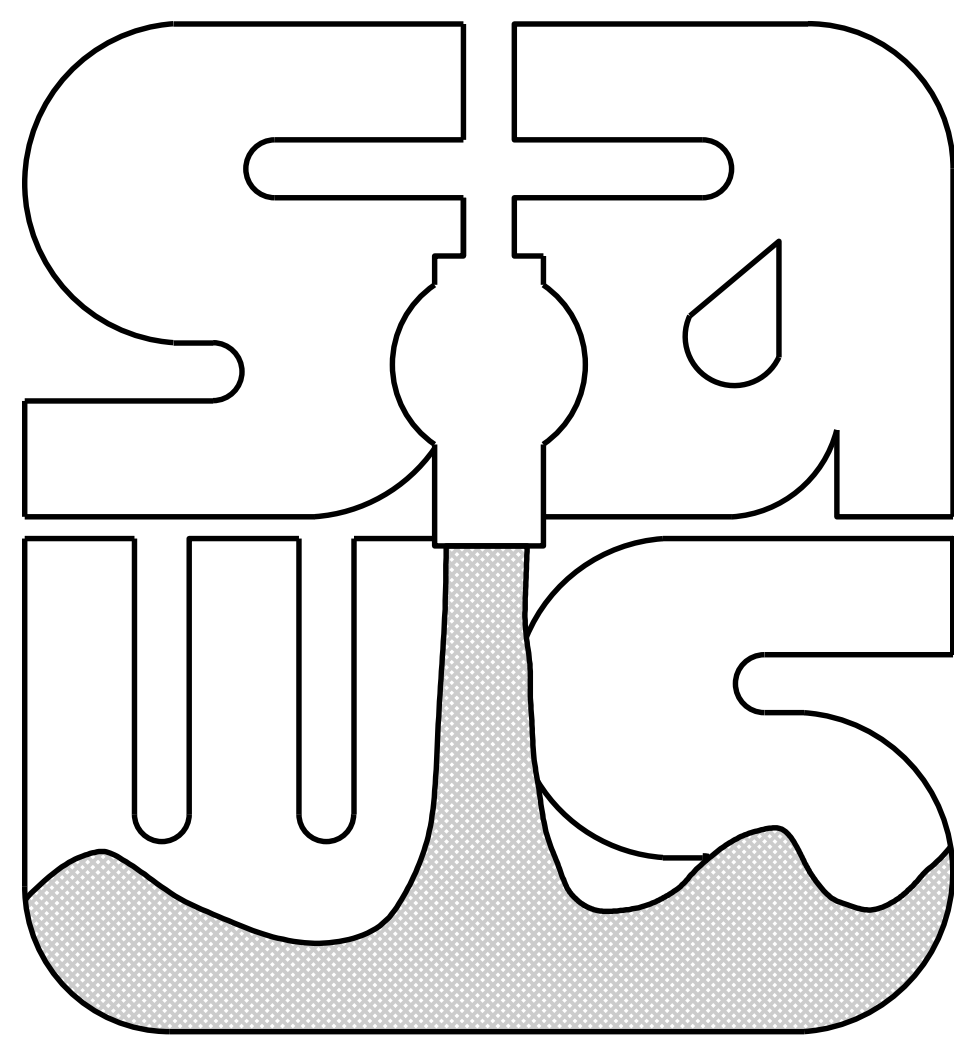


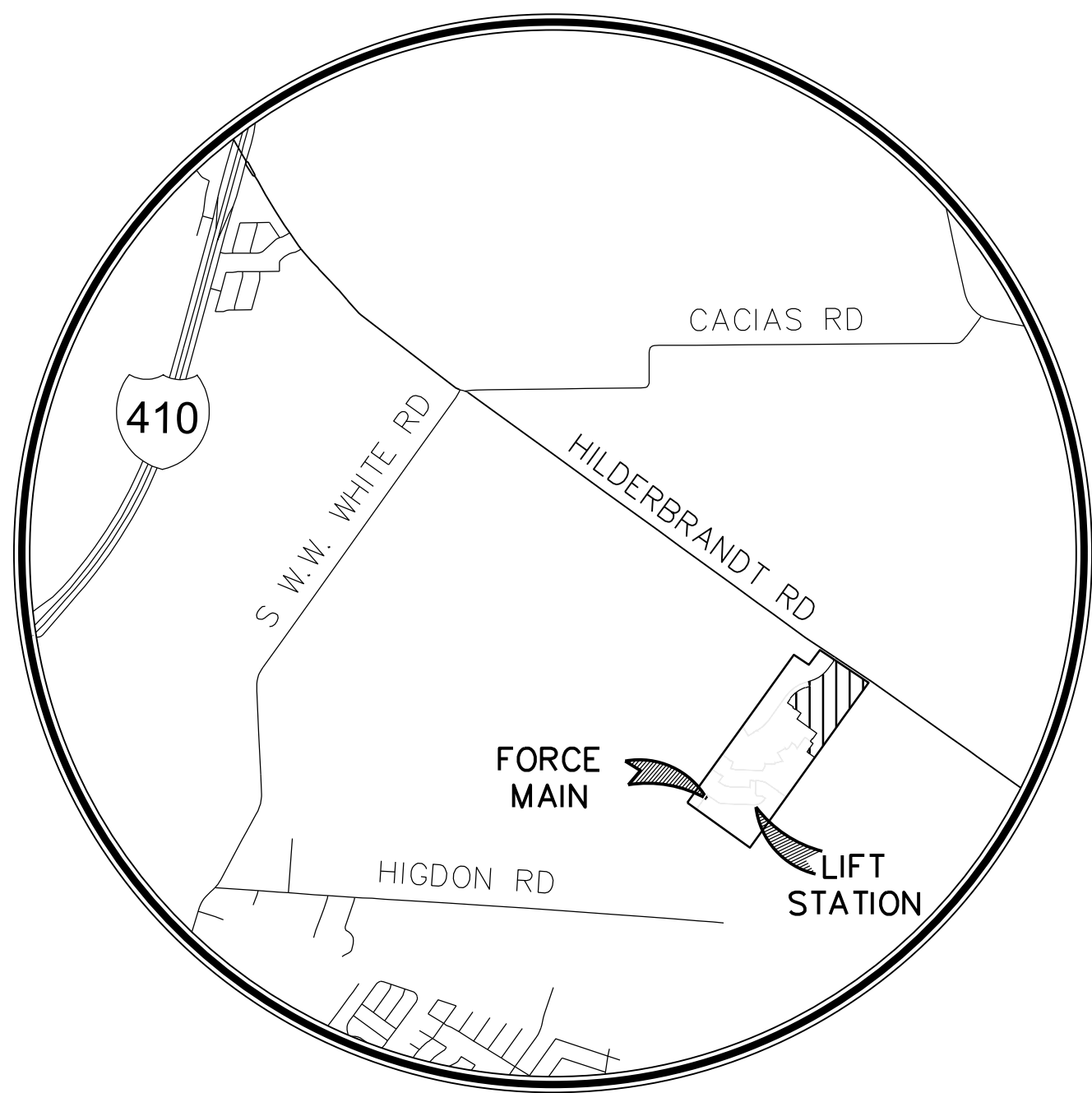
SAN ANTONIO WATER SYSTEM



DEVELOPER
KING FISH DEVELOPMENT LLC
2722 WEST BITTERS RD, SUITE 106
SAN ANTONIO, TX 78248

EASTRIDGE UNIT 1
LAND - PLAT - 22-11800026
6" FORCE MAIN AND LIFT STATION
SAWS JOB NO. 22-1665

JULY 2022



SHEET INDEX

Sheet No.	Sheet Description
FM0.0	COVER SHEET
FM0.1	OVERALL SEWER PLAN
FM1.0	6" FM PLAN AND PROFILE STA 1+00.00 - STA 12+00.00
FM2.0	6" FM PLAN AND PROFILE STA 12+00.00 - STA 14+62.13
FM2.1	TIE-IN DETAIL
FM3.0	CIVIL DETAILS
LS1.0	LIFT STATION SITE PLAN
LS1.1	LIFT STATION GRADING PLAN
LS2.0	LIFT STATION PLAN VIEW
LS3.0	LIFT STATION DETAILS
LS3.1	LIFT STATION DETAILS
LS3.2	LIFT STATION DETAILS
LS4.0	SWPPP PLAN
LS4.1	SWPPP DETAILS
LS4.2	SWPPP DETAILS
E-1	ELECTRICAL LEGEND
E-2	ELECTRICAL ONE-LINE DIAGRAM
E-3	ELECTRICAL SERVICE RACK LAYOUT
E-4	ELECTRICAL SITE PLAN
E-5	CONTROL DETAILS NO. 1 PUMP CONTROL PANEL
E-6	CONTROL DETAILS NO. 2 PUMP CONTROL PANEL
E-7	SCADA DETAILS #1
E-8	MISCELLANEOUS DETAILS #2
E-9	EXTERIOR PUMP CONTROL PANEL
E-10	INTERNAL PUMP CONTROL PANEL
E-11	LIFT STATION MISCELLANEOUS DETAILS #1
E-12	TOWER GROUNDING DETAILS
E-13	LIFT STATION MISCELLANEOUS DETAILS #2
E-14	P&ID LEGEND
E-15	P&ID

EAST SEWERSHED (SALADO WATERSHED) – DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIOSTATE: TEXASZIP: 78231

PHONE:FAK:

SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXXTOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 6" FM – 1,362 LF12" GM – 8 LFPAT NUMBER: 22-11800026

NUMBER OF LOTS: 0SAWS JOB NO.: 22-1665

DESIGNED BY:
DRAWN BY:
APPROVED:
JOB NO.:

D O N
D U R D E N
I N C
d b a c i v i l e n g i n e e r i n g c o n s u l t a n t s
13550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78248-1037
TEL: (210) 841-9988
FAX: (210) 841-6440
REGISTRATION #F-2214

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: ALAN D. LINDSKOG, P.E. NO. #39706 ON: 07/28/2023 DATE:

DESCRIPTION

REVDATE

SAN ANTONIO WATER SYSTEM

EASTRIDGE UNIT 1
6" FORCE MAIN

SHEET NO.

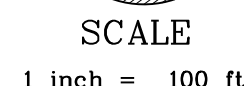
FM0.0

Date: Jul 26, 2023, 10:37am User ID: Lance.Elling File: L:\viewing\proj\2021\Eastridge Unit 1\cadd\lift station\Eastridge Unit 1 FM0.0 FM COVER SHEET.dwg



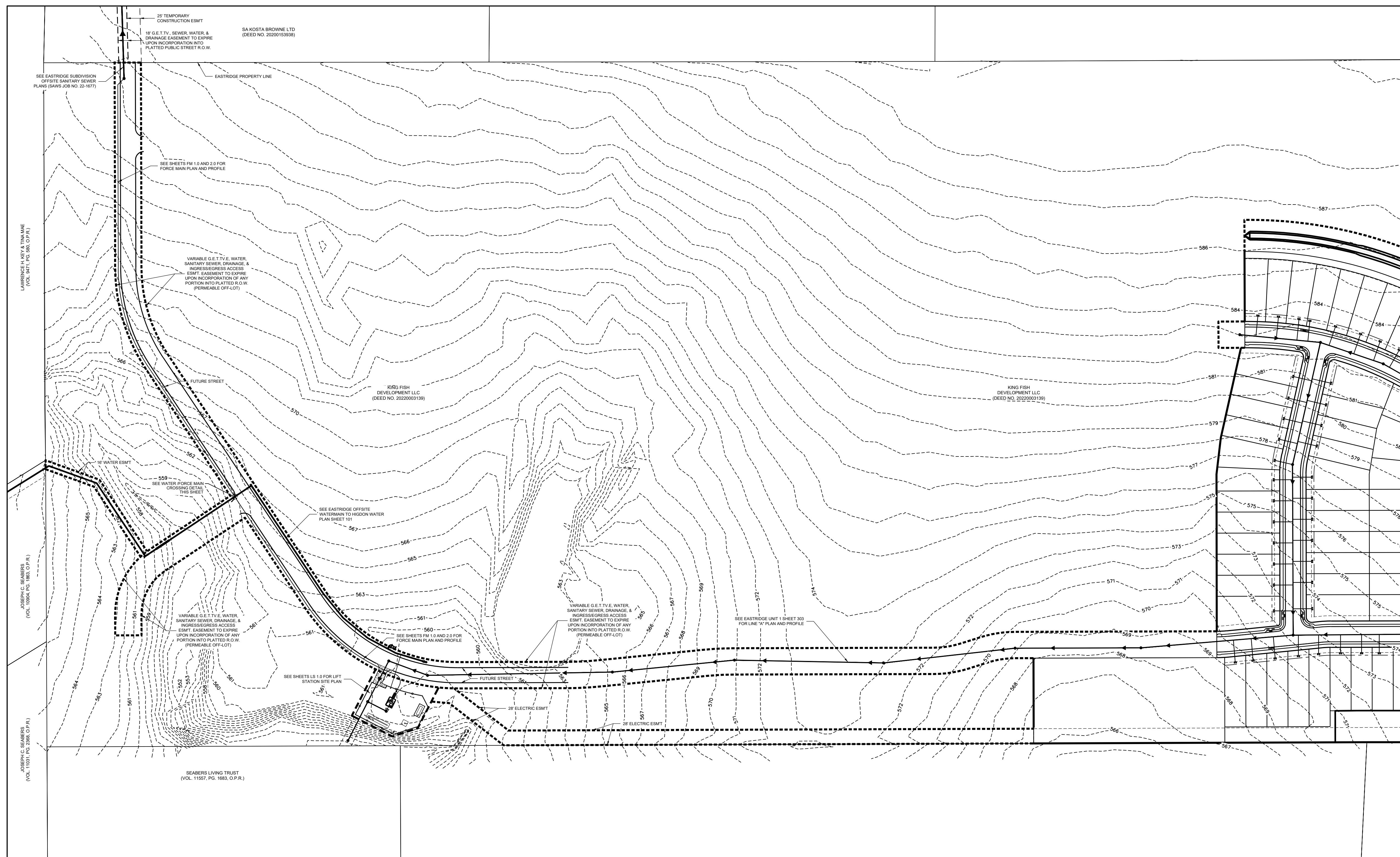
FORCE MAIN NOTE:
FORCE MAIN TO BE 6" HDPE, DR 13.5 DIPS (160 PSI)

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, OR SHALL REVIEW THESE PLANS AND AVOID GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA FOR ANY TOPOGRAPHY, EXISTING OR PROPOSED TRENCHES, EXISTING OR PROPOSED PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACTOR'S DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENSH EXCAVATION SAFETY PROTECTION THAT COMPLY WITH ALL APPLICABLE OSHA STANDARDS AND REGULATIONS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENSH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENSH EXCAVATION.



