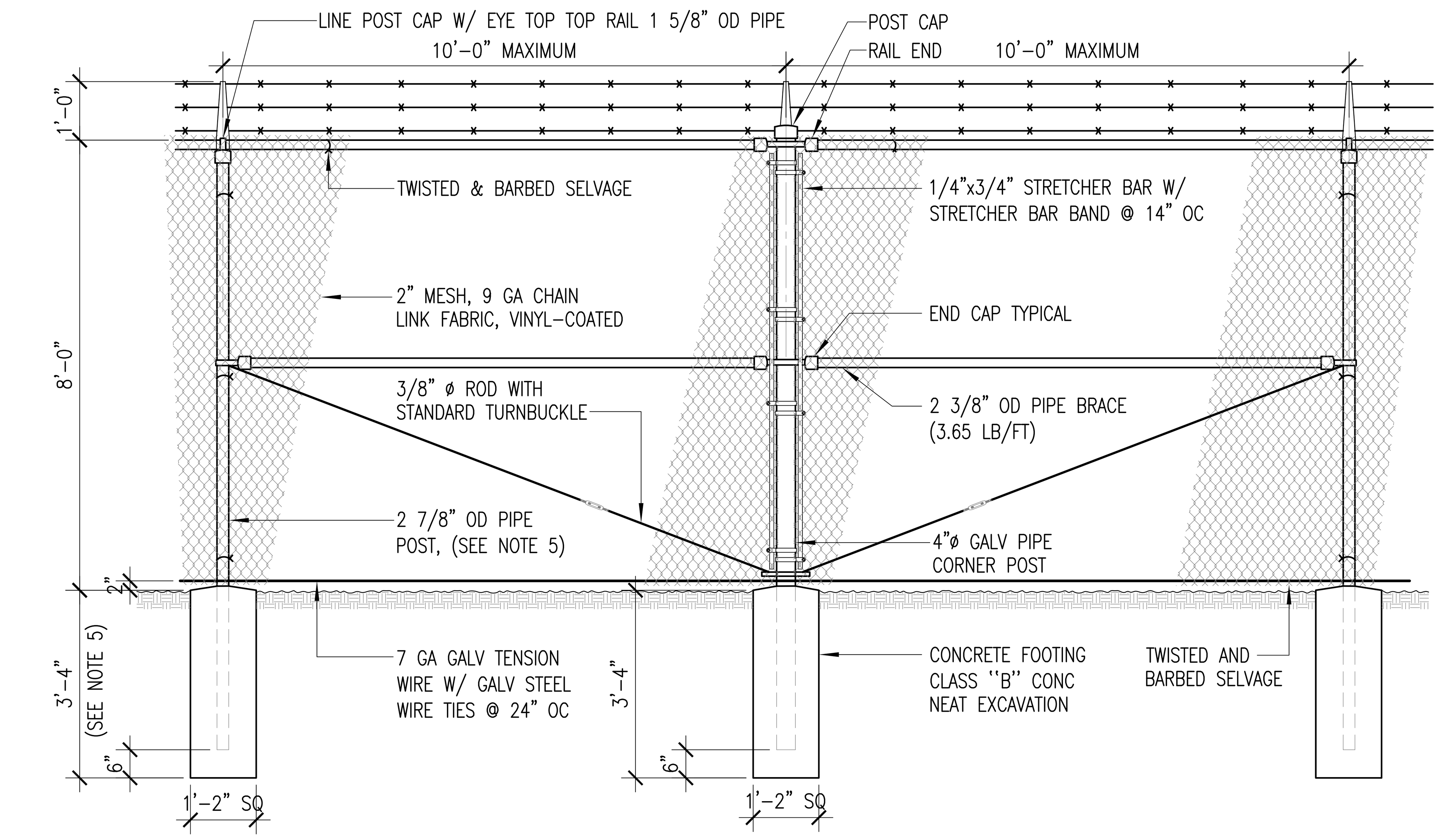
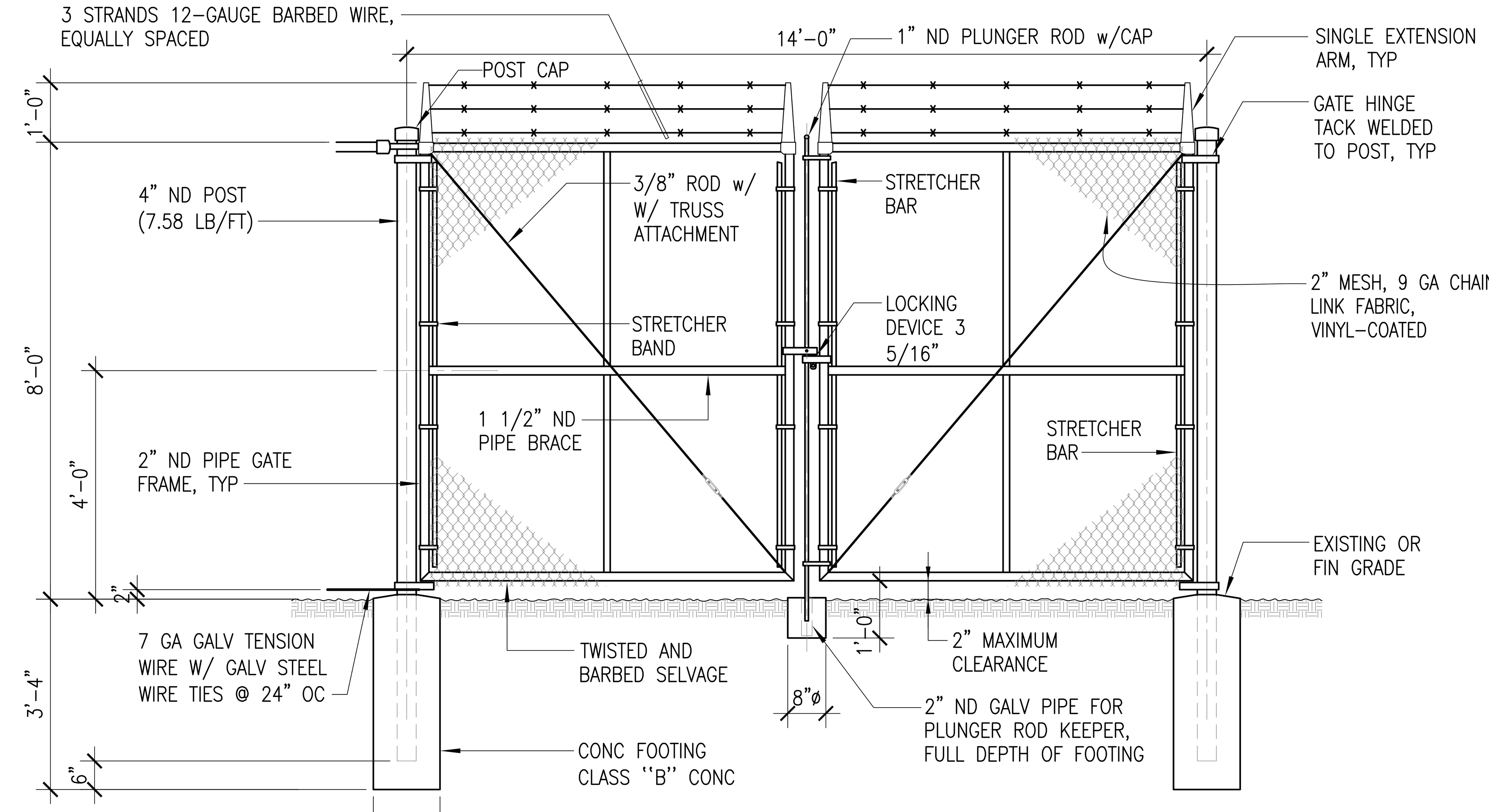


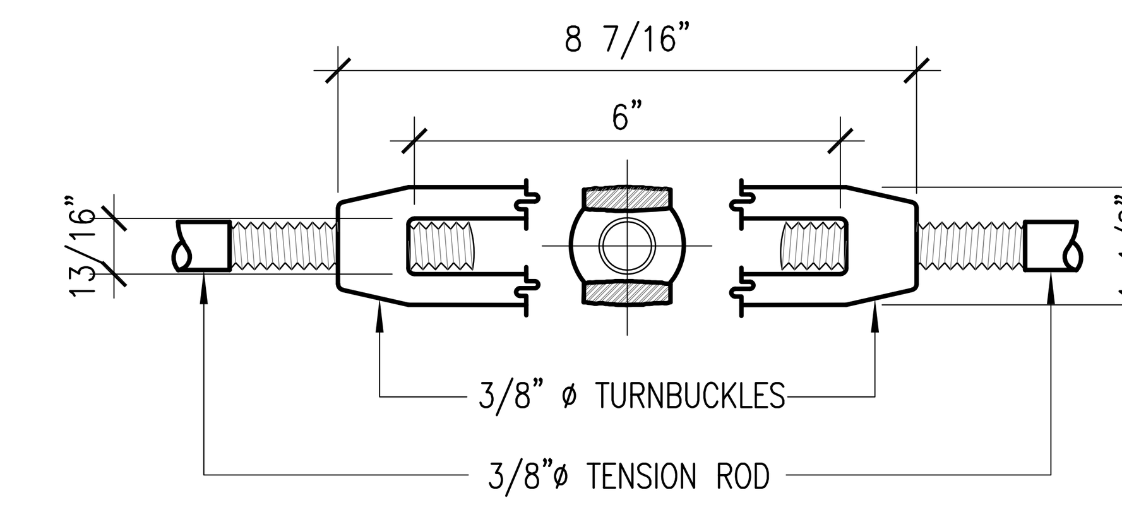
NOTES:

1. NO EXCAVATIONS WERE MADE TO VERIFY THE EXACT LOCATIONS SHOWN FOR UNDERGROUND UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO DETERMINE THE EXACT LOCATION OF THE UTILITIES AND SERVICE CONNECTION THERE TO.
2. THE CONTRACTOR SHALL MAKE HIS OWN INVESTIGATIONS, INCLUDING EXPLORATORY EXCAVATIONS, TO DETERMINE THE LOCATIONS AND TYPE OF EXISTING UTILITIES, INCLUDING SERVICE CONNECTORS, PRIOR TO COMMENCING WORK WHICH COULD RESULT IN DAMAGE TO SUCH UTILITIES.
3. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AS TO ANY UTILITY DISCOVERED BY HIM IN A DIFFERENT POSITION THAN SHOWN ON THE PLANS OR WHICH IS NOT SHOWN ON THE PLANS.
4. ALL GALVANIZED STEEL PIPE SHALL BE SCHEDULE 80 RATED.
5. CHAINLINK POSTS & FOOTINGS SHALL BE RATED AGAINST 170 MPH WIND LOADING.

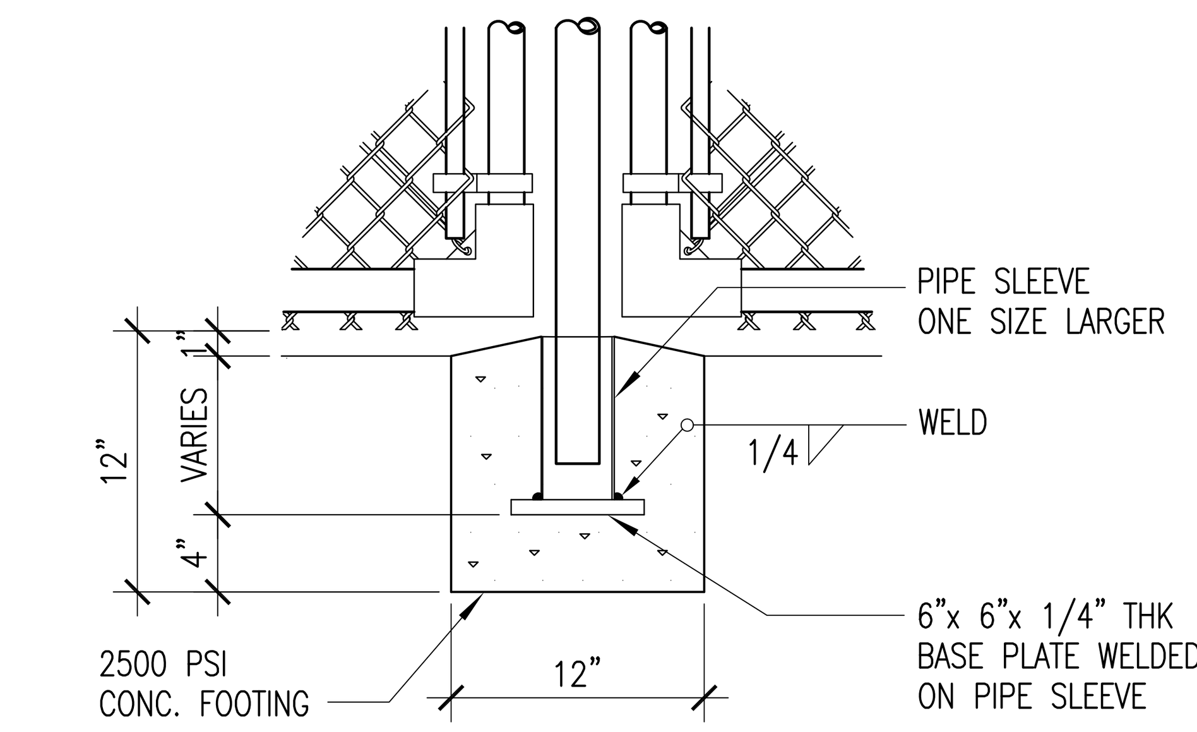
1 C-2.0 C-3.1 DEVELOPED ELEV CHAINLINK FENCE INSTALLATION DETAIL AT CORNER
SCALE: 1/2" = 1'-0"



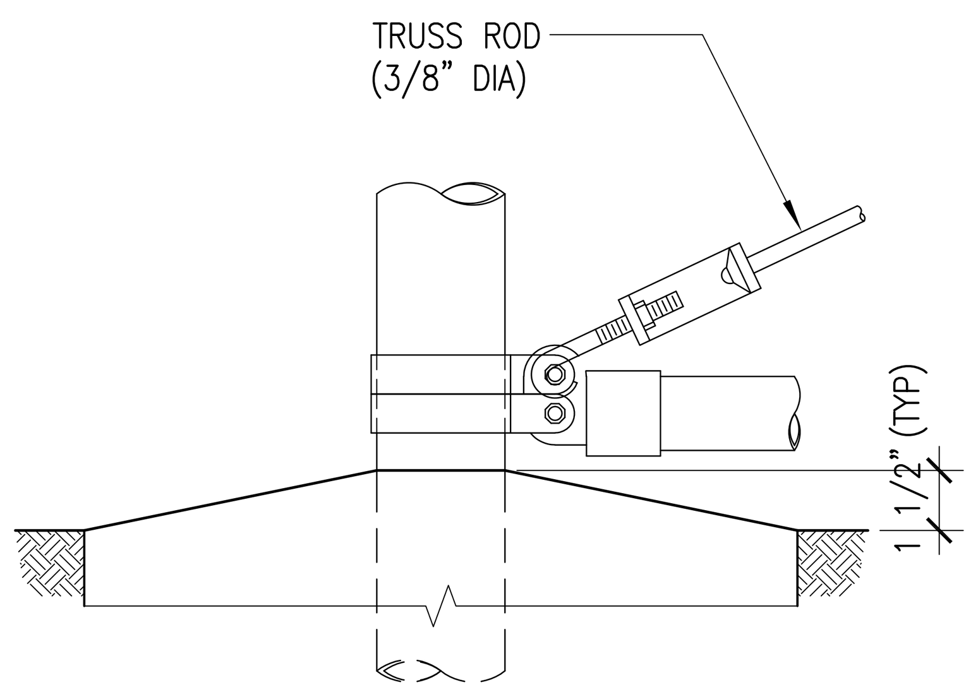
2 C-2.0 C-3.1 CHAINLINK VEHICULAR GATE ELEVATION
SCALE: 1/2" = 1'-0"



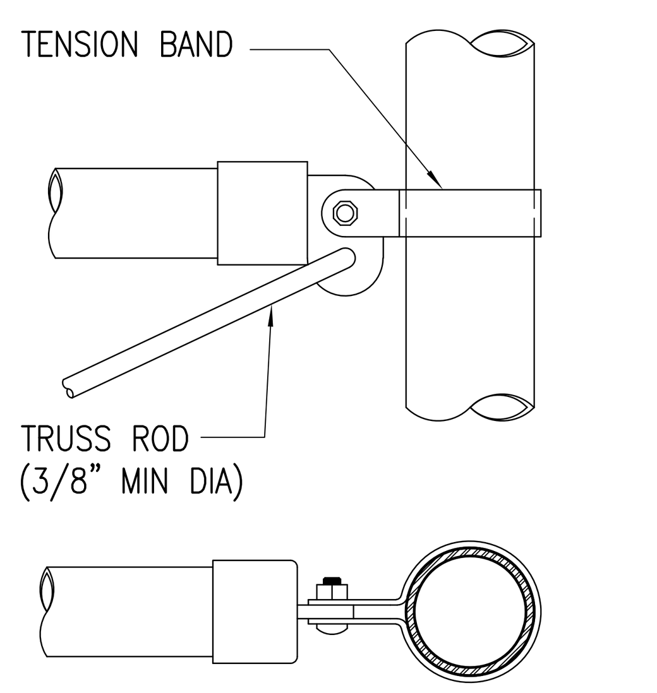
3 C-3.1 C-3.1 TURNBUCKLE DETAIL
SCALE: NTS



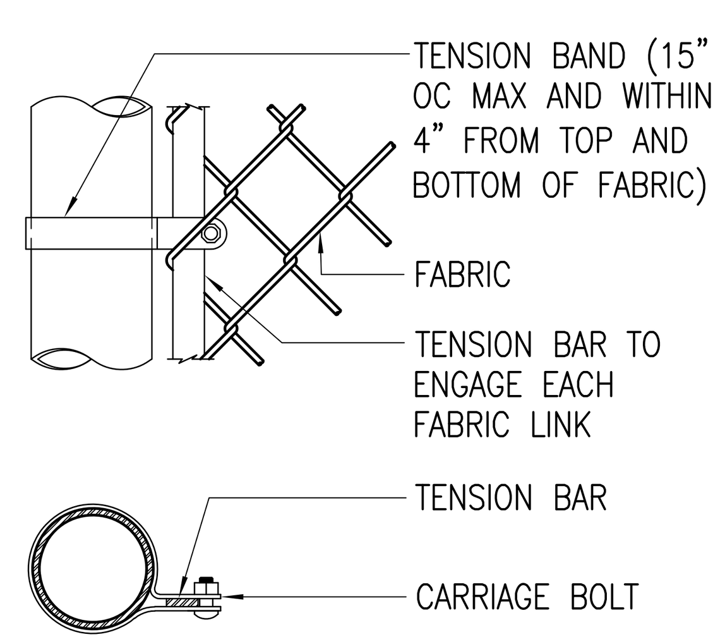
5D C-3.1 C-3.1 PLUNGER ROD KEEPER DETAIL



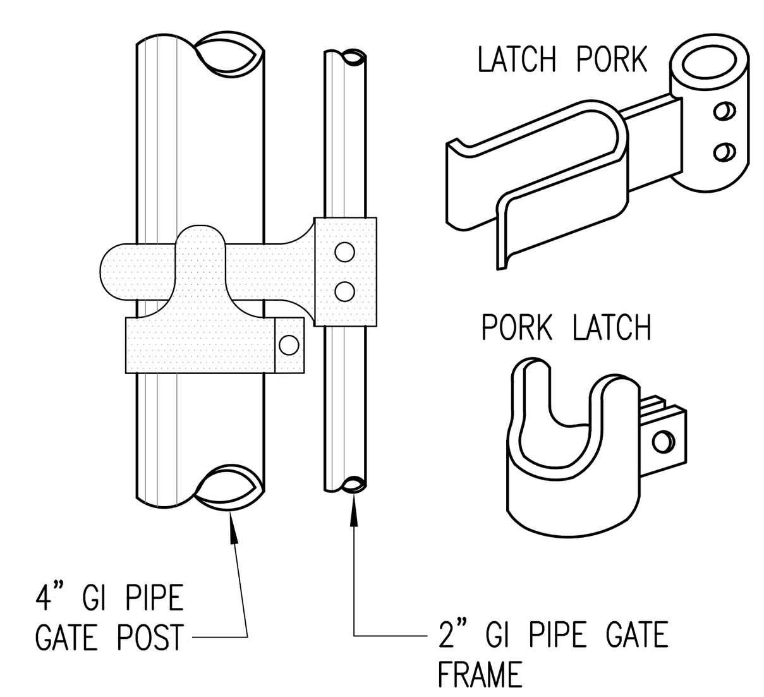
4A C-3.1 C-3.1 TRUSS ROD AND BAND



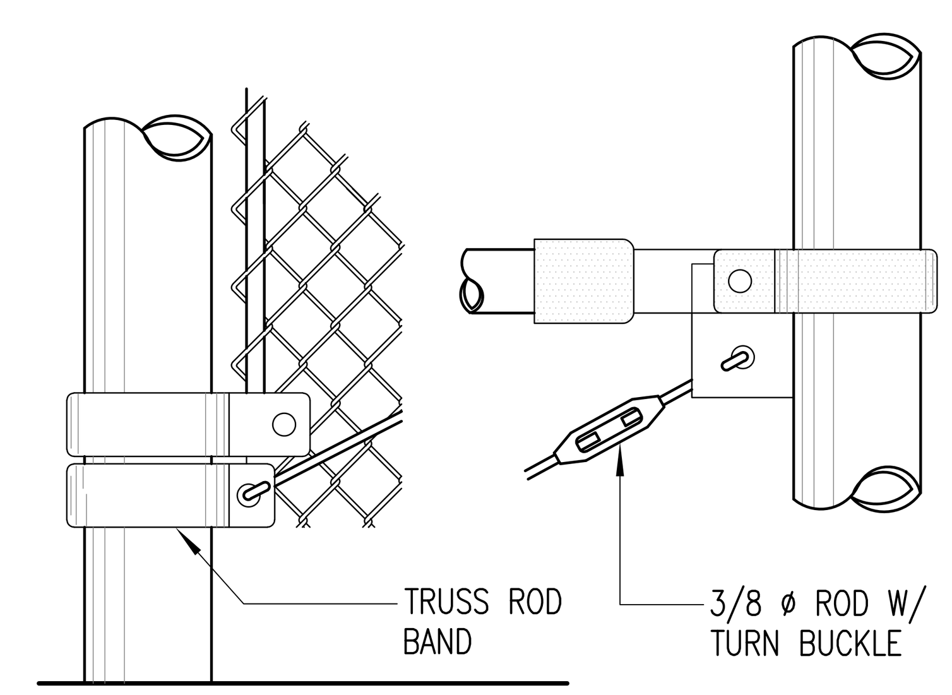
4B C-3.1 C-3.1 BRACE RAIL CLAMP DETAIL



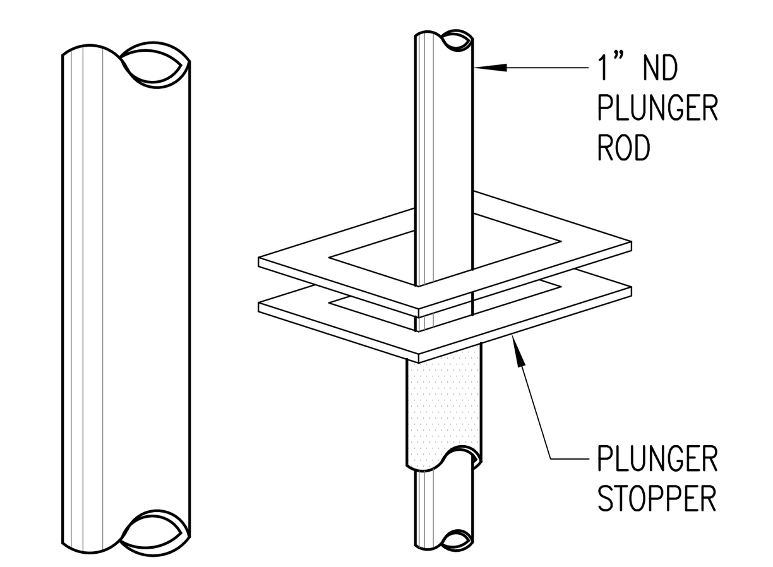
4C C-3.1 C-3.1 END POST DETAIL



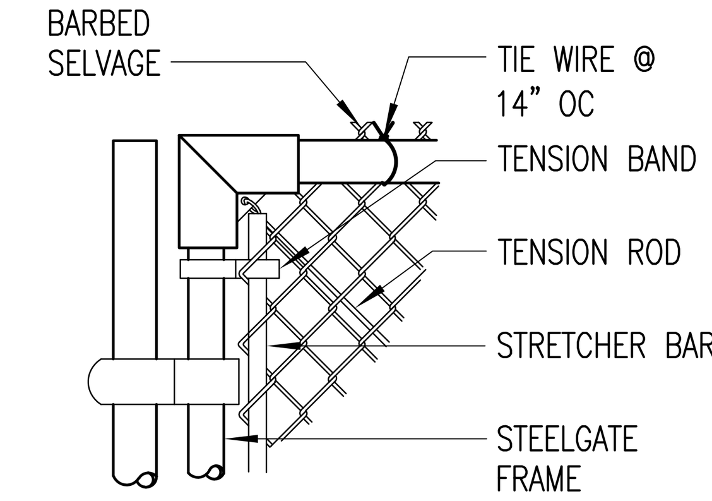
5A C-3.1 C-3.1 LATCH DETAIL



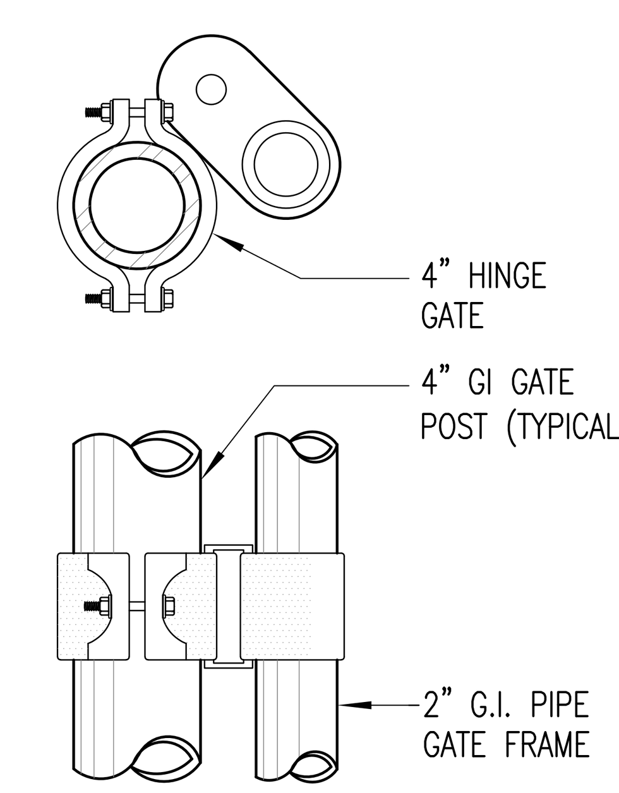
4B C-3.1 C-3.1 TENSION ROD DETAIL



5C C-3.1 C-3.1 PLUNGER CATCH DETAIL



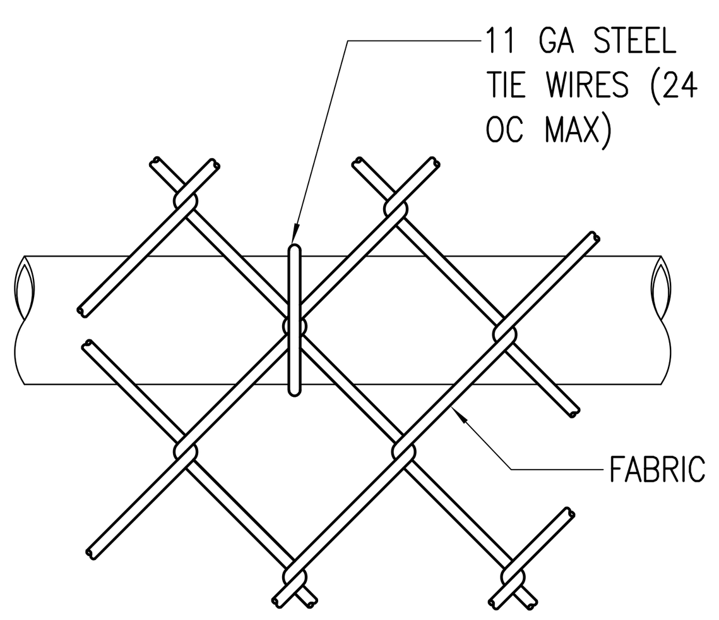
5G C-3.1 C-3.1 TENSION BAND AND STRETCHER DETAIL



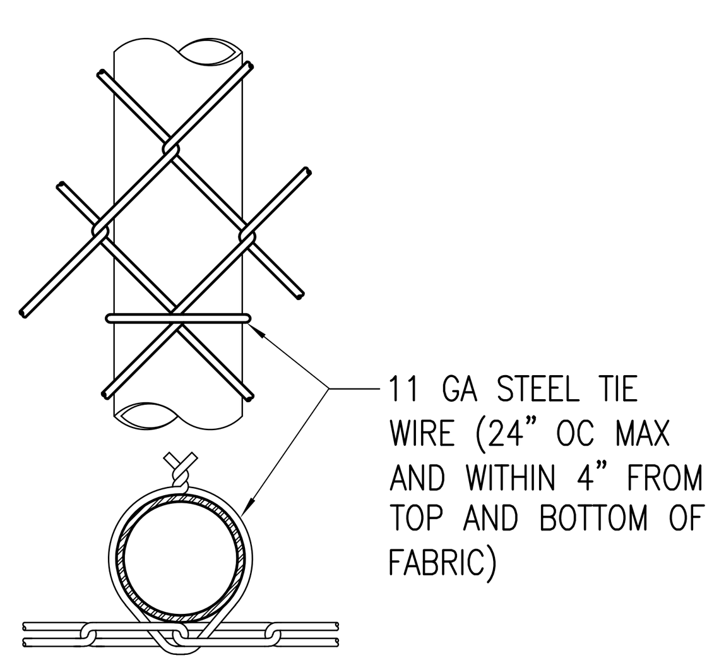
5H C-3.1 C-3.1 HINGE GATE DETAIL

NOTES:

1. GATE FRAME SHALL BE OF WELDED PIPE CONSTRUCTION.
2. FOR ALL WELDED CONNECTIONS: CORNERS SHALL BE MITERED AND ALL PIPE BRACES PROPERLY COPED.
3. ALL WELDED CONNECTIONS SHALL BE PAINTED WITH TWO COATS OF Z.R.C. COLD GALVANIZING COMPOUND.
4. GATE HINGES SHALL BE TACK WELDED TO POST.
5. ALL PIPES AND POST SIZES ARE NOMINAL DIAMETER (N.D.)
6. PAD LOCK SHALL BE FURNISHED BY OWNER.
7. FIPES, FITTINGS AND POSTS SHALL BE HOT-DIP GALVANIZED.
8. TOP OF CONCRETE FOOTING SHALL BE CROWNED TOSHED WATER.

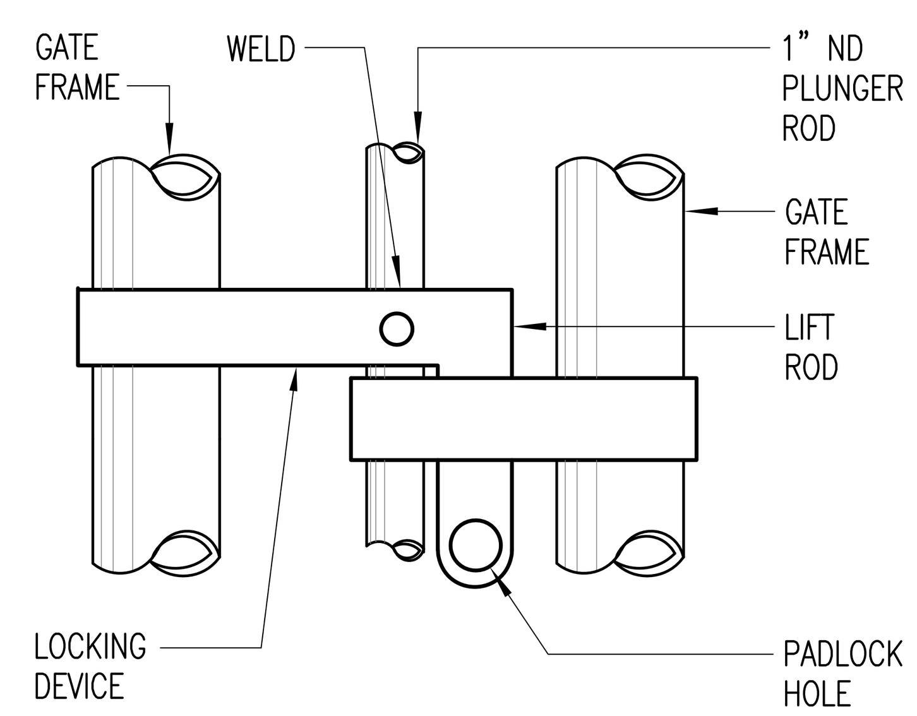


4E C-3.1 C-3.1 TOP OR BRACE RAIL ATTACHMENT

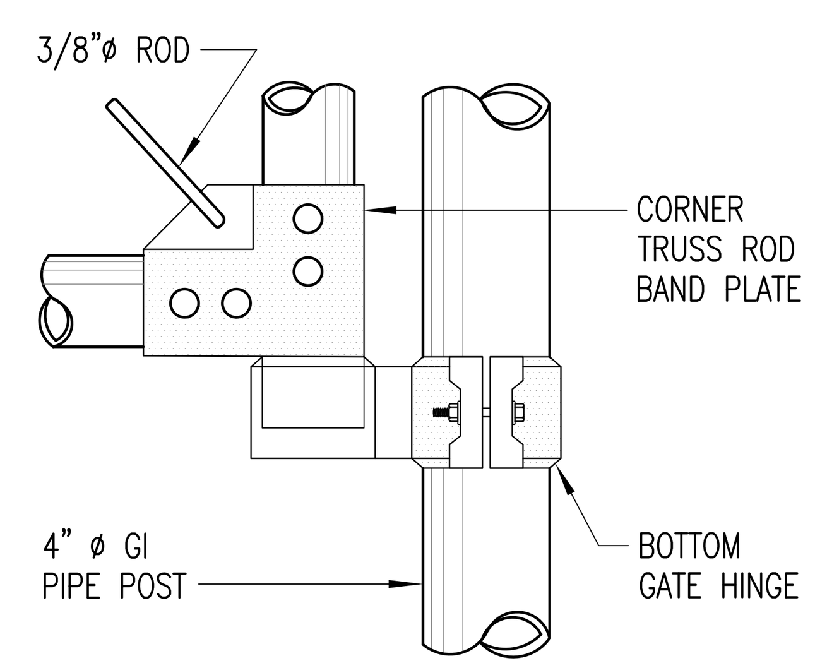


4D C-3.1 C-3.1 LINE POST ATTACHMENTS

4 C-3.1 C-3.1 CHAINLINK FENCE CONNECTION DETAILS
SCALE: NTS



5E C-3.1 C-3.1 LOCKING DEVICE DETAIL



5F C-3.1 C-3.1 BOTTOM HINGE DETAIL

5 A-1.0 C-3.1 CHAINLINK VEHICULAR GATE CONNECTION DETAILS
SCALE: NTS

GRAPHIC SCALE:
0' 6" 1' 2' 3' 4' 8'
SCALE : 1/2" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation

ERNESTO A. CAPULONG JR. CERTIFICATE NO. 649 (CIVIL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

Ernesto A. Capulong Jr.