	FLOW DIRECTION
	PROPOSED MANHOLE
	PROPOSED CONTOUR
	EXISTING CONTOUR
	GRADE BREAK
	SWALE
	EXISTING GAS LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING FENCE LINE
	FUTURE SOUTHTON MEADOWS UNIT BOUNDARY LINE
	100 YR FLOOD PLAIN
	OVERHEAD ELECTRIC
	EXISTING EDGE PAVEMENT
	EXISTING POWER POLE
	EXISTING TELE. PED.
	EXISTING TELE. MANHOLE
	EXISTING WATER VALVE

ASPH – ASPHALT
INV. – INVERT
EG – EXISTING GROUND
FF – FINISHED FLOOR
FG – FINISHED GROUND
EX – EXISTING
GU – GUTTER
PS – PAINT STRIPE
TOP – TOP OF GRATE INLET
STEP – STEP
SW – SIDEWALK
TC – TOP OF CURB
⊕ = BENCHMARK



DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

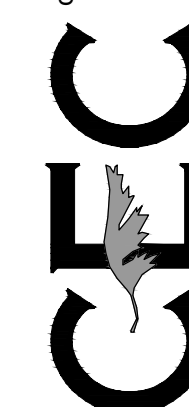
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200544

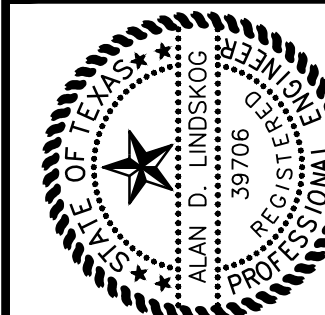
TOTAL LINEAL FOOTAGE OF PIPE: 6" FM - 1,362 LF
12" GW - 8 LF PLANT NUMBER: 22-1180002

NUMBER OF LOTS: 0 SWS BLOCK NO: 22-1665

D O N D U R D E N , I N C
1b.a.CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214



THE SEAL APPEARING ON
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MALAN D. LINDSKOG, P.E.
NO. #39706
07/28/2023
DATE

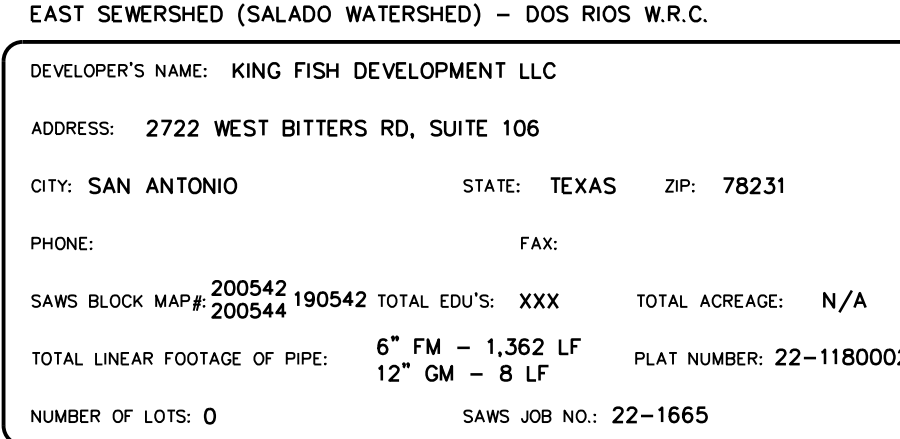
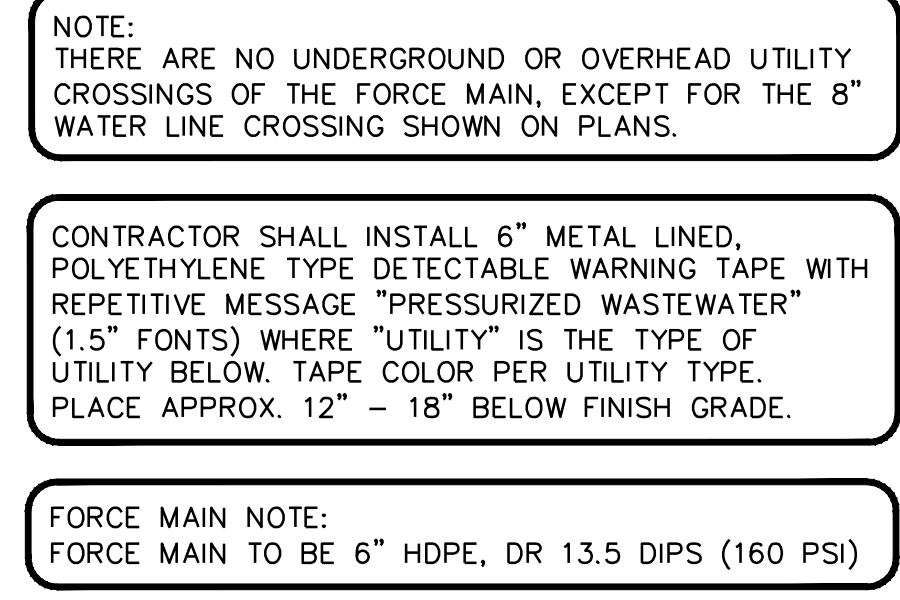
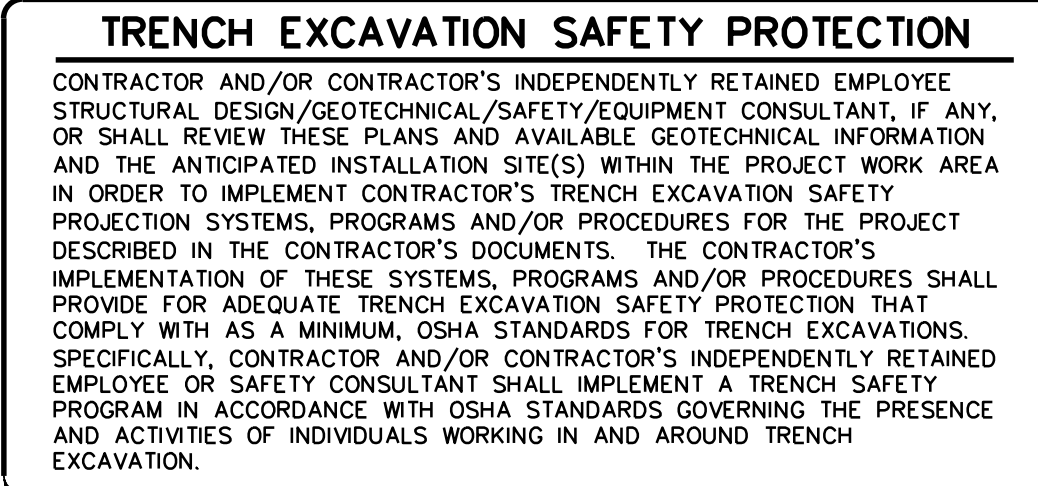
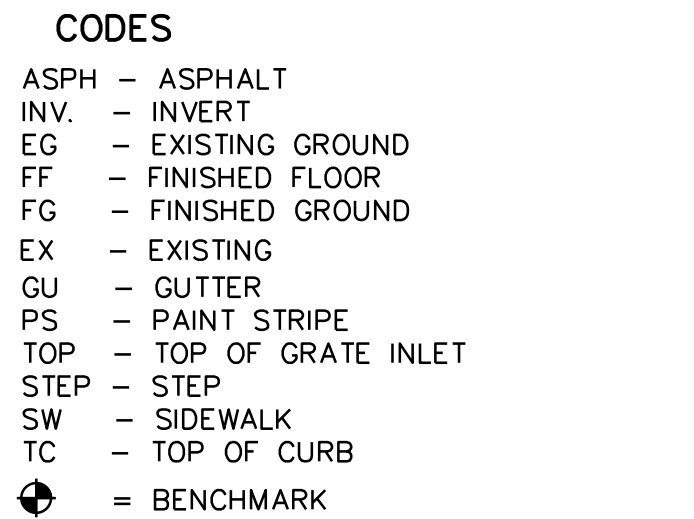
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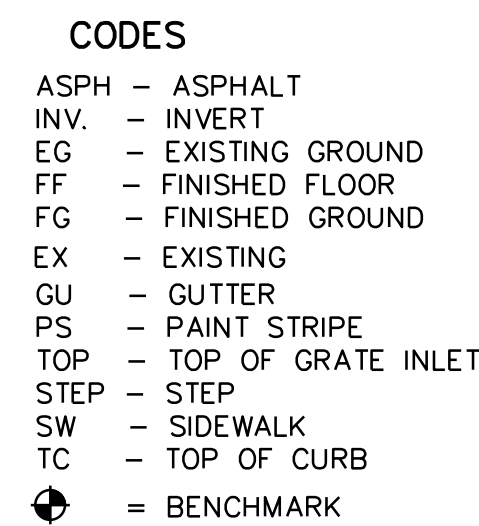
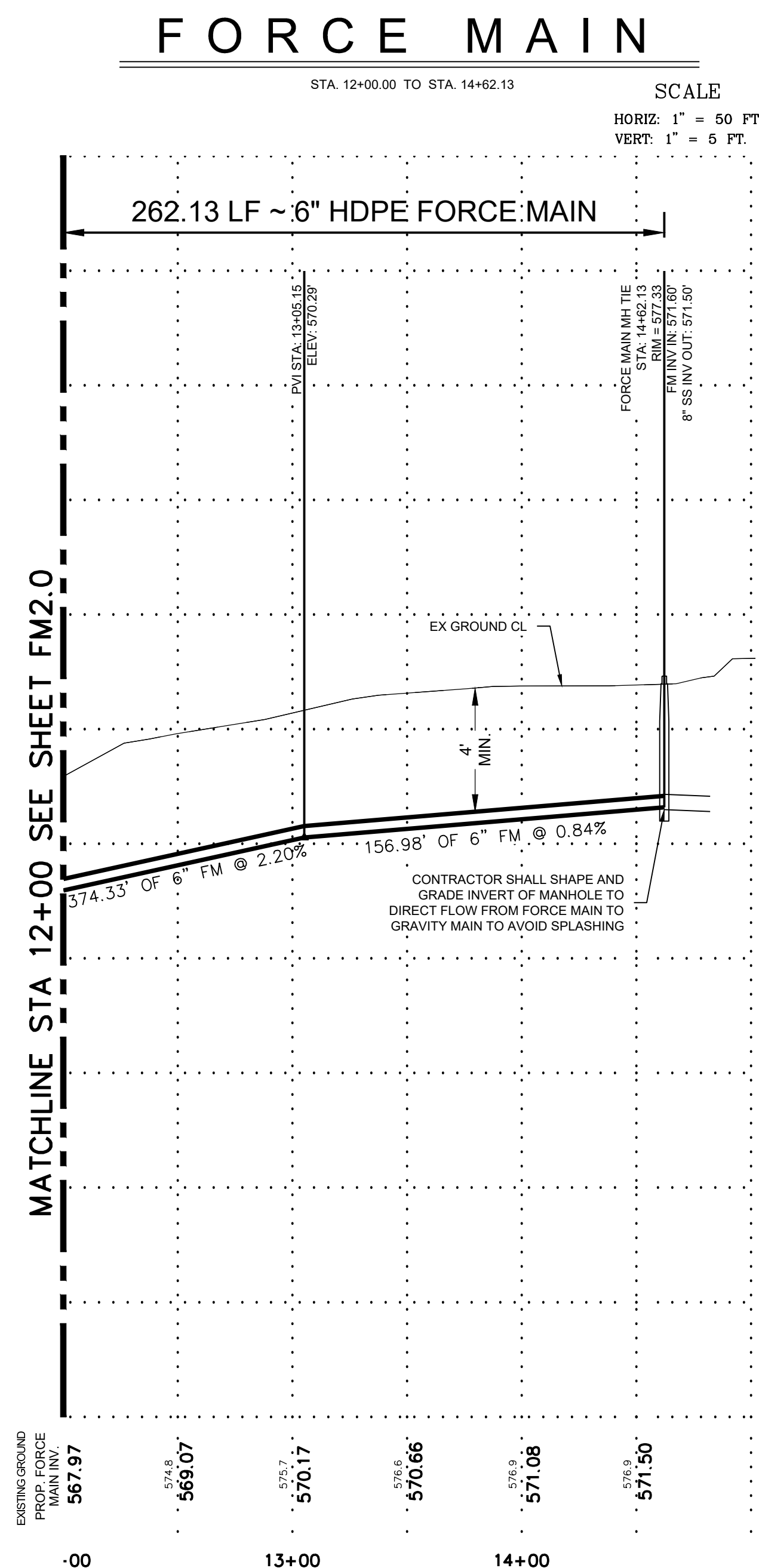
SAN ANTONIO WATER SYSTEM
EASTRIDGE UNIT
6" FORCE MAIN
OVERALL SEWER PLAN

SHEET NO.

FM0.1

Date: Jul 26, 2023, 10:38am User ID: Lance.Elling
File: L:\develop\Proj_2021\E0674101_Eastridge Unit 1\cadd\LIFT STATION\E0674101 FMQ.1 OVERALL SEWER PLAN.dwg





CONTRACTOR SHALL INSTALL 6" METAL LINED,
POLYETHYLENE TYPE DETECTABLE WARNING TAPE WITH
REPETITIVE MESSAGE "PRESSURIZED WASTEWATER"
(1.5" FONTS) WHERE "UTILITY" IS THE TYPE OF
UTILITY BELOW. TAPE COLOR PER UTILITY TYPE.
PLACE APPROX. 12" - 18" BELOW FINISH GRADE.

FORCE MAIN NOTE:
FORCE MAIN TO BE 6" HDPE, DR 13.5 DIPS (160 PSI)

CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE STRUCTURAL DESIGN/GEOTECHNICAL/SAFETY/EQUIPMENT CONSULTANT, IF ANY, OR SHALL REVIEW THESE PLANS AND AVAILABLE GEOTECHNICAL INFORMATION AND THE ANTICIPATED INSTALLATION SITE(S) WITHIN THE PROJECT WORK AREA AND/OR PROJECT SITE(S) TO DETERMINE THE APPROPRIATE PRELIMINARY PROTECTION SYSTEMS, PROGRAMS AND/OR PROCEDURES FOR THE PROJECT DESCRIBED IN THE CONTRACTOR'S DOCUMENTS. THE CONTRACTOR'S IMPLEMENTATION OF THESE SYSTEMS, PROGRAMS AND/OR PROCEDURES SHALL PROVIDE FOR ADEQUATE TRENCH EXCAVATION SAFETY PROTECTION THAT COMPLEMENTS THE CONTRACTOR'S AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE AND/OR SAFETY CONSULTANT'S TRENCH SAFETY PROGRAMS. SPECIFICALLY, CONTRACTOR AND/OR CONTRACTOR'S INDEPENDENTLY RETAINED EMPLOYEE OR SAFETY CONSULTANT SHALL IMPLEMENT A TRENCH SAFETY PROGRAM IN ACCORDANCE WITH OSHA STANDARDS GOVERNING THE PRESENCE AND ACTIVITIES OF INDIVIDUALS WORKING IN AND AROUND TRENCH EXCAVATION.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

PHONE: FAX:

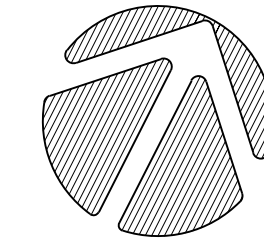
SAWS BLOCK MAP# 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 6" FM - 1,362 LF
12" GM - 8 LF

PLAN NUMBER: 22-1180002

NUMBER OF LOTS: 0

SAWS JOB NO: 22-1665



KEY NOTES:

- GENERAL NOTES:

- EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

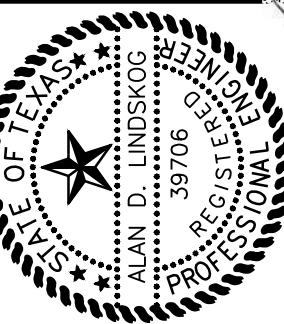
DRAWN BY:
APPROVED:
JOB NO.:

d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214



THE SEAL APPEARING ON
THIS DOCUMENT WAS
AUTHORIZED BY:
ALAN D. LINDSKOG, P.E.
NO. #39706

DATE: _____

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SAN ANTONIO WATER SYSTEM

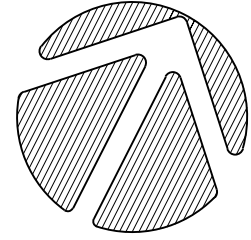
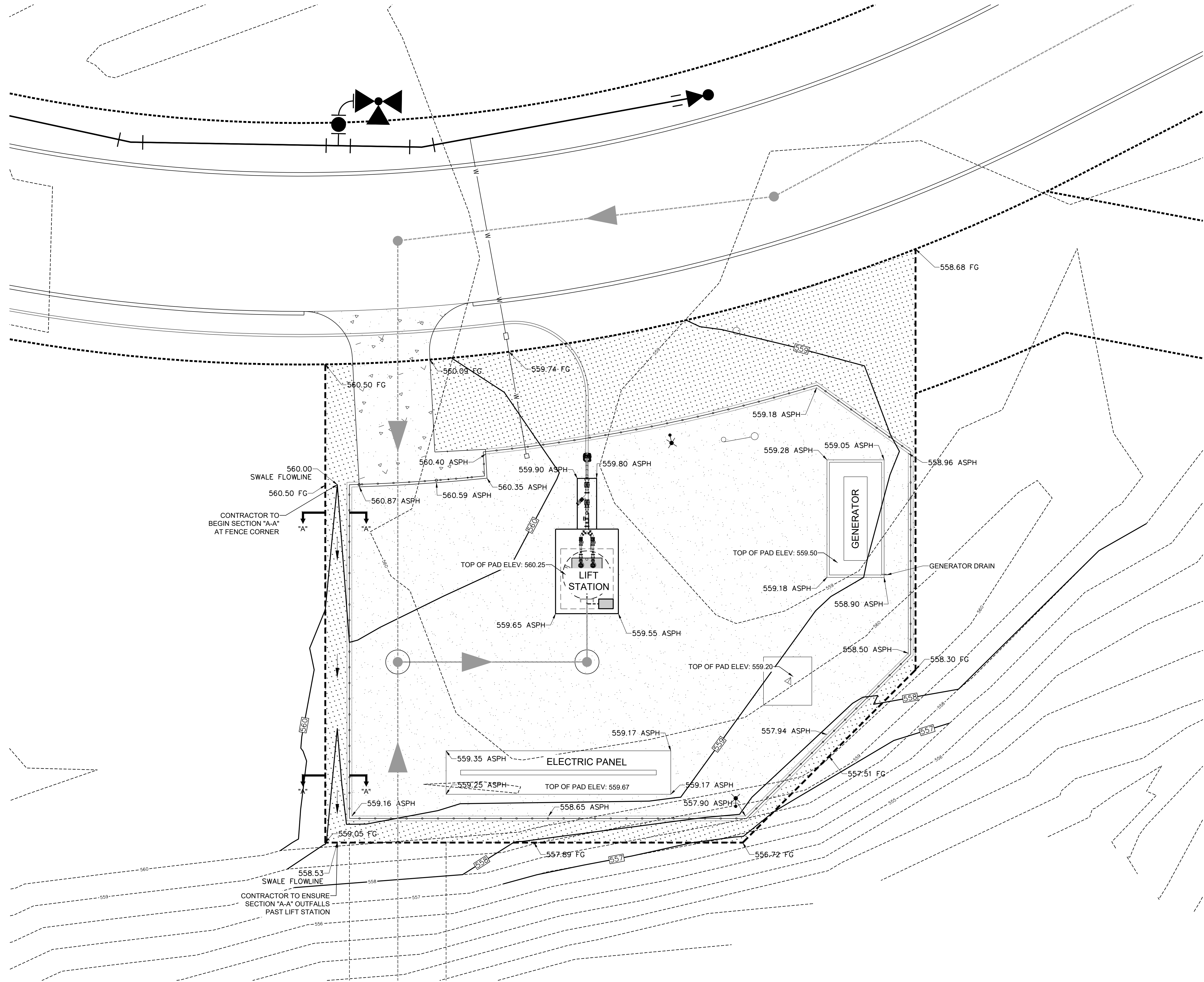
EASTRIDGE UNIT 1

LIFE STATION SITE PLAN

SHEET NO.

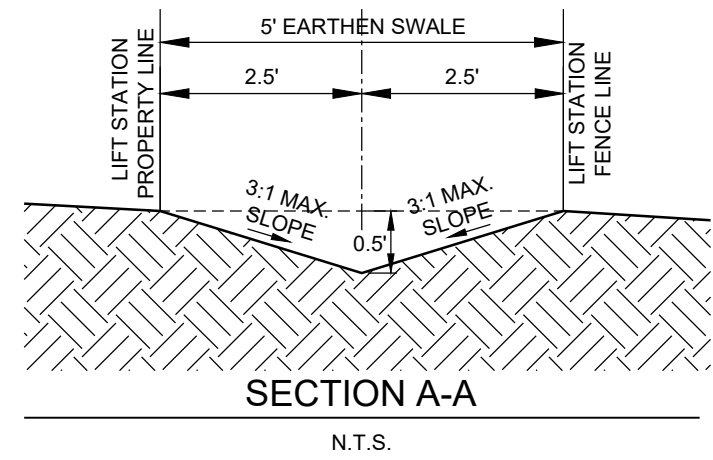
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Date: Jul 26, 2023, 10:38am User ID: Lance.Elling
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CODES

- ASPH - ASPHALT
- INV. - INVERT
- EG - EXISTING GROUND
- FF - FINISHED FLOOR
- FG - FINISHED GROUND
- EX - EXISTING
- GU - GUTTER
- PS - PAINT STRIPE
- TOP - TOP OF GRATE INLET
- STEP - STEP
- SW - SIDEWALK
- TC - TOP OF CURB
- BM - BENCHMARK
- DA - DRAINAGE FLOW ARROW



GRADING PLAN

SCALE: 1" = 10'

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO

STATE: TEXAS ZIP: 78231

PHONE:

FAX:

SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A

6" FM - 1,362 LF 12" GM - 8 LF PLAT NUMBER: 22-11800026

NUMBER OF LOTS: 0

SAWS JOB NO.: 22-1665

SAN ANTONIO WATER SYSTEM

EASTRIDGE UNIT 1 6" FORCE MAIN LIFT STATION GRADING PLAN

SHEET NO.

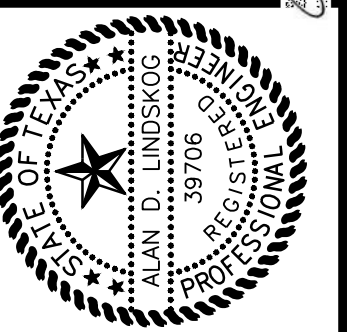
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DESCRIPTION

REV DATE

THE SEAL APPEARING ON
THIS DOCUMENT WAS
AUTHORIZED BY:

ALAN D. LINDSKOG, P.E.
NO. #39706
ON: 07/28/2023
DATE



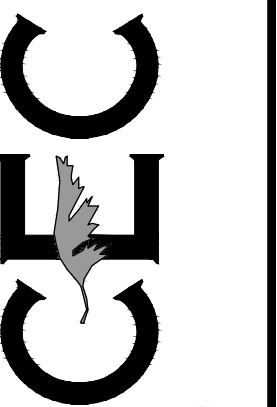
DESIGNED BY:

DRAWN BY:

APPROVED:

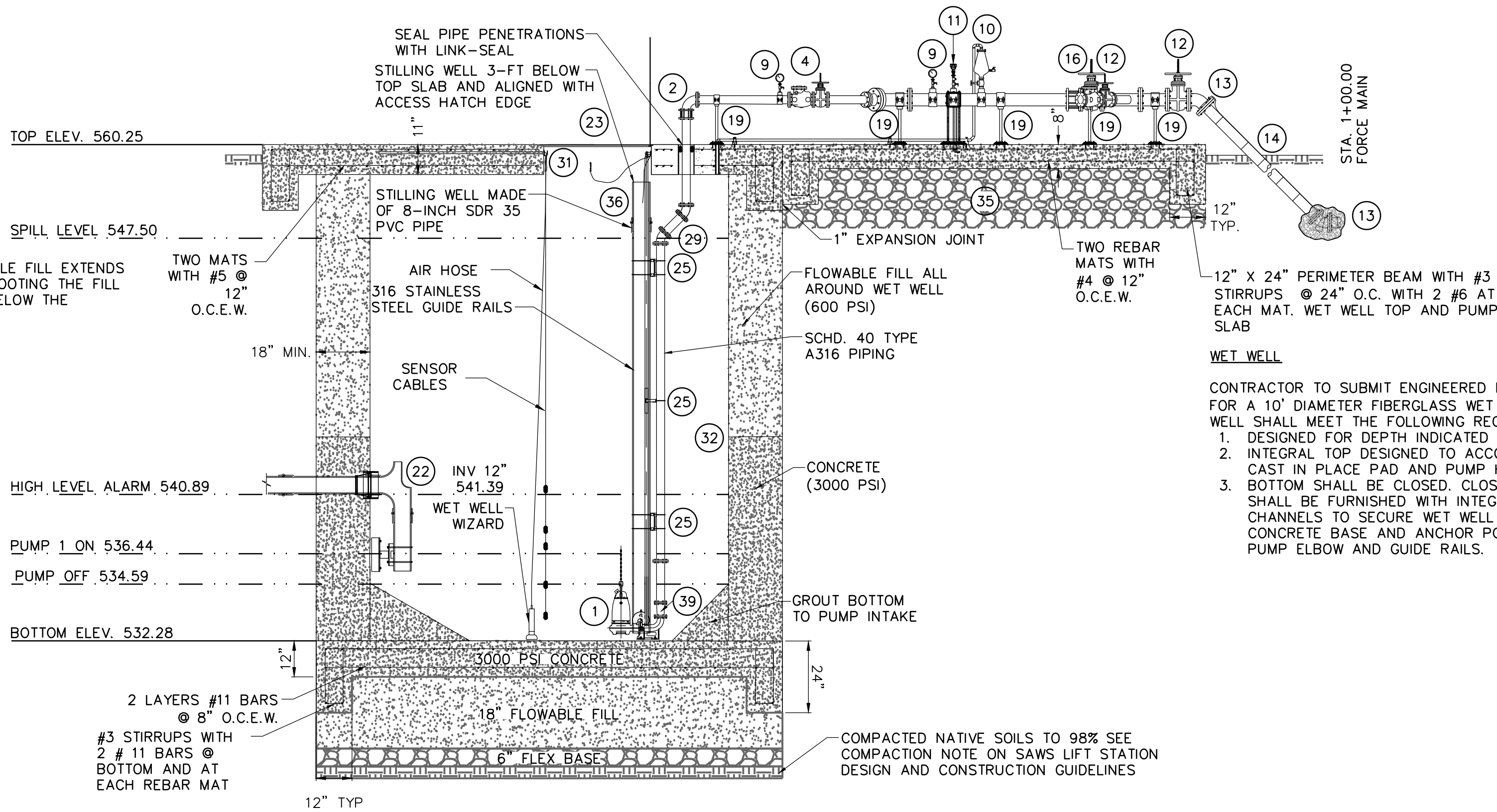
JOB NO.:

DON DURDEN, INC.
dba CIVIL ENGINEERING CONSULTANTS
1550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78231
TEL: (210) 841-9980
FAX: (210) 841-6440
REGISTRATION #F-2214



Date: Jul 26, 2023, 10:39am User: D. Lance Elling
File: L:\Projects\2021\LS2.0 Lift Station\LS2.0 Lift Station PLAN.dwg

- THE MINIMUM CONCRETE BASE THICKNESS SHALL BE 12"
- THE MINIMUM CONCRETE DECK THICKNESS SHALL BE 11" FOR DECK SUPPORTED BY FIBERGLASS TOP
- THE MINIMUM FLOWABLE FILL ENCASEMENT THICKNESS SHALL BE 18". CONCRETE SHALL EXTEND TO A MINIMUM OF SIX FEET ABOVE THE BOTTOM OF THE WET WELL. IF THE FLOWABLE FILL UNIT WEIGHT IS LESS THAN 150 POUNDS PER CUBIC FOOT, THE THICKNESS SHALL BE INCREASED TO PROVIDE A VOLUME OF FLOWABLE FILL THAT PROVIDES A WEIGHT EQUIVALENT TO THAT PROVIDED BY 18 INCHES OF ENCASEMENT AT 150 POUNDS PER CUBIC FOOT.
- SLAB SHALL NOT BE CONSTRUCTED UNTIL SHOP DRAWINGS FOR PUMPS AND PIPING HAVE BEEN APPROVED.