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

DATE: 07-17-2017

REV	DATE	BY	DESCRIPTION	APPROVED BY

GWA NO.: .
GRANT ID NO.: .
CONTRACT NO.: .
PROJECT NO.: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

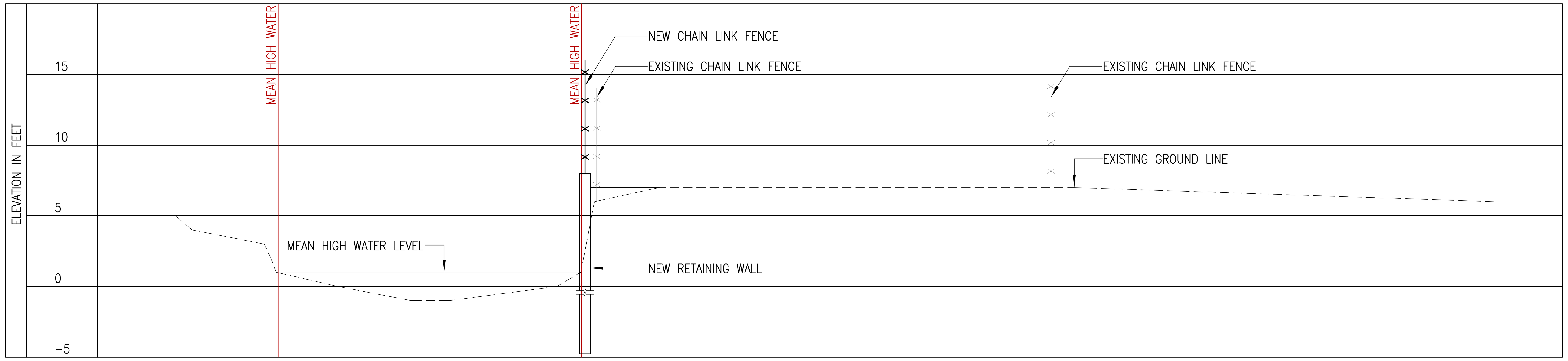
PROJECT: BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: ju | CHIEF ENGR: .
DRN. BY: ju | ENGR. SUP: .
CHK. BY: rmca | PROJ. ENGR: .

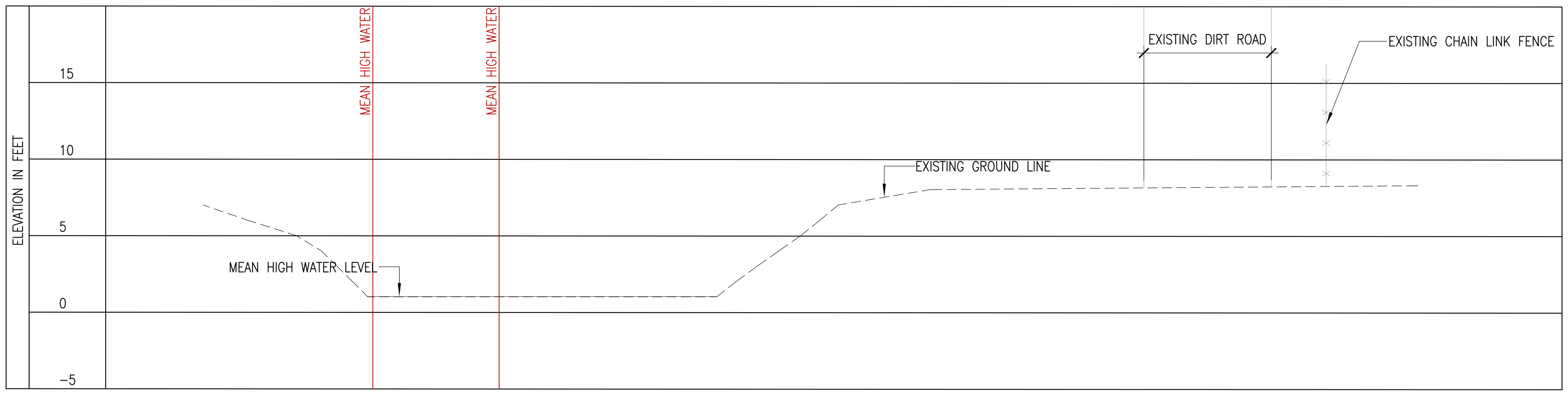
CONTENTS: CHAIN LINK FENCE AND GATE DETAILS

DRAWING NO. C-3.1
SHT. 5 OF 27

5/17/2017 12:53:30 PM



1 C-1.0 C-4.0 SITE SECTION
SCALE: 1" = 5'-0"



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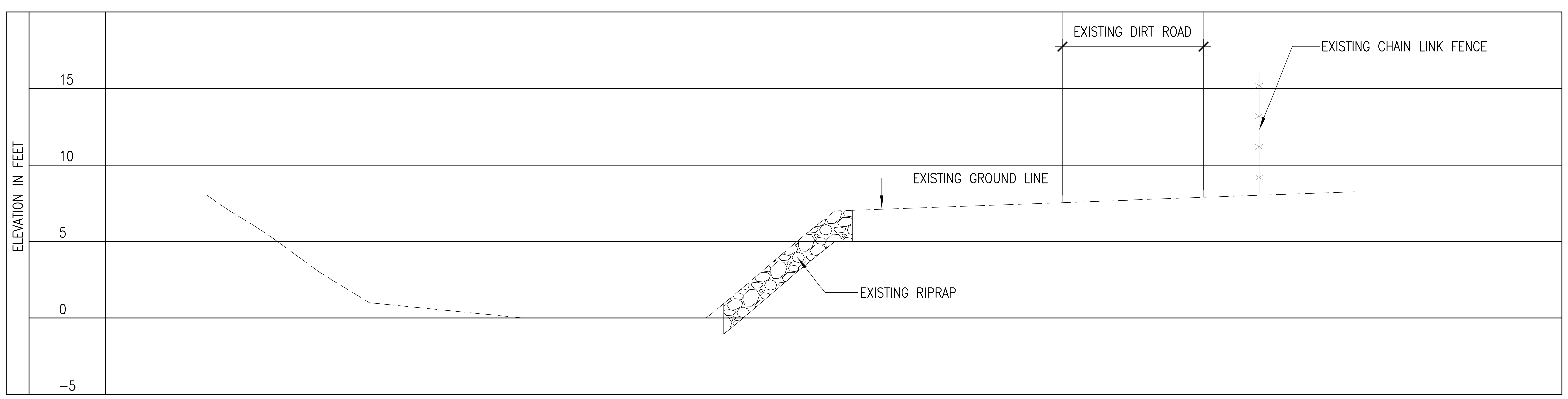
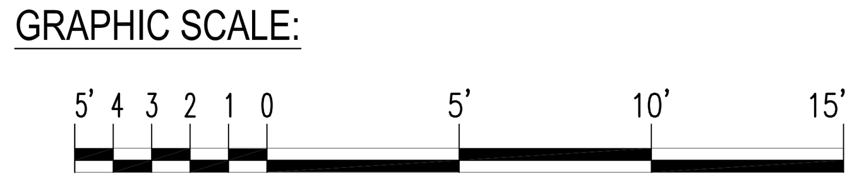


3 C-1.0 C-4.0 SITE SECTION
SCALE: 1" = 5'-0"

GRAPHIC SCALE:



SCALE: 1"=5'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING
ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 638.5716 / 638.4716 Fax (671) 638.2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

ERNESTO A. CAPULONG JR. CERTIFICATE NO. 649 (CIVIL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

Ernesto A. Capulong Jr.

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DATE: 07-17-2017

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .

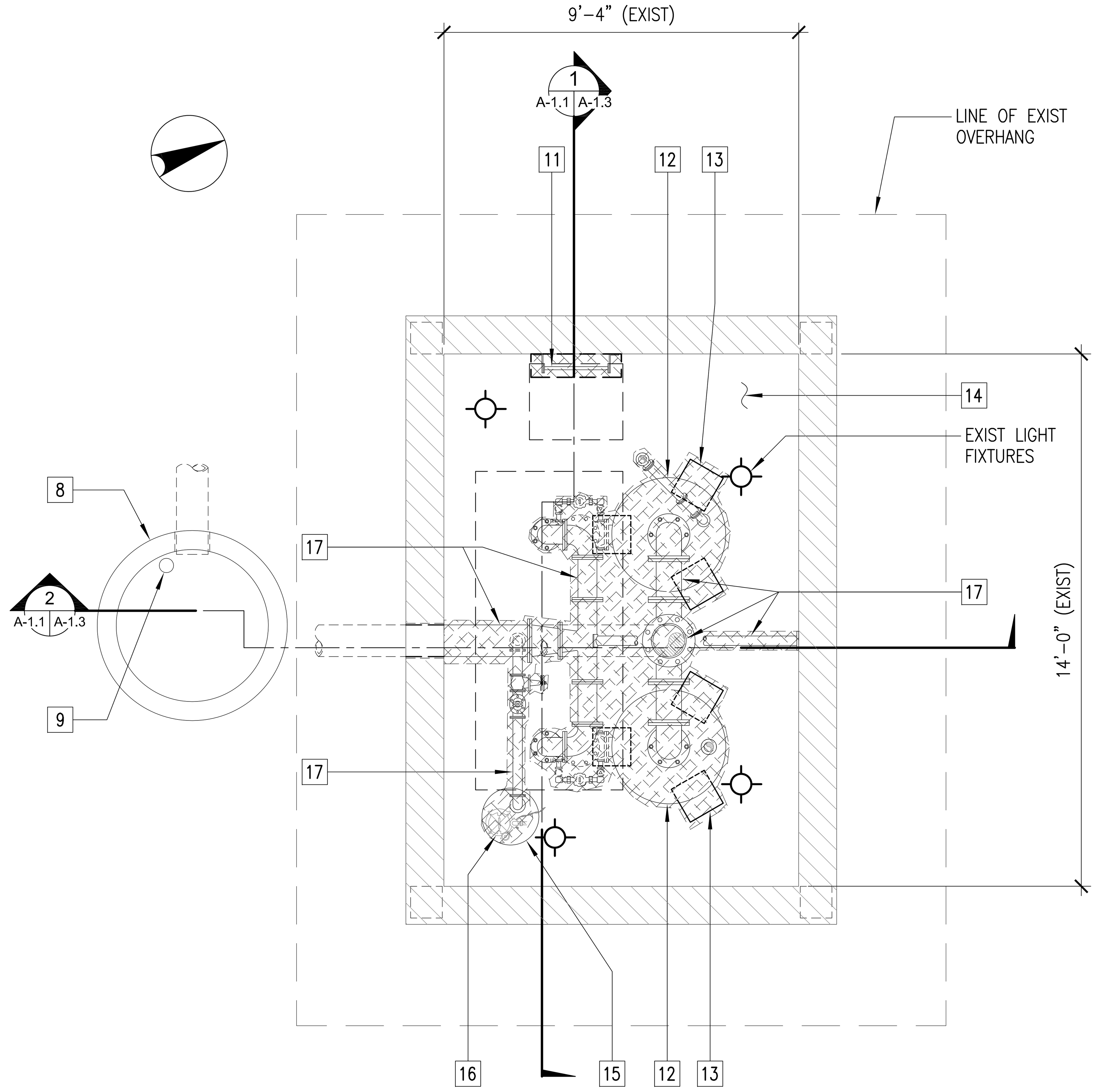
GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

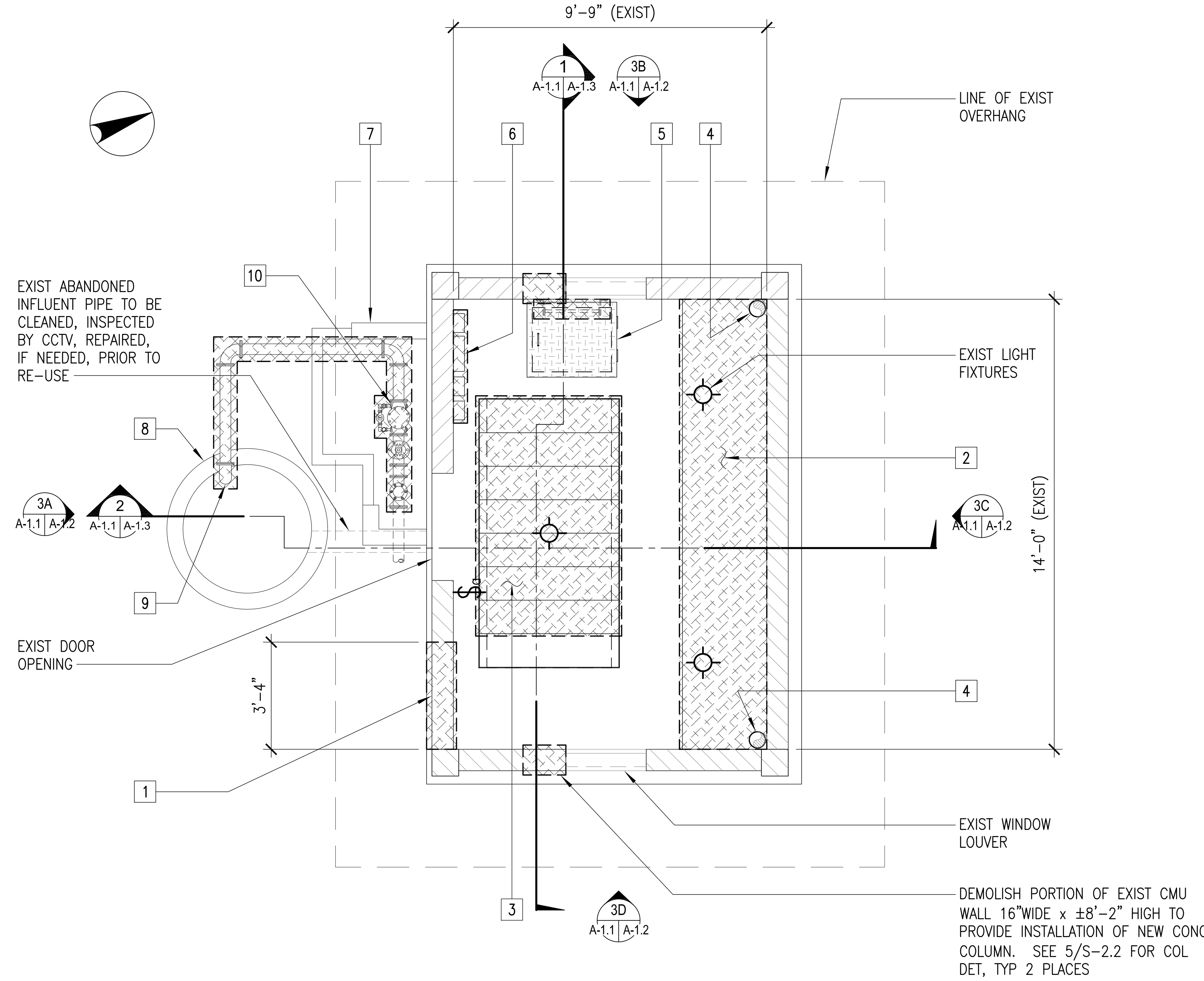
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: ju	CHIEF ENGR: .	CONTENTS: SITE SECTIONS
DRN. BY: ju	ENGR. SUP: .	DRAWING NO. C-4.0
CHK. BY: rmca	PROJ. ENGR: .	SHT. 6 OF 27

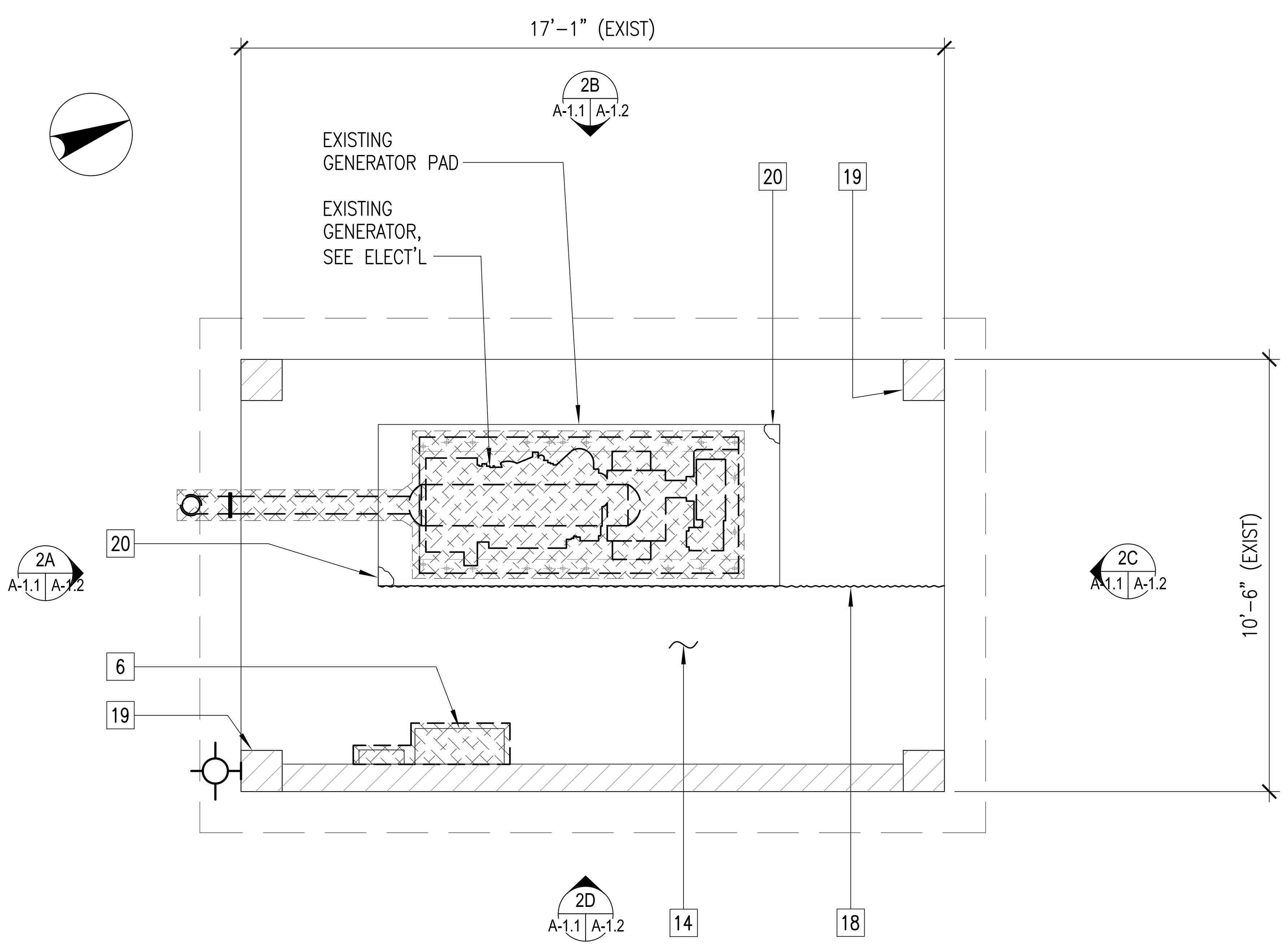
5/17/2017 2:15:48 PM



1 A-1.1 A-1.1
DEMOLITION PLAN - PUMP HOUSE LOWER FLOOR
SCALE: 3/8" = 1'-0"



2 A-1.1 A-1.1
DEMOLITION PLAN - PUMP HOUSE GROUND FLOOR
SCALE: 3/8" = 1'-0"



1 A-1.2 A-1.2
DEMOLITION PLAN - GENERATOR HOUSE
SCALE: 3/8" = 1'-0"

DEMOLITION KEYED NOTES:

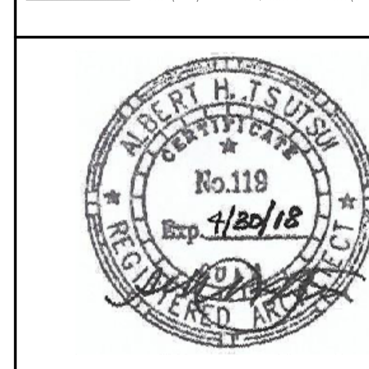
1. SAWCUT 3'-4"Wx7'-2"H AND DEMOLISH PORTION OF EXISTING WALL TO NEW OPENING FOR NEW DOOR.
2. DEMOLISH/REMOVE EXISTING CONCRETE PAD.
3. DEMOLISH/REMOVE EXISTING CONCRETE PLANK.
4. EXISTING STEEL PIPE VENTS TO REMAIN (REFER TO MECHANICAL DRAWING FOR REFURBISHMENT REQUIREMENT).
5. EXISTING STEEL ACCESS COVER TO REMAIN.
6. EXISTING ELECTRICAL PANELS, BOXES, DEVICES TO BE REMOVED (REFER TO ELECTRICAL DEMOLITION PLAN).
7. EXISTING CONCRETE VALVE BOX TO REMAIN (FOR REPAIR AND RECONSTRUCTION DETAILS SEE A-2.1).
8. EXISTING CONCRETE MANHOLE/WETWELL.
9. REMOVE EXISTING PUMP AND STEEL DISCHARGE RISER AND HORIZONTAL PIPE AND FITTINGS.
10. EXISTING GATE VALVES AND FITTINGS, SEE MECHANICAL FOR DEMOLITION.
11. REMOVE AND REPLACE EXISTING STAINLESS STEEL LADDER.
12. REMOVE EXISTING STEEL TANKS.
13. DEMOLISH/REMOVE EXISTING CONCRETE PEDESTALS AND STEEL SUPPORTS, TYPICAL.
14. EXISTING CONCRETE FLOOR SLAB, REFER TO SPECIFICATION FOR REPAIR.
15. EXISTING SUMP PIT TO BE CLEAR WITH DEBRIS.
16. REMOVE EXISTING SUMP PUMP.
17. REMOVE EXISTING STEEL PIPE LINE AND FITTINGS, SEE MECHANICAL FOR DEMOLITION.
18. EXISTING FLOOR CRACKS, REFER TO SPECIFICATION FOR REPAIR.
19. EXISTING COLUMN CRACKS AND SPALLS, REFER TO SPECIFICATION FOR REPAIR.
20. EXISTING PAD SPALLS, REFER TO SPECIFICATION FOR REPAIR.
21. EXISTING HOLES AT WALLS TO PATCH WITH CEMENT.

LEGEND:

- DEMOLITION
- EXISTING CONCRETE WALL

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation



I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

REV	DATE	BY	DESCRIPTION	APPROVED BY

GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

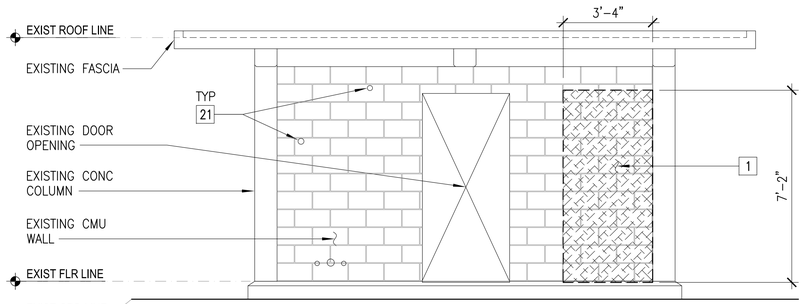
DES. BY: kje
DRN. BY: jl
CHK. BY: aht
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

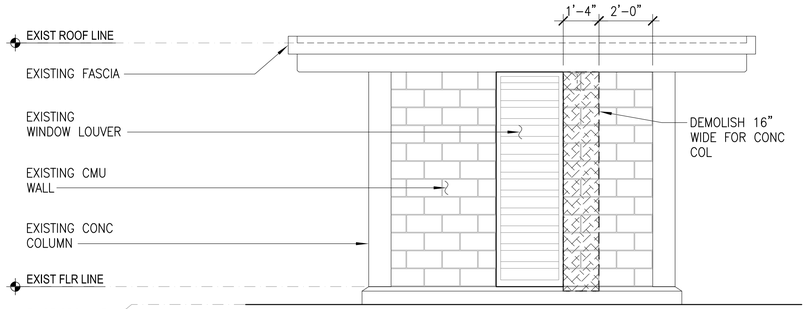
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
DEMOLITION PLAN-PUMP HOUSE LOWER FLOOR, DEMOLITION PLAN-PUMP HOUSE GROUND FLOOR, DEMOLITION PLAN - GENERATOR HOUSE & DEMOLITION KEYED NOTES

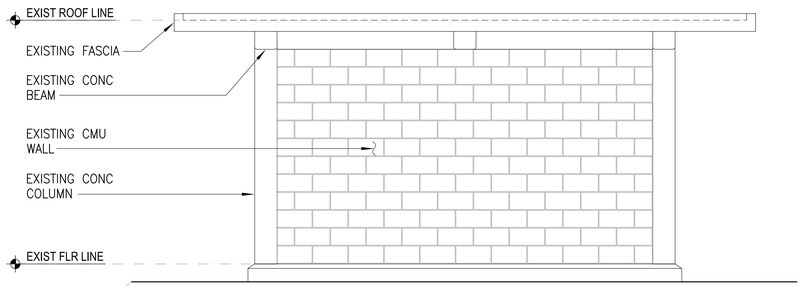
DRAWING NO. A-1.1
SHT. 7 OF 27



1A A-1.1 A-1.2 EXISTING SOUTH ELEVATION



1B A-1.1 A-1.2 EXISTING WEST ELEVATION



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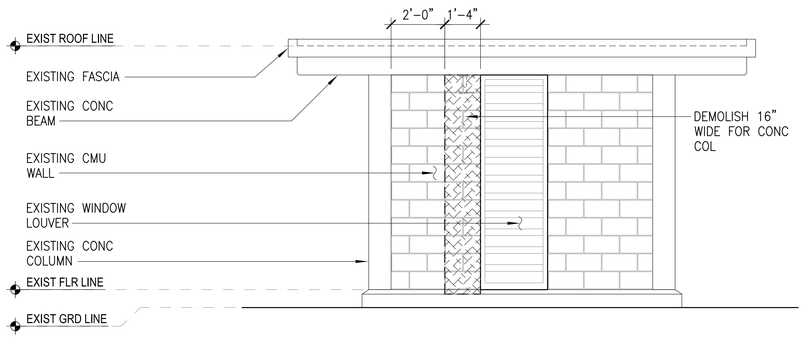
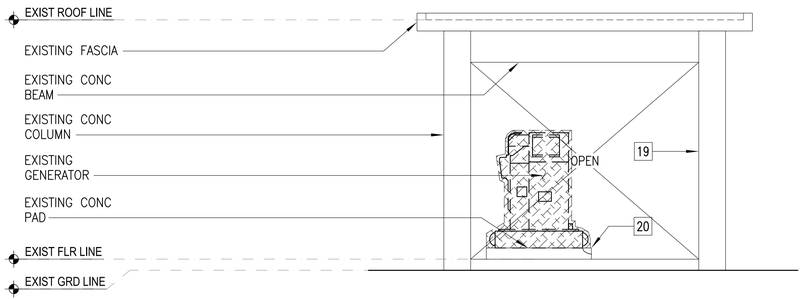


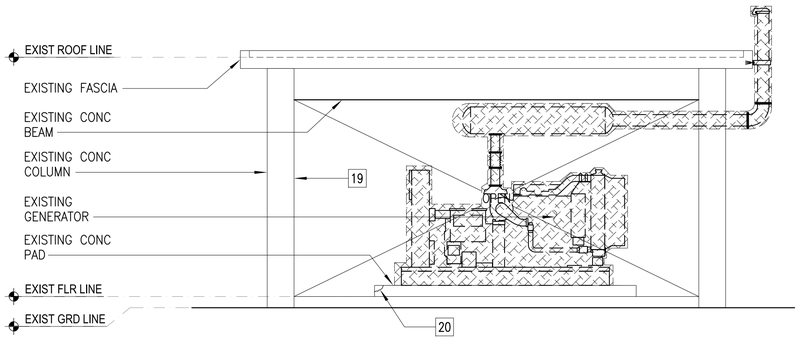
1D A-1.1 A-1.2 EXISTING EAST ELEVATION

1 A-1.1 A-1.2 DEMOLITION/DAMAGED LOCATION-EXISTING PUMP HOUSE ELEVATIONS

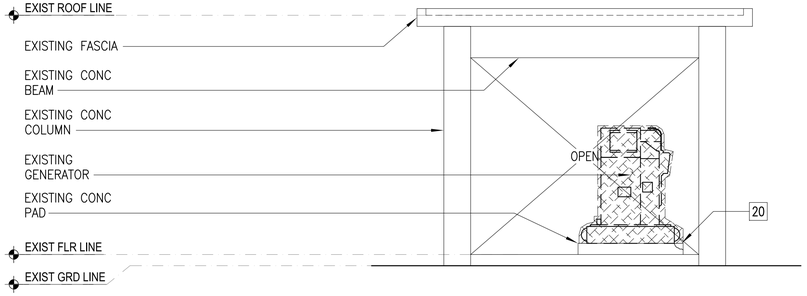
SCALE: 3/8" = 1'-0"



2A A-1.1 A-1.2 EXISTING SOUTH ELEVATION



2B A-1.1 A-1.2 EXISTING WEST ELEVATION



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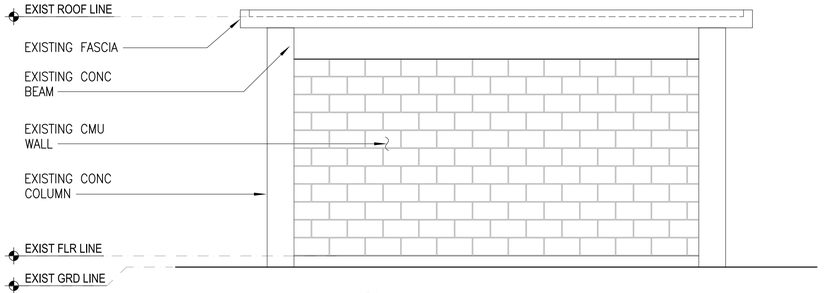

2D A-1.1 A-1.2 EXISTING EAST ELEVATION

2 A-1.1 A-1.2 DEMOLITION/DAMAGED LOCATION- EXISTING GENERATOR HOUSE ELEVATIONS

SCALE: 3/8" = 1'-0"

DEMOLITION KEYED NOTES:

1. SAWCUT 3'-4"Wx7'-2"H AND DEMOLISH PORTION OF EXISTING WALL TO NEW OPENING FOR NEW DOOR.
2. DEMOLISH/REMOVE EXISTING CONCRETE PAD.
3. DEMOLISH/REMOVE EXISTING CONCRETE PLANK.
4. EXISTING STEEL PIPE VENTS TO REMAIN (REFER TO MECHANICAL DRAWING FOR REFURBISHMENT REQUIREMENT).
5. EXISTING STEEL ACCESS COVER TO REMAIN.
6. EXISTING ELECTRICAL PANELS, BOXES, DEVICES TO BE REMOVED (REFER TO ELECTRICAL DEMOLITION PLAN).
7. EXISTING CONCRETE VALVE BOX TO REMAIN (FOR REPAIR AND RECONSTRUCTION DETAILS SEE A-2.1).
8. EXISTING CONCRETE MANHOLE/WETWELL.
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10. EXISTING GATE VALVES AND FITTINGS, SEE MECHANICAL FOR DEMOLITION.
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19. EXISTING COLUMN CRACKS AND SPALLS, REFER TO SPECIFICATION FOR REPAIR.
20. EXISTING PAD SPALLS, REFER TO SPECIFICATION FOR REPAIR.
21. EXISTING HOLES AT WALLS TO PATCH WITH CEMENT.

LEGEND:

▨ – DEMOLITION

GRAPHIC SCALE:

0' 1' 2' 4' 6' 8' 10' 12'

SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 3/F EMPSCO BUILDING ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 638-3716 / 638-4714 Fax (671) 638-2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUSHI — No.119 — Exp. 4/30/18 — REGISTERED ARCHITECT

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

DATE: 05-17-2017

DES. BY: kje
DRN. BY: jl
CHK. BY: aht

CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

GWA NO. . .
GRANT ID NO. . .
CONTRACT NO. . .
PROJECT NO. . .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

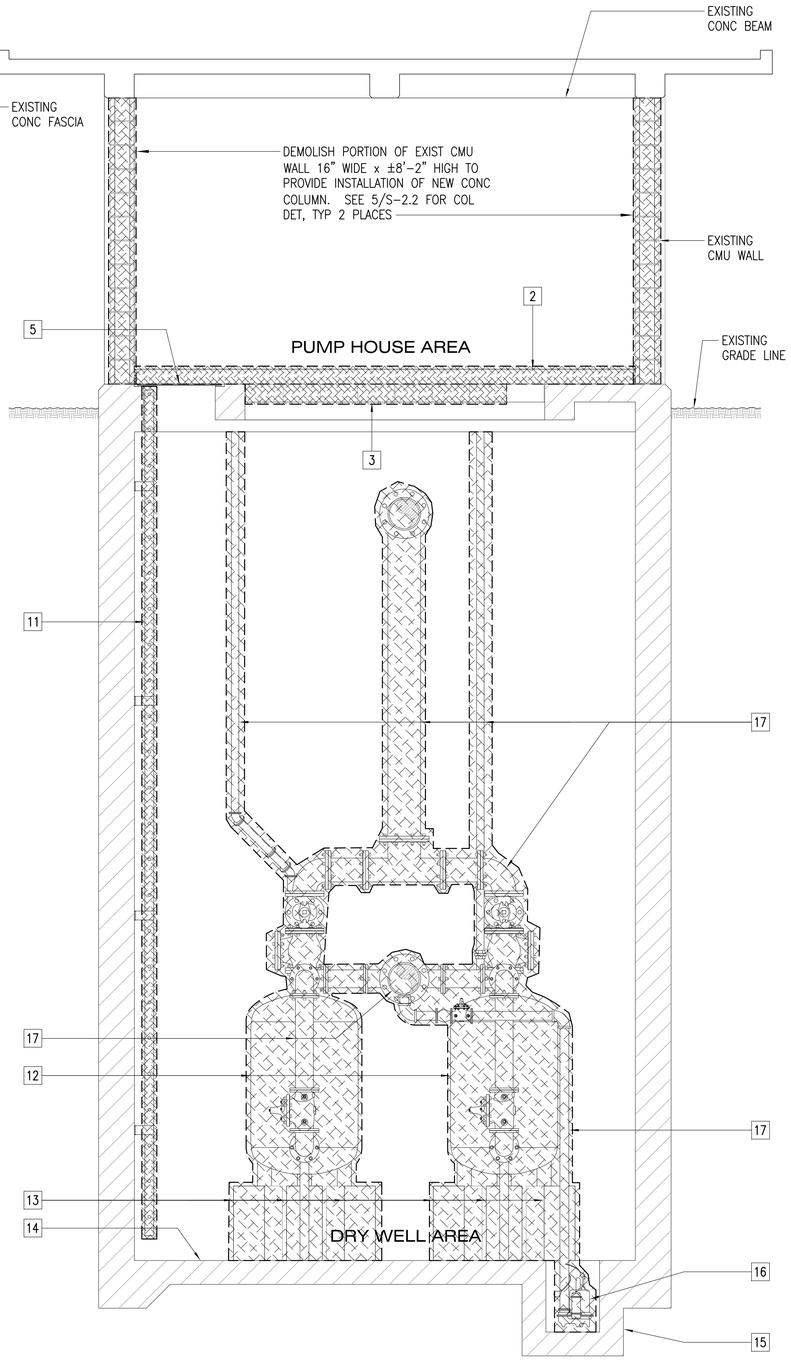
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
DEMOLITION/DAMAGED LOCATION-EXISTING PUMP HOUSE ELEVATION, DEMOLITION/DAMAGED LOCATION-EXISTING GENERATOR HOUSE ELEV and DEMOLITION KEYED NOTES

DRAWING NO. A-1.2

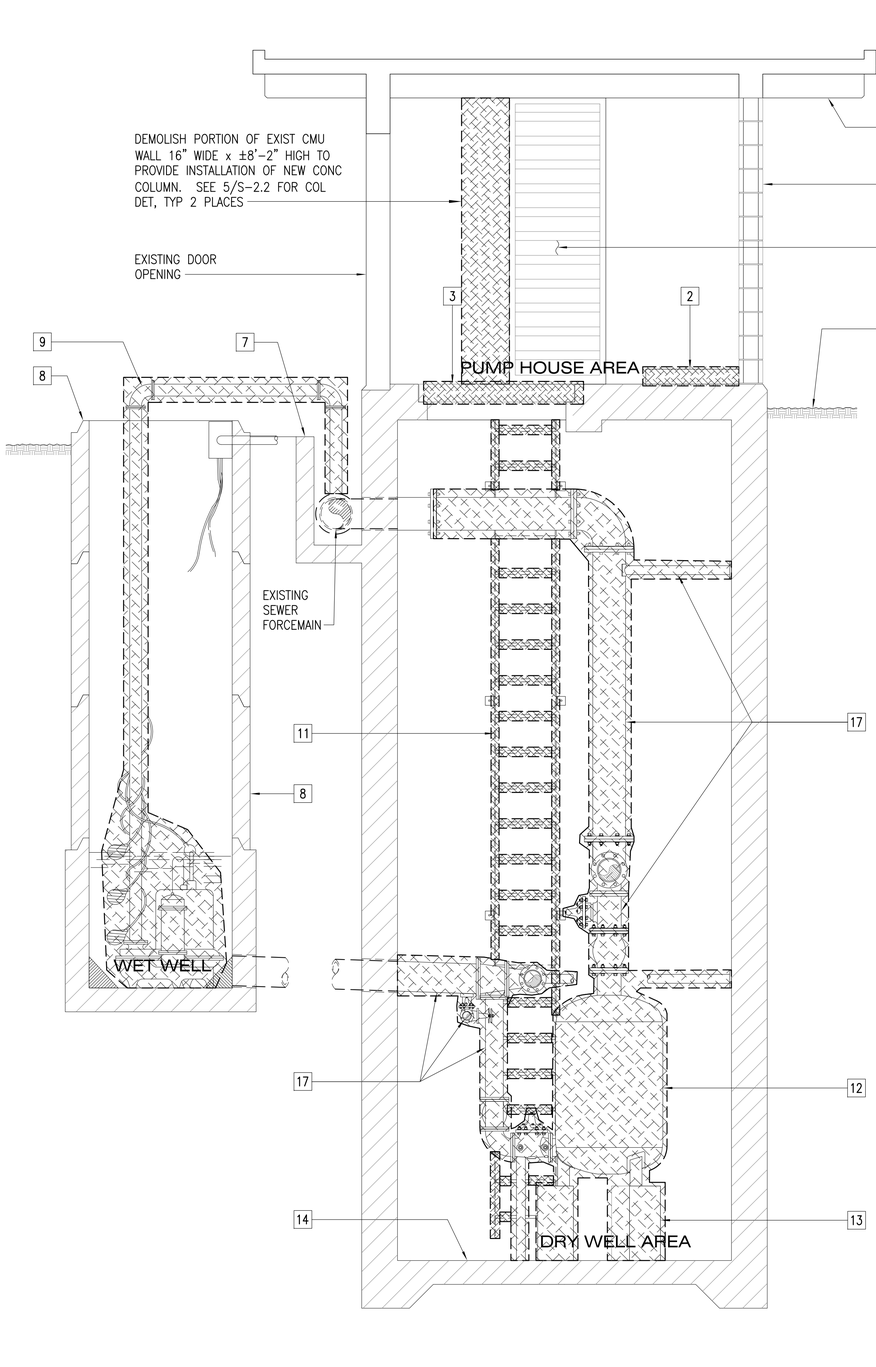
SHT. 8 OF 27

5/17/2017 2:46:26 PM



1 A-1.1 A-1.3 EXISTING PUMP HOUSE BUILDING LONGITUDINAL SECTION DEMOLITION

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



2 A-1.1 A-1.3 EXISTING PUMP HOUSE BUILDING CROSS SECTION DEMOLITION

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

DEMOLITION KEYED NOTES:

1. SAWCUT 3'-4"Wx7'-2"H AND DEMOLISH PORTION OF EXISTING WALL TO NEW OPENING FOR NEW DOOR.
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16. REMOVE EXISTING SUMP PUMP.
17. REMOVE EXISTING STEEL PIPE LINE AND FITTINGS, SEE MECHANICAL FOR DEMOLITION.
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19. EXISTING COLUMN CRACKS AND SPALLS, REFER TO SPECIFICATION FOR REPAIR.
20. EXISTING PAD SPALLS, REFER TO SPECIFICATION FOR REPAIR.
21. EXISTING HOLES AT WALLS TO PATCH WITH CEMENT.

LEGEND:

– DEMOLITION

GRAPHIC SCALE:

0' 6" 1' 2' 3' 4' 8'

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

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TEL (671) 638.5716 / 638.4716 FAX (671) 638.2156

REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUTSUI CERTIFICATE No.119 Exp. 4/30/18 REGISTERED ARCHITECT

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

DATE: 05-17-2017

DES. BY:	kje
DRN. BY:	jl
CHK. BY:	aht

GWA NO. .
GRANT ID NO. .
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CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

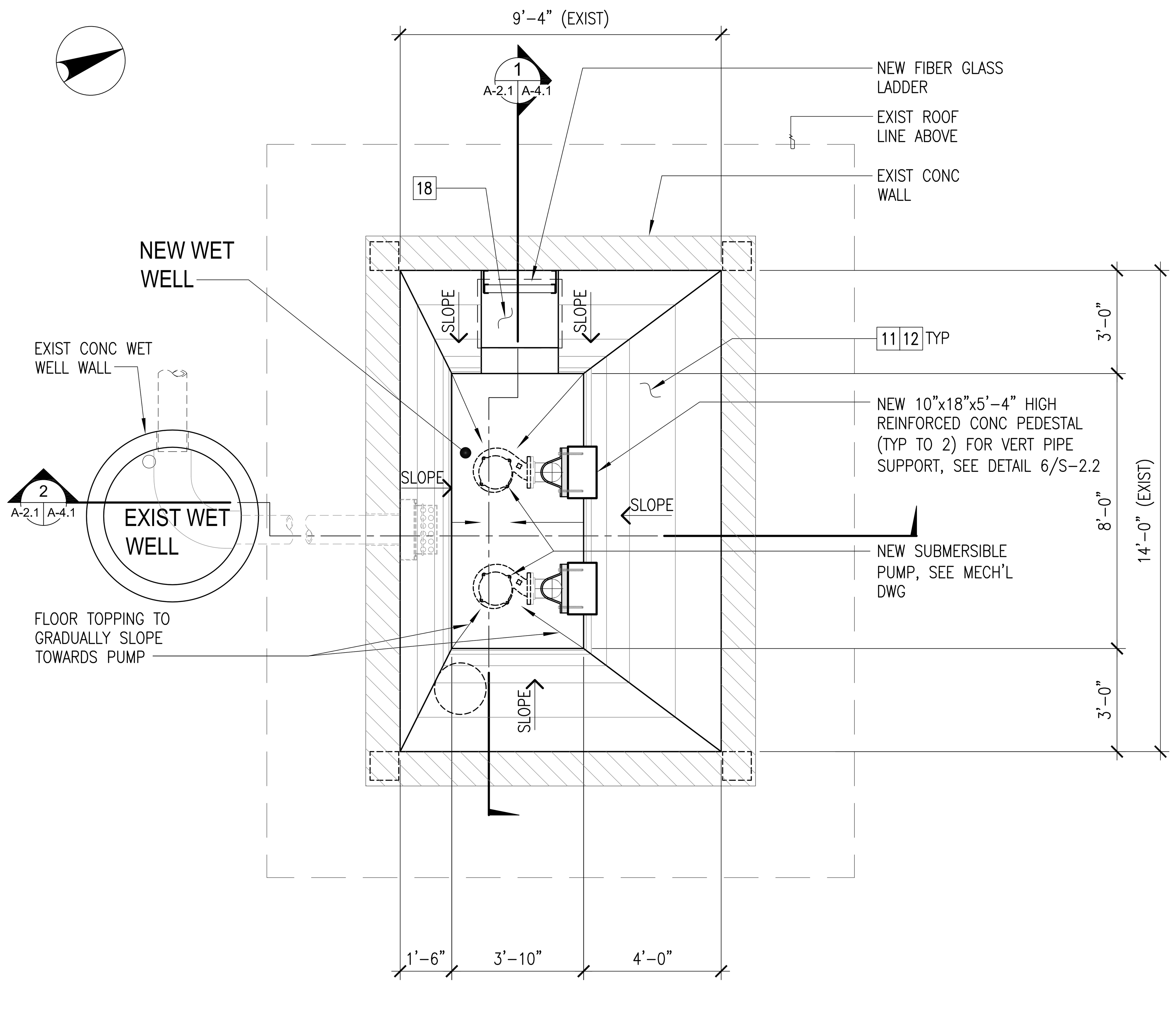
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
EXISTING PUMP HOUSE BUILDING LONGITUDINAL SECTION DEMOLITION, EXISTING PUMP HOUSE BUILDING CROSS SECTION DEMOLITION and DEMOLITION KEYED NOTES

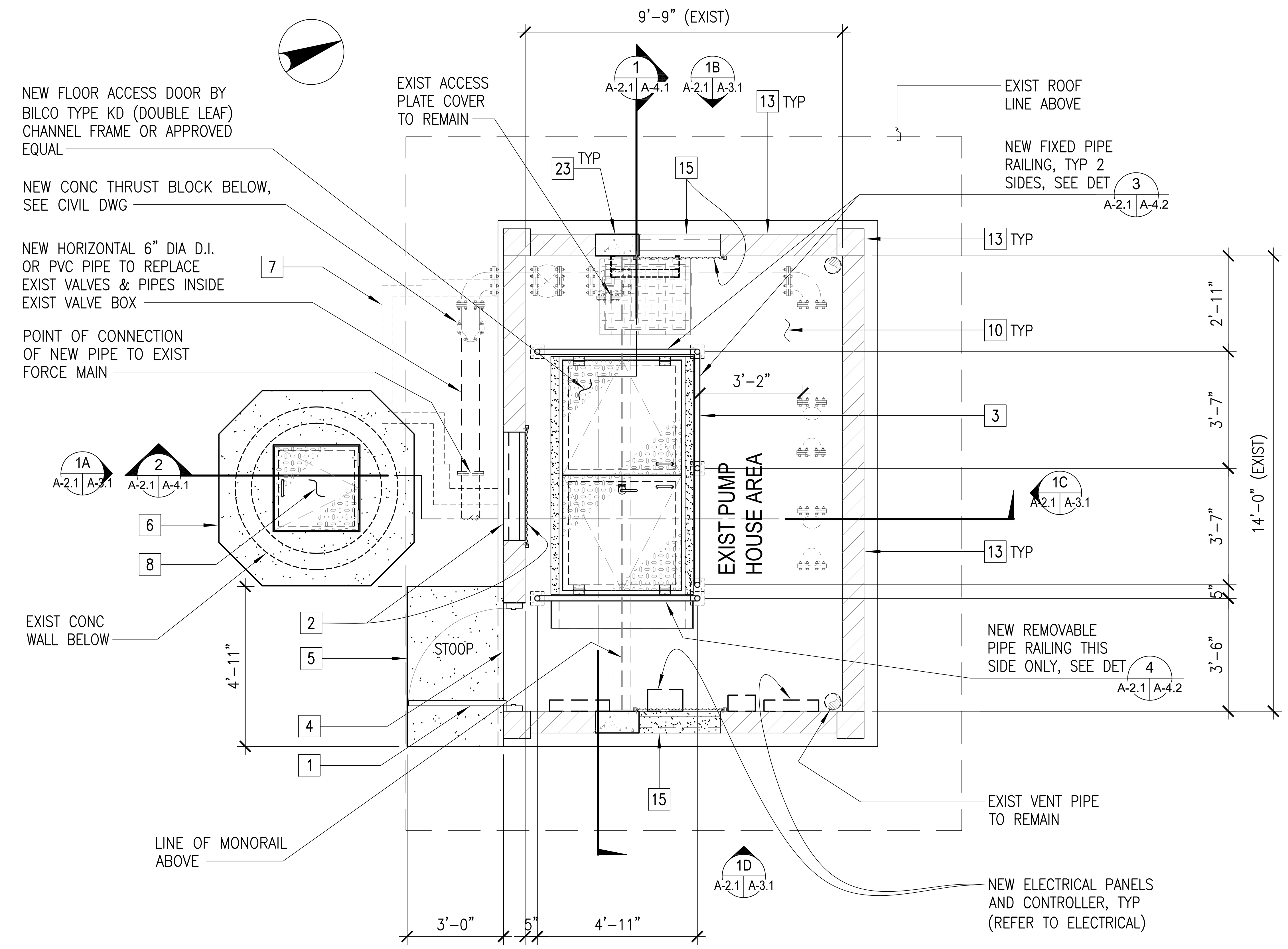
DRAWING NO. A-1.3

SHT. 9 OF 27

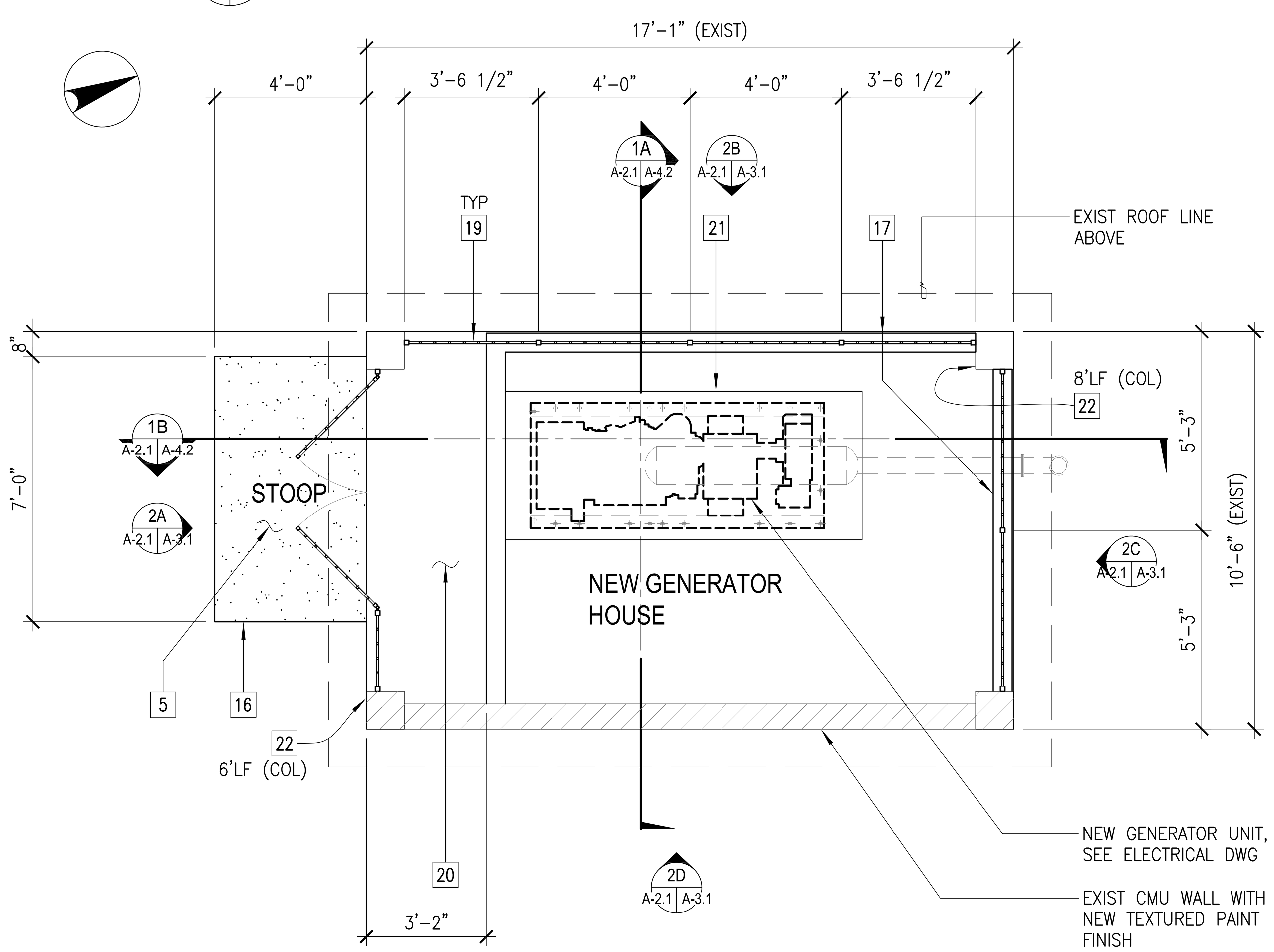
5/17/2017 2:48:22 PM



1 NEW FLOOR PLAN - PUMP HOUSE LOWER FLOOR
SCALE: 3/8" = 1'-0"



2 NEW FLOOR PLAN - PUMP HOUSE GROUND FLOOR
SCALE: 3/8" = 1'-0"



3 NEW FLOOR PLAN - GENERATOR HOUSE
SCALE: 3/8" = 1'-0"

NEW WORKS KEYED NOTES:

1. PROVIDE NEW HOLLOW METAL FLUSH DOOR AND FRAME (HOT DIPPED GALVANIZED) AND HARDWARES.
2. PROVIDE NEW CONCRETE WINDOW LOUVER TO MATCH EXISTING. PROVIDE INSECT SCREENS. SEE NOTE 15.
3. PROVIDE NEW HOT DIPPED GALVANIZED PIPE RAILING.
4. PROVIDE NEW LEVELING CONCRETE MORTAR UNDER NEW DOOR THRESHOLD.
5. PROVIDE NEW CONCRETE STOOP.
6. PROVIDE NEW CONCRETE COLLAR.
7. DEMOLISH TOP 12" OF CONCRETE WALL, BACKFILL AND COMPACT SOIL OVER THE EXISTING VALVE BOX.
8. PROVIDE NEW HINGED ALUMINUM ACCESS DOOR AND FRAME WITH LOCK. BILCO TYPE J-AL LIGHT DUTY OR APPROVED EQUAL.
9. PROVIDE NEW 2-TON MOTORIZED HOIST AT CENTER OF OPENING ON MOTORIZED TROLLEY TO FIT THE STRUCTURAL BEAM, SEE STRUCTURAL BEAM & COLUMN DETAILS 5/S-2.2.
10. PROVIDE NEW EPOXY PAINT FINISH ON EXISTING CONCRETE FLOOR SLAB.
11. PROVIDE NEW CONCRETE MORTAR TOPPING WITH 1 TO 1 SLOPE MAXIMUM, SEE SECTION FOR DETAILS.
12. PROVIDE POLYMORPHIC RESIN COATING THROUGHOUT WET WELL SURFACES. ON WALL SURFACES, PROVIDE COATING AT LEAST 12 FEET HIGH FROM BOTTOM.
13. PROVIDE NEW PAINT ON EXISTING CMU WALL AND COLUMN, TYPICAL.
14. PROVIDE NEW PAINT ON EXISTING CONCRETE BEAM AND FASCIA, TYPICAL.
15. PROVIDE NEW PAINT ON EXISTING CONCRETE LOUVERED WINDOWS, TYPICAL. INFILL PORTION OF WINDOW LOUVER w/ CONCRETE MORTAR AND PAINT WHERE ELECTRICAL CONTROLS AND PANELS WILL BE INSTALLED. PROVIDE NEW INDUSTRIAL GRADE INSECT SCREENS ON ALUMINUM FRAMES WITH HEAVY GAGE WIRE MESH OVER THE INTERIOR SIDE OF ALL THE LOUVER WINDOWS.
16. PROVIDE NEW PAINTED CAST-IRON GRILLE DOUBLE DOOR.
17. PROVIDE 6" THICK x 12" HIGH PERIMETER CONCRETE CONTAINMENT CURB.
18. PROVIDE NEW CONCRETE STEPS.
19. PROVIDE NEW PAINTED CAST-IRON GRILLES ON THREE SIDES INCLUDING AROUND DOOR.
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22. REPAIR EXISTING CRACKS AND SPALLS ON EXISTING CONCRETE PAD, COLUMNS AND BEAM.
23. 8"x16" NEW CONCRETE COLUMN FOR MONORAIL BEAM, SEE STRUCTURAL FOR REINFORCEMENT DETAILS.
24. PROVIDE MORTAR CHANELLING AT BOTTOM OF MANHOLE FROM INLET TO OUTLET PIPE.

GRAPHIC SCALE: 0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

REV	DATE	BY	DESCRIPTION	APPROVED BY

GWA NO.: .
GRANT ID NO.: .
CONTRACT NO.: .
PROJECT NO.: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

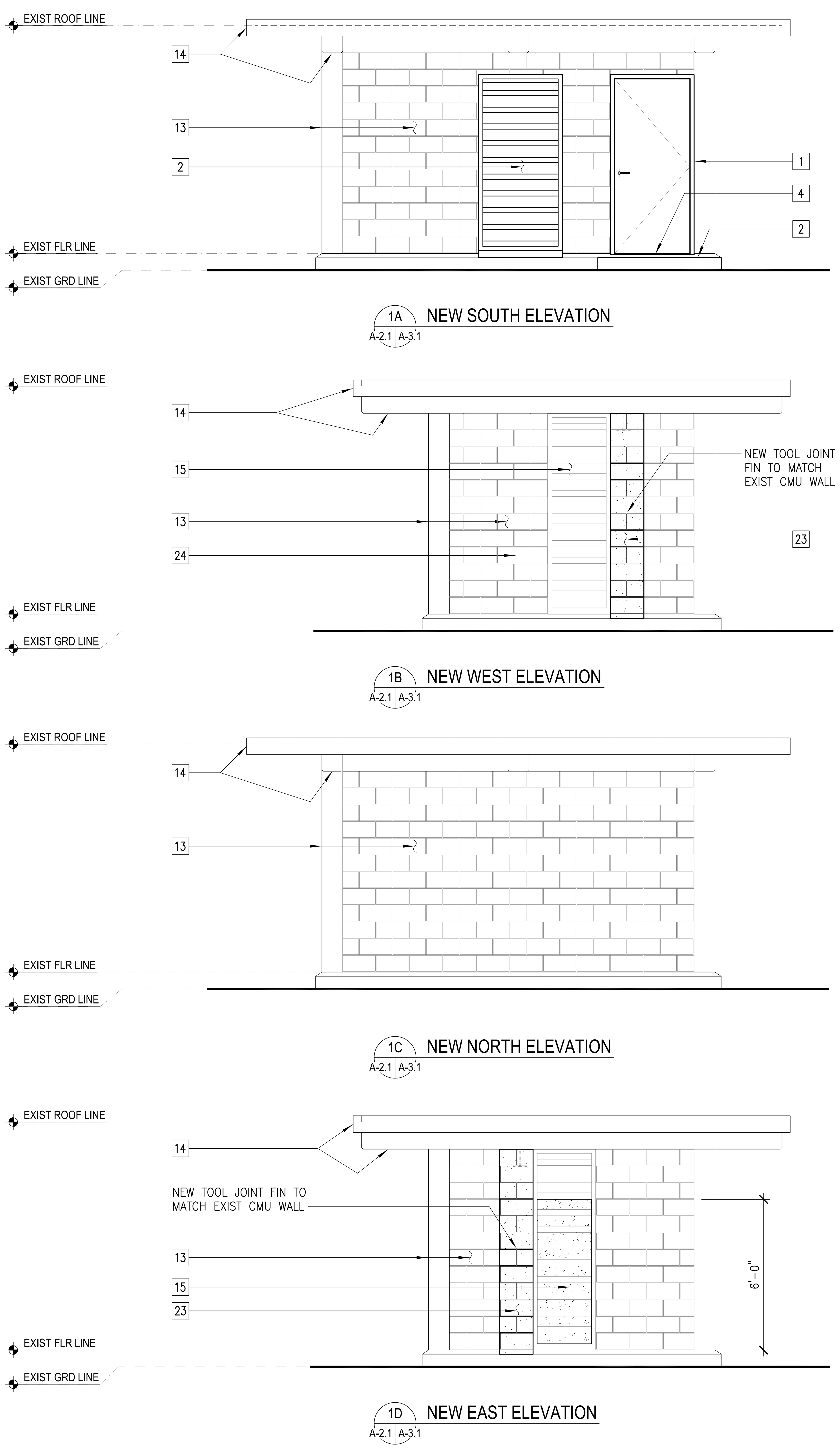
PROJECT: BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: kje
DRN. BY: jl
CHK. BY: rmca
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

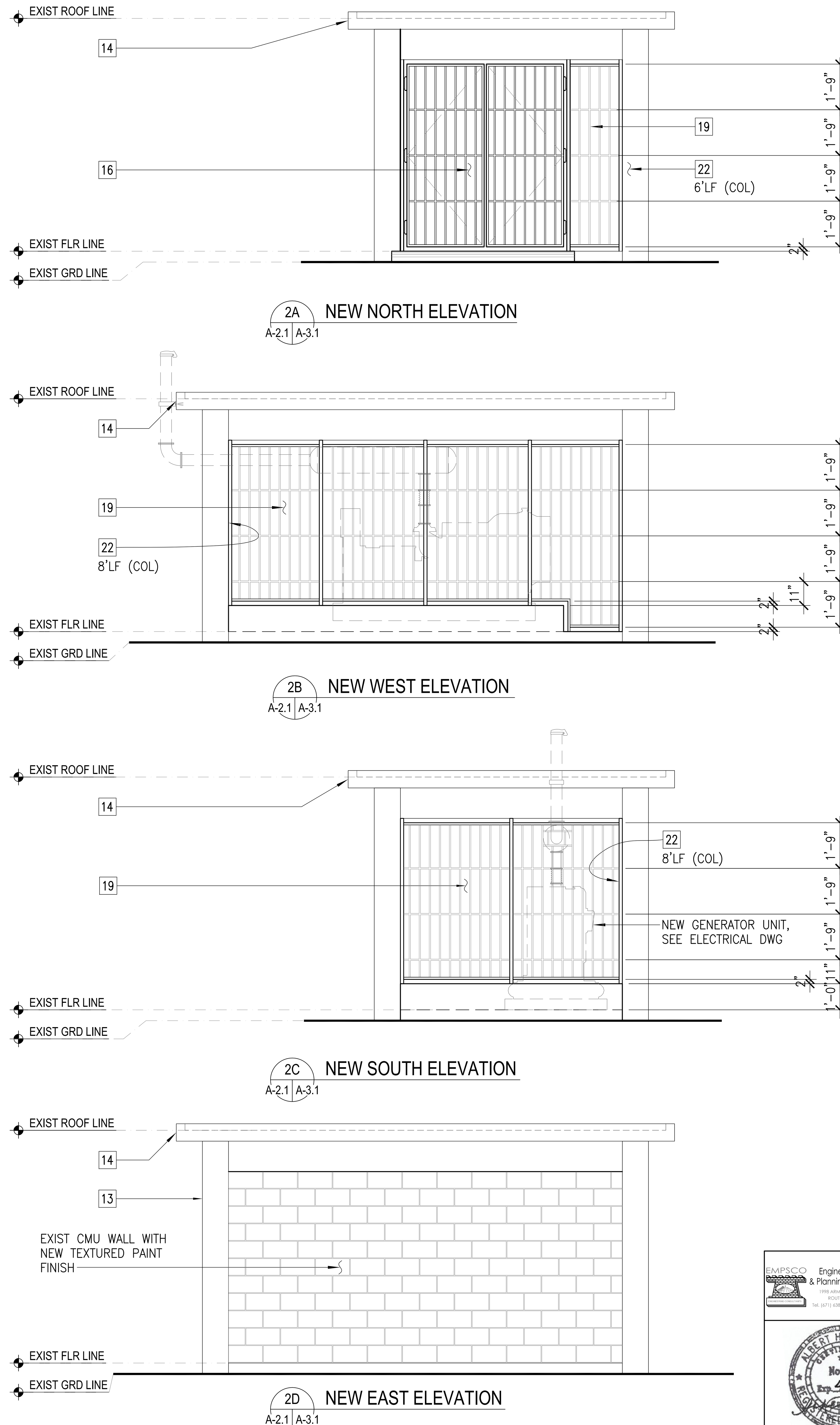
CONTENTS: NEW FLOOR PLAN-PUMP HOUSE LOWER FLOOR, NEW FLOOR PLAN-PUMP HOUSE GROUND FLOOR, NEW FLOOR PLAN-GENERATOR HOUSE, and NEW WORKS KEYED NOTES

DRAWING NO. A-2.1
SHT. 10 OF 27

5/17/2017 2:50:16 PM



1 NEW PUMP HOUSE ELEVATIONS
A-2.1 A-3.1
SCALE: 3/8" = 1'-0"



2 NEW GENERATOR HOUSE ELEVATIONS
A-2.1 A-3.1
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

NEW WORKS KEYED NOTES:

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24. PROVIDE MORTAR CHANELLING AT BOTTOM OF MANHOLE FROM INLET TO OUTLET PIPE.