SECTION A-A

N.T.S.

NOTE:
ALL FITTINGS SHALL BE FLANGED
EXCEPT WHERE SHOWN

- SUBMERSIBLE PUMPS
- 4" 90° BEND
- 4" DI PIPE SPOOL (AS REQUIRED)
- 4" CHECK VALVE (LEVER WEIGHTED)
- 4" GATE VALVE
- 6" X 4" REDUCER
- 6" DOUBLE WYE
- 6" DI PIPE SPOOL (AS REQUIRED)
- AMTEK 656 PRESSURE GAUGE - (2 1/2" GAUGES FOR 4" LINES AND 4" GAUGE FOR 6" LINE, LIQUID FILLED WITH SAFETY GLASS)
- 2" AIR RELEASE VALVE
- PRESSURE TRANSMITTER AND JUNCTION BOX - SEE ELECTRICAL PLANS
- 6" GATE VALVE
- 6" 45° BEND
- 6" DI PIPE
- 4" 45° BEND
- EMERGENCY BY-PASS W/ MALE QUICK COUPLER (ALIGNMENT ROTATED IN PLAN VIEW FOR CLARITY)
- 2" AIR RELEASE BLEED LINE (SCHEDULE 40 PVC)
- HEAT TRACE WIRE
- ADJUSTABLE PIPE SUPPORT
- HIGH LEVEL FLOAT SWITCH
- 1/2" DIA. x 18" DOWELS @ 12" O.C.
- 12" SDR 26" PVC TEE AND DROP PIPE. DROP PIPE TO BE SECURED WITH STAINLESS STEEL HARDWARE. SEE DETAIL SHT LS.3.2
- ALUMINUM HATCH SIZE 60" X 48". MAY BE MULTIPLE SECTIONS. ACCESS HATCH SHOULD BE PEDESTRIAN RATED OF THE DOUBLE GRATE, DOUBLE COVER TYPE. BOTH SAFETY GRATES SHALL OPEN TOWARDS THE DISCHARGE PIPING. ACCESS HATCH SHOULD NOT OPEN TO SIDES OR OPPOSITE OF DISCHARGE LINES. REFER TO PUMP SPECIFICATIONS FOR ADDITIONAL INFORMATION
- 6" STAINLESS STEEL VENT WITH STAINLESS STEEL SCREEN
- RAIL SUPPORT (SUPPORT GUIDE BARS USING 316 SS INTERMEDIATE GUIDE BAR BRACKETTS INSTALLED IN ACCORDANCE W/SELECTED PUMP MANUFACTURER'S REQUIREMENTS
- 4" 45° BEND (STAINLESS STEEL TO OFFSET PUMP DISCHARGE)
- 2" 316 SS AIR LINE (SCHD 40)
- NOTE: HANGARS FOR POWER AND CABLES SHALL BE INSTALLED JUST BELOW SAFETY GRATING TO ALLOW ACCESS MINIMIZE REACHING INTO WET WELL
- 10" DIAMETER FIBERGLASS WET WELL (REFER TO SPECIFICATIONS)
- WET WELL WIZARD AERATION UNIT
- PROVIDE FLEXIBLE COUPLING BETWEEN SS PIPING AND COMPRESSOR MANIFOLD
- 2" X 1 1/4" SS ELBOW, 1 1/4" BEND WITH 1 1/4" CAM LOK FITTING ROTATED 45° FROM HORIZONTAL
- LEVEL TRANSDUCER STILLING WELL
- 2" 1/4 BEND, THD. (STAINLESS STEEL)
- WET WELL TO HAVE 6" THD CONNECTION W/ CENTERLINE 8" BELOW TOP OF WET WELL. EXTEND 6" SCHD. 40 STAINLESS STEEL PIPING TO 1/4 BEND SET 6" INSIDE OF EXTERIOR BEAM. EXTEND 6" STAINLESS PIPING VERTICALLY TO STAINLESS REVERSE ELL W/ STAINLESS SCREEN FOR VENT. REVERSE ELL TO BE SET PARALLEL TO EDGE OF SLAB.
- 3" X 4" ECCENTRIC INCREASER (STAINLESS STEEL)

LIFT STATION

INLET ELEVATION:	541.39
HIGH WATER ALARM:	540.89
PUMP ON:	536.44
PUMP OFF:	534.59
BOTTOM:	532.28

SUBMERSIBLE PUMP INFORMATION

MODEL:	FLYGT NP3127SH3 249 IMP
	480 V
	3PH
	11HP

REFER TO PUMP SPECIFICATIONS FOR
ADDITIONAL INFORMATION

FLOW (GPM)	ONE PUMP
HEAD (FT)	320
HYD. EFF (%)	63.6
	59

C=140

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME:	KING FISH DEVELOPMENT LLC
ADDRESS:	2722 WEST BITTERS RD, SUITE 106
CITY:	SAN ANTONIO
STATE:	TEXAS
ZIP:	78231
PHONE:	
FAX:	
SAWS BLOCK MAP #	200542
TOTAL EDU'S:	XXX
TOTAL ACREAGE:	N/A
TOTAL LINEAR FOOTAGE OF PIPE:	6" FM - 1,362 LF
	12" GM - 8 LF
PLAT NUMBER:	22-11800026
NUMBER OF LOTS:	0
SAWS JOB NO.:	22-1665

SAN ANTONIO WATER SYSTEM

LIFT STATION

EASTRIDGE UNIT 1

6" FORCE MAIN

LIFT STATION PLAN VIEW

SHEET NO.

LS2.0

DESIGNED BY:

DRAWN BY:

APPROVED:

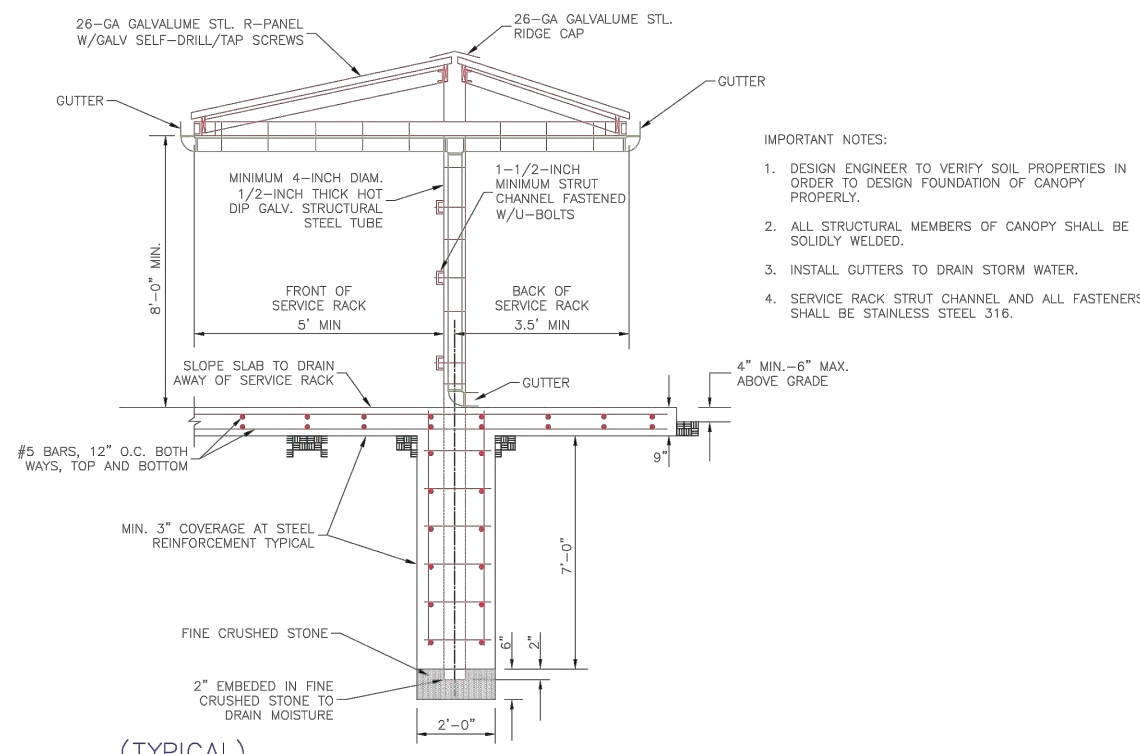
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SAN ANTONIO, TEXAS 78231
TEL: (210) 641-9999
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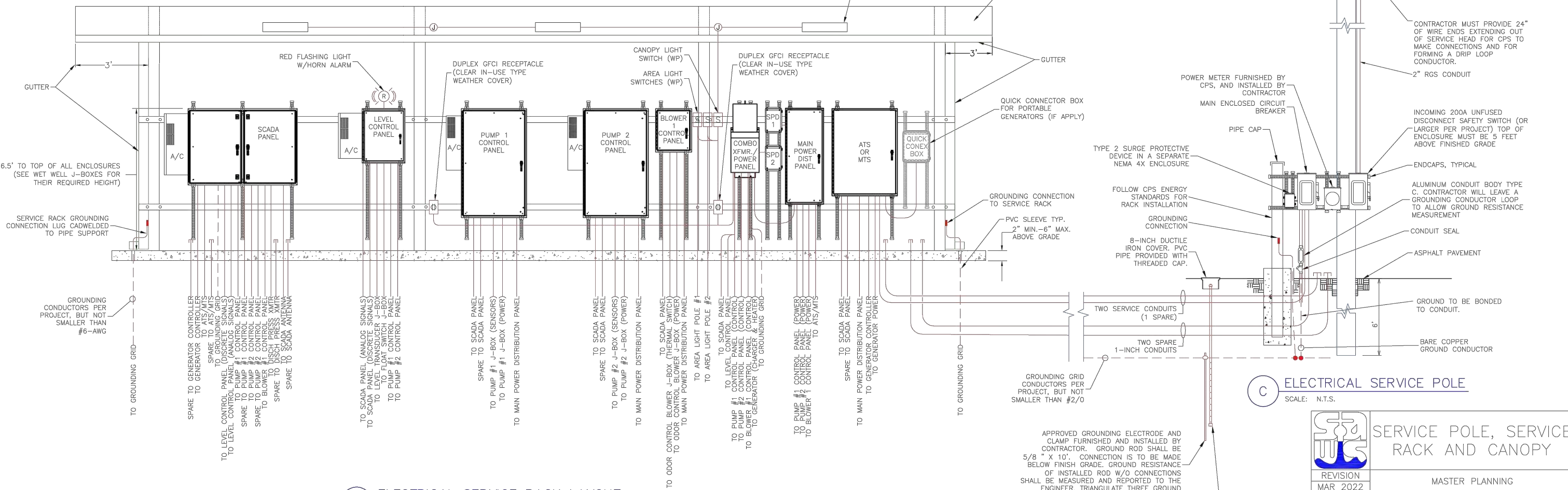


THE SEAL APPEARING ON
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ALAN D. LINDSKOG, P.E.
NO. #39706
ON: 07/28/2023
DATE

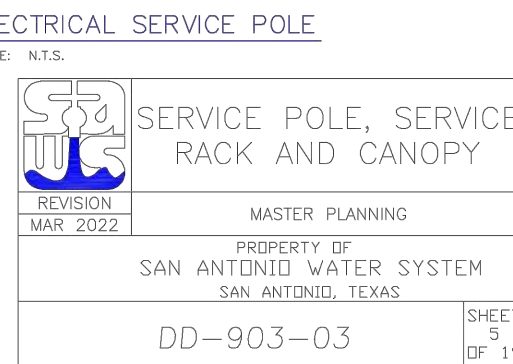
- NOTES:
1. ALL ENCLOSURES SHALL BE PAD-LOCKABLE. PUMP CONTROL PANEL SHALL BE SINGLE DOOR, WALL MOUNTED TYPE. INSTALL ONE PUMP CONTROL PANEL FOR EACH PUMP INSTALLED. LEVEL CONTROL PANEL SHALL BE COMBIO TO ALL PUMP CONTROL PANELS FOR AUTOMATIC CONTROL.
 2. ALL MOUNTING HARDWARE AND STRUT CHANNEL SHALL BE OF STAINLESS STEEL 316. ALL ENCLOSURES SHALL BE NEMA 4X, STAINLESS STEEL 316. PUMP CONTROL PANELS AND SCADA ENCLOSURES SHALL ALSO BE WHITE ENAMEL COATED ON EXTERIOR.
 3. CONDUIT PENETRATIONS TO ALL ENCLOSURES AND JUNCTION BOXES, REGARDLESS OF LOCATION, SHALL BE MADE AT THE BOTTOM FACE ONLY. CONDUIT PENETRATIONS ON BACK, SIDES OR TOP SHALL BE PROHIBITED. ONLY THE WEIRD GUTTER SHALL BE PERMITTED TO HAVE PENETRATIONS ON THE TOP AND BOTTOM FACE.
 4. ALL DISCONNECTS SHALL BE NEMA 4X, STAINLESS STEEL 316.
 5. SERVICE BACK STRUTS SHALL BE OF STAINLESS STEEL 316 1-1/2 INCH MINIMUM AND SHALL BE MOUNTED ON 4-INCH X 1/2-INCH THICK STRUCTURAL STEEL TUBE. ALL STRUT CHANNEL ENDS SHALL BE PROTECTED WITH END CAPS.
 6. THERE SHALL BE 6" MINIMUM SPACING BETWEEN EQUIPMENT MOUNTED ON THE BACK.
 7. ELECTRIC BACK SHALL HAVE SUPPORT COUPLERS EVERY 10 FEET.
 8. PROVIDE SEALING FITTING FOR ALL CONDUITS LEAVING THE BACK AND CONDUITS FOR SURGE PROTECTIVE DEVICES.
 9. PROVIDE A TYPE 2 SURGE PROTECTIVE DEVICE IN A SEPARATE NEMA 4X, STAINLESS STEEL 316, WHITE ENAMEL COATED ENCLOSURE ADJACENT TO THE INCOMING SERVICE DISCONNECT SWITCH.
 10. USE OF STAND-BY GENERATOR WITH AUTOMATIC TRANSFER SWITCH, OR COM-LOK (DALE TYPE) QUICK CONNECTORS WITH MAIN EMERGENCY BREAKER AND MANUAL TRANSFER SWITCH FOR PORTABLE GENERATORS TO BE DETERMINED FOR PROJECT DESIGNER. FOR LOCATION IN RELATION TO TOWERS ADJUTER BEHIND SCADA, AND LEFT STATION, CAPACITY AND LOCATION.
 11. ALL ELECTRICAL COMPONENTS SHALL BE NEMA RATED.
 12. THE RESISTANCE TO GROUND SHALL NOT EXCEED 5 OHMS AT ANY POINT.



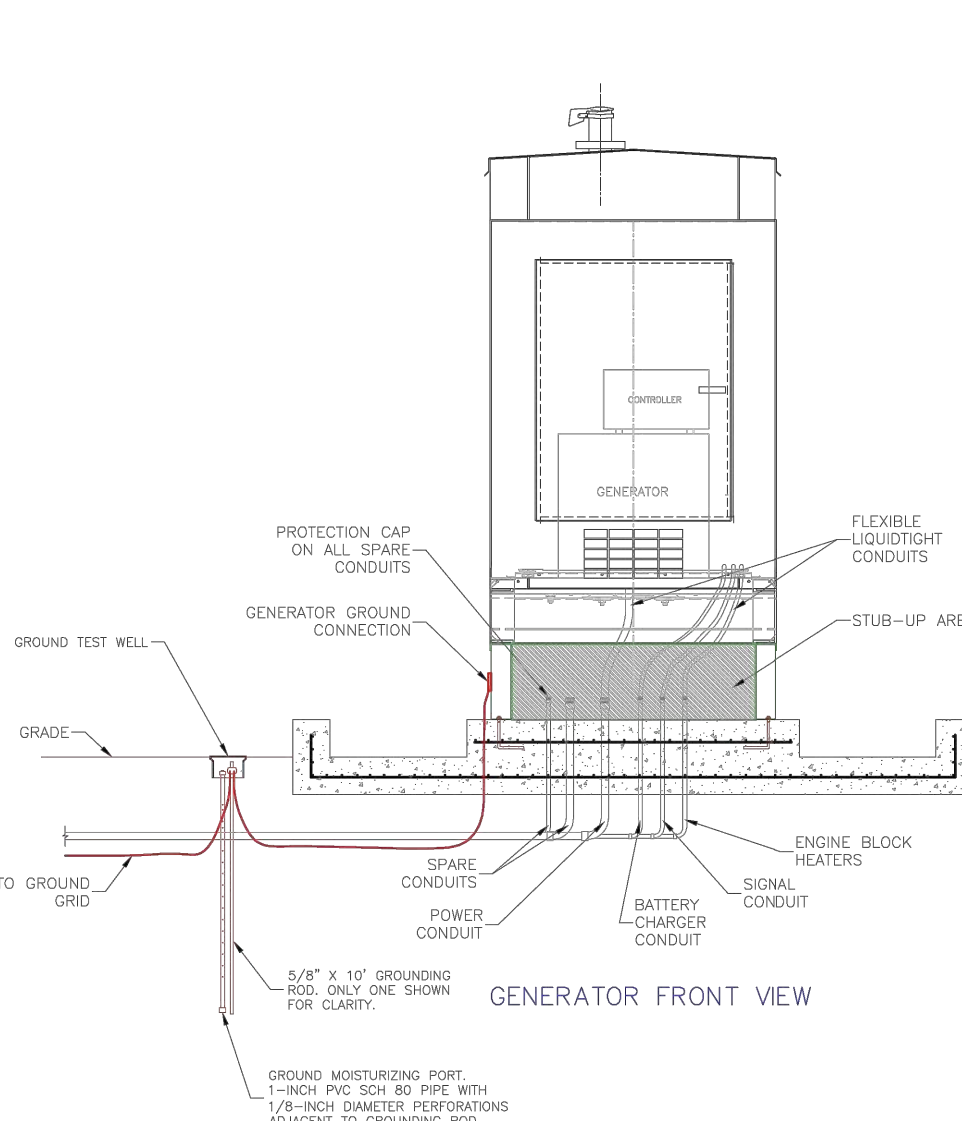
(A) TYPICAL ELECTRICAL SERVICE RACK SIDE VIEW DETAIL
SCALE: N.T.S.



(B) ELECTRICAL SERVICE RACK LAYOUT
SCALE: N.T.S.

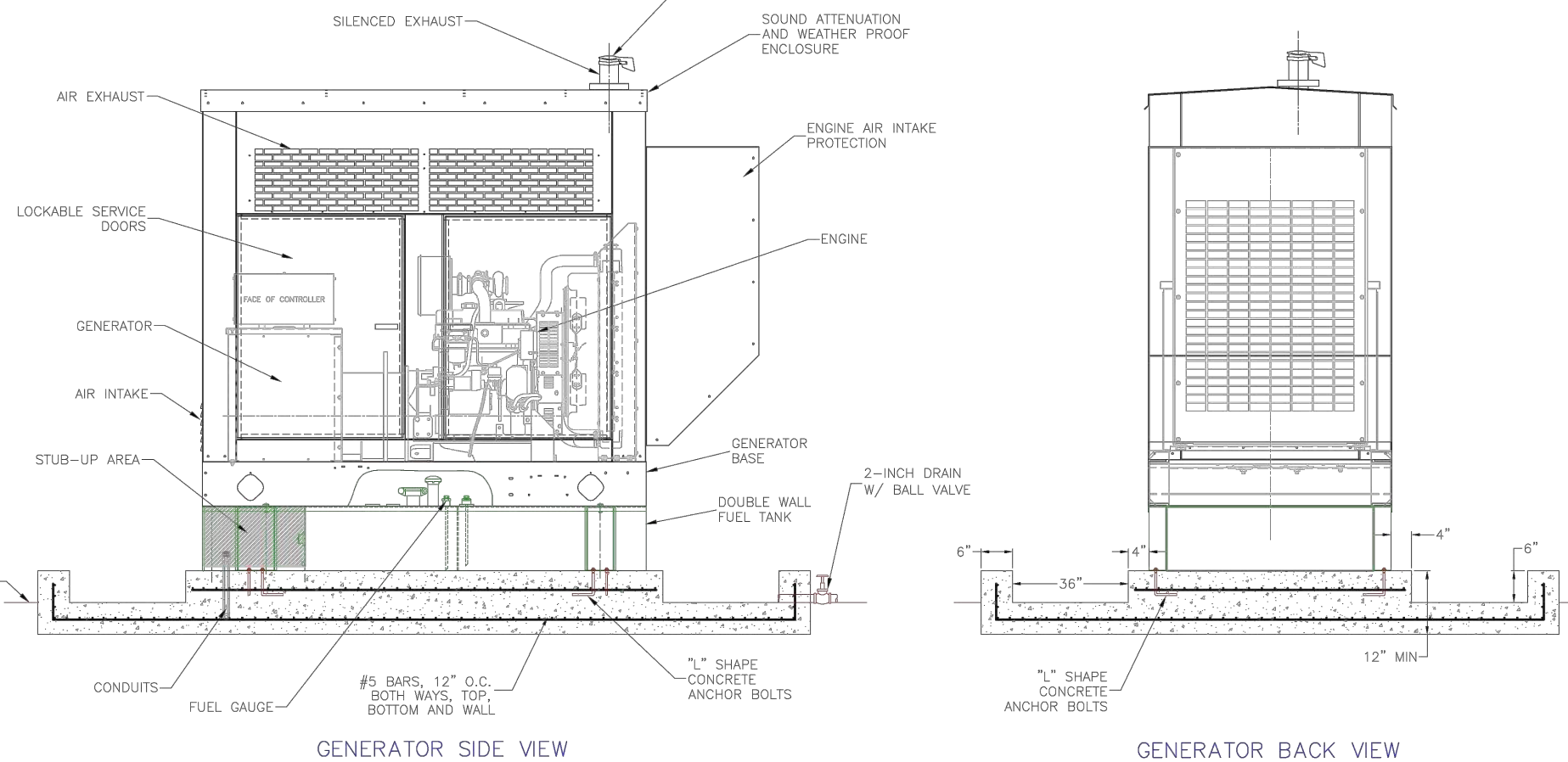


(C) ELECTRICAL SERVICE POLE
SCALE: N.T.S.



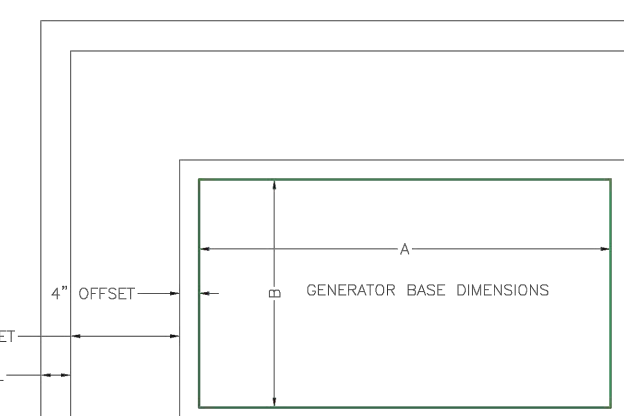
- NOTES
1. VOLTAGE DIP SHALL NOT DROP BELOW 15% AND FREQUENCY SHALL NOT DROP BELOW 5% WHEN STARTING ACROSS-THE-LINE THE LARGEST MOTOR WHILE ALL OTHER LIFT STATION MOTORS AND AUXILIARY TRANSFORMER (OR DISTRIBUTION PANELBOARD IF NO AUXILIARY TRANSFORMER) ARE RUNNING AT FULL LOAD.
 2. GENERATOR FRAME SHALL BE SOLIDLY BONDED TO THE REST OF THE GROUNDING SYSTEM AT EACH CORNER. GROUND RESISTANCE MEASURED AT THE GENERATOR SHALL HAVE THE SAME MONITORING AS THE REST OF THE GROUNDING SYSTEM, AND IT SHALL NOT EXCEED 5 OHMS.
 3. GENERATOR SHALL BE WIRED AS A NON-SEPARATELY DERIVED SYSTEM, IN STRICT COMPLIANCE WITH NEC CURRENT REQUIREMENTS.
 4. GENERATOR MUST BE PROVIDED WITH SOUND ATTENUATION ENCLOSURE AND EXHAUST, AND MUST BE WEATHER PROOF. SEE SAWS LIFT STATION DESIGN AND CONSTRUCTION STANDARDS TEXT DOCUMENT FOR OTHER GENERATOR REQUIREMENTS.
 5. GENERATOR FRAME SHALL BE SOLIDLY ANCHORED TO CONCRETE SLAB. ALL COMPONENTS USED TO FASTEN THE GENERATOR SHALL BE MADE OF STAINLESS STEEL 316.
 6. CONDUITS SHALL INCLUDE AC POWER, BATTERY CHARGER, ENGINE BLOCK HEATER, SIGNAL AND SPARE.
 7. FUEL TANK SHALL BE DOUBLE WALL TYPE.
 8. CONCRETE SLAB SHALL BE MADE OF CONCRETE MIX WITH A COMPRESSIVE STRENGTH OF 3,000 PSI. CONCRETE SLAB MUST INCLUDE A CONFINEMENT STRUCTURE AS SHOWN IN DETAIL B OF THIS SHEET. A 2-INCH DRAIN PIPE AND BALL VALVE SHALL BE PROVIDED.
 9. A 3-FOOT DEDICATED CLEARANCE AROUND GENERATOR CONTAINMENT SLAB SHALL BE PROVIDED, IN STRICT COMPLIANCE WITH SAWS LIFT STATION DESIGN AND CONSTRUCTION STANDARDS TEXT DOCUMENT.
 10. CONDUIT STUB-UP AREA SHOWN IN THIS DRAWING IS FOR ILLUSTRATION PURPOSES ONLY. DESIGN ENGINEER MUST VERIFY THE LOCATION OF THE STUB-UP AREA WITH THE GENERATOR MANUFACTURER. CONDUIT DUST BANK AND STUBUPS SHALL COMPLY WITH STANDARD DETAILS OF THESE STANDARDS DRAWINGS.

GENERATOR INFORMATION	
MANUFACTURER	
GENERATOR MODEL	
ALTERNATIVE MODEL	
STAND-BY POWER CAPACITY	SW
STAND-BY POWER CAPACITY	KVA
RATED VOLTAGE	V
FULL LOAD AMPS	A
MOTOR STARTING CAPACITY	KVA
PERCENT OF VOLTAGE DIP	%

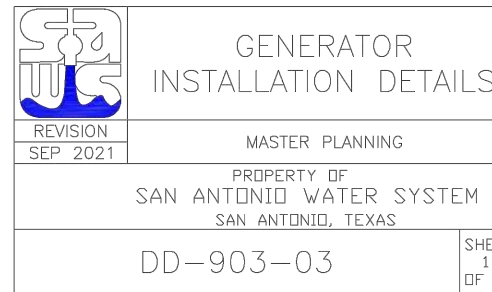


(A) STAND BY GENERATOR INSTALLATION DETAILS
SCALE: N.T.S.

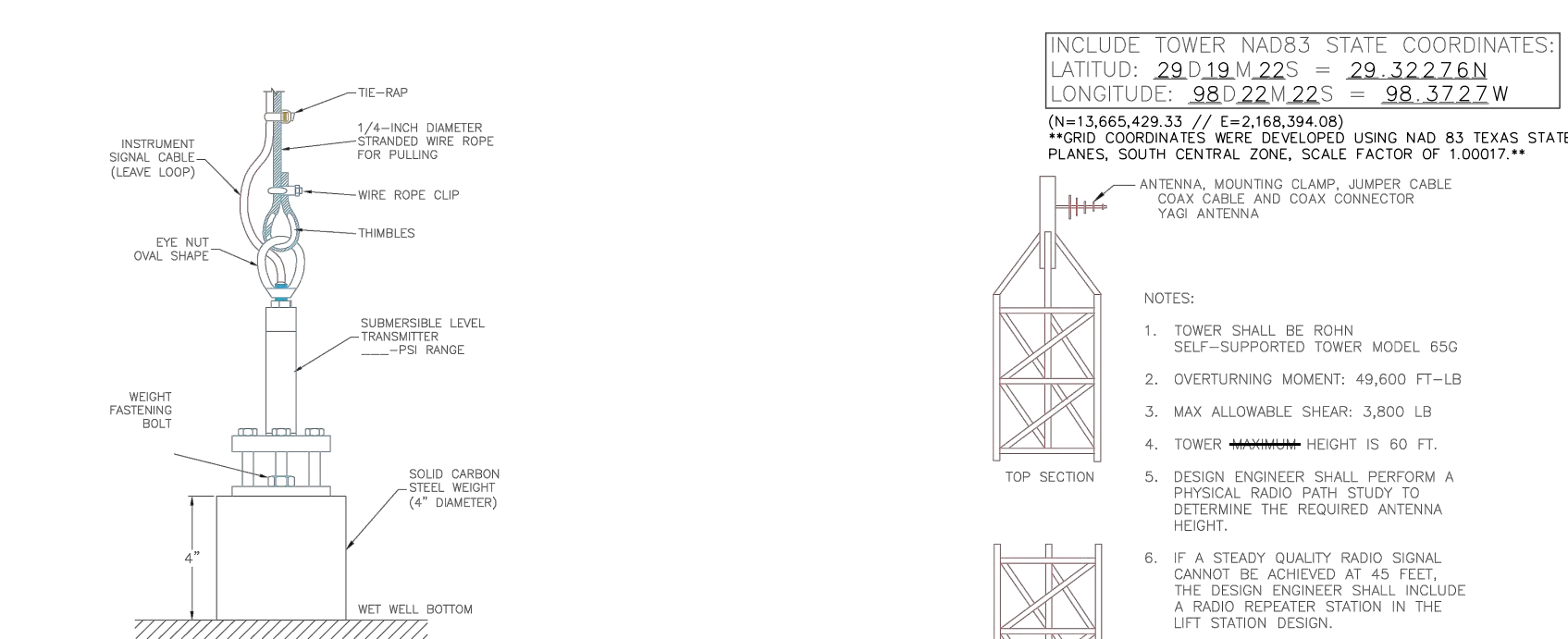
- IMPORTANT NOTES:
1. DESIGN ENGINEER SHALL VERIFY GENERATOR MANUFACTURER'S REQUIREMENTS WITH GENERATOR MANUFACTURER.