EMPSCO Engineering Management & Planning Services Corporation

REV	DATE	BY	DESCRIPTION	APPROVED BY

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DATE: 05-17-2017

GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

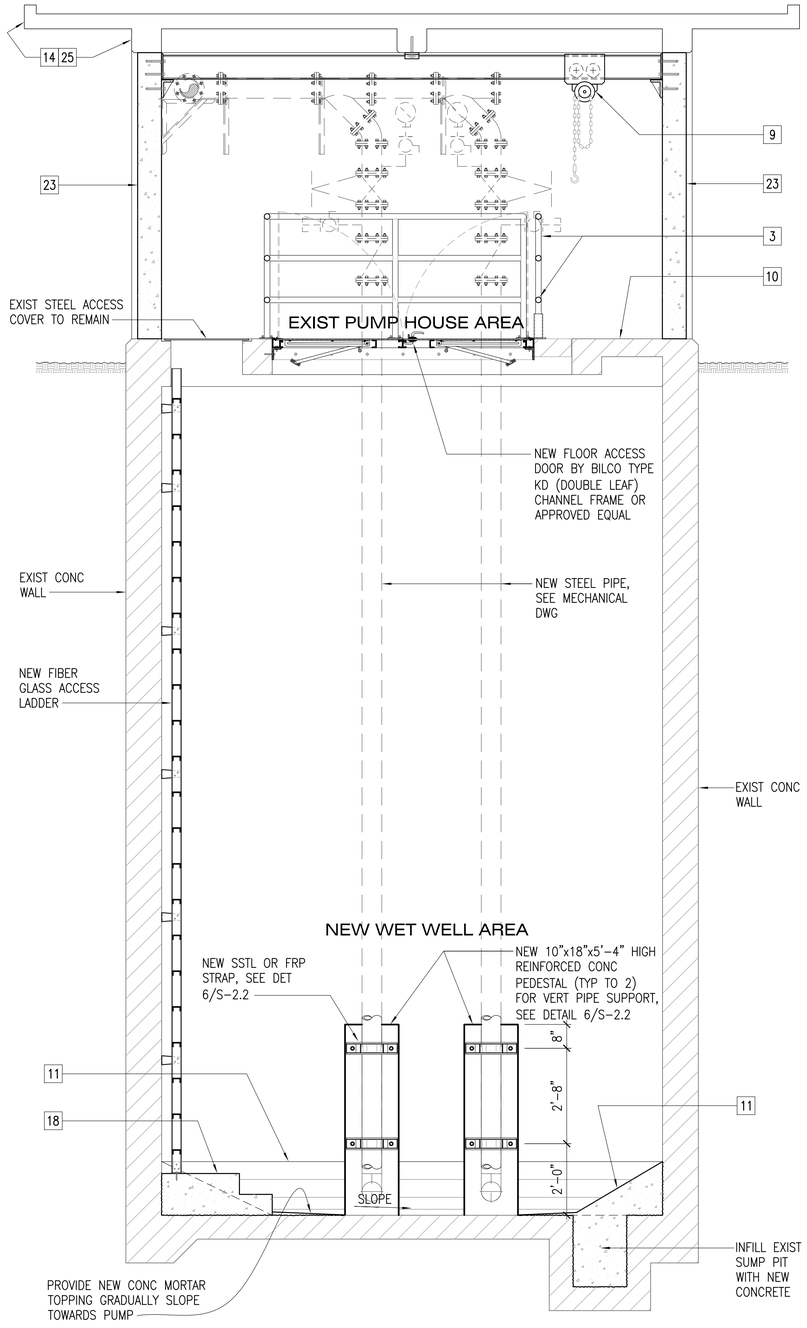
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: kje
DRN. BY: jl
CHK. BY: aht
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

CONTENTS:
NEW PUMP HOUSE ELEVATIONS, NEW GENERATOR HOUSE ELEVATIONS and NEW WORKS KEYED NOTES

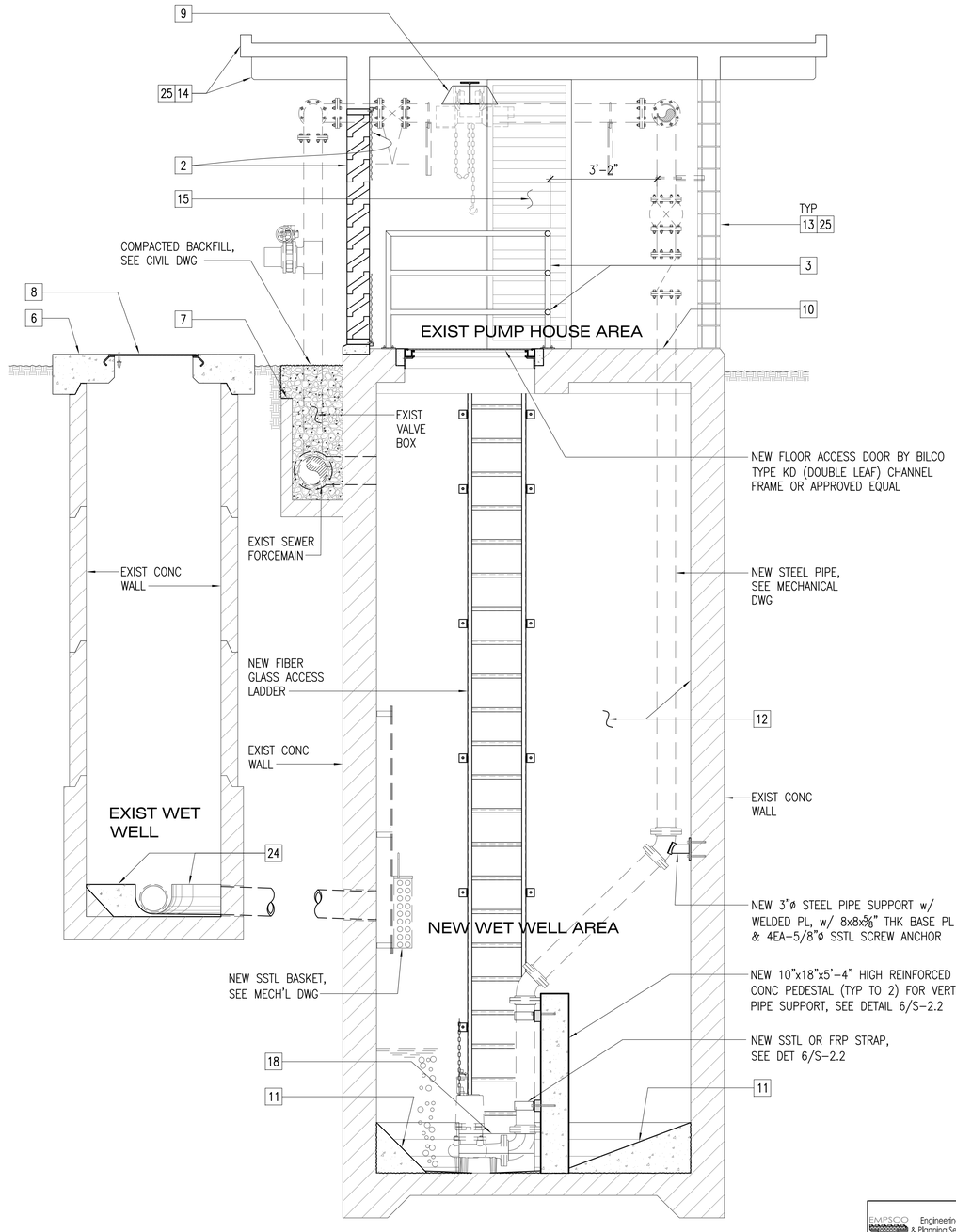
DRAWING NO. A-3.1
SHT. 11 OF 27

5/17/2017 2:52:09 PM



1 A-2.1 A-4.1 NEW PUMP HOUSE LONGITUDINAL SECTION

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



2 A-2.1 A-4.1 NEW PUMP HOUSE CROSS SECTION

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GRAPHIC SCALE:

0' 6" 1' 2' 3' 4' 8'

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

EMPSCO Engineering Management & Planning Services Corporation
ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 635-3114 / 635-4114 Fax (671) 635-2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUJI No.119 Exp. 4/30/18 REGISTERED ARCHITECT

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

DATE: 05-17-2017

DES. BY:	kje
DRN. BY:	jl
CHK. BY:	aht

GWA NO.	. .
GRANT ID NO.	. .
CONTRACT NO.	. .
PROJECT NO.	. .
	.
CHIEF ENGR:	.
ENGR. SUP:	.
PROJ. ENGR:	.

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

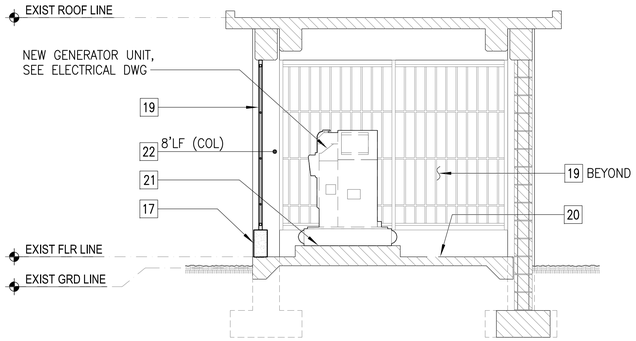
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
NEW PUMP HOUSE LONGITUDINAL SECTION, NEW PUMP HOUSE CROSS SECTION & NEW WORKS KEYED NOTES

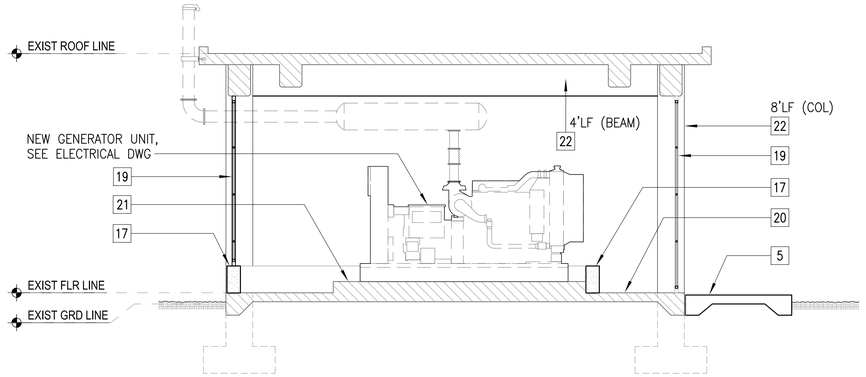
DRAWING NO. A-4.1

SHT. 12 OF 27

5/17/2017 2:54:35 PM



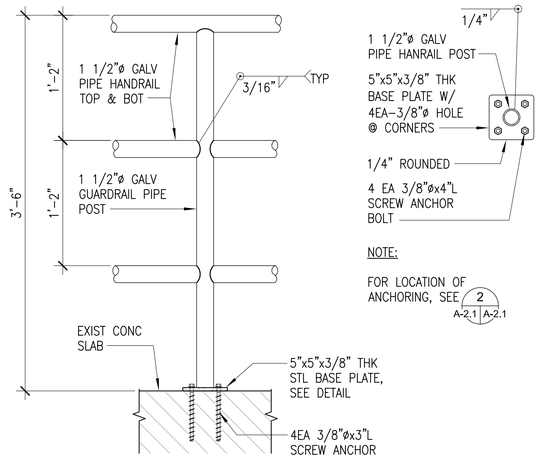
1A A-2.1 A-4.2 CROSS SECTION



1B A-2.1 A-4.2 LONGITUDINAL SECTION

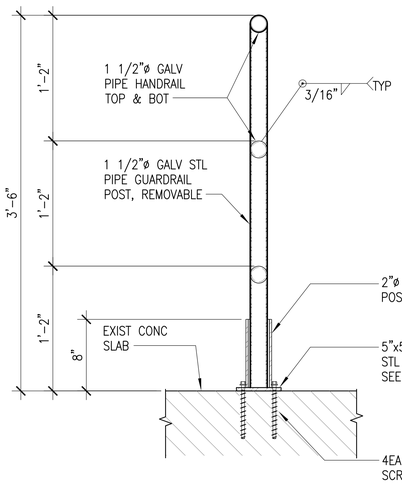
1 A-2.1 A-4.2 NEW GENERATOR HOUSE CROSS & LONGITUDINAL SECTIONS

SCALE: 3/8" = 1'-0"



3 A-2.1 A-4.2 TYPICAL PIPE RAILING DETAIL

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



4 A-2.1 A-4.2 REMOVABLE GALVAZINED PIPE RAILING DETAIL

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

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GRAPHIC SCALE:

0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

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

EMPSCO Engineering Management & Planning Services Corporation
ROUTE 16, DEDEDO, GUAM 96929
TEL (671) 635-7114 / 635-4714 FAX (671) 635-2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUTSUI No.119 Exp. 4/30/18 REGISTERED ARCHITECT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

DES. BY: kje
DRN. BY: jl
CHK. BY: aht

GWA NO. .
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PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

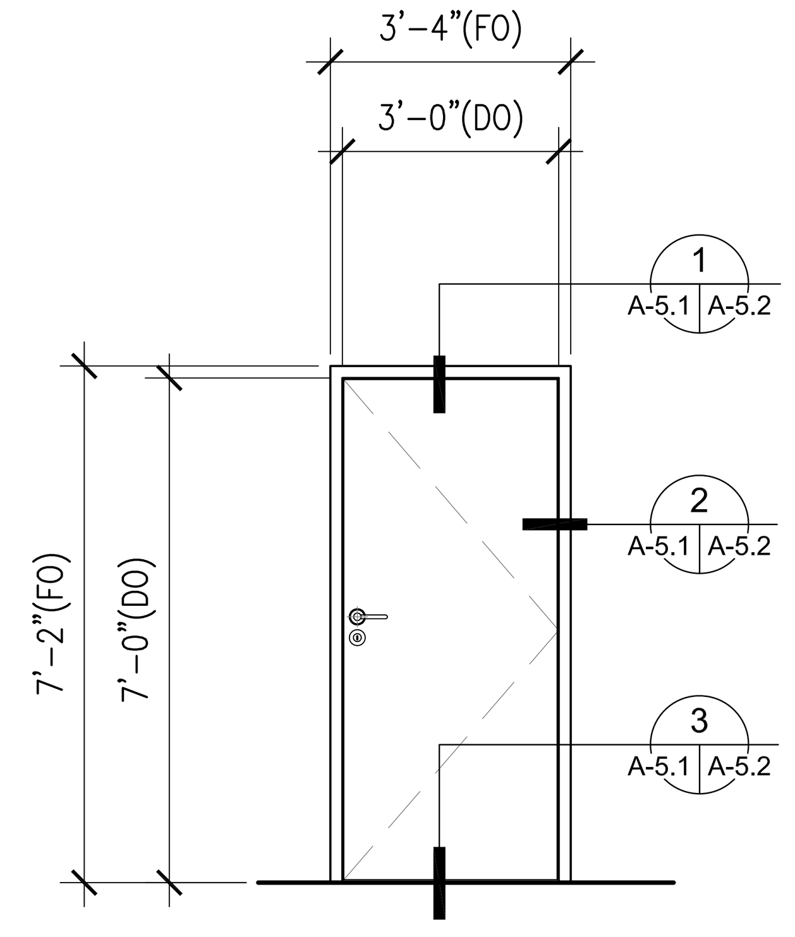
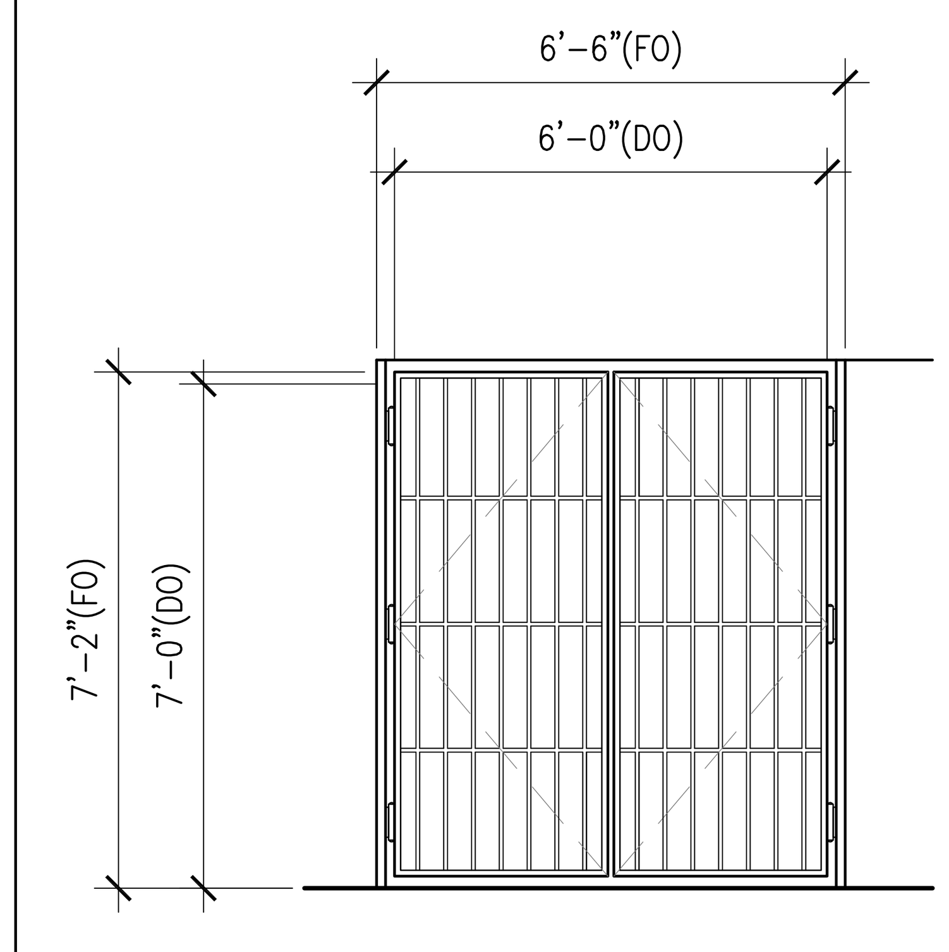
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
NEW GENERATOR HOUSE CROSS SECTION, NEW GENERATOR LONGITUDINAL SECTION, GALVANIZED PIPE RAILING DETAILS and NEW WORKS KEYED NOTES

DRAWING NO. A-4.2
SHT. 13 OF 27

5/17/2017 2:41:02 PM

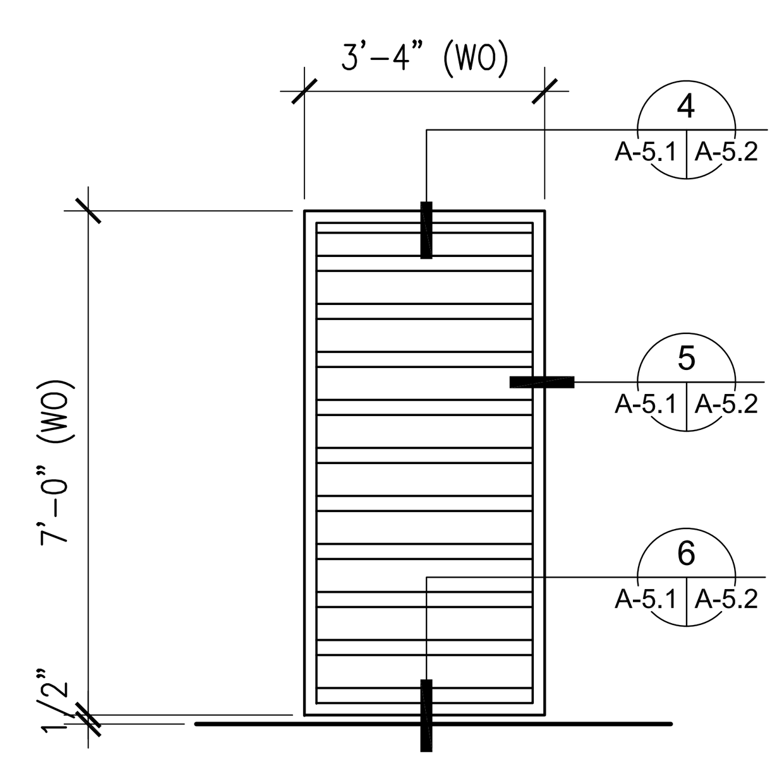
DOORS TYPES/SCHEDULE

MARK & QUANTITY	D1 1 EA	MARK & QUANTITY	D2 2 EA
	 TYPE A		 TYPE B
TYPE	HOT-DIPPED GALVANIZED STEEL SWING FLUSH DOOR	TYPE	HOT-DIPPED GALVANIZED STEEL GRILLE DOUBLE DOOR
GLASS	N.A.	GLASS	N.A.
HARDWARE	HINGES (SSTL) 1 EA – CONTINUOUS HINGES CLOSER – SSTL MORTISE LOCKSET WITH LEVER HANDLES LEVER EXTENSION FLUSH BOLTS – ROCKWOOD 550 OR APPROVED EQUAL DOORSTOP – FLOOR MOUNT TRIMCO 1210. WEATHERSTRIP – SELF ADHESIVE GASKET PEMKO SILICONE SEAL 588D25 RAIN DRIPS – REESE R199A OR APPROVED EQUAL DOOR SHOE – PEMKO 216 DPK. THRESHOLD – REESE T575A x TL4C INTERLOCK THRESHOLD CLOSER – CONCEALED FULL FUNCTION WITH HOLD OPEN PARALLEL ARM.	HARDWARE	HINGES (SSTL) 3 EA – 4 1/4"x4" STANDARD MORTISE WITH BALL BEARINGS. CLOSER – LOCKING DEVICE WITH PADLOCK HOLE DOORSTOP – PLUNGER BAR MOUNTED ON FRAME
DOOR KNOB MOUNT HT	40 5/16"	DOOR KNOB MOUNT HT	N.A.
DOOR RATING	N.A.	DOOR RATING	N.A.
LOCATION	ENTRANCE (FRONT)	LOCATION	GENERATOR HOUSE (FRONT)

1 A-5.1 A-5.2 **DOOR ELEVATIONS AND SCHEDULE**
SCALE: 3/8" = 1'-0"

LOUVERED WINDOW SCHEDULE

WINDOW NO.	TYPE	OPERATION	OPENING SIZE WxH	DETAIL REFERENCE JAMB	HEAD	MULLION	SILL	QTY	REMARKS
W1	1	FIXED	3'-4"x7'-0"	5 A-5.1 A-5.2	4 A-5.1 A-5.2		6 A-5.1 A-5.2	1	CONCRETE LOUVER



2 A-5.1 A-5.2 **LOUVERED WINDOW ELEVATION AND SCHEDULE**
SCALE: 3/8" = 1'-0"

ROOM FINISH SCHEDULE

ROOM NUMBER	ROOM NAME	FLOOR FINISH	BASE MATERIAL	BASE HEIGHT	WALLS W1	W2	W3	W4	CEILING FINISH	CEILING HEIGHT	REMARKS
101	WET WELL LOWER FLOOR	POLYMORPHIC RESIN COATING	POLYMORPHIC RESIN COATING	–	POLYMORPHIC RESIN COATING	POLYMORPHIC RESIN COATING	POLYMORPHIC RESIN COATING	POLYMORPHIC RESIN COATING	POLYMORPHIC RESIN COATING	23'-9"	FULL HEIGHT
102	PUMP HOUSE GROUND FLR	EPOXY SEALER	PAINT	6"	PAINT	PAINT	PAINT	PAINT	PAINT	PAINT	FULL HEIGHT
103	GENERATOR HOUSE	EPOXY SEALER	PAINT	6"	PAINT	PAINT	PAINT	PAINT	PAINT	PAINT	FULL HEIGHT

EXTERIOR FINISH AND COLOR SCHEDULE

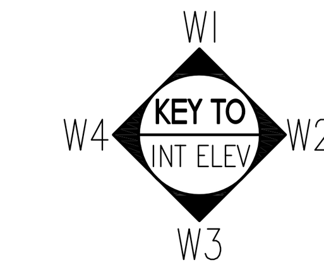
ITEM	MAT'L	FINISH	COLOR	REMARKS
ROOF	CONC	ROOF COATING	WHITE	ELASTOMERIC ROOF COATING
WALL	CONC	PAINT	GOV GUAM GWA STANDARD	PAINT
DOOR FRAME	STEEL	PAINT	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)
EXT. DOOR	HOT DIPPED GALV	PAINT	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)
LOUVERS	CONCRETE	PAINT	GOV GUAM GWA STANDARD	PAINT

INTERIOR FINISH COLOR SCHEDULE

ITEM	MATERIAL	FINISH	COLOR	REMARKS
WALL PANELS	CONC	PAINTED	GOV GUAM GWA STANDARD	CONCRETE PANEL (PCP)
DOOR PANELS	HOT DIPPED GALV	PAINTED	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)
DOOR FRAMES	STEEL	PAINTED	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)
CONCRETE CURB	CONC	PAINTED	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)
CONCRETE PAD	CONC	PAINTED	GOV GUAM GWA STANDARD	FACTORY FINISH (FF)

KEY TO ROOM FINISHES

PCP PAINTED CONCRETE PANEL
EPF ELASTOMERIC PAINT FINISH
FF FACTORY FINISH
LP LATEX PAINT
PC PLAIN CONCRETE



KEY TO INTERIOR ELEVATIONS

ABBREVIATIONS:

AL	ALUMINUM
ANOD	ANODIZED
CONC	CONCRETE
FF	FACTORY FINISH
H	HEIGHT
HC	HOLLOW CORE
HM	HOLLOW METAL
HORIZ	HORIZONTAL
HT	HEIGHT
MAT	MATERIAL
NO	NUMBER
OFCI	OWNER FURNISHED CONTRACTOR INSTALLED
SC	SOLID CORE
THK	THICKNESS
W	WIDTH

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 638.5716 / 638.4716 Fax (671) 638.2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUTSUI CERTIFICATE No.119 Exp 9/30/18 REGISTERED ARCHITECT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

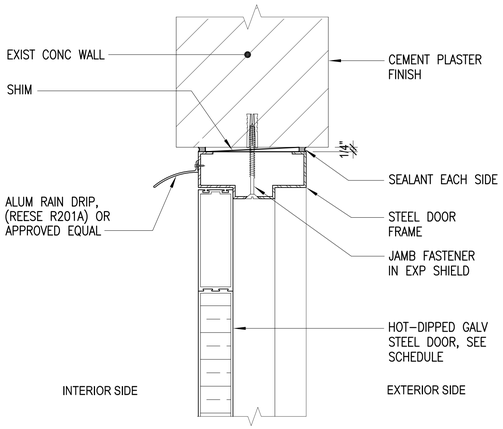
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: kje
DRN. BY: jl
CHK. BY: aht
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

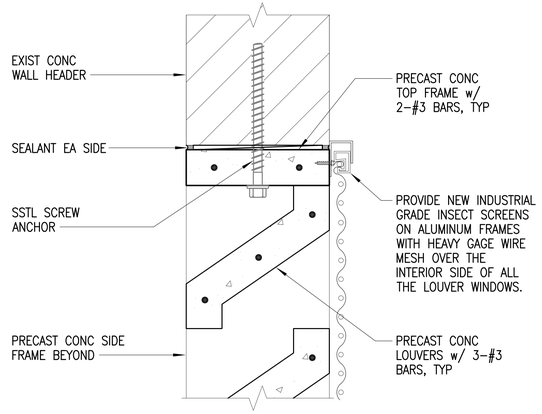
CONTENTS:
DOOR ELEVATIONS & SCHEDULE, LOUVERED WINDOW ELEV & SCHED, ROOM FINISH SCHEDULE, EXTERIOR FIN & COLOR SCHED, INTERIOR FIN & COLOR SCHED, KEY TO ROOM FIN & ABBREVIATIONS

DRAWING NO. A-5.1
SHT. 14 OF 27

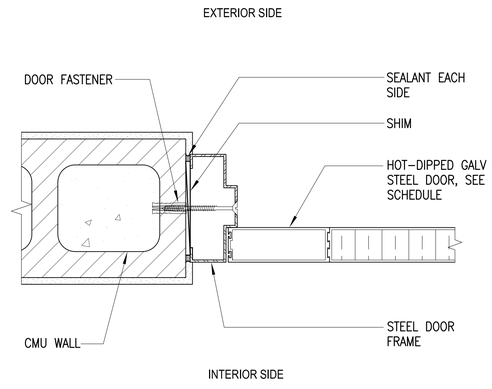
5/17/2017 2:56:46 PM



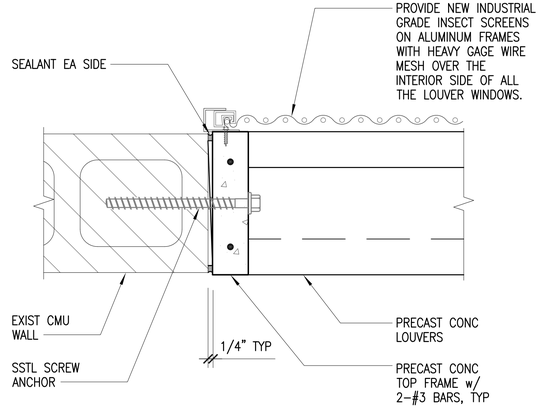
1 A-5.1 A-5.2 **DOOR HEAD DETAIL**
SCALE: 3" = 1'-0"



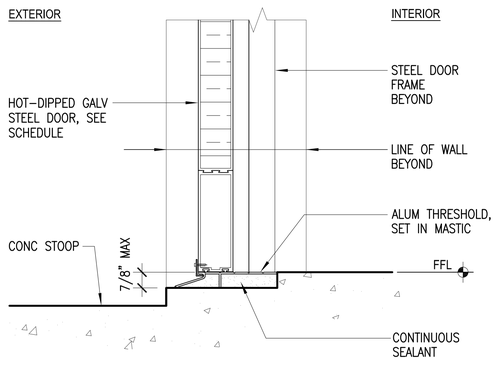
4 A-5.1 A-5.2 **LOUVER HEAD DETAIL**
SCALE: 3" = 1'-0"



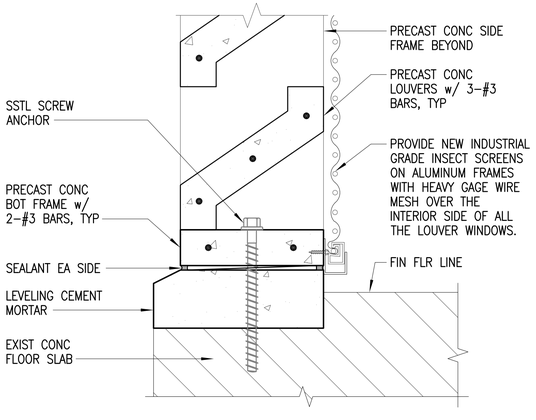
2 A-5.1 A-5.2 **DOOR JAMB DETAIL**
SCALE: 3" = 1'-0"



5 A-5.1 A-5.2 **LOUVER JAMB DETAIL**
SCALE: 3" = 1'-0"



3 A-5.1 A-5.2 **DOOR SILL DETAIL**
SCALE: 3" = 1'-0"



6 A-5.1 A-5.2 **LOUVER SILL DETAIL**
SCALE: 3" = 1'-0"

GRAPHIC SCALE:
0" 1" 2" 3" 6" 12" 18"
SCALE : 3" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING ROUTE 16, DEDEDO, GUAM 96929
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REV	DATE	BY	DESCRIPTION	APPROVED BY

ALBERT H. TSUTSUI No.119 Exp. 4/30/18 REGISTERED ARCHITECT

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION.
DATE: 05-17-2017

GWA NO.	.
GRANT ID NO.	.
CONTRACT NO.	.
PROJECT NO.	.
DES. BY: kje	CHIEF ENGR: .
DRN. BY: jl	ENGR. SUP: .
CHK. BY: aht	PROJ. ENGR: .

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

CONTENTS:
DOOR DETAILS AND LOUVERED WINDOW DETAILS

DRAWING NO. A-5.2
SHT. 15 OF 27

5/17/2017 3:00:07 PM

GENERAL NOTES:

1. GENERAL NOTES AND TYPICAL STRUCTURAL DETAILS SHALL APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED.
2. THE CONTRACTOR SHALL TONE AND LOCATE ALL UTILITY LINES WITHIN THE PROJECT AREA PRIOR TO START OF EXCAVATION. THE CONTRACTOR SHALL BE HELD RESPONSIBLE AND SHALL PAY FOR ALL DAMAGES TO THE MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES.
3. ALL WORK CALLED FOR ON THE PLANS AND ALL WORK NOT CALLED FOR BUT REQUIRED FOR THE CONSTRUCTION OF THIS PROJECT, SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACTOR'S SCOPE OF WORK.
4. THE CONTRACTOR SHALL RESTORE TO THEIR ORIGINAL OR BETTER CONDITION ALL EXISTING IMPROVEMENTS DAMAGED AS A RESULT OF THE CONSTRUCTION, INCLUDING BUT NOT LIMITED TO PAVEMENTS, CURBS, SIDEWALKS, LANDSCAPING, STRUCTURES, UTILITIES DEMOLITION AND RESTORATION OF EXISTING WORK SHALL BE INCIDENTAL AND INCLUDED WITHIN THE CONTRACTOR'S LUMP SUM BID PRICE.

SOIL RECOMMENDATIONS:

1. FOUNDATION DESIGN AND RECOMMENDATION FOR THE PUMP STATION ARE BASED ON GEOTECHNICAL REPORT PREPARED BY PACIFIC SOILS ENGINEERING AND TESTING, DATED 18 AUGUST 2016. FOR THE BANK PROTECTION AT EASEMENT ENTRY, REFER TO THE LIMITED SUBSURFACE SOIL INVESTIGATION REPORT PREPARED BY GEO-ENGINEERING & TESTING DATED FEBRUARY 11, 2017.
2. PROVIDE BASE COURSE BELOW FOOTINGS AND SLAB, A MINIMUM OF 4 INCHES COMPACTED THICKNESS EQUIVALENT TO 95% RELATIVE COMPACTION, ASTM D1557. EXISTING NATURAL GRADE SHALL BE COMPACTED TO 90% MAXIMUM DRY DENSITY, ASTM D1557, PRIOR TO INSTALLATION OF BASE COURSE.
3. EXCAVATION SHALL BE MONITORED TO ENSURE CONDITION OF SOIL BEARING PRIOR TO PLACEMENT OF CONCRETE FORMS AND REINFORCEMENT.

CONCRETE:

1. ALL CONCRETE SHALL DEVELOP A MINIMUM OF f'c=3,000 psi, ULTIMATE COMPRESSIVE STRENGTH AFTER 28 DAYS.
2. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF AMERICAN CONCRETE INSTITUTE (ACI 318).
3. ALL INSERT, ANCHOR BOLTS, PLATES ETC. TO BE EMBEDDED IN CONCRETE SHALL BE HOT DIP GALVANIZED UNLESS NOTED OTHERWISE.

MASONRY:

1. MASONRY UNIT SHALL BE GRADE IN CONFORMING TO ASTM C90. ALL MASONRY UNIT SHALL BE OF NORMAL WEIGHT WITH MINIMUM COMPRESSIVE STRENGTH OF 1500 PSI.
2. MORTAR AND GROUT SHALL CONFORM TO THE REQUIREMENTS OF SECTION 2130 IBC. CEMENT FOR MORTAR AND GROUT SHALL BE LOW IN ALKALI TYPE CONFORMING TO ASTM C150.
3. MORTAR SHALL BE TYPE M OR S AND SHALL DEVELOP A MINIMUM STRENGTH OF 2000 PSI AT 28 DAYS.