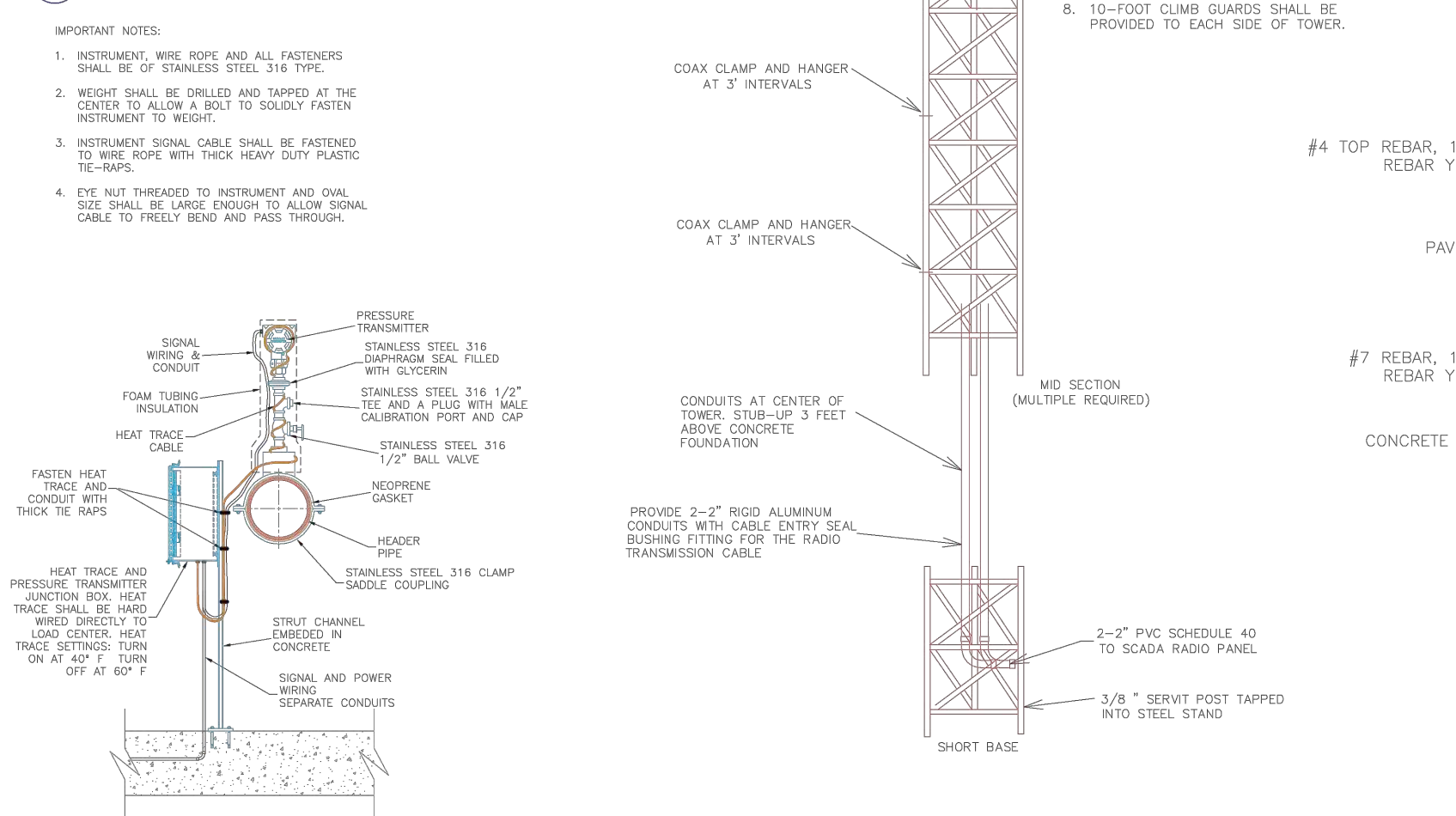
(B) CONTAINMENT BASE DETAILS
SCALE: N.T.S.



GENERATOR INSTALLATION DETAILS
MASTER PLANNING
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
DD-903-03
SHEET 11 OF 11



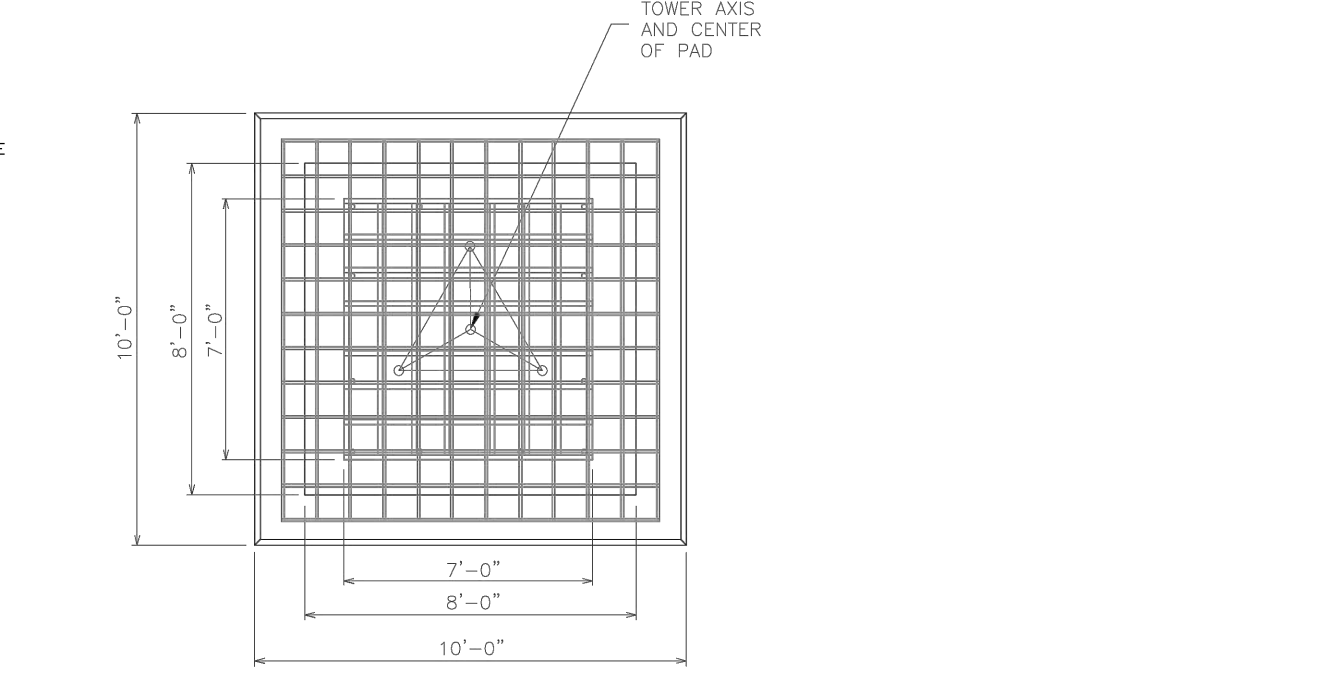
(A) SUBMERSIBLE LEVEL TRANSDUCER MOUNTING DETAIL
SCALE: N.T.S.



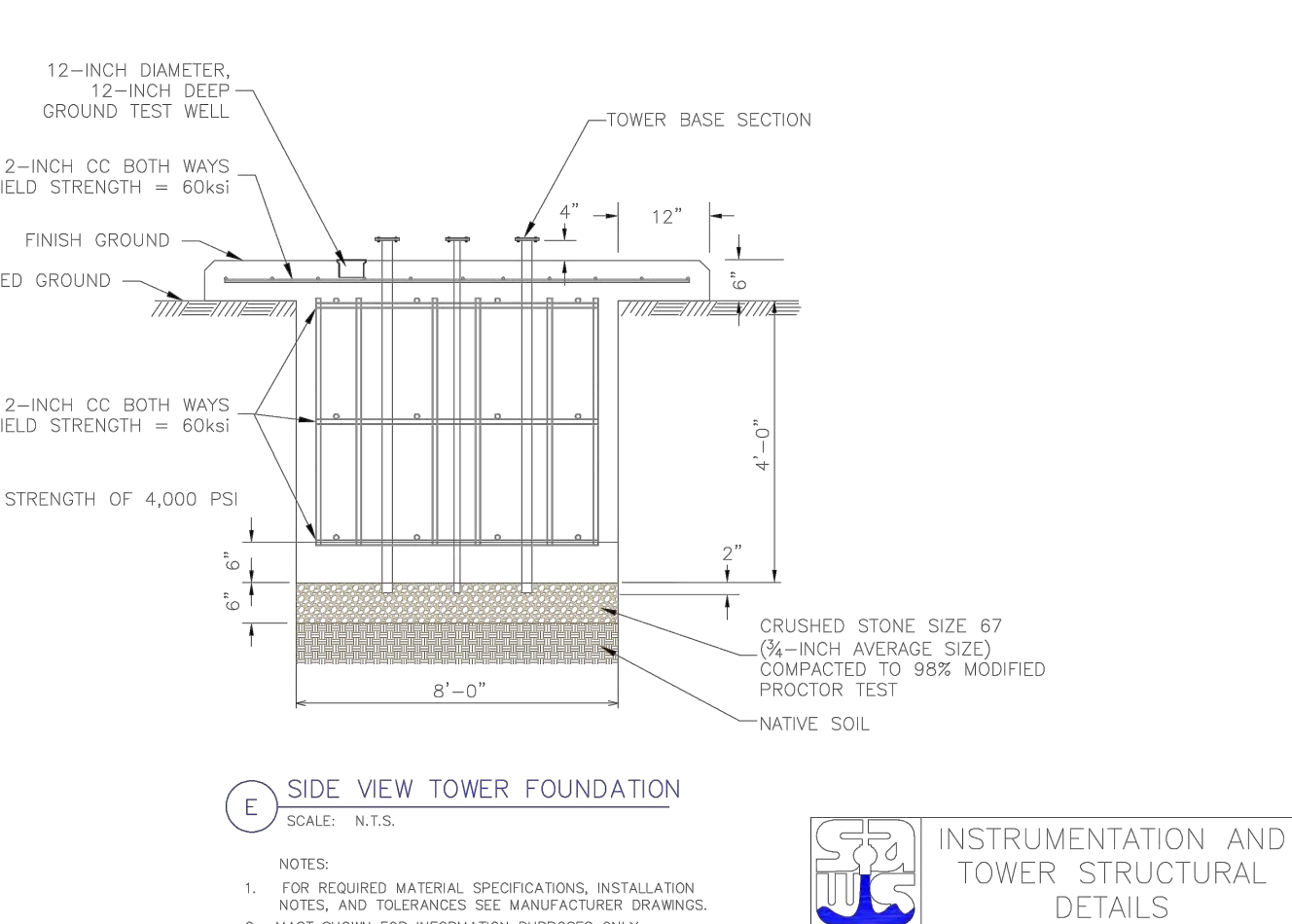
(B) DISCHARGE PRESSURE TRANSMITTER MOUNTING DETAIL
SCALE: N.T.S.



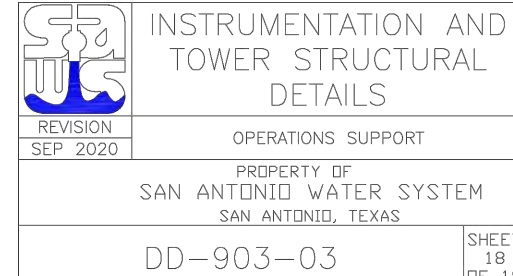
(C) SCADA TOWER SECTIONS
SCALE: N.T.S.



(D) PLAN VIEW TOWER FOUNDATION
SCALE: N.T.S.



(E) SIDE VIEW TOWER FOUNDATION
SCALE: N.T.S.



SAWS STANDARD DETAIL MODIFICATION AND NOTES

THESE DETAILS AND MODIFICATIONS ARE PROVIDED FOR THE CIVIL PORTION OF THE PROJECT. PLEASE REFER TO THE ELECTRICAL PLANS FOR ANY REVISIONS OR MODIFICATIONS FOR ELECTRICAL WORK.

DD-903-03: SHEET 5 THE CONCRETE PAD SHALL HAVE AN 8" LAYER OF COMPACTED FLEXIBLE BASE UNDER THE PAD. BAS MATERIAL SHALL MEET THE REQUIREMENTS OF TxDOT GRADE A1-2 BASE AND BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY. BASE SHALL BE PLACED ON COMPACTED SUBGRADE.

THE OUTSIDE EDGE OF THE SLAB SHALL BE THICKENED TO 12" FOR A WIDTH OF ONE FOOT IN FROM THE EDGE OF THE SLAB AND SHALL TRANSITION UP AT 1:1 TO THE 9" SLAB DEPTH.

MAXIMUM SPACING OF PIERS AND COLUMN SUPPORTS SHALL BE EIGHT FEET.

THE DIMENSIONS OF THE SLAB ARE SHOWN ON SHEET L1.0. THESE DIMENSIONS SHALL BE CONFIRMED WITH THE SUBMITTAL BEFORE CONSTRUCTION.

DD-903-03: SHEET 11: THE MINIMUM THICKNESS OF THE BOTTOM PORTION OF THE CONCRETE SLAB SHALL BE 8".

THE CONCRETE PAD SHALL HAVE AN 8" LAYER OF COMPACTED FLEXIBLE BASE UNDER THE PAD. BAS MATERIAL SHALL MEET THE REQUIREMENTS OF TxDOT GRADE A1-2 BASE AND BE COMPACTED TO 95% OF STANDARD PROCTOR DENSITY. BASE SHALL BE PLACED ON COMPACTED SUBGRADE.

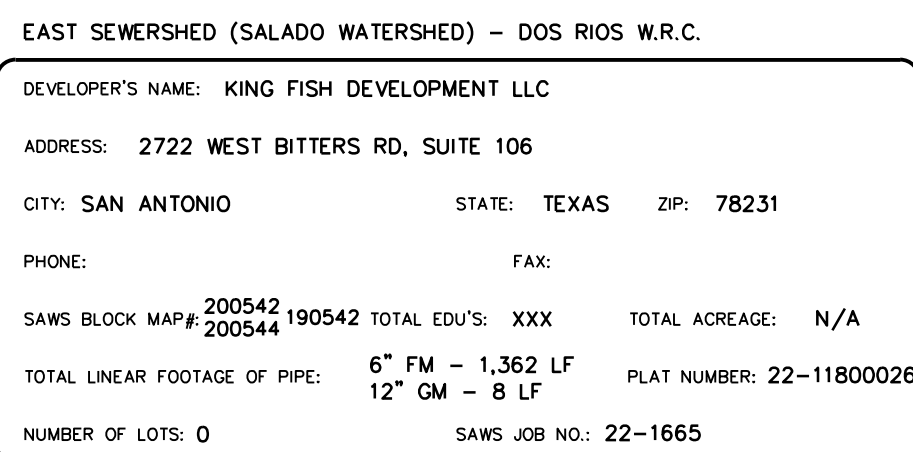
THE DIMENSIONS OF THE SLAB ARE SHOWN ON SHEET L1.0. THESE DIMENSIONS SHALL BE CONFIRMED WITH THE SUBMITTAL BEFORE CONSTRUCTION.

THE CENTER SECTION AND CURBS SHALL BE AT THE SAME LEVEL. THE SIDE TROUGHS SHALL SLOPE AT A MINIMUM OF 0.5% TO THE OUTLET.

ALL DETAILS: THE CONTRACTOR SHALL CONTACT THE ENGINEER OF THEY ENCOUNTER UNSTABLE GROUND CONDITIONS BELOW ANY OF THE FACILITIES SHOWN IN THESE DETAILS.

GENERAL NOTES:

1. ALL CONCRETE PADS SHALL HAVE 4,000 PSI (28 DAY) CONCRETE
2. REINFORCING SHALL BE ATSM GRADE 60.
3. ALL EXPANSION JOINTS SHALL BE SEALED WITH POLYURETHANE SEALANT
4. SLABS SHALL RECEIVE A BROOM FINISH
5. PAD CONSTRUCTION SHALL BE COORDINATED WITH ELECTRICAL AND CANOPY SUBS TO ENSURE REQUIRED CONDUITS AND SUPPORTS ARE INSTALLED.
6. WHERE CONCRETE ENCASED ELECTRICAL CONDUITS ARE UNDER THE SLAB THE ENCASEMENT SHALL BE TIED TO THE PAD WITH #3 AT 12" O.C.



DESIGNED BY:
DRAWN BY:
APPROVED:
JOB NO:

THIS DOCUMENT IS THE PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
DD-903-03
SHEET 11 OF 11

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY:
ALAN D. LINDSKOG, P.E.
NO. #39706
07/28/2023
ON: DATE

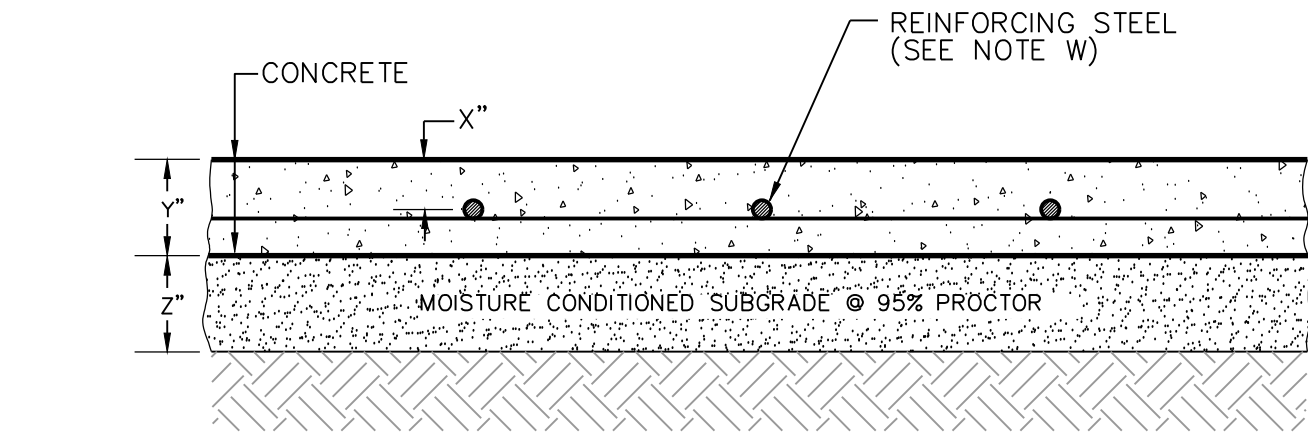
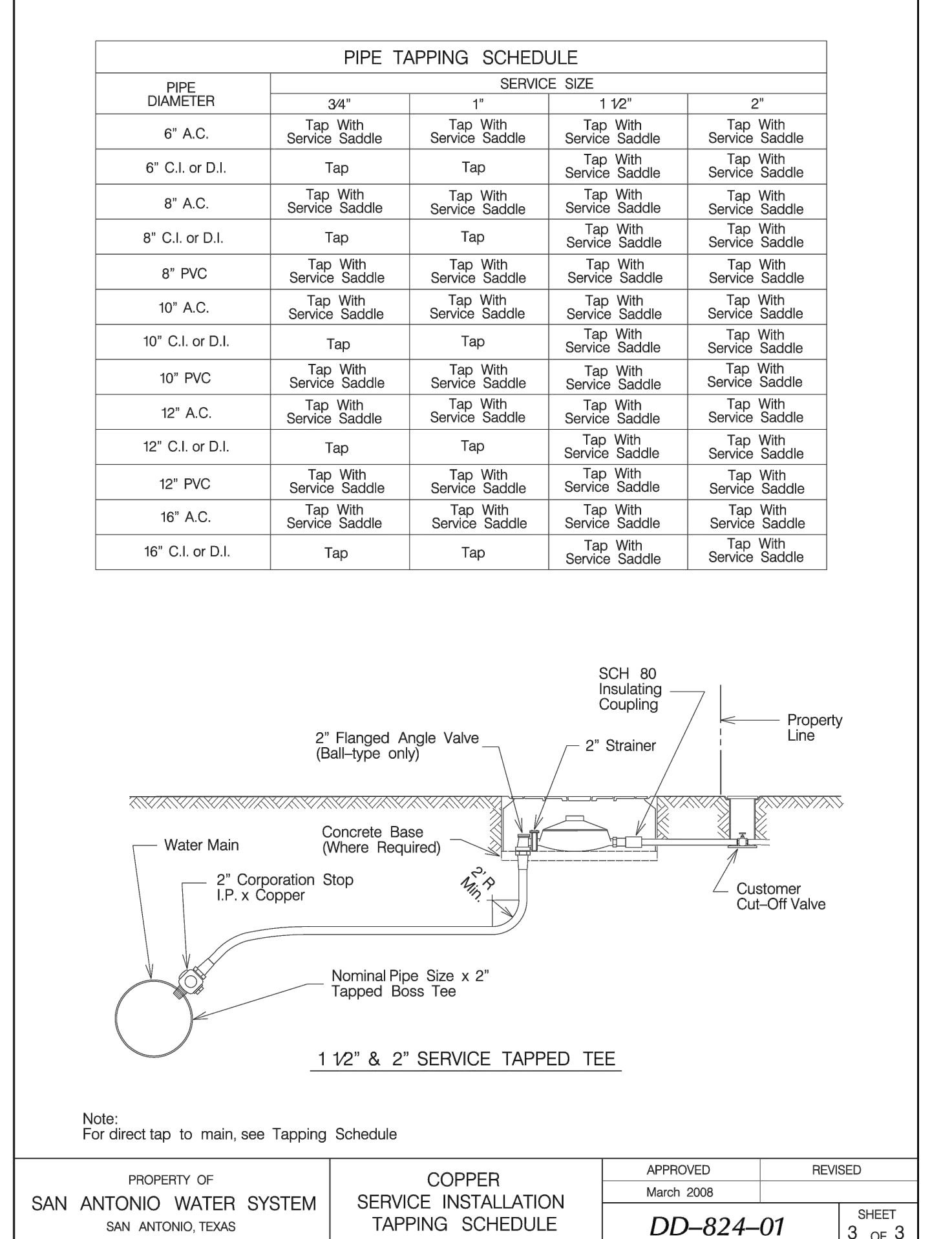
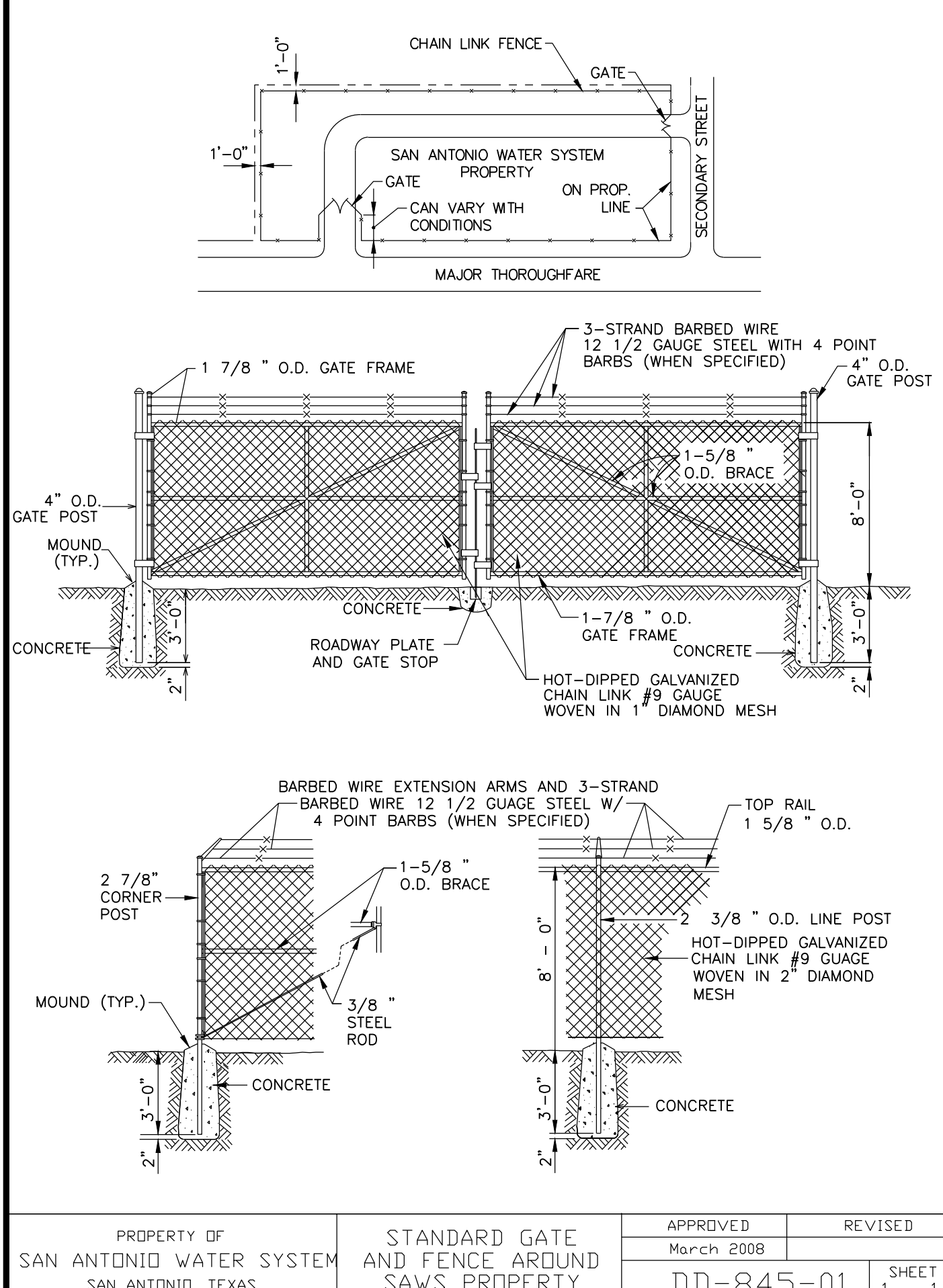
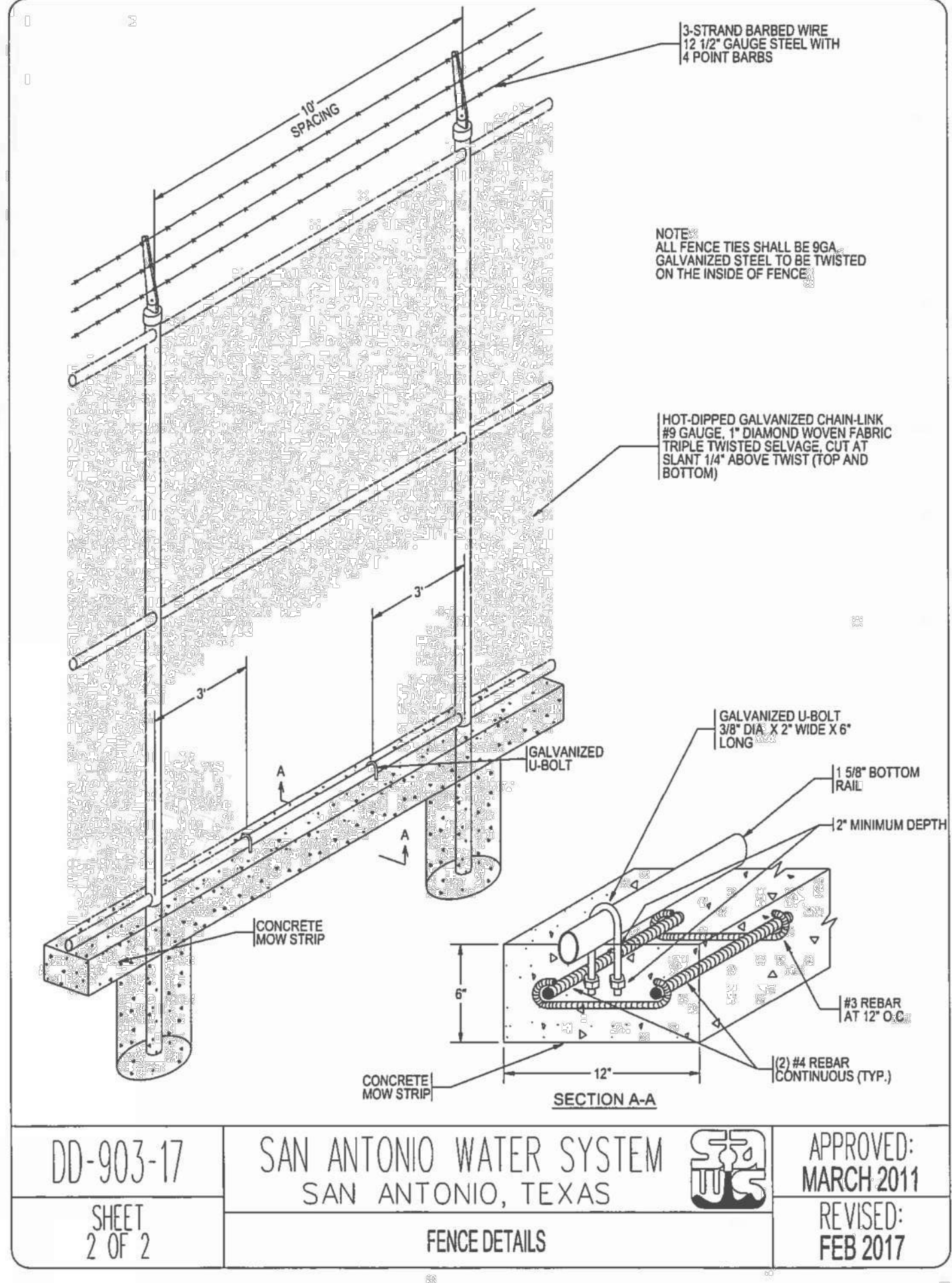
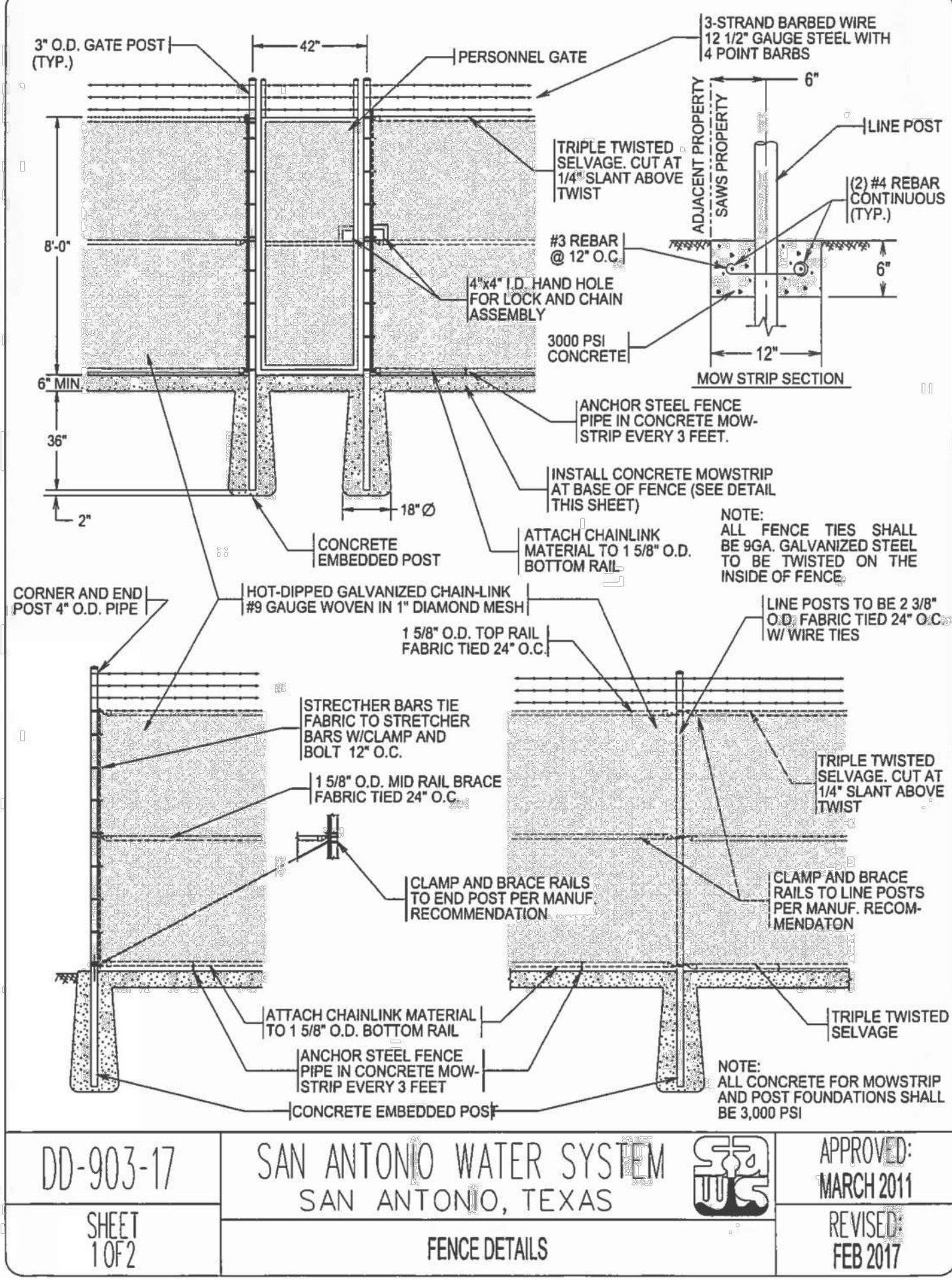
PROPERTY OF
SAN ANTONIO WATER SYSTEM
SAN ANTONIO, TEXAS
DD-903-03
SHEET 11 OF 11