PILE DRIVING NOTES:

1. CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH THE PLANS AND SPECIFICATION DETAILS DEALING WITH PILING IN THE CONTRACT. PROVIDE THE REQUIRED "WELDING PROCEDURES" FOR ALL WELDS PROPOSED FOR THE PILES AND SPLICES AND THE "PILE DRIVING EQUIPMENT".
2. FIELD PILE DRIVING PROCEDURES, DRIVING RECORDS AND DATA OBSERVATIONS SHALL BE REQUIRED AND BE RECORDED AND SUBMITTED TO PMU/C.O. ON STANDARD FORMS PREPARED BY CONTRACTOR. FORMS SHALL BE SUBMITTED ON A DAILY BASIS.
3. RECORDATION IS ACCOMPLISHED BASED ON BLOWS-PER-UNIT DEPTH. EMBEDMENT DEPTH SHALL BE FIELD VERIFIED BY CONTRACTOR DURING THE INSTALLATION BASED ON PILE MARKINGS.
4. CONTRACTOR SHALL VERIFY ALL DATA LOGGED ON THE FORMS FOR COMPLETENESS AND NOTE WHETHER FINAL LENGTHS ARE IN ACCORDANCE WITH THE PLAN REQUIREMENTS.
5. CONTRACTOR SHALL SUBMIT APPROVAL FOR PILE DRIVING EQUIPMENT. VERIFY THAT THE TYPE, STRIKING ENERGY PER BLOW, RATED SPEED AND TYPE OF EQUIPMENT TO BE USED ARE APPROPRIATE FOR THE INTENDED PURPOSE.
6. HAMMERS SHALL HAVE CONTINUOUS COMPRESSOR CAPACITY TO ASSURE THAT THE RATED CONDITIONS ARE ACHIEVED. HAMMERS SHALL HAVE AN ACCEPTABLE MEANS FOR MEASURING HAMMER ENERGY PRESSURE. CONTRACTOR SHALL BE RESPONSIBLE TO INSPECT AND CHECK HAMMER OPERATION FOR PROPER FUNCTIONING.
7. STEEL SHEET PILES SHALL BE AS SPECIFIED AND FROM ROLLED SECTIONS OF STANDARD DIMENSIONS. THEY SHALL BE NEW AND UN-USED AND CONFORM TO ASTM A36M MATERIALS STANDARDS.
8. ALL SHEET PILES AND COMPONENTS FOR PERMANENT STRUCTURES SHALL BE PROVIDED WITH CORROSION PROTECTION USING HOT-DIPPED GALVANIZED COATING OR A COAL-TAR EPOXY BASED COATING SYSTEM.
9. PILES SHALL BE PLUMB (TRULY VERTICAL). PILE ALIGNMENT SHALL BE MEASURED WITH A TEMPLATE IN THE FIELD. OBSERVE AND RECORD THE METHOD BEING FOLLOWED. THE PILE SHALL NOT VARY FROM THE PLANNED LOCATION AND BE WITHIN TOLERANCE OF ONE-INCH, AND SHALL NOT HAVE MORE THAN A 1/4 INCH PER FOOT VARIATION AT THEIR TIP FROM THE VERTICAL.
10. SPLICES SHALL BE A CONTINGENT ITEM THAT IS REQUIRED WHEN THE ENGINEER DIRECTS THE CONTRACTOR TO DRIVE A PILE MORE THAN 5 FEET BEYOND THE ESTIMATED PLAN LENGTH. ALL SPLICES ARE SUBJECT TO THE APPROVAL OF THE PMU.
11. PILE CUTOFFS SHALL BE MADE TO THE REQUIRED ELEVATION AS SHOWN ON THE PLANS ALL CAVITIES CREATED BY THE PILE DRIVING SHALL BE BACKFILLED.
12. CONTRACTOR SHALL ENSURE THAT ALL REMAINING EXPOSED SURFACES OF PILE SECTIONS AND COMPONENTS AFTER INSTALLATION SHALL BE PROVIDED WITH CORROSION PROTECTIVE COATING.
13. WHEN NECESSARY, THE CONTRACTOR SHALL PROVIDE EQUIPMENT AND LABOR FOR PILE FIELD TESTING AND PILE HAMMER EFFICIENCY EVALUATION. THE CONTRACTOR WILL PERFORM ALL INCIDENTAL WORK TO PERFORM THE TEST REQUIREMENTS. TESTING WILL BE PERFORMED BY CONTRACTOR'S CREWS AND OBSERVED BY PMU.
14. DEFECTIVE PILES ARE CATEGORIZED BY THE FOLLOWING DEFICIENCIES: LOCATION INCORRECT, OUT OF PLUMB, PILE DAMAGED, PILES FAILS TO ACHIEVE RESISTANCE, TIP ELEVATION NOT WITHIN TOLERANCES, PMU DETERMINES PILE IS UNSERVICEABLE. THE CONTRACTOR SHALL REMOVE REJECTED PILES AND A NEW REPLACEMENT PILE SHALL BE DRIVEN IN PLACE.

STEEL SHEET PILE:

1. SHEET PILE SHALL CONFORM TO ASTM A328/328M, STANDARD SPECIFICATION FOR STEEL SHEET PILING.
2. SHEET PILING SHALL BE THE SECTIONS SPECIFIED. PROVIDE FABRICATED SECTIONS CONFORMING THE REQUIREMENT AND THE PILING MANUFACTURE'S RECOMMENDATIONS FOR FABRICATION SECTIONS.
3. ANY SUBSTITUTIONS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR APPROVAL.
4. SUBMIT A SHOP DRAWING FOR DETAIL DRAWINGS FOR SHEEL PILING, INCLUDING FABRICATED SECTION SHOWING COMPLETE PILING DIMENSIONS AND DETAILS, DRIVING SEQUENCE AND LOCATION OF INSTALLED PILING.
5. THE INTERLOCKS OF SHEET PILING SHALL BE FREE-SLIDING, PROVIDE A SWING ANGLE SUITABLE FOR THE INTENDED INSTALATION BUT NOT LESS THAN 5 DEGREES WHEN INTERLOCKED, AND MAINTAIN CONTINUOUS INTERLOCKING WHEN INSTALLED.

REINFORCING STEEL:

1. ALL REINFORCING BARS SHALL CONFORM TO ASTM A615 GRADE 40 REQUIREMENTS.
2. REINFORCING SHALL BE SPLICED ONLY AS INDICATING ON THE DRAWING.

STRUCTURAL STEEL:

1. UNLESS OTHERWISE NOTED, ALL STRUCTURAL MEMBER SHALL CONFORM TO ASTM A36 STEEL W/ MINIMUM YIELD STRENGTH, Fy, EQUAL TO 36 ksi.
2. ALL SHOP AND FIELD CONNECTIONS SHALL BE BOLTED WITH HIGH STRENGTH BOLTS EXCEPT WHERE OTHERWISE SHOWN OR NOTED IN THE DRAWINGS TO BE BOLTED WITH MACHINE BOLT OR WELDED.
3. ALL BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A325M, TYPE 3, AND HAVE A HARDENED WASHER UNDER THE ELEMENT TURNED IN TIGHTENING.
4. TIE ROD SHALL CONFORM TO ASTM A722 HIGH STRENGTH STEEL BAR.
5. USE AWS E70XX ELECTRODES FOR WELDING, UNLESS OTHERWISE SPECIFIED. WELDS SHALL BE CONTINUOUS FILLET WELDS OF MINIMUM REQUIRED THROAT THICKNESS SHALL NOT BE LESS THAN 3/16 INCH.
6. ALL HARDWARE, BOLTS, TIE RODS AND STRUCTURAL MEMBERS SHALL BE HOT DIPPED GALVANIZED.
7. SHOP DRAWINGS: THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL BEFORE THE WORK STARTED.

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REV	DATE	BY	DESCRIPTION	APPROVED BY

REYNALDO M.C. ABAD
CERTIFICATE
NO. 774
(STRUCTURAL)
EXP. 04-30-18
GUAM
PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

DES. BY: tdg
DRN. BY: jl
CHK. BY: rmca

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

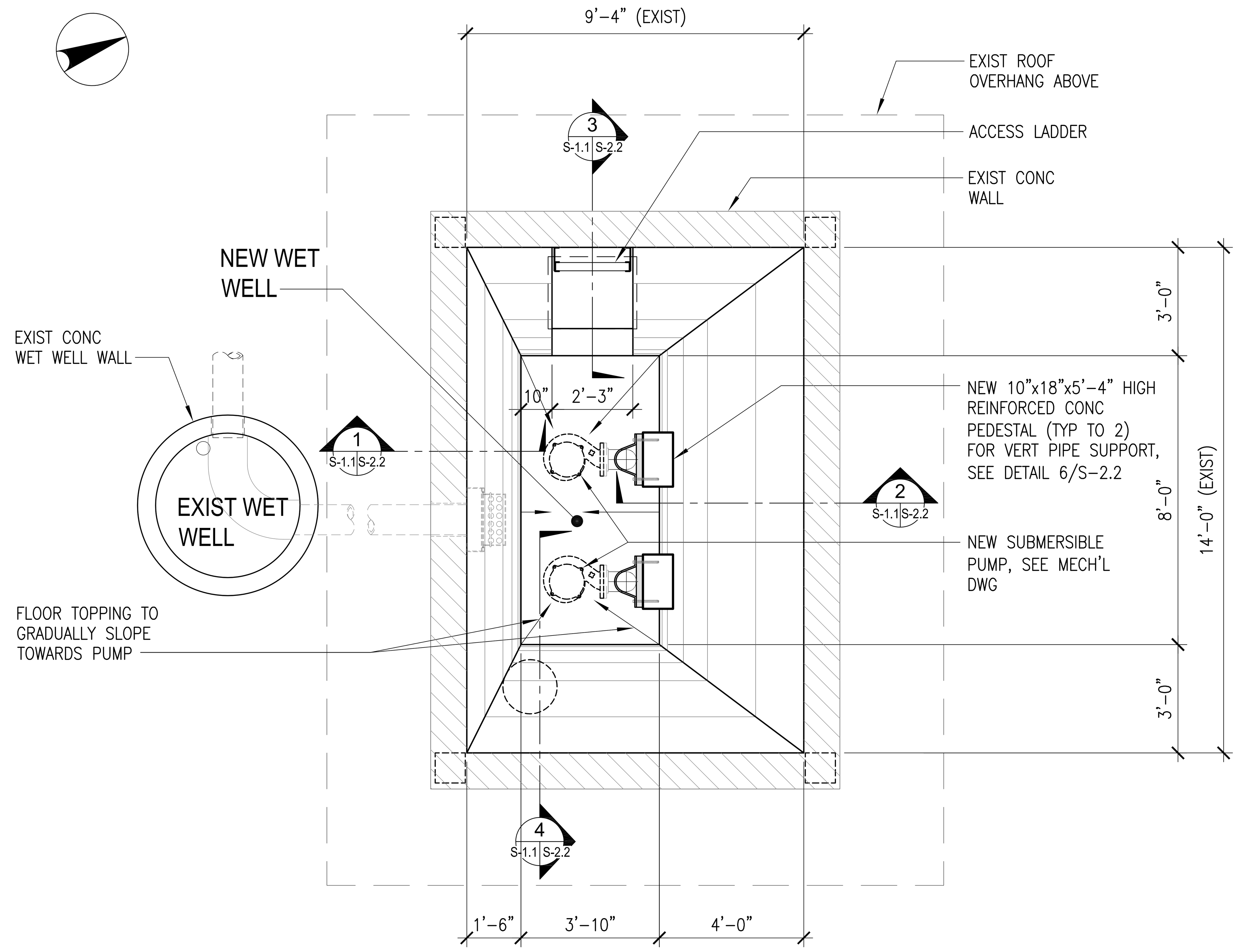
GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

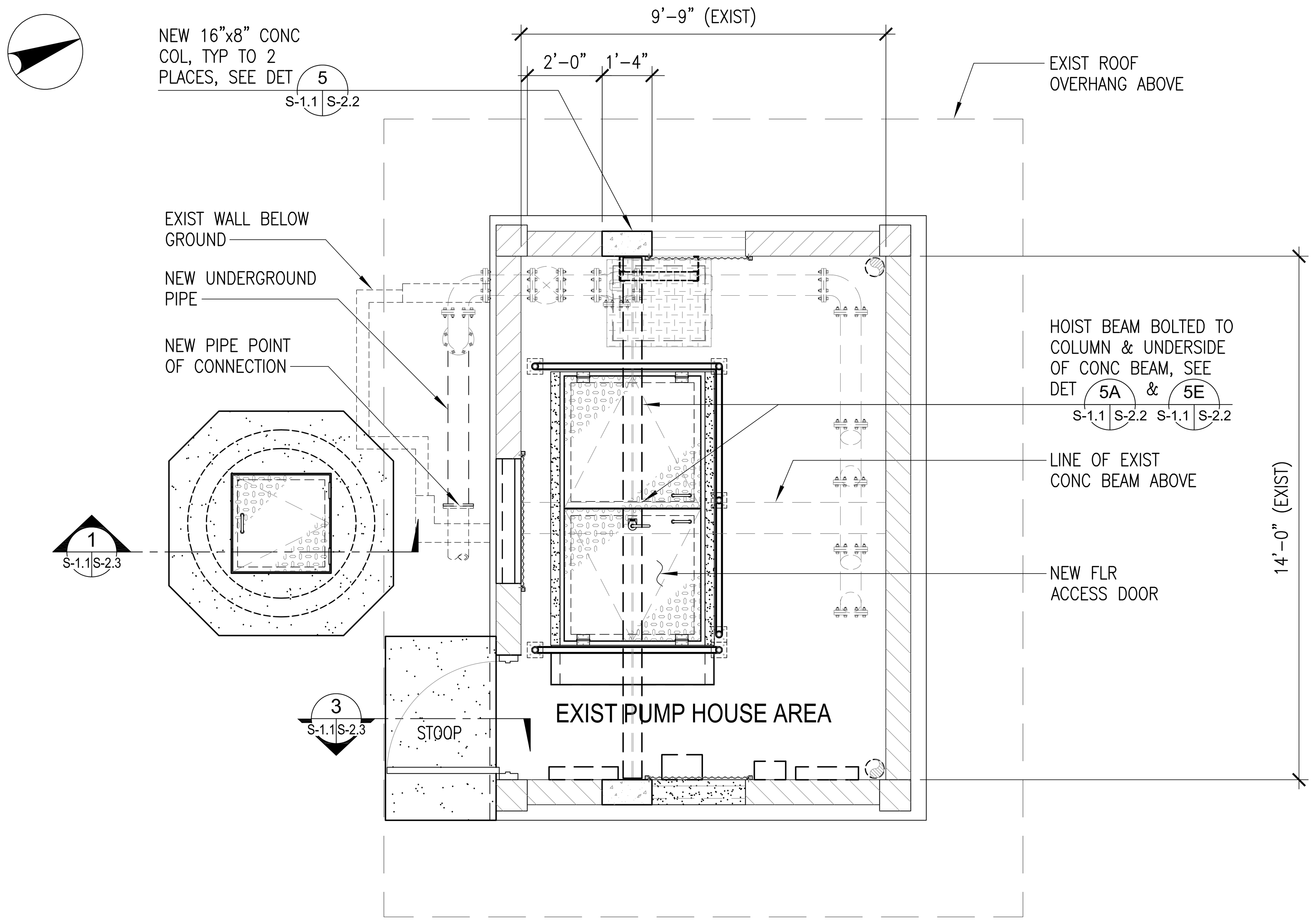
CONTENTS: STRUCTURAL NOTES

DRAWING NO. S-0.1
SHT. 16 OF 27

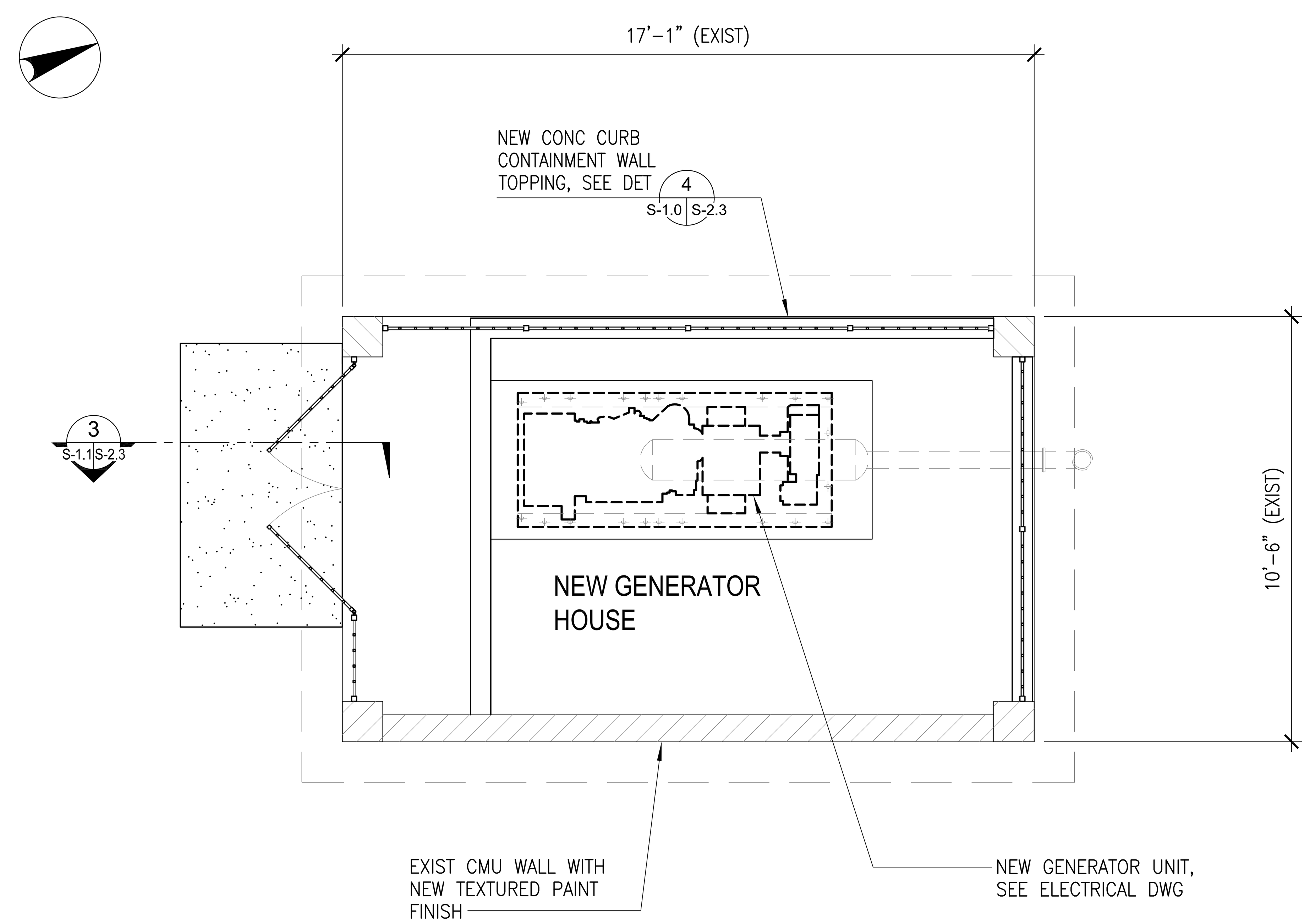
5/17/2017 3:03:07 PM



1 S-1.1 S-1.1 CONCRETE TOPPING PLAN - PUMP HOUSE WET WELL
SCALE: 3/8" = 1'-0"



2 S-1.1 S-1.1 NEW CONCRETE COLUMN PLAN FOR HOIST BEAM - PUMP ROOM
SCALE: 3/8" = 1'-0"



3 S-1.1 S-1.1 CONCRETE CONTAINMENT PLAN - GENERATOR HOUSE
SCALE: 3/8" = 1'-0"

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation

REYNALDO M.C. ARCE CERTIFICATE NO. 774 (STRUCTURAL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

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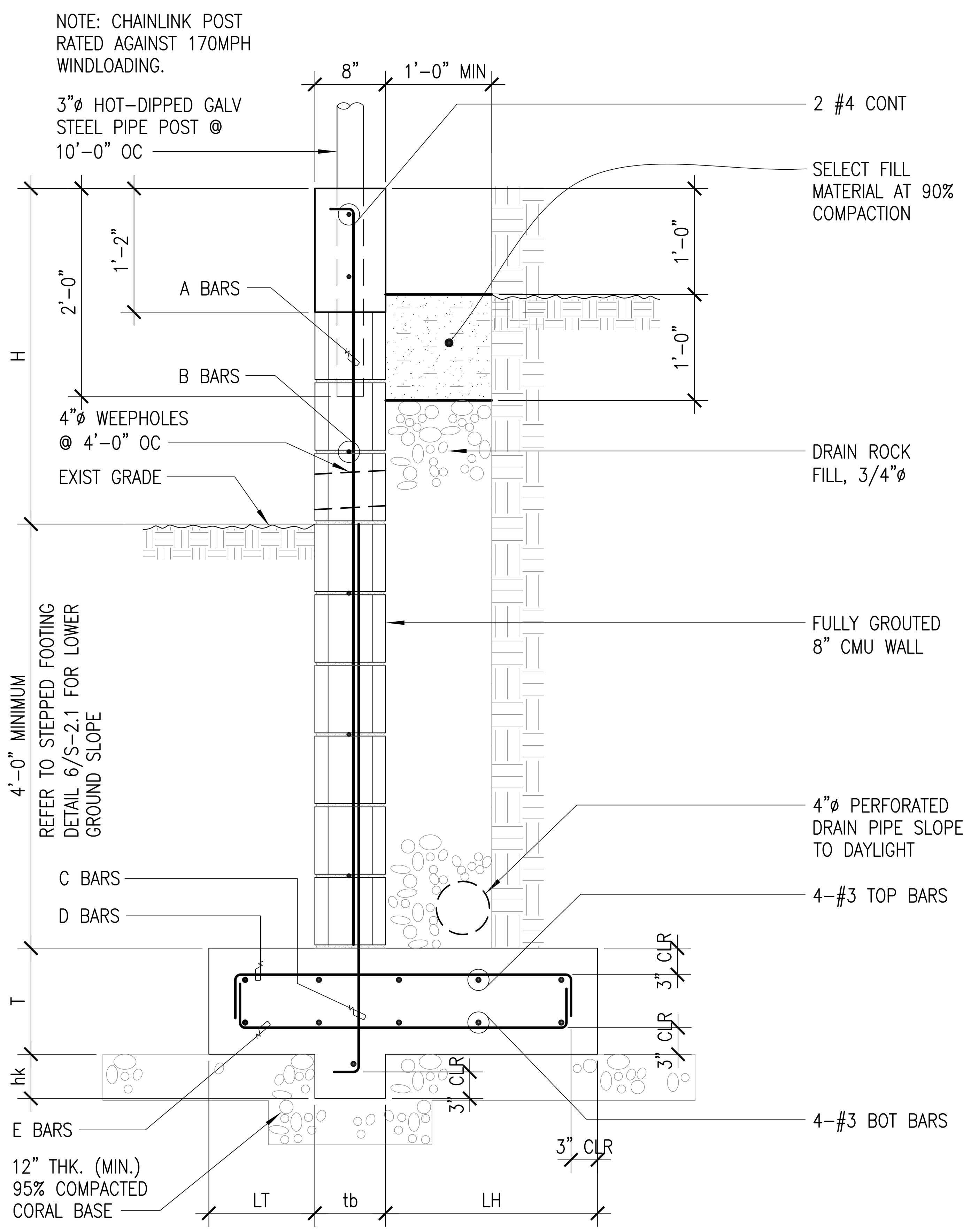
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: tdg
DRN. BY: jl
CHK. BY: rmca
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

CONTENTS:
CONCRETE TOPPING PLAN - PUMP HOUSE WET WELL, NEW CONCRETE COLUMN PLAN for HOIST BEAM - PUMP RM, & CONCRETE CONTAINMENT PLAN - GENERATOR HOUSE

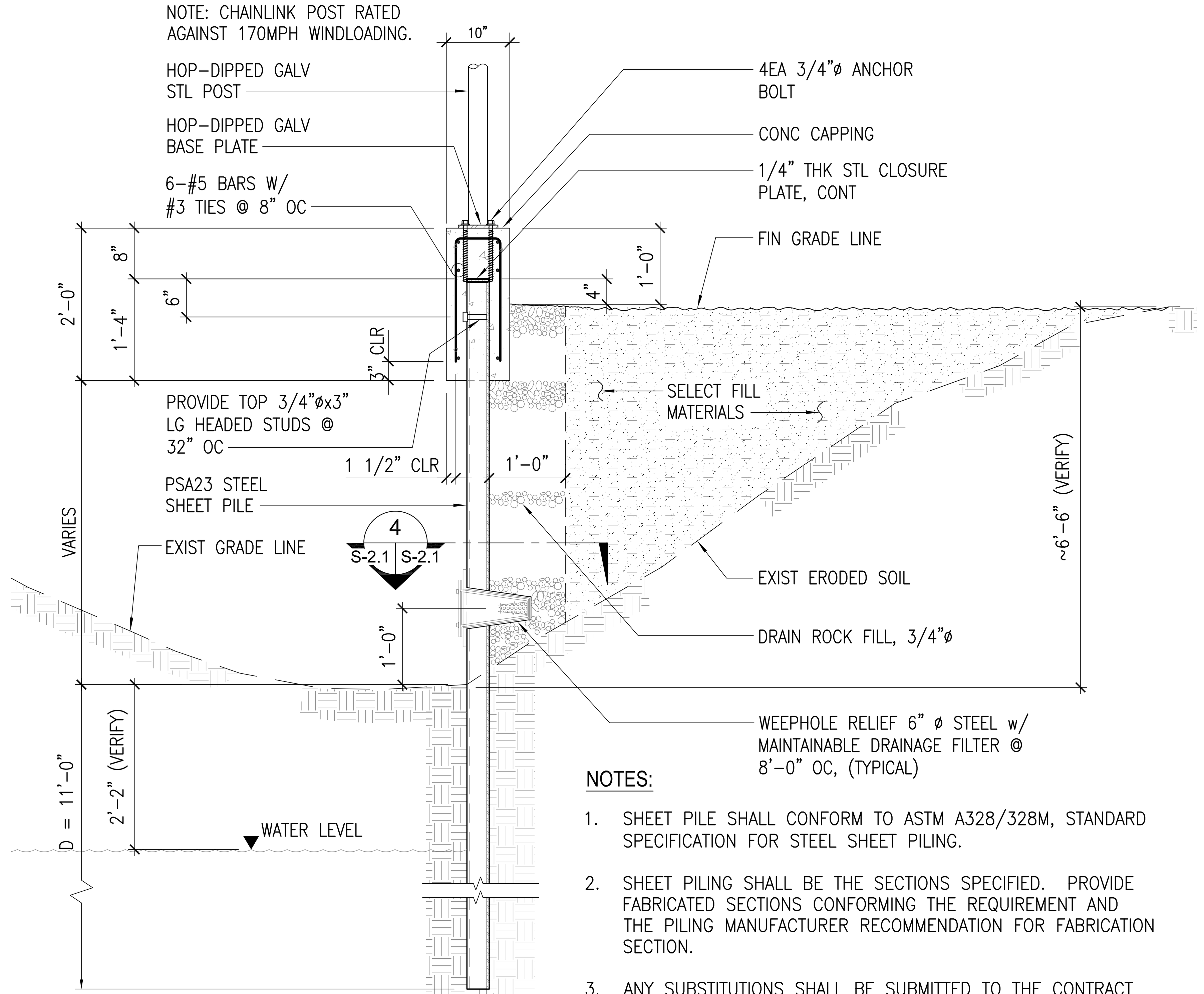
DRAWING NO. S-1.1
SHT. 17 OF 27



RETAINING WALL SCHEDULE

H (FT.)	T	hk	tb	LT	LH	A BAR (VERT)	B BAR (HORIZ)	C BAR (VERT)	D BAR (TOP)	E BAR (BOT)
3	12"	5"	8"	1'-0"	1'-7"	#4 @ 12" OC	#3 @ 16" OC	2-#4 @ 12" OC	#4 @ 12" OC	#3 @ 12" OC
2	12"	0	8"	1'-0"	1'-2"	#4 @ 16" OC	#3 @ 16" OC	#4 @ 16" OC	#4 @ 12" OC	#3 @ 12" OC

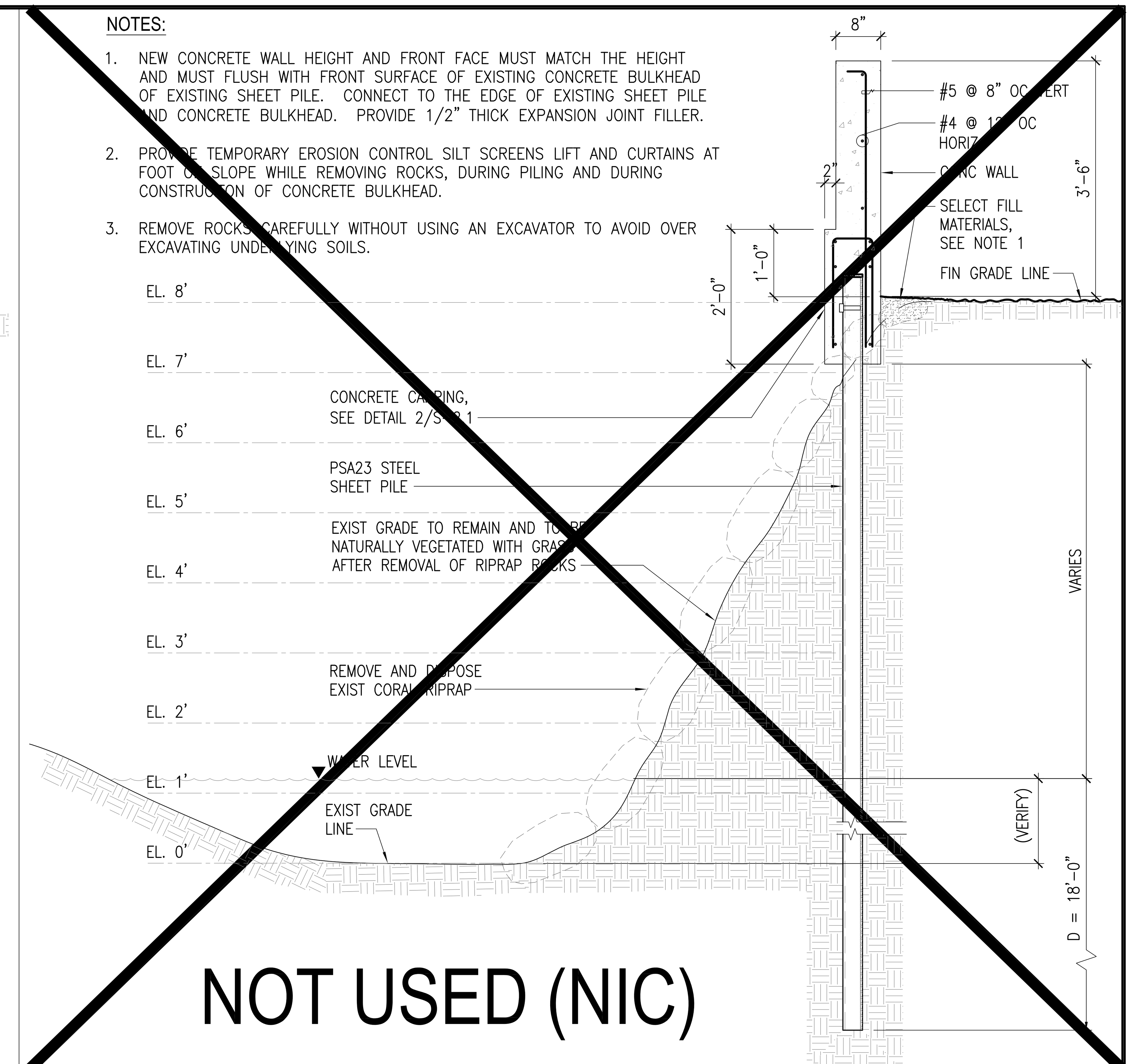
1 A-1.0 | S-2.1
CMU RETAINING WALL DETAIL
SCALE: 1" = 1'-0"



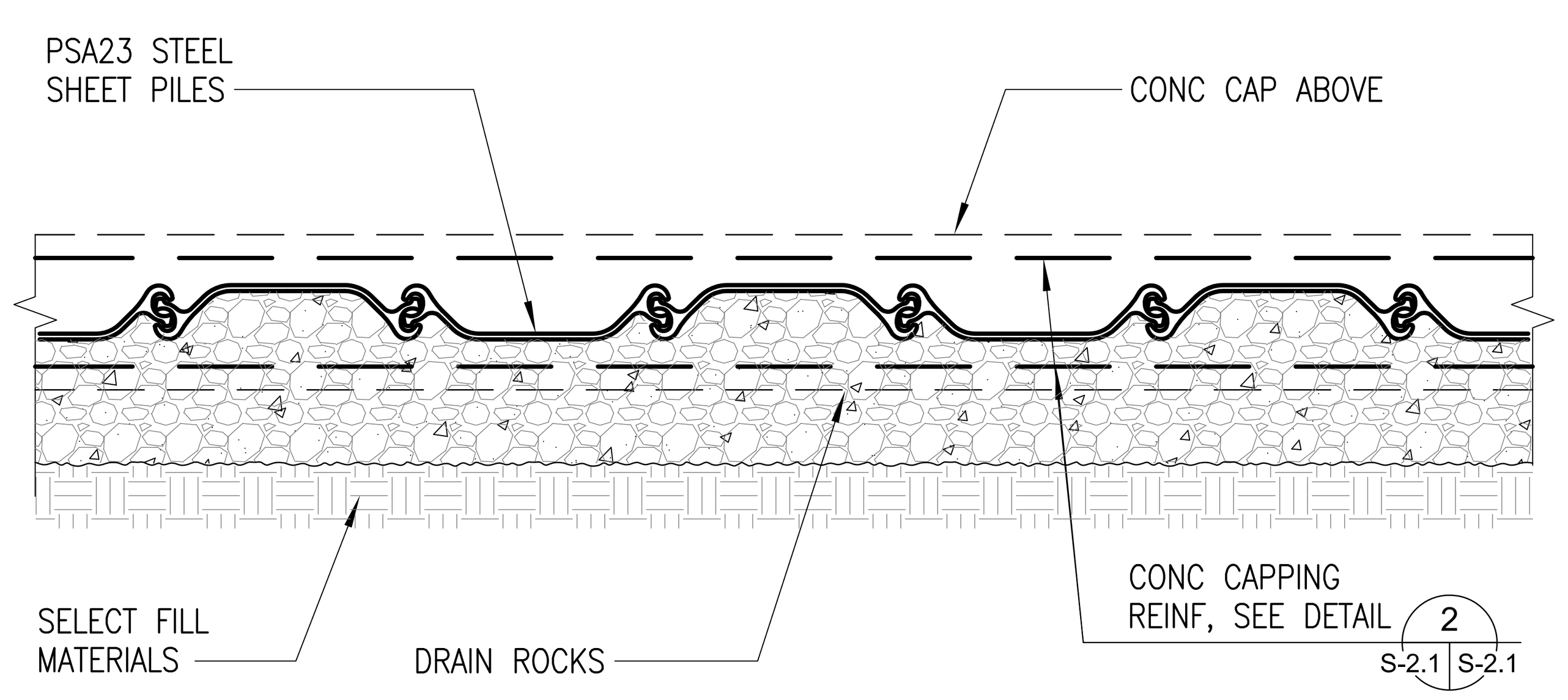
NOTES:

1. SHEET PILE SHALL CONFORM TO ASTM A328/328M, STANDARD SPECIFICATION FOR STEEL SHEET PILING.
2. SHEET PILING SHALL BE THE SECTIONS SPECIFIED. PROVIDE FABRICATED SECTIONS CONFORMING THE REQUIREMENT AND THE PILING MANUFACTURER RECOMMENDATION FOR FABRICATION SECTION.
3. ANY SUBSTITUTIONS SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR FOR APPROVAL.
4. SUBMIT A SHOP DRAWING FOR DETAIL DRAWINGS FOR SHEET PILING, INCLUDING FABRICATED SECTION SHOWING COMPLETE PILING DIMENSIONS AND DETAILS DRIVING SEQUENCE AND LOCATION OF INSTALLED PILING.

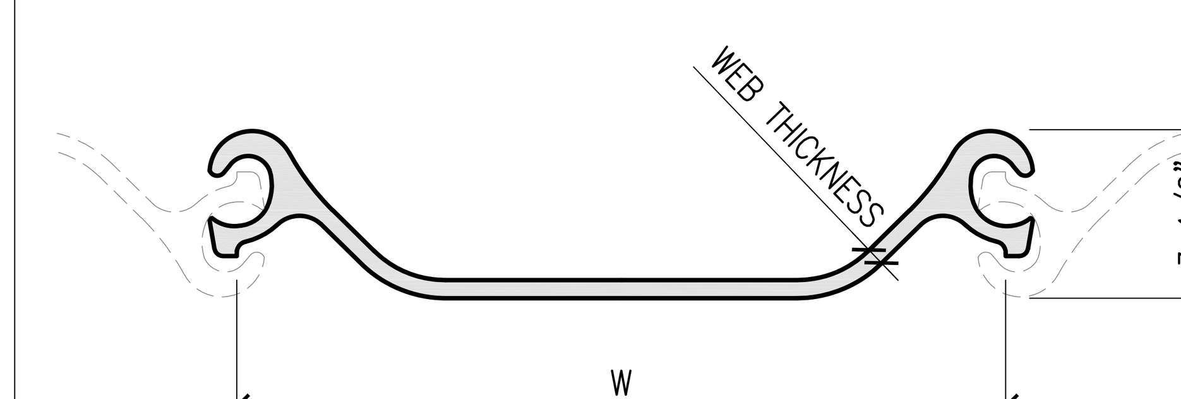
2 A-1.0 | S-2.1
CANTILEVERED STEEL SHEET PILE RETAINING WALL DETAIL
SCALE: 3/4" = 1'-0"



3 A-1.0 | S-2.1
STEEL SHEET PILE RETAINING WALL DETAIL
SCALE: 1" = 1'-0"



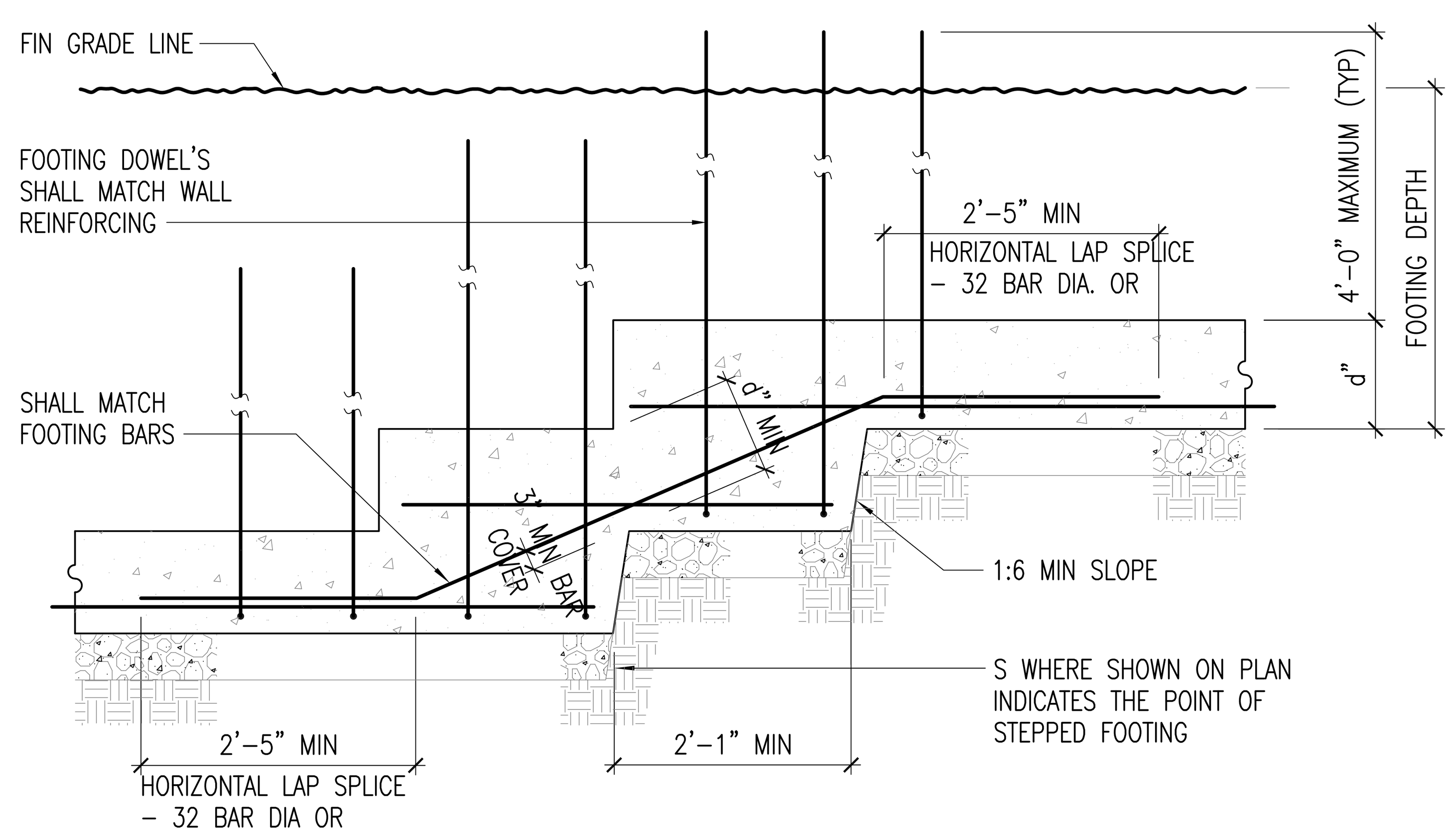
4 S-2.1 | S-2.1
STEEL SHEET PILE PLAN
SCALE: 1" = 1'-0"



STEEL SHEET PILE SECTION

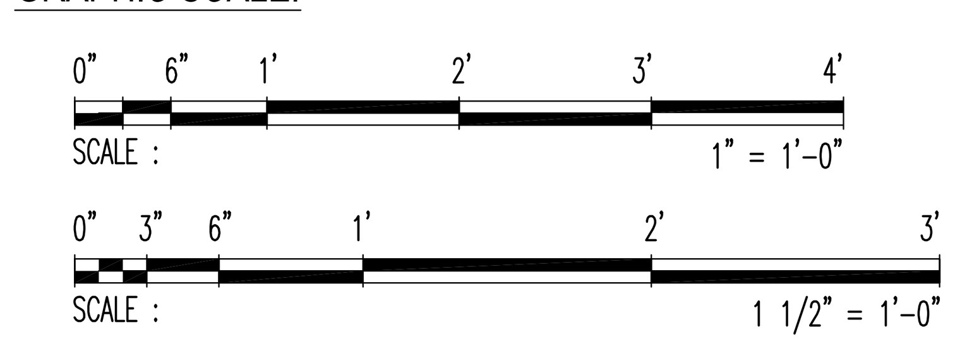
SECTION INDEX		AREA PER PILE	NOMINAL WIDTH	WEIGHT PER FOOT	WEIGHT PER SQ FT OF WALL	WEB THICKNESS	MOMENT OF INERTIA PER PILE	SECTION MODULUS PER PILE	SECTION MODULUS PER FOOT OF WALL	SURFACE AREA SQ FT PER LIN FT OF BAR TOTAL AREA	SURFACE AREA SQ FT PER LIN FT OF BAR NOMINAL COATING AREA*
		IN.²	W IN.	LBS.	LBS.	IN.	IN.⁴	IN.³	IN.³		
INTERLOCK WITH EACH OTHER	PSA23	8.99	16	30.7	23.0	3/8	5.5	3.2	2.4	3.76	3.08

5 S-2.1 | S-2.1
STEEL SHEET PILE SECTION
SCALE: NTS



6 A-1.0 | S-2.1
STEPPED FOOTING DETAIL
SCALE: 3/4" = 1'-0"

GRAPHIC SCALE:



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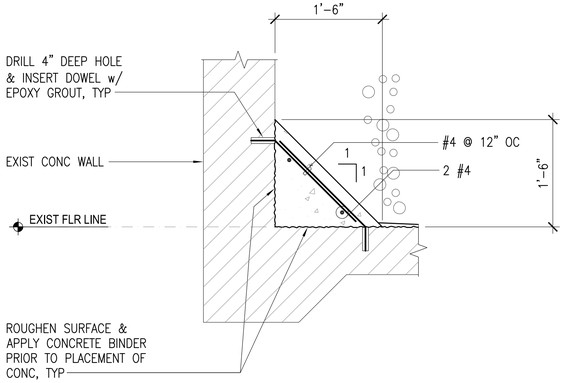
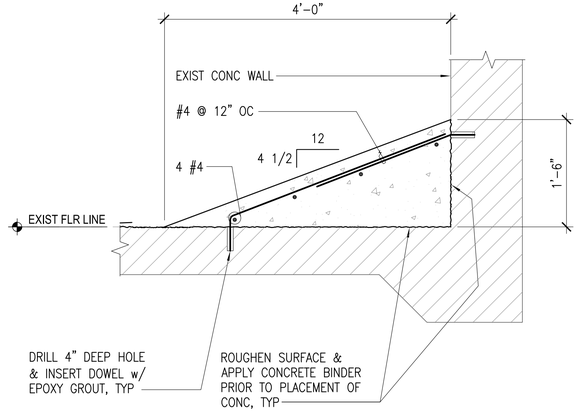
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: tdg	CHIEF ENGR:	CONTENTS: CMU RETAINING WALL DETAIL, CANTELIVER SHEET PILE RETAINING WALL DET, STEEL SHEET PILE RETAINING WALL DET, STL SHT PILE PLAN & STEELSHEET PILE SECTION	DRAWING NO. S-2.1
DRN. BY: jl	ENGR. SUP:		SHT. 18 OF 27
CHK. BY: rmca	PROJ. ENGR:		

7/12/2017 1:49:51 PM



1 S-1.1 S-2.2 **DETAIL** SCALE: 1" = 1'-0"



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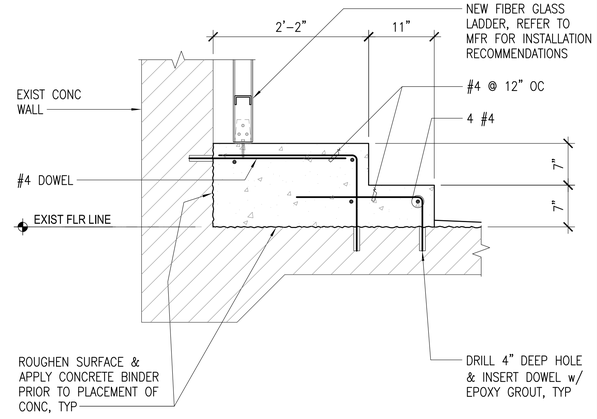
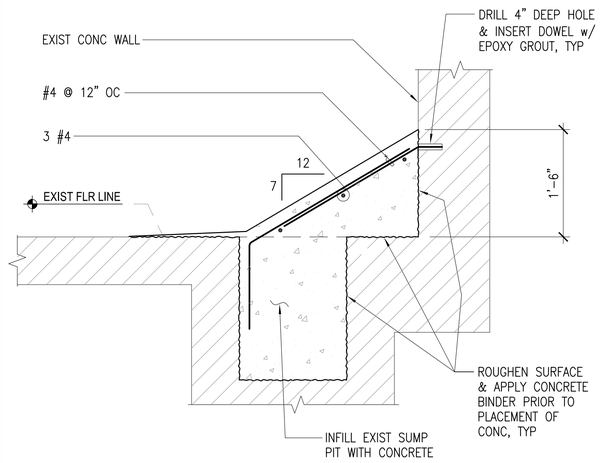
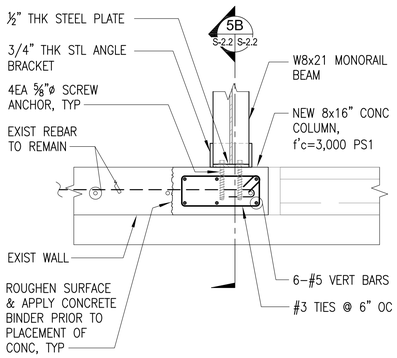


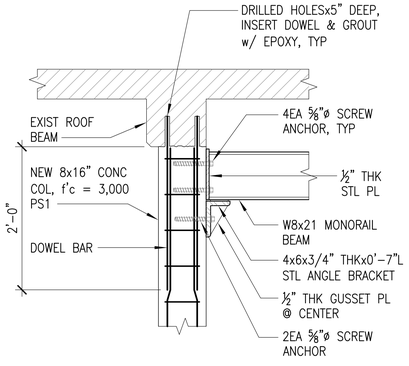
3 S-1.1 S-2.2 **CONC STEP DETAIL** SCALE: 1" = 1'-0"



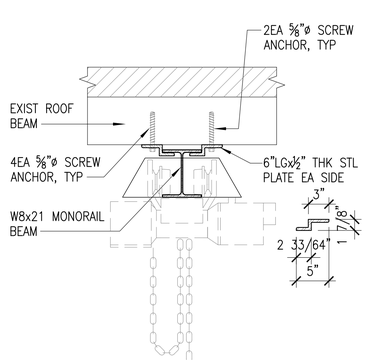
4 S-1.1 S-2.2 **DETAIL** SCALE: 1" = 1'-0"



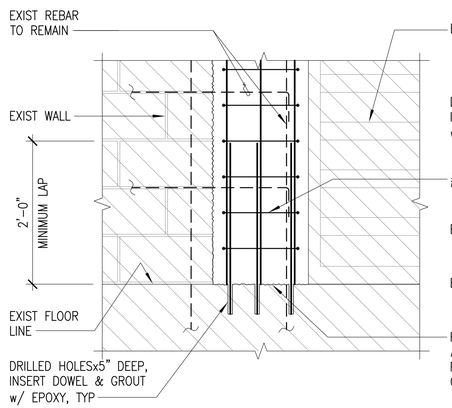
5A S-1.1 S-2.2 **PLAN DETAIL** SCALE 1" = 1'-0"



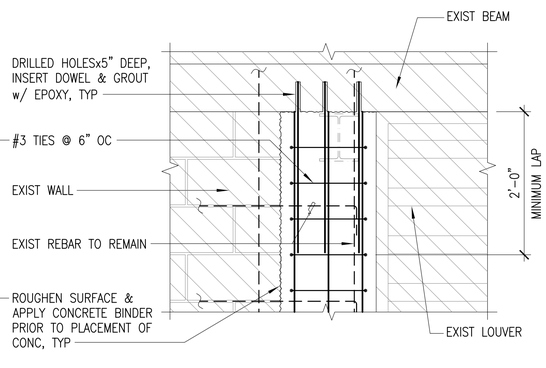
5B S-1.1 S-2.2 **SECTION** SCALE 1" = 1'-0"



5E S-1.1 S-2.2 **SECTION** SCALE 1" = 1'-0"

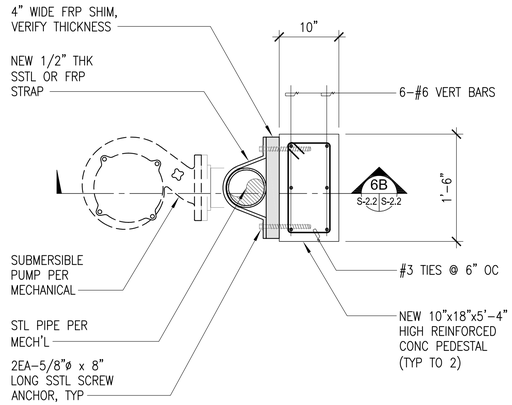


5C S-1.1 S-2.2 **DETAIL AT FLOOR** SCALE 1" = 1'-0"

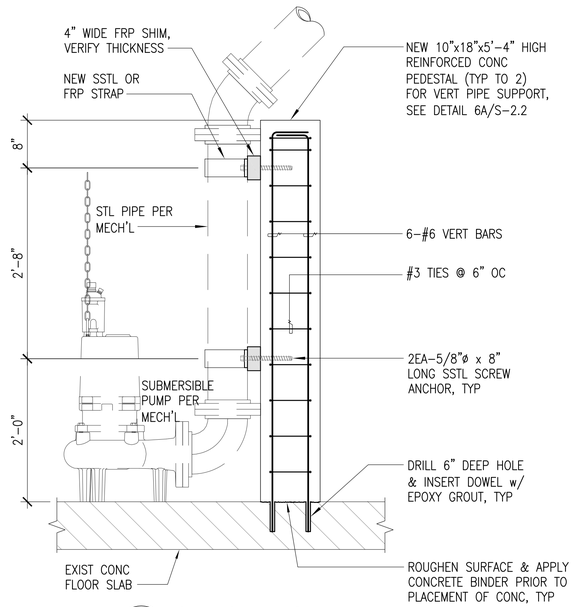


5D S-1.1 S-2.2 **DETAIL AT BEAM** SCALE 1" = 1'-0"

5 S-1.1 S-2.2 **CONCRETE COLUMN DETAILS** SCALE: 1" = 1'-0"



6A S-1.1 S-2.2 **PLAN DETAIL** SCALE 1" = 1'-0"



6B S-1.1 S-2.2 **SECTION** SCALE 1" = 1'-0"

6 S-1.1 S-2.2 **CONCRETE PEDESTAL & PIPE STRAP DETAILS** SCALE: 1" = 1'-0"

GRAPHIC SCALE:

0" 6" 1' 2' 3' 4'
SCALE : 1" = 1'-0"

0" 3" 6" 1' 2' 3'
SCALE : 1 1/2" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING ROUTE 16, DEDEDO, GUAM 96929
Tel: (671) 635-5716 / 635-4716 Fax (671) 635-2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

REGINALDO M.C. ABAD CERTIFICATE NO. 274 (STRUCTURAL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE: 05-17-2017

DES. BY: tdg
DRN. BY: jl
CHK. BY: rmca

GWA NO. .
GRANT ID NO. .
CONTRACT NO. .
PROJECT NO. .
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

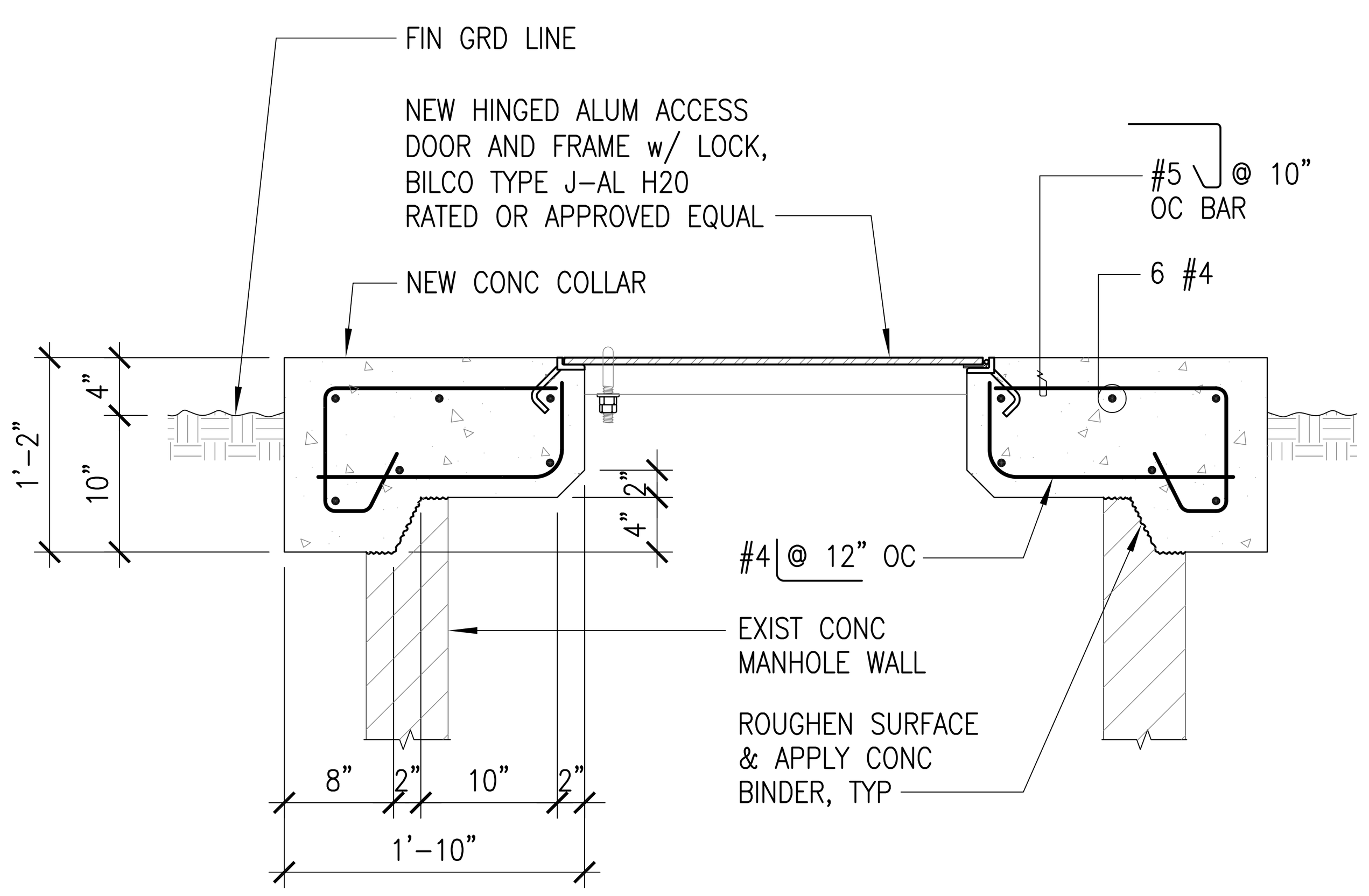
GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

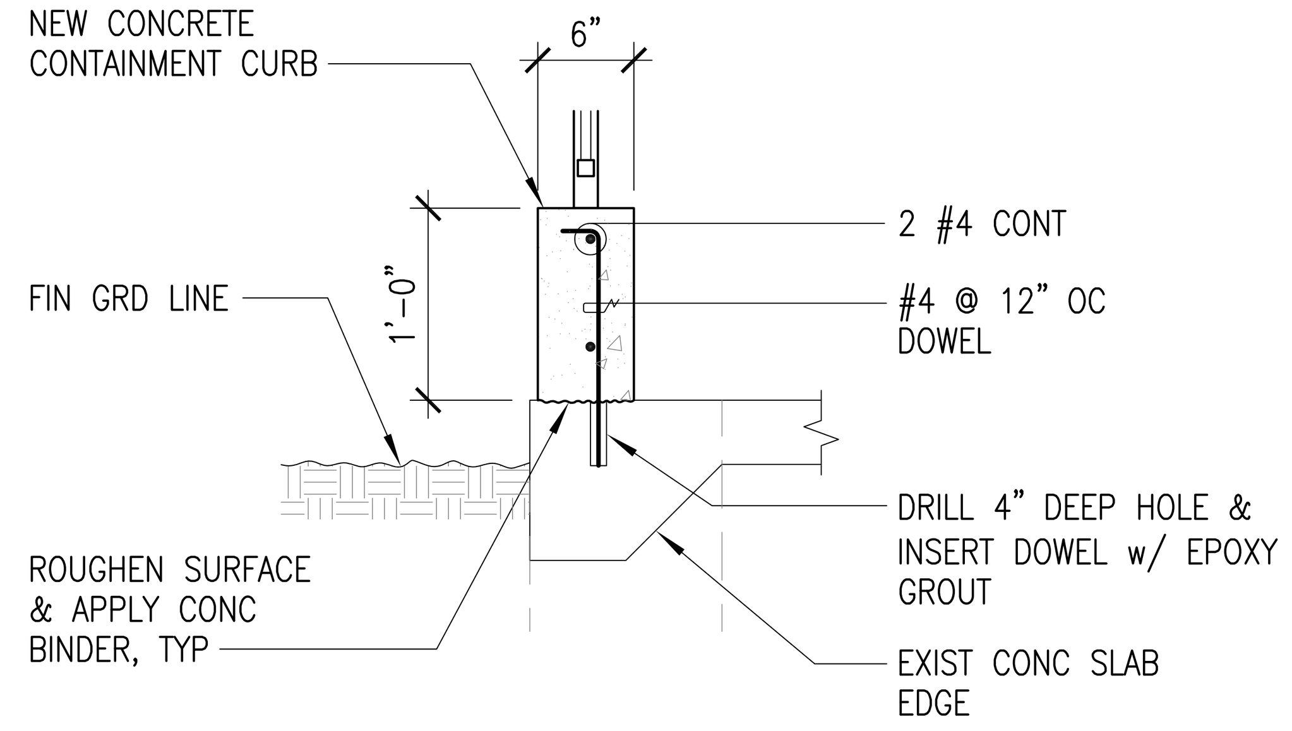
CONTENTS:
MISCELLANEOUS DETAILS and CONCRETE COLUMN DETAILS

DRAWING NO. S-2.2
SHT. 19 OF 27

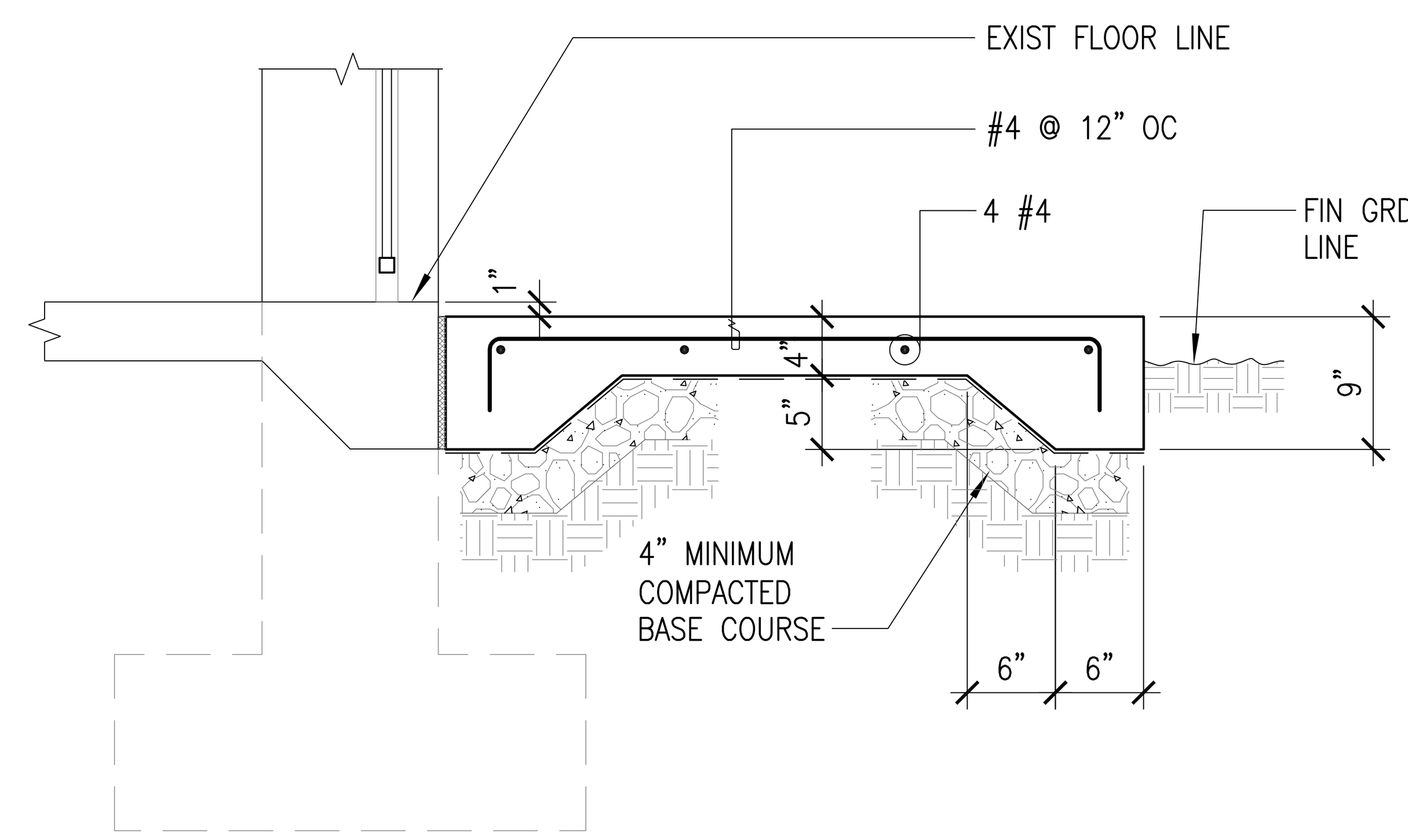
5/17/2017 3:13:40 PM



1 S-1.1 S-2.3 CONCRETE COLLAR DETAIL
SCALE: 1" = 1'-0"



2 S-1.1 S-2.3 TYPICAL CONCRETE CONTAINMENT CURB DETAIL
SCALE: 1" = 1'-0"



3 S-1.1 S-2.3 CONCRETE STOOP DETAIL
SCALE: 1" = 1'-0"

GRAPHIC SCALE:
0" 6" 1' 2' 3' 4'
SCALE : 1" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation

REV	DATE	BY	DESCRIPTION	APPROVED BY

REYNALDO M.C. ARCE CERTIFICATE NO. 774 (STRUCTURAL) EXP. 04-30-18 GUAM PROFESSIONAL ENGINEER

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

DATE: 05-17-2017

GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
TAN MARIAN COATLA LP, TAMUNING, GUAM

DES. BY: tdg
DRN. BY: jl
CHK. BY: rmca
CHIEF ENGR: .
ENGR. SUP: .
PROJ. ENGR: .

CONTENTS:
CONCRETE COLLAR DETAIL, VALVE BOX TOPPING DETAIL, CONCRETE STOOP DETAIL & TYPICAL CONCRETE CONTAINMENT CURB DETAIL

DRAWING NO. S-2.3
SHT. 20 OF 27

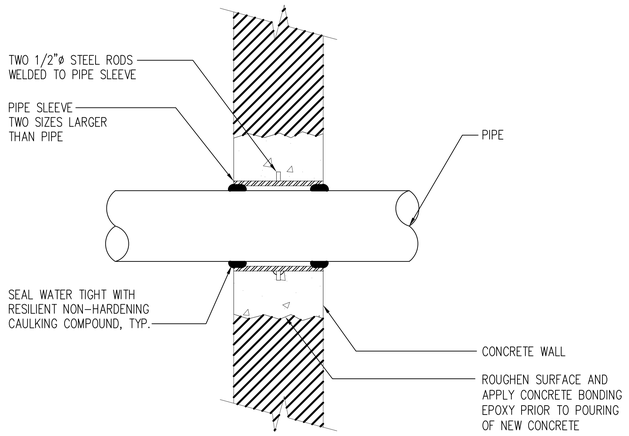
5/17/2017 3:19:22 PM

LEGEND AND ABBREVIATIONS

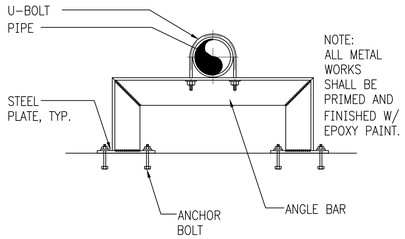
SYMBOL	ABBR	DESCRIPTION
10x8		RECTANGULAR DUCTWORK (WIDTH X DEPTH)
10x8ø		FLAT OVAL DUCTWORK
		SQUARE ELBOW W/ TURNING VANES
		RADIUS ELBOW
		SQUARE-THROATED TEE
R		CHANGE IN ELEVATION (R=RISE, D=DOWN)
		TRANSITION WITH FLAT SIDE
		TRANSITION ON CENTER
		DUCT TRANSITION (SQUARE TO ROUND)
AD		ACCESS DOOR (SIDE OR BOTTOM LOCATION)
		SUPPLY AIR DUCT UP/DOWN
		RETURN/EXHAUST AIR DUCT UP/DOWN
		OUTDOOR AIR DUCT UP/DOWN
		EXIST PIPE (RL/RS, CHWS/R, ACD) TO BE REMOVED
		EXIST PIPE (RS/RL, CHWS/R, ACD) TO REMAIN
		NEW PIPE (RS/RL, CHWS/R, ACD)
OI		ELBOW, TURNED UP
GI		ELBOW, TURNED DOWN
OI		PIPE TEE, TURNED UP
GI		PIPE TEE, TURNED DOWN
		CONCENTRIC REDUCER
		ECCENTRIC REDUCER
E		PIPE CAP
		FLANGED CONNECTION
		UNION CONNECTION
		EXPANSION JOINT
		FLEXIBLE PIPING

MECHANICAL GENERAL NOTES:

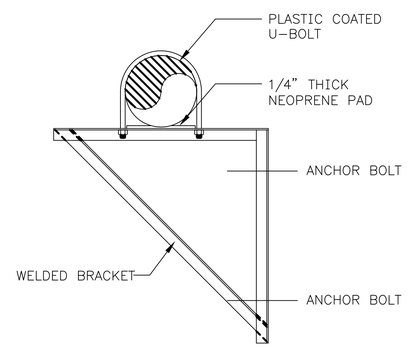
1. ALL MECHANICAL WORKS SHALL CONFORM TO THE 2009 EDITION OF THE INTERNATIONAL BUILDING CODE, 2009 EDITION OF THE INTERNATIONAL MECHANICAL CODE, THE CONTRACT DOCUMENTS AND THE RULES AND REGULATIONS OF THE GOVERNMENT OF GUAM AUTHORITIES HAVING JURISDICTIONS.
2. THE CONTRACTOR SHALL VERIFY FIELD CONDITIONS AND COORDINATE THE WORK AMONG VARIOUS TRADES AS NECESSARY TO AVOID CONFLICTS AND TO ENSURE THE PROPER INSTALLATION OF THE WORK WITHIN THE AVAILABLE SPACE.
3. THOUGH SOME OFFSETS AND TRANSITIONS ARE SHOWN IN PIPING AND DUCTWORKS TO HELP INDICATE THE PHYSICAL RELATIONSHIP BETWEEN THEM, IT IS NOT THE INTENT OF THE DRAWINGS TO SHOW ALL PIPING AND DUCTWORKS OFFSETS AND TRANSITIONS REQUIRED. THE CONTRACTOR SHALL COORDINATE THE MECHANICAL WORK WITHIN ITSELF AND THE WORK OF ALL TRADES TO PROVIDE COMPLETE AND OPERABLE SYSTEM WITHOUT INTERFERENCES.
4. LOCATION OF AIR INLETS AND OUTLETS ARE APPROXIMATE. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS. WHEN MECHANICAL AND ARCHITECTURAL DRAWINGS SHOW CONFLICTING LOCATIONS, CONSULT WITH ARCHITECT.
5. DIFFUSER, REGISTER AND GRILLE SIZES SHOWN ON FLOOR PLAN ARE NECK SIZES.
6. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURER'S CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITION REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
7. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
8. CONTRACTOR SHALL ENSURE THAT MECHANICAL EQUIPMENT IS INSTALLED WITH MANUFACTURER'S RECOMMENDED ACCESS SPACE AND TO MEET THE NATIONAL ELECTRIC CODE CLEARANCES.
9. SUBMIT LEVEL CONTROL AND ALARM SEQUENCE PLAN FOR GWA REVIEW AND APPROVAL PRIOR TO INSTALLATION AND PROGRAMMING INTO CONTROLLER. PROVIDE POSTED INFORMATION AND INSTRUCTIONS AT THE STATION AT COMPLETION OF THE PROJECT.
10. CONTRACTOR TO FIELD VERIFY PRIOR PROGRAMMING THE ELEVATIONS, ADJUST AS NEEDED AND TO DEMONSTRATE TO GWA THE EFFECTIVENESS OF THE PROPOSED ELEVATIONS USING LEVEL CONTROLS PRIOR TO TURN-OVER.
11. NEW CONTROLLER SHALL HAVE SPRING-LOADED "M-O-A" (MANUAL-OFF-AUTO) SWITCH FOR ALL PUMPS TO ALLOW MANUAL STARTING AND SHUTTING DOWN OF EACH PUMP. THE SPRING MECHANISM SHALL PREVENT THE OPERATOR FROM INADVERTENTLY LEAVING THE PUMP ON MANUAL.
12. PROVIDE ENOUGH SLACK FOR LEVEL TRANSMITTER AND FLOAT LEVEL SWITCH CABLES. INSTALL FLOAT LEVEL SWITCH HANG IMMERSED IN THE LIQUID.
13. SET HEIGHT OF FLOAT LEVEL SWITCHES AND TRANSDUCER AT WET WELL DURING COMMISSIONING OF THE PUMP CONTROLLER.
14. SET ELEVATION CONTROL POINTS AS SHOWN IN SEWAGE PUMP SEQUENCE OF OPERATION.



PIPE THRU WALL DETAIL



PIPE SUPPORT DETAIL



PIPE SUPPORT DETAIL

1 / M-0.1 | M-0.1 MISCELLANEOUS DETAILS

SCALE: NOT TO SCALE

EXHAUST FAN SCHEDULE

MARK NO.	SERVICE	CAPACITY (CFM)	E.S.P. (IN H_2O)	TYPE	CLASS	DRIVE	MOTOR					WEIGHT (LBS)	REMARKS
							HP	RPM	VOLTS	PHASE	HERTZ		
EF 1	PUMP HOUSE-LOWER FLOOR	900	0.5	BACKWARD INCLINED	–	BELT	1/4	1,750	115	1	60	120	SPARK RESISTANT WITH MANUAL CONTROL.

PUMP SCHEDULE

MARK NO.	LOCATION	TYPE	CAPACITY (GPM)	TDH (FT H20)	MOTOR					REMARKS
					HP	RPM	VOLTS	PHASE	HERTZ	
P 1	WELL	SUBMERSIBLE NON-CLOG SEWAGE PUMP	350	60	10	1,750	460	3	60	– – –

GRAPHIC SCALE:

0' 1' 2' 4' 6' 8' 10' 12'

SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARAY DRIVE, S.P. EMPSCO BUILDING, ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 635.5716 / 635.4714 Fax (671) 635.2156

REV	DATE	BY	DESCRIPTION	APPROVED BY

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

DATE:

GWA NO.

GRANT ID NO.

CONTRACT NO.

PROJECT NO.

DES. BY: JBE

DRN. BY: JBE

CHK. BY: JBE

CHIEF ENGR:

ENGR. SUP:

PROJ. ENGR:

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

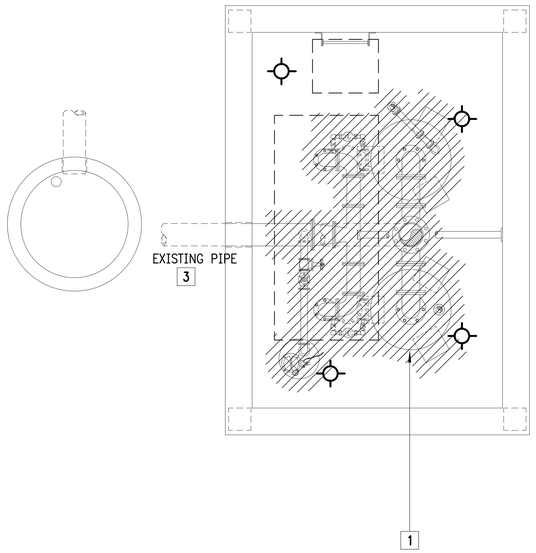
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

CONTENTS:
NOTES, DETAILS, SCHEDULES, LEGENDS AND ABBREVIATIONS

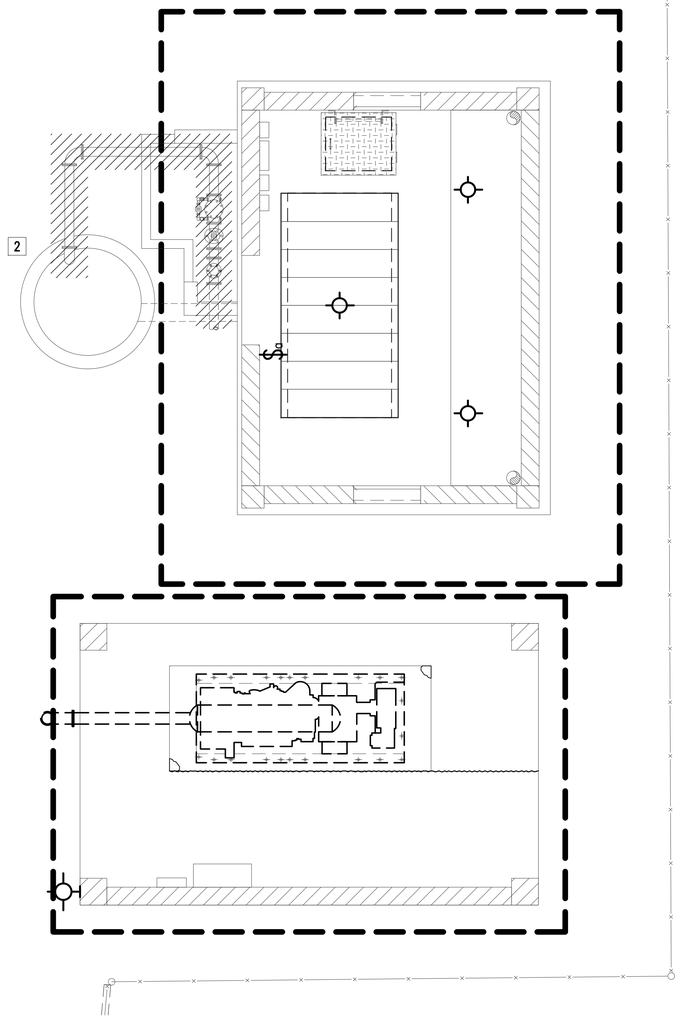
DRAWING NO.
M-0.1

SHT. 21 OF 27

5/19/2017 6:47:59 AM



1 M-1.1 | M-1.1 DEMOLITION PLAN
SCALE: 3/8" = 1'-0"



2 M-1.1 | M-1.1 DEMOLITION PLAN
SCALE: 3/8" = 1'-0"

DEMOLITION KEYED NOTES:

1. REMOVE AND DISPOSE EXISTING PUMP INCLUDING ASSOCIATED PIPES AND FITTINGS.
2. REMOVE EXISTING SUBMERSIBLE PUMP, BY-PASS PIPING, VALVES AND FITTINGS. REMOVAL SHALL BE DONE AFTER THE NEW SEWAGE PUMPS, PIPES AND FITTINGS HAVE BEEN ACCEPTED BY GWA. TURN OVER PUMP, PIPES, VALVES AND FITTINGS TO AGANA MAINTENANCE YARD OR AS DIRECTED BY GWA.
3. EXISTING EMBEDDED SECTION OF PIPE TO REMAIN; CLEAN INTERNAL DIRT AND DEBRIS, PROVIDE CCTV INSPECTION/DATA FOR GWA REVIEW. PROVIDE CIPP LINING INTO ENTIRE PIPE AFTER CLEANING.

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, D/F EMPSCO BUILDING
ROUTE 16, DEDEDO, GUAM 96929
Tel. (671) 638.5714 / 638.4714 Fax (671) 638.2136

REV	DATE	BY	DESCRIPTION	APPROVED BY

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

DES. BY: JBE
DRN. BY: JBE
CHK. BY: JBE
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

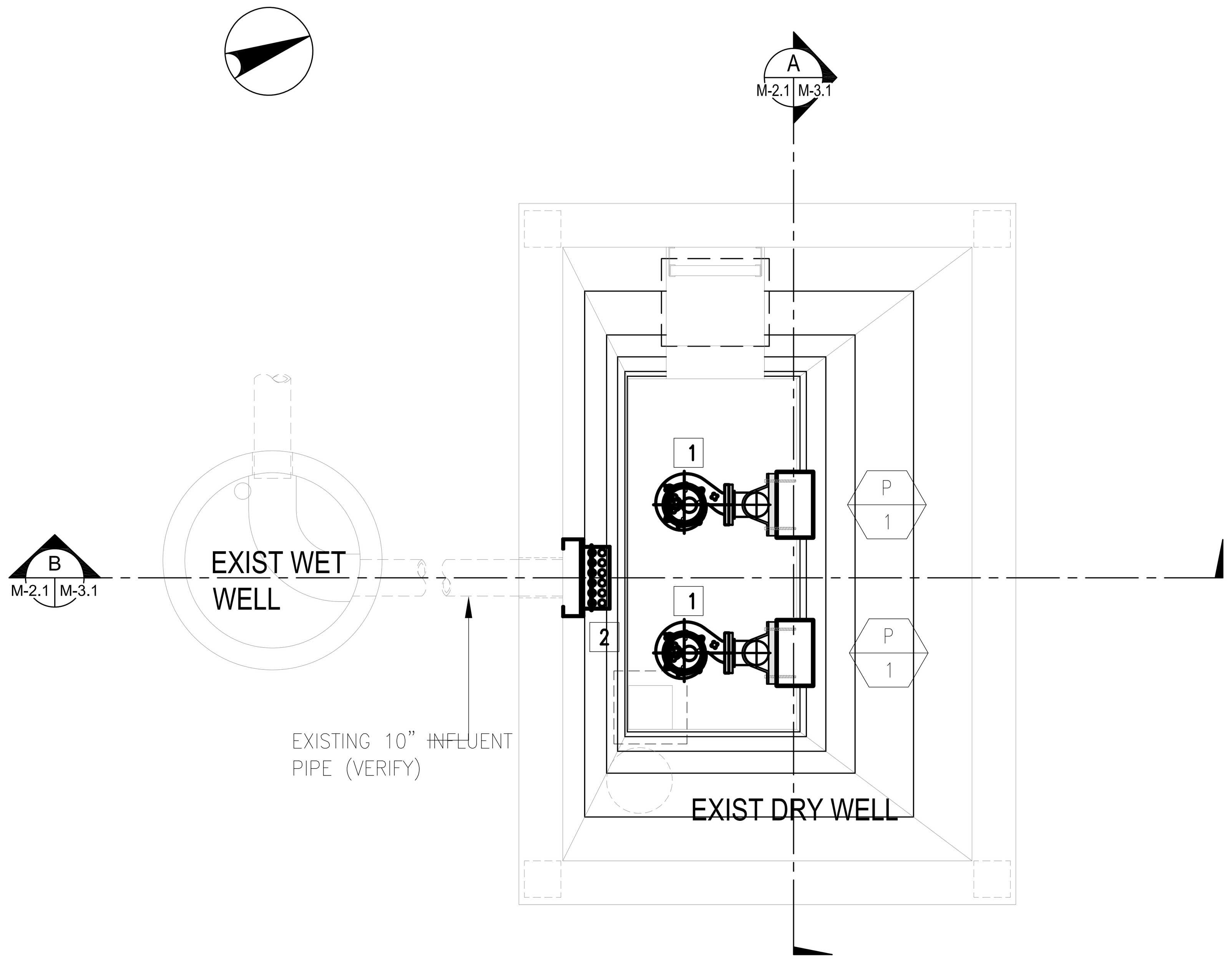
GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

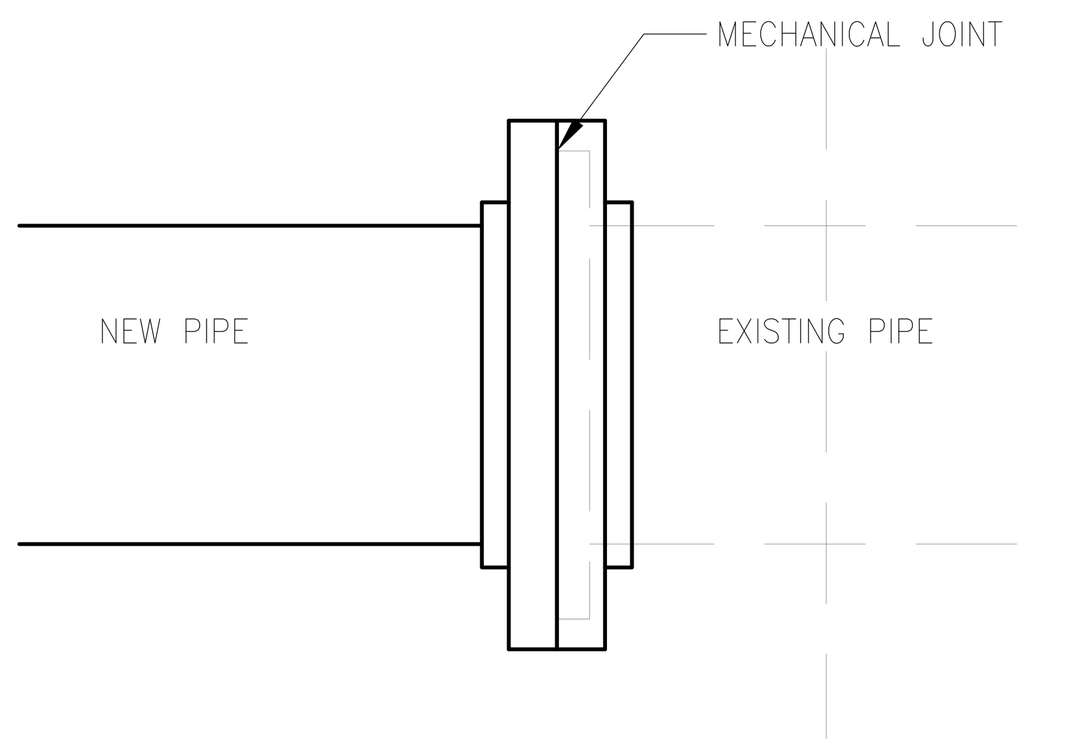
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

CONTENTS: DEMOLITION PLAN
DRAWING NO. M-1.1
SHT. 22 OF 27

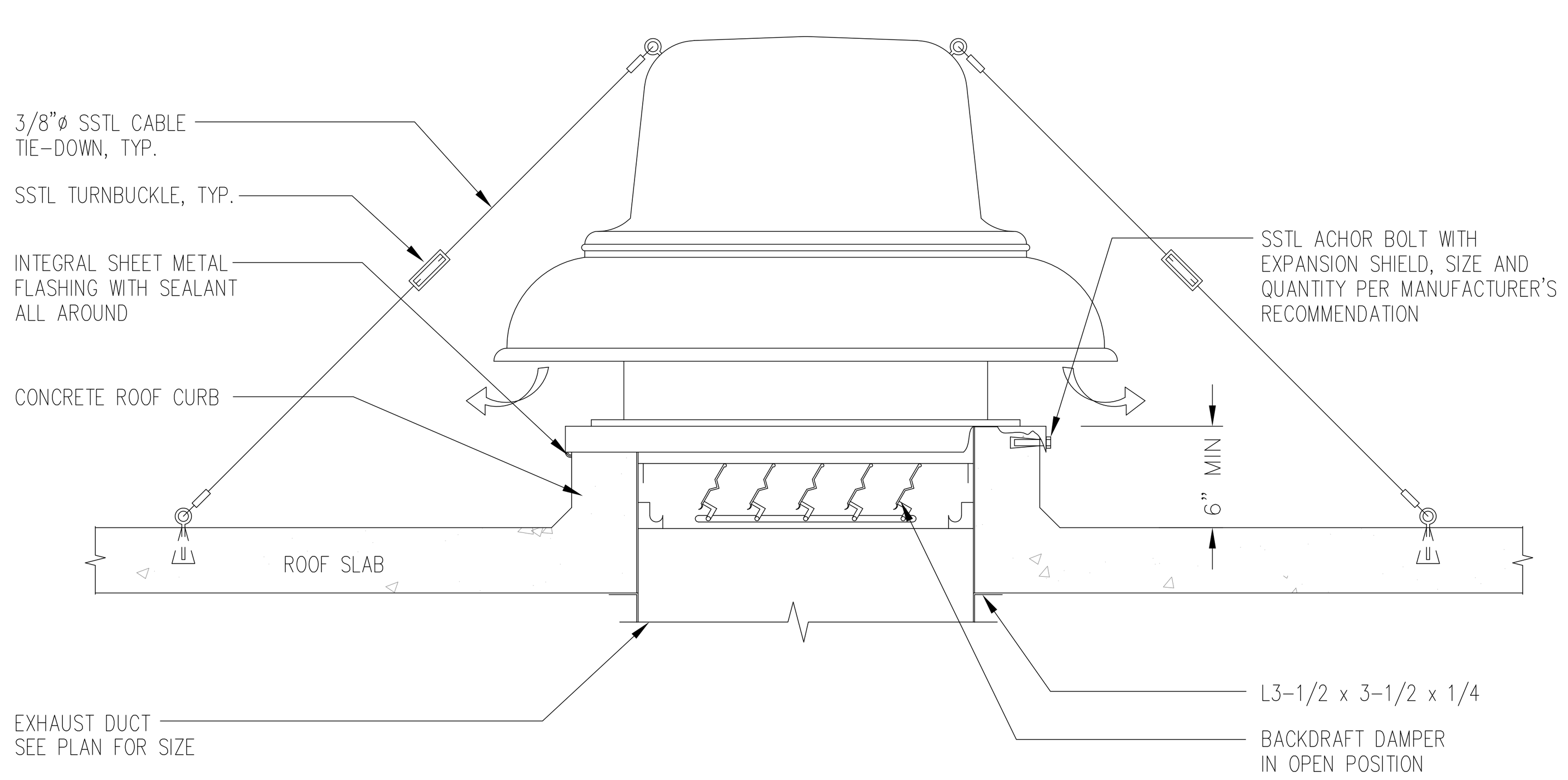
5/17/2017 6:56:07 PM



1 M-2.1 M-2.1
MECHANICAL PLAN-WELL LEVEL
SCALE: 3/8" = 1'-0"



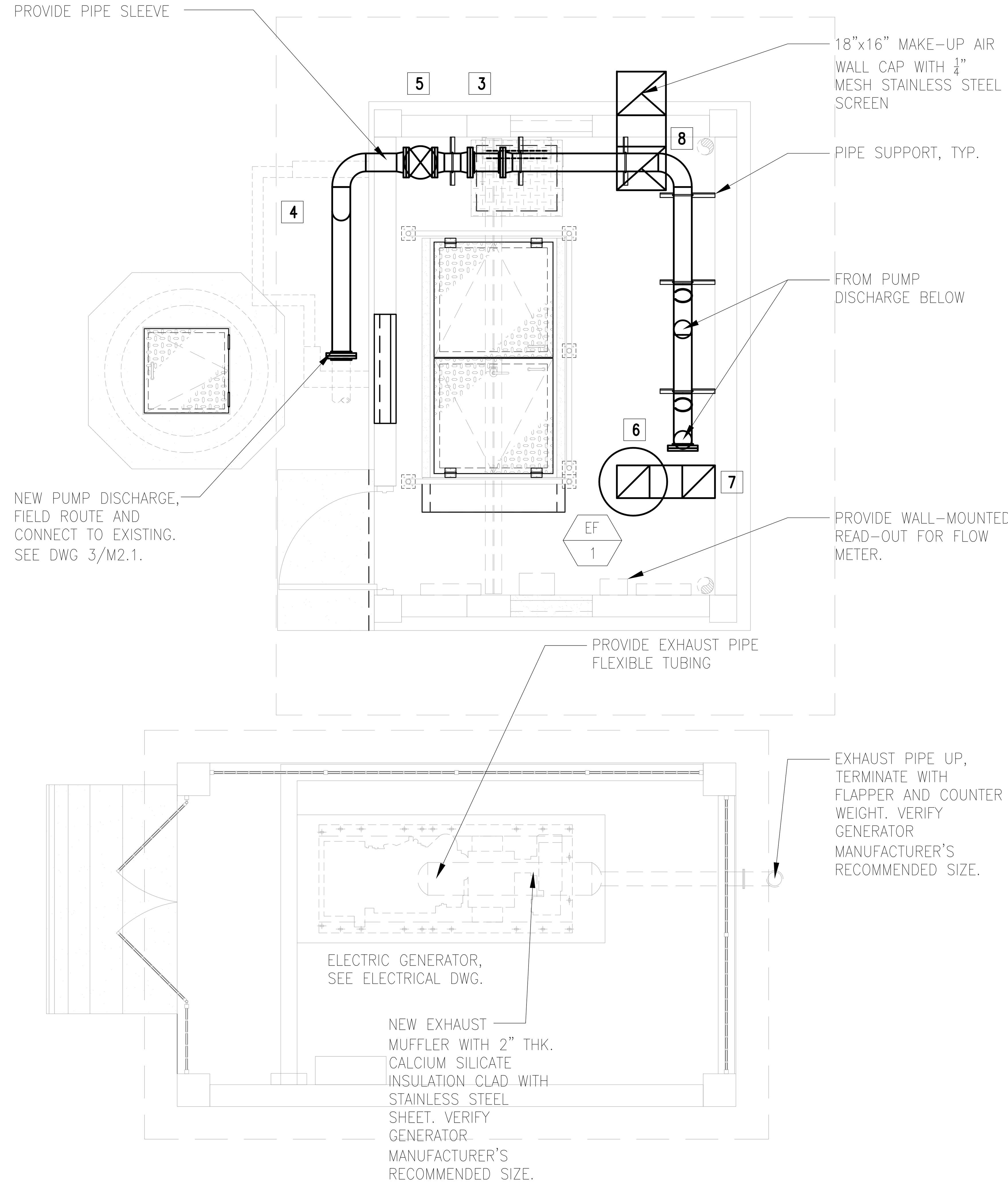
3 M-2.1 M-2.1
PIPE CONNECTION DETAIL
SCALE: NOT TO SCALE



ROOF MOUNTED EXHAUST FAN

NOTE:
1. WHERE DISCONNECT IS EXPOSED TO WEATHER, PROVIDE NEMA 4 ENCLOSURE.

4 M-2.1 M-2.1
MISCELLANEOUS DETAILS
SCALE: NOT TO SCALE



2 M-2.1 M-2.1
MECHANICAL PLAN-GROUND LEVEL
SCALE: 3/8" = 1'-0"

NEW WORKS KEYED NOTES:

1	SUBMERSIBLE NON-CLOG SEWAGE PUMPS.
2	STAINLESS STEEL BASKET SCREEN, HALLIDAY SERIES B4A TRASH BASKET OR APPROVED EQUAL.
3	NEW 6" MAGNETIC FLOW METER. PROVIDE SPARE DI FLANGED SPOOL OF SAME SIZE AND LENGTH AS METER FOR FUTURE MAINTENANCE.
4	CAM LOCK COUPLING WITH LOCKING DUST CAP ON BUTTERFLY VALVE.
5	6" GATE VALVE.
6	ROOF MOUNTED EXHAUST FAN.
7	12"x12" EXHAUST AIR DUCT, STAINLESS STEEL. GOING DOWN TO WELL LEVEL. TERMINATE WITH ¼" MESH STAINLESS STEEL SCREEN.
8	18"x16" MAKE UP AIR DUCT, STAINLESS STEEL. GOING DOWN TO WELL LEVEL, TERMINATE 6" BELOW GROUND FLOOR WITH ¼" MESH STAINLESS STEEL SCREEN.

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation

REV	DATE	BY	DESCRIPTION	APPROVED BY

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

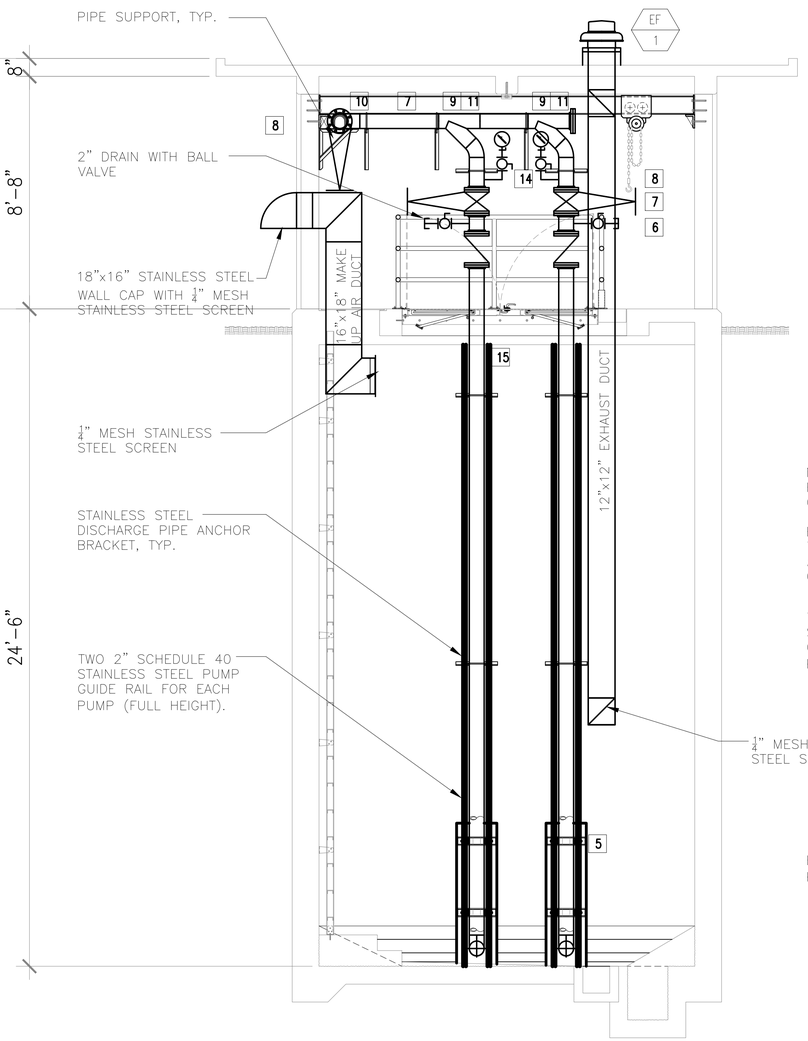
GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

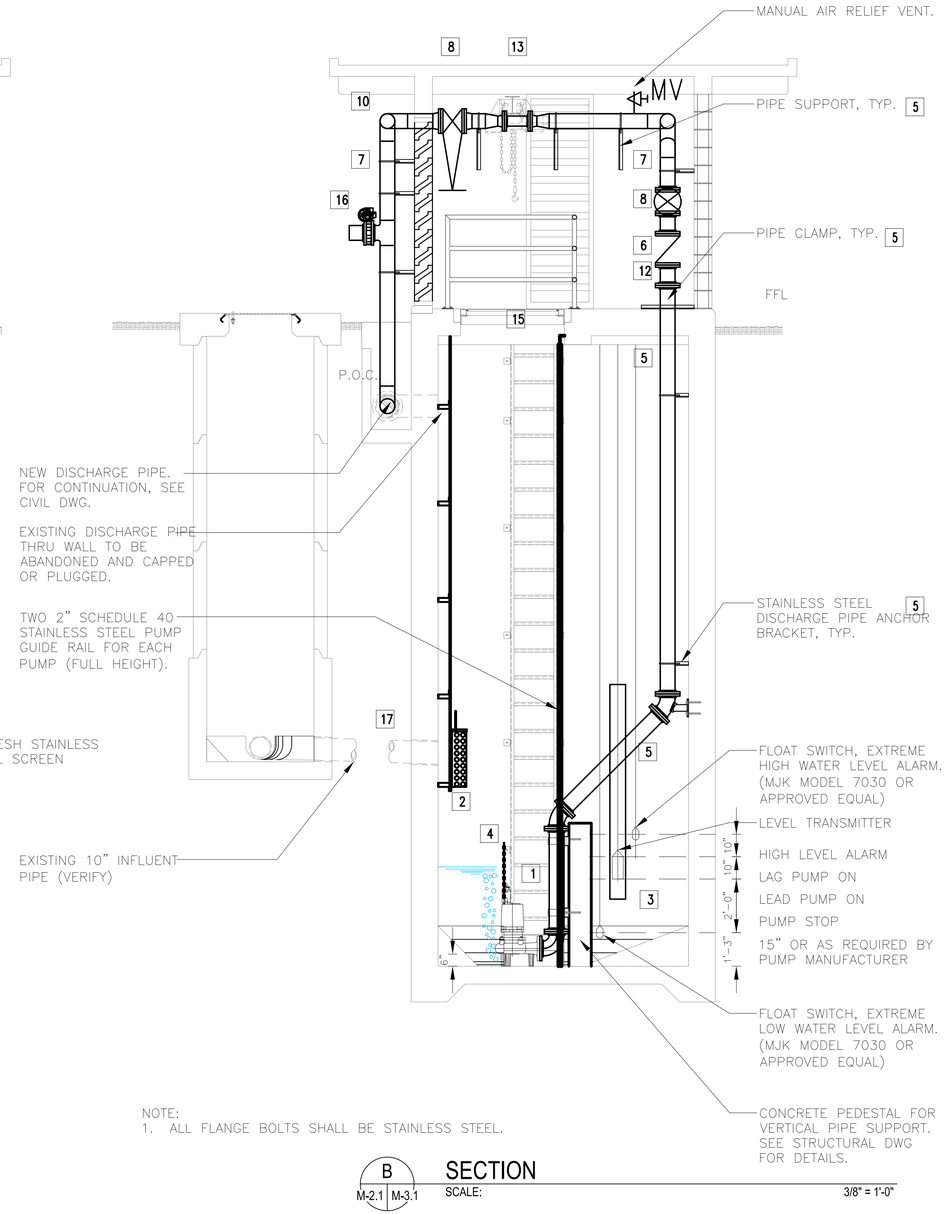
PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

DES. BY: JBE	CHIEF ENGR:	CONTENTS: MECHANICAL PLAN, MISCELLANEOUS DETAILS	DRAWING NO. M-2.1
DRN. BY: JBE	ENGR. SUP:		
CHK. BY: JBE	PROJ. ENGR:		SHT. 23 OF 27

7/10/2017 2:50:05 PM



A SECTION
M-2.1 | M-3.1
SCALE: 3/8" = 1'-0"



NOTE:
1. ALL FLANGE BOLTS SHALL BE STAINLESS STEEL.

B SECTION
M-2.1 | M-3.1
SCALE: 3/8" = 1'-0"

NEW WORKS KEYED NOTES:

1. SUBMERSIBLE NON-CLOG SEWAGE PUMPS.
2. STAINLESS STEEL BASKET SCREEN, HALLIDAY SERIES B4A TRASH BASKET OR APPROVED EQUAL.
3. LEVEL TRANSMITTER INSIDE 12" STILLING WELL (PVC) WITH ½" PERFORATIONS AT 16" ON CENTER.
4. 1/4" STAINLESS STEEL CHAIN FOR PUMP RETRIEVAL. ATTACHED TO PUMP LIFTING HANDLE.
5. 6" PVC DISCHARGE PIPING (ASTM D1785). SEE STRUCTURAL DWG FOR SUPPORT DETAIL.
6. 6" CHECK VALVE. IT SHALL CONFORM TO AWWA C-508 AND SHALL HAVE IRON BODY, BRONZED MOUNTED, FULL OPENING WITH ADJUSTABLE TENSION LEVER AND SPRING TO PROVIDE NON-SLAMMING ACTION UNDER ALL CONDITIONS. VALVES SHALL BE SUITABLE FOR CONTROLLING SEWAGE.
7. 6" CLASS 52 DUCTILE IRON DISCHARGE PIPING.
8. 6" GATE VALVE.
9. 6" 45 DEG LATERAL STRAIGHT DUCTILE IRON FLANGED FITTING.
10. 6" 90 DEG STRAIGHT ELBOW DUCTILE IRON FLANGED FITTING.
11. 6" 45 DEG ELBOW DUCTILE IRON FLANGED FITTINGM.
12. DUCTILE IRON TRANSITION ADAPTERS.
13. NEW 4" MAGNETIC FLOW METER. PROVIDE SPARE D.I. FLANGE SPOOL OF SAME SIZE AND LENGTH AS METER FOR FUTURE MAINTENANCE. PROVIDE REMOTE READ-OUT/MONITOR ON NORTHEAST WALL.
14. PRESSURE GAUGE
15. NEW ALUMINUM FLOOR HATCH. BILCO ANGLE FRAME TYPE KD OR APPROVED EQUAL (DOUBLE LEAF), SEE ARCHITECTURAL DWG.).
16. CAM LOCK COUPLING WITH LOCKING DUST CAP ON PLUG VALVE.
17. EXISTING EMBEDDED SECTION OF PIPE TO REMAIN; CLEAN INTERNAL DIRT AND DEBRIS, PROVIDE CCTV INSPECTION/DATA FOR GWA REVIEW. PROVIDE CIPP LINING INTO ENTIRE PIPE AFTER CLEANING.

SEQUENCE OF OPERATION:

WHEN THE WATER LEVEL REACHES THE LEAD PUMP ON LEVEL, THE LEAD PUMP MOTOR IS ENERGIZED AND THE LEAD PUMP STARTS PUMPING DOWN.

WHEN THE WATER LEVEL FALLS BELOW THE PUMP STOP LEVEL, THE LEAD PUMP MOTOR MOTOR IS DE-ENERGIZED AND THE LEAD PUMP STOPS.

IF THE WATER LEVEL KEEP RAISING ONCE THE LEAD PUMP IS ON AND IT REACHES THE LAG PUMP ON LEVEL, THE LAG PUMP MOTOR IS ENERGIZED AND THE LAG PUMP STARTS PUMPING DOWN.

ONCE THE WATER LEVEL FALLS BELOW THE PUMP STOP LEVEL LEVEL, BOTH LEAD AND LAG PUMP MOTORS ARE DE-ENERGIZED AND BOTH PUMPS STOP.

THE PUMP STOP FLOAT SWITCH TRIGGERS THE ALTERNATOR AND REVERSE THE ORDER OF LEAD AND LAG PUMPS.

IF THE WATER LEVEL KEEP RAISING AND IT REACHES THE HIGH LEVEL ALARM, THE HIGH LEVEL ALARM BEACON WILL LIGHTS UP AND HORN WILL SOUND. DEPRESSED RESET BUTTON FOR HIGH LEVEL ALARM WILL TURN OFF THE ALARM.

GRAPHIC SCALE:
0' 1' 2' 4' 6' 8' 10' 12'
SCALE : 3/8" = 1'-0"

EMPSCO Engineering Management & Planning Services Corporation
1998 ARMY DRIVE, 2/F EMPSCO BUILDING, ROUTE 16, DEDEDO, GUAM 96929
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I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION
DATE:_____

REV	DATE	BY	DESCRIPTION	APPROVED BY

GWA NO.
GRANT ID NO.
CONTRACT NO.
PROJECT NO.

DES. BY: JBE
DRN. BY: JBE
CHK. BY: JBE
CHIEF ENGR:
ENGR. SUP:
PROJ. ENGR:

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

CONTENTS: SECTIONS

DRAWING NO. M-3.1
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GENERAL NOTES

1. ELECTRICAL LAYOUT DRAWINGS ARE PARTIALLY DIAGRAMMATIC. REFER TO ARCHITECTURAL, STRUCTURAL, MECHANICAL AND HVAC FOR GUIDANCE ON DIMENSIONS, CEILING HEIGHTS, DOOR SWINGS, ROOM FINISHES, STRUCTURAL AND ARCHITECTURAL DETAILS, AND LOCATIONS OF PIPES AND STRUCTURAL STEEL. INSTALL THE ELECTRICAL SYSTEMS WITHOUT INTERFERING WITH PIPES, STRUCTURAL STEEL OR OTHER SYSTEMS. LOCATE LIGHTING SYSTEMS SYMMETRICALLY IN PROPER RELATION TO FINISHED AREAS EXCEPT WHERE DIMENSIONED ON THE DRAWINGS OR LOCATED ON REFLECTED CEILING PLANS. COORDINATE WITH OTHER TRADES FOR PROPER INSTALLATION OF WORK AND FOR TIMELY EXECUTION OF CONSTRUCTION.
2. FURNISH ALL LABOR, EQUIPMENT, APPLIANCES, MATERIALS AND PERFORM OPERATIONS REQUIRED FOR COMPLETE INSTALLATION OF SYSTEMS SPECIFIED IN ACCORDANCE WITH DRAWINGS, CODES, ORDINANCES AND TERMS AND CONDITIONS OF CONTRACT.
3. COMPLY WITH THE LATEST EDITION OF ALL APPLICABLE CODES, ORDINANCES AND REGULATIONS.
4. SYMBOLS IN THE LEGEND ARE APPLICABLE GENERALLY. FOR EXACT REQUIREMENTS, REFER TO THE SCHEDULES, LAYOUTS, AND DETAILS. THE APPEARANCE OF A PARTICULAR SYMBOL DOES NOT NECESSARILY IMPLY THAT THE ITEM IS INCLUDED IN THE CONTRACT.
5. PROVIDE ADDITIONAL SUPPORTS FOR SWITCHES, STARTERS, RACEWAYS AND OTHER ELECTRICAL EQUIPMENT WHEREVER THE BUILDING STRUCTURE IS NOT SUITABLE FOR DIRECT MOUNTING.
6. VERIFY CEILING SUSPENSION SYSTEMS IN THE VARIOUS AREAS AND PROVIDE THE PROPER MOUNTING ACCESSORIES, TRIMS, ETC. TO SUIT THE PARTICULAR AREA. SUPPORT RACEWAYS WITH APPROVED TYPES OF WALL BRACKETS OR CEILING TRAPEZE HANGER. DO NOT SUSPEND FROM DROPPED CEILING, TIE WIRE OR T-BAR. PROVIDE SAFETY WIRES FOR EACH LIGHTING FIXTURE IN NEW DROPPED CEILING SO THAT IN THE EVENT OF CEILING FAILURE, NO PART OF THE FIXTURE WILL DROP MORE THAN 12" BELOW NORMAL CEILING HEIGHT.
7. PROVIDE SEAL FITTINGS IN CONDUITS THAT ENTER CONDITIONED AREAS FROM NON-CONDITIONED AREAS.
8. PROPERLY GROUND CONDUIT SYSTEM, OUTLETS, FIXTURES, ETC. IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, SECTION 250. PROVIDE ALL BONDING JUMPERS AND WIRE, GROUNDING BUSHINGS, CLAMPS, ETC. REQUIRED FOR COMPLETE GROUNDING. PROVIDE GREEN GROUND WIRE IN EACH RACEWAY.
9. CONNECT BRANCH CIRCUIT NEUTRAL TO RECEPTACLE TERMINAL BY MEANS OF A SHORT "PIGTAIL" PERMANENTLY SPLICED TO THE NEUTRAL.
10. PROVIDE 3/4" CONDUIT FROM EACH THERMOSTAT TO THE EQUIPMENT THAT IT CONTROLS. SEE MECHANICAL PLANS FOR THERMOSTAT LOCATIONS.
11. ALL WIRING SHALL BE COPPER. ALL POWER WIRING #10 AND SMALLER SHALL BE SOLID. #8 AND LARGER MAY BE STRANDED. COLOR CODE ALL WIRING BY SYSTEM. FOR 120/208V SYSTEMS, PHASE A SHALL BE BLACK, PHASE B SHALL BE RED AND PHASE C SHALL BE BLUE. FOR 277/480V SYSTEMS, PHASE A SHALL BE BROWN, PHASE B SHALL ORANGE AND PHASE C SHALL BE YELLOW.
12. NEW SERVICE TO BE PROVIDED BY GPA (E) SERVICE TO REMAIN UNTIL NEW SERVICE IS AVAILABLE.

EXISTING SYSTEM NOTES

1. USE MATERIALS TO MATCH EXISTING CONSTRUCTION UNLESS SPECIFIED ELSEWHERE IN THESE CONTRACT DOCUMENTS. MATERIALS SHALL COMPLY TO LOCAL CODES AND UL AND SHALL BE PROPERLY APPLIED TO THEIR INTENDED FUNCTION.
2. RELOCATE ALL EXISTING EQUIPMENT AND DEVICES REQUIRED TO ACCOMMODATE THE NEW CONSTRUCTION AS SHOWN ON THE DRAWINGS. EXISTING WORK WHICH, IN THE OPINION OF THE ARCHITECT, IS TO REMAIN, SHALL BE RELOCATED IF NECESSARY.
3. EXISTING ELECTRICAL EQUIPMENT, WIRING AND INSTALLATION WHICH ARE TO BE REMOVED, SHALL BE REMOVED AS A PART OF THIS CONTRACT AND SHALL BE DISPOSED OF PROPERLY. VERIFY WHICH MATERIALS ARE CONSIDERED SALVAGE AND THESE SHALL BE TURNED OVER TO THE OWNER FOR HIS USE.
4. EXTEND EXISTING CIRCUITS SERVING EQUIPMENT TO BE RELOCATED, MATCHING EXISTING WIRE AND CONDUIT SIZE.
5. RE-USE EXISTING RACEWAYS WHERE POSSIBLE AND WHERE PERMITTED BY CODE. RE-WORK EXISTING RACEWAYS WHERE REQUIRED. SECURE ALL REUSED RACEWAYS WHICH ARE LOOSE OR NOT PROPERLY CONNECTED.
6. INSPECT ALL WIRE CONNECTIONS AND RETIGHTEN WHERE REQUIRED.
7. CHECK CONTINUITY OF THE EXISTING GROUNDING AND RECONNECT AND RETIGHTEN ALL CONNECTIONS TO ESTABLISH A SAFE AND CONTINUOUS GROUNDING SYSTEM THROUGHOUT THE SYSTEM.

LEGEND

1	REVISION SYMBOL
JH	JUNCTION BOX
$	SINGLE POLE SWITCH
	BRANCH CIRCUIT PANEL
	VOICE DROP WALL MTD.
	RECEPTACLE FLUSH MOUTED,15AMPS.
GFI	GROUND FAULT CIRCUIT INTERRUPTER
MS H	MOTION SENSOR
EF	EXHAUST FAN
	ANTENNA
	COMBINATION MOTOR STARTER DISCONNECT

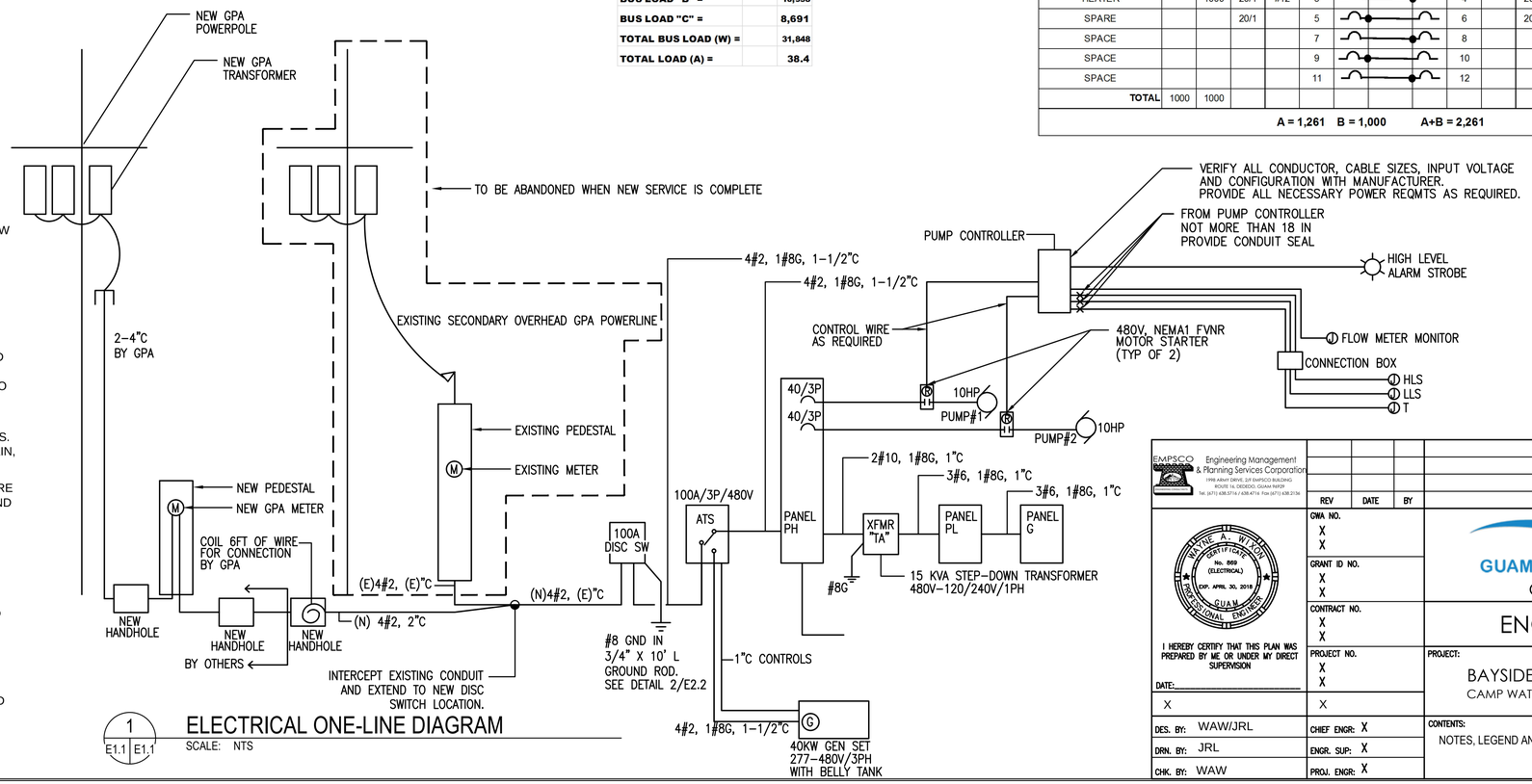
HLS – HIGH LEVEL SWITCH
LLS – LOW LEVEL SWITCH
T – TRANSDUCER

LIGHT FIXTURE SCHEDULE

SYMBOL	LAMP	VOLTS	DESCRIPTION	MFR CAT NUMBER
A	LED 31W PER FIXTURE 4000K	MVOLT	A GENERAL PURPOSE AND ENERGY-EFFICIENT SURFACE MOUNTED OR SUSPENDED LIGHT FIXTURE.	LITHONIA LIGHTING #FEM-L48-4000LM-LPPCL-WD-MVOLT-GZ10-90CRI OR APPROVED EQUAL
B	LED 60W PER FIXTURE 3300K	MVOLT	TEMPERED AND IMPACT RESISTANT GLASS GLOBE, HEAT AND CORROSION PROOF	LITHONIA LIGHTING #LPL04-C60-60W-3300K OR APPROVED EQUAL
C	LED 19W PER FIXTURE 5000K	MVOLT	WALL MOUNTED LED FIXTURE WITH BUILT-IN PHOTOCELL INLINE WITH MOTION SENSOR AND WIRE TO MANUAL BYPASS SWITCH.	LITHONIA LIGHTING #LPL04-C60-60W-3300K OR APPROVED EQUAL

LOAD CALCULATIONS

BUS LOAD "A" =		**12,199**
BUS LOAD "B" =		**10,958**
BUS LOAD "C" =		**8,691**
TOTAL BUS LOAD (W) =		**31,848**
TOTAL LOAD (A) =		**38.4**



1 E1.1 E1.1 **ELECTRICAL ONE-LINE DIAGRAM**
SCALE: NTS

NEW PANELBOARD "PH" SCHEDULE

100A MCB, 480/277V, 3 PHASE, 4 WIRE, 10KAIC MINIMUM, SURFACE MOUNTED

LOAD SERVED	LOAD (VA) A	LOAD (VA) B	LOAD (VA) C	BKR TRIP	WIRE SIZE	CKT #	CKT #	WIRE SIZE	BKR TRIP	LOAD (VA) A	LOAD (VA) B	LOAD (VA) C	LOAD SERVED
PUMP#1	3875			40/3	#8	1	2	#10	30/2	2841			TRANSFORMER "TA"
		3875				3	4				1564		
			3875			5	6	#12	20/3			941	HOIST
PUMP#2	3875			40/3	#8	7	8			941			
		3875				9	10				941		
			3875			11	12		20/1				SPARE
SPARE							8						SPACE
SPARE							10						SPACE
SPACE							12						SPACE
TOTAL	7750	7750	7750							3782	2505	941	**TOTAL**

A = 11,532 B = 10,255 C = 8,691 A+B+C = 30,478

NEW PANELBOARD "PL" SCHEDULE

60A MCB, 240/120V, 1 PHASE, 4 WIRE, 10KAIC MINIMUM, SURFACE MOUNTED

LOAD SERVED	LOAD (VA) A	LOAD (VA) B	BKR TRIP	WIRE SIZE	CKT #	CKT #	WIRE SIZE	BKR TRIP	LOAD (VA) A	LOAD (VA) B	LOAD SERVED
LIGHTING	220		20/1	#12	1	2	#12	20/1	360		OUTLET
FLOW METER MONITOR		300	20/1	#12	3	4	#12	20/1		667	EF#1
HIGH LEVEL ALARM PANEL	1000		20/1	#12	5	6		20/1			SPARE
HOIST CONTROL		300	20/1	#12	7	8		20/1			SPARE
SPARE			20/1		9	10	#10	30/2	1261		PANEL G
SPARE			20/1		11	12				1000	
TOTAL	1220	600							1621	1667	**TOTAL**

A = 2,841 B = 2,267 A+B = 5,108

NEW PANELBOARD "G" SCHEDULE

60A MCB, 240/120V, 1 PHASE, 4 WIRE, 10KAIC MINIMUM, SURFACE MOUNTED

LOAD SERVED	LOAD (VA) A	LOAD (VA) B	BKR TRIP	WIRE SIZE	CKT #	CKT #	WIRE SIZE	BKR TRIP	LOAD (VA) A	LOAD (VA) B	LOAD SERVED
BATTERY CHARGER	1000		20/1	#12	1	2	#12	20/1	261		LTG AND RECEPT
HEATER		1000	20/1	#12	3	4		20/1			SPARE
SPARE			20/1		5	6		20/1			SPARE
SPACE					7	8					SPACE
SPACE					9	10					SPACE
SPACE					11	12					SPACE
TOTAL	1000	1000							261	0	**TOTAL**

A = 1,261 B = 1,000 A+B = 2,261

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REV	DATE	BY	DESCRIPTION	APPROVED BY

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

DES. BY:	WAW/JRL
DRN. BY:	JRL
CHK. BY:	WAW

GWA NO.	X X
GRANT ID NO.	X X
CONTRACT NO.	X X
PROJECT NO.	X X
	X
CHIEF ENGR:	X
ENGR. SUP:	X
PROJ. ENGR:	X

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

CONTENTS:
NOTES, LEGEND AND SCHEDULES

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SHT. 25 OF 27

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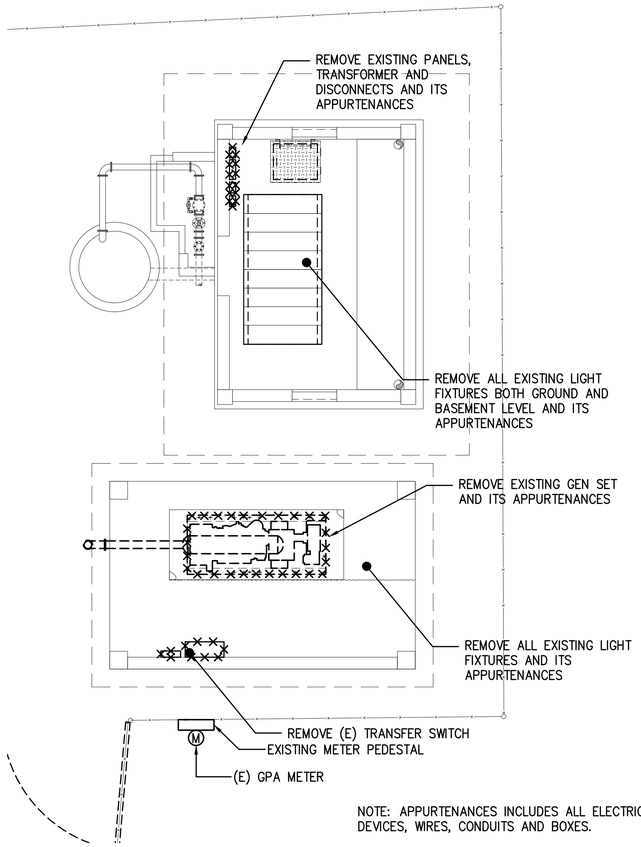
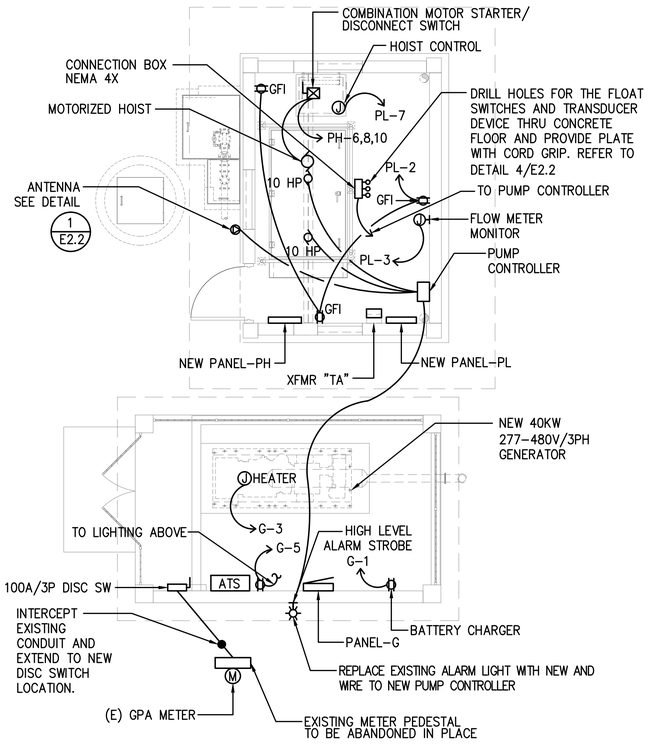
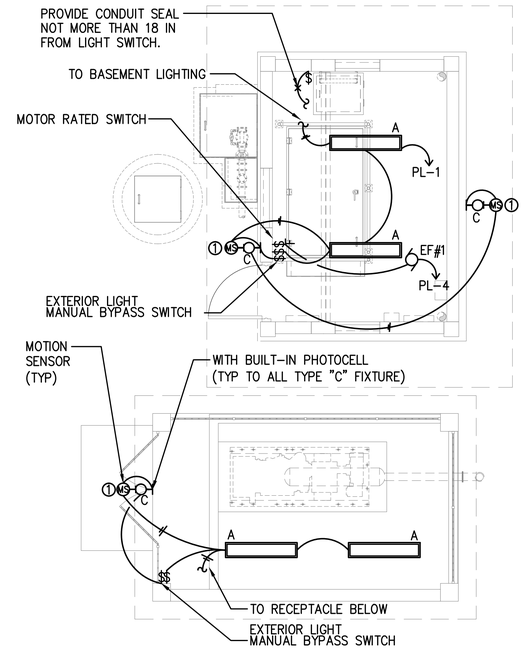


1 E2.1 E2.1 DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

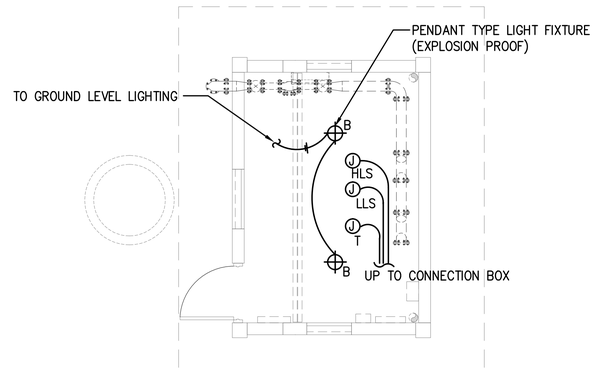


2 E2.1 E2.1 GROUND LEVEL POWER PLAN
SCALE: 1/4" = 1'-0"



NOTE:
① EACH LIGHT FIXTURE TYPE "C" HAS DEDICATED REMOTE MOTION SENSOR IN SERIES WITH PHOTOCELL WITH MANUAL BYPASS SWITCH OR AUTOMATIC "ON" FUNCTION..

3 E2.1 E2.1 GROUND LEVEL LIGHTING PLAN
SCALE: 1/4" = 1'-0"



4 E2.1 E2.1 BASEMENT LEVEL POWER & LIGHTING PLAN
SCALE: 1/4" = 1'-0"

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REV	DATE	BY	DESCRIPTION	APPROVED BY

WAYNE A. WYKOFF CERTIFICATE No. 869 (ELECTRICAL) EXP. APRIL 30, 2018 GUAM PROFESSIONAL ENGINEER

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

DATE:

GWA NO.	X X
GRANT ID NO.	X X
CONTRACT NO.	X X
PROJECT NO.	X X
X	X
DES. BY: WAW/JRL	CHIEF ENGR: X
DRN. BY: JRL	ENGR. SUP: X
CHK. BY: WAW	PROJ. ENGR: X

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM
ENGINEERING DIVISION

PROJECT:
BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

CONTENTS:
POWER AND LIGHTIN PLAN, AND DIAGRAM

DRAWING NO.
E2.1
SHT. 26 OF 27

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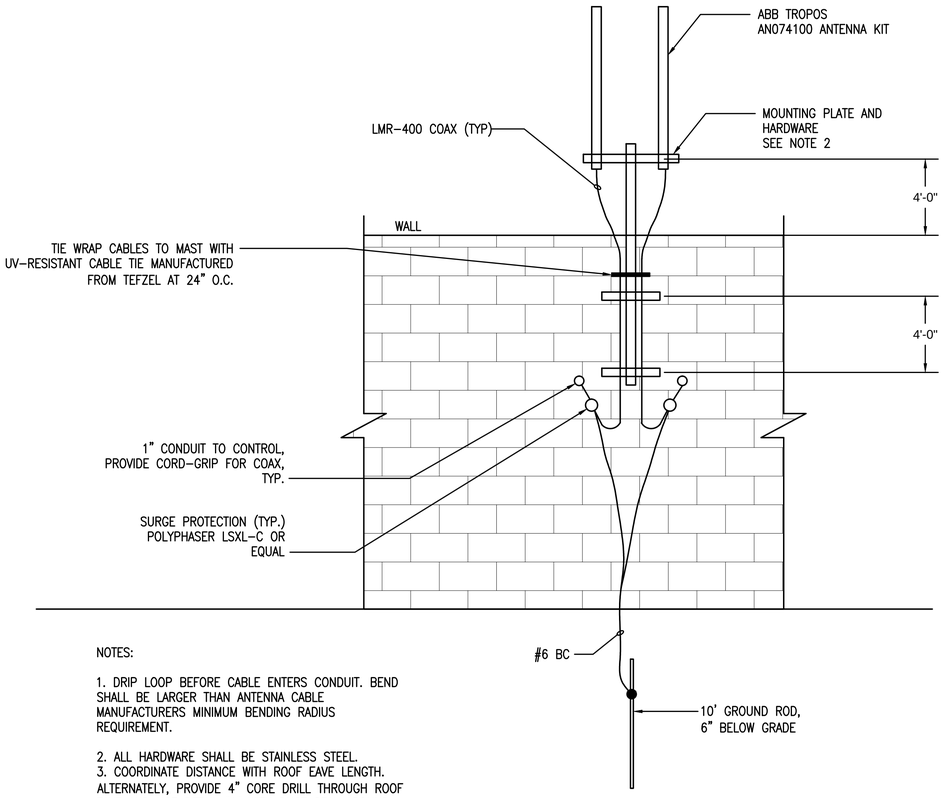
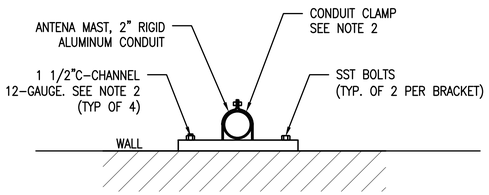


NOTES:

1. DRIP LOOP BEFORE CABLE ENTERS CONDUIT. BEND SHALL BE LARGER THAN ANTENNA CABLE MANUFACTURERS MINIMUM BENDING RADIUS REQUIREMENT.

2. ALL HARDWARE SHALL BE STAINLESS STEEL.
3. COORDINATE DISTANCE WITH ROOF EAVE LENGTH. ALTERNATELY, PROVIDE 4" CORE DRILL THROUGH ROOF EAVE AND USE DETAIL "A" WITH DUCT SEAL AROUND CONDUIT AND CABLES. ANTENNA MAST SHALL BE STRAIGHT, NO BENDS.

1 TROPOS ROUTER ANTENNA INSTALLATION
E2.2 | E2.2
SCALE: NTS



A STEEL CONDUIT SUPPORT
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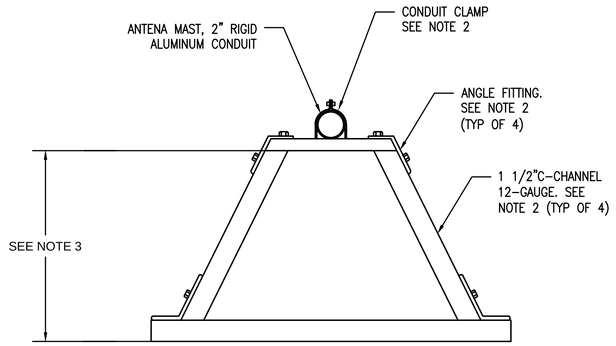
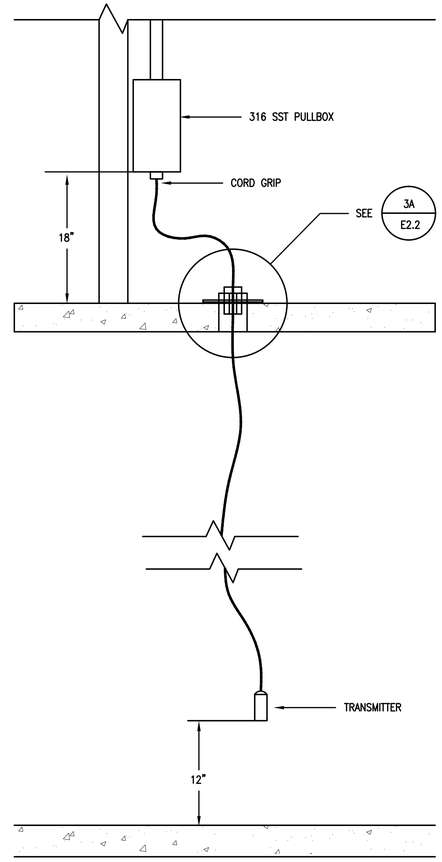
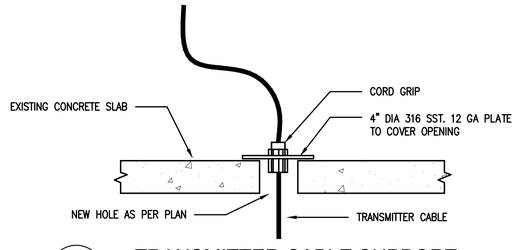
SCALE: NTS



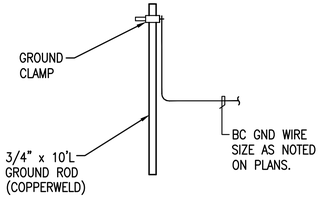
A ALTERNATE MAST SUPPORT TO CLEAR BUILDING ROOF
E2.2 | E2.2
SCALE: NTS





4A TRANSMITTER CABLE SUPPORT
E2.2 | E2.2
SCALE: NTS

4 TRANSMITTER DETAIL
E2.2 | E2.2
SCALE: NTS



SECTION A-A

2 GROUNDING DETAIL
E2.2 | E2.2
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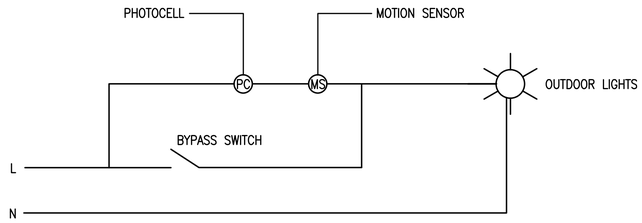

3 OUTDOOR LIGHTING CONTROL DIAGRAMS
E2.2 | E2.2
SCALE: NTS

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REV	DATE	BY	DESCRIPTION	APPROVED BY

WAYNE A. WILSON — CERTIFICATE No. 8691 (ELECTRICAL) — EXP. APRIL 30, 2018 — GUAM — PROFESSIONAL ENGINEER

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DATE:

X

GWA NO. X X
GRANT ID NO. X X
CONTRACT NO. X X
PROJECT NO. X X
X

GUAM WATERWORKS AUTHORITY
GOVERNMENT OF GUAM

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BAYSIDE PUMP STATION REHABILITATION
CAMP WATKINS ROAD, TAMUNING, GUAM

DES. BY:	WAW/JRL	CHIEF ENGR:	X
DRN. BY:	JRL	ENGR. SUP:	X
CHK. BY:	WAW	PROJ. ENGR:	X

CONTENTS: DETAILS

DRAWING NO. E2.2

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