DESCRIPTION
REV
DATE

SAN ANTONIO WATER SYSTEM
EASTRIDGE UNIT 1
CIVIL DETAILS
SHEET NO.

LS3.0

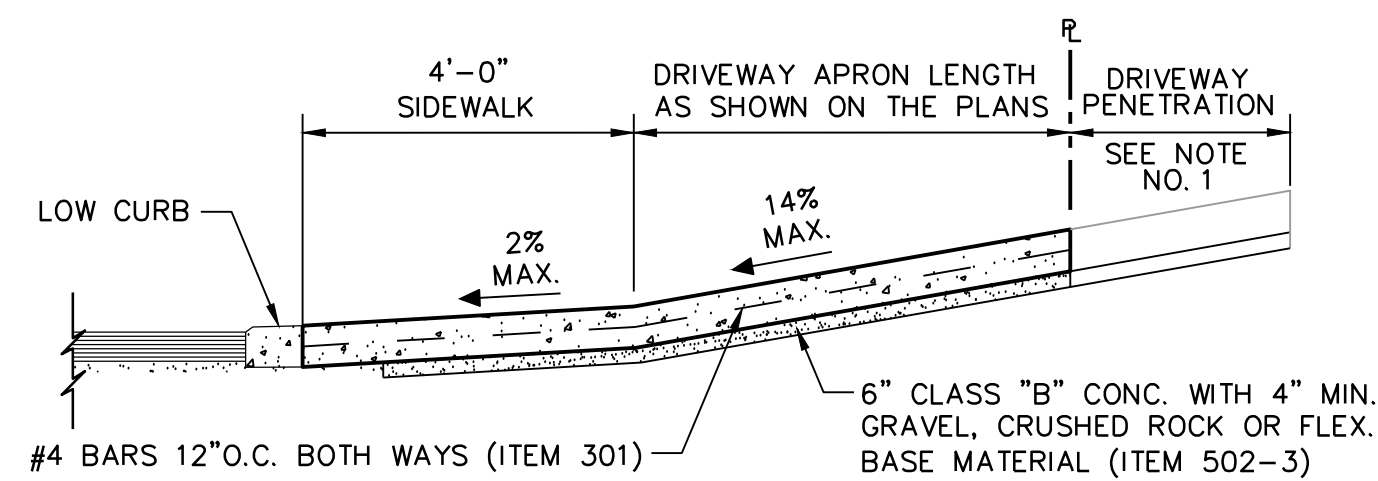
Date: Jul 26, 2023, 10:39am User ID: Lance Elling File C: Viewport [Proj_2021] LS3 - Lift Station Details.dwg



W	REINFORCEMENT	#4 BARS @ 12" O.C.E.W.
X	SPACING	3.0"
Y	CONCRETE	7.0", 4000 PSI
Z	SUBGRADE	6.0" COMPACTED DEPTH, MOISTURE CONDITIONED, ASTM D 698

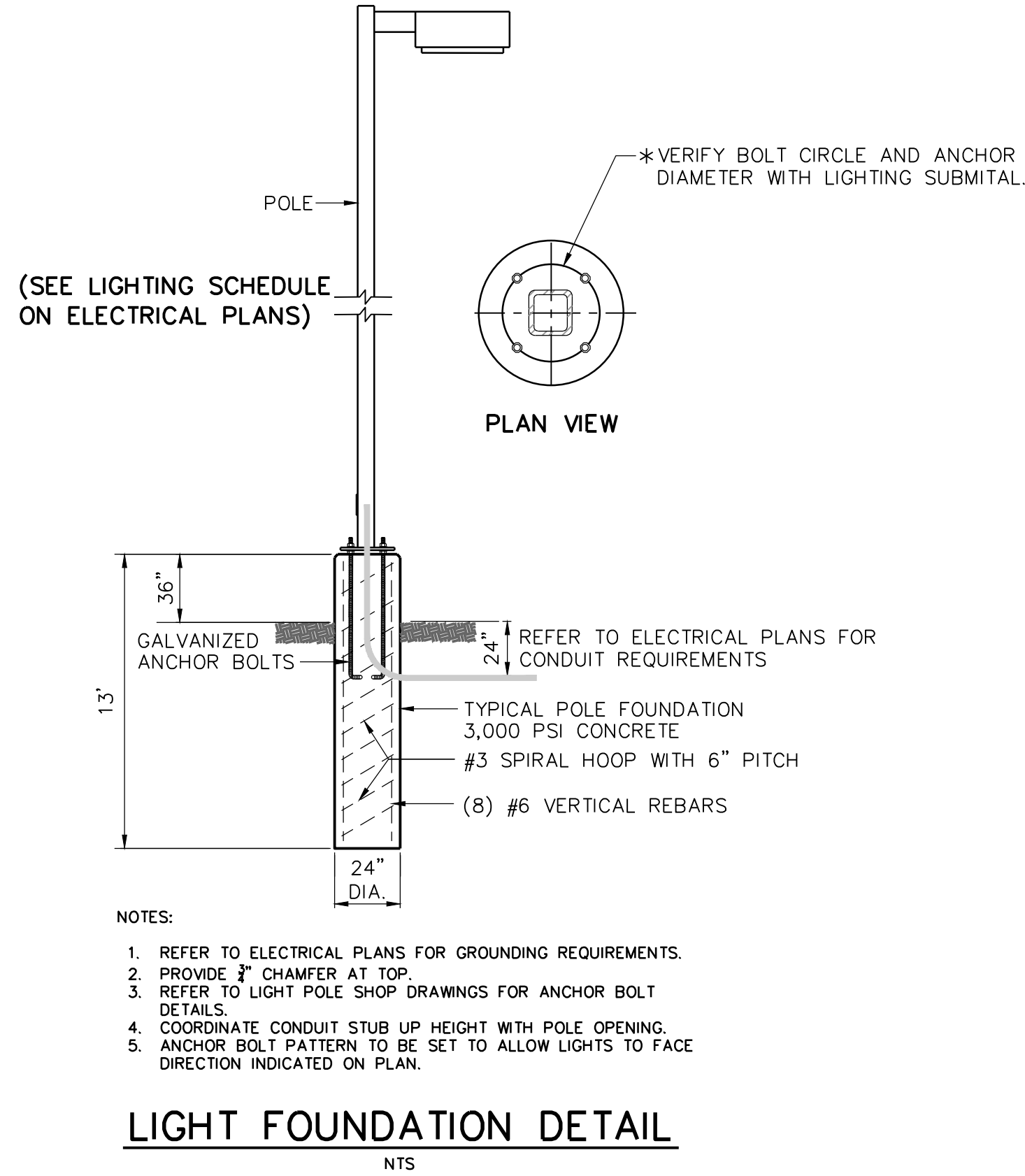
CONTRACTOR TO PROVIDE ENGINEER, FOR PRIOR APPROVAL, JOINT LAYOUT FOR ANY CONCRETE PAVEMENT AREAS.

CONTROL JOINT FOR THIS PROJECT 15' MAXIMUM



ITEM 502-3 WHERE SIDEWALK ABUTS CURB

NOTE:
THIS DETAIL PROVIDED FOR DRIVE GATE POSTS AND FRAME.
USE DD-903-17 FOR FABRIC REQUIREMENTS
SEE SHEET LS3.3 FOR CONCRETE MOW STRIP DETAIL.



- NOTES:
1. REFER TO ELECTRICAL PLANS FOR GROUNDING REQUIREMENTS.
 2. PROVIDE 3" CHAMFER AT TOP.
 3. REFER TO LIGHT POLE SHOP DRAWINGS FOR ANCHOR BOLT DETAILS.
 4. COORDINATE CONDUIT STUB UP HEIGHT WITH POLE OPENING.
 5. ANCHOR BOLT PATTERN TO BE SET TO ALLOW LIGHTS TO FACE DIRECTION INDICATED ON PLAN.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC
ADDRESS: 2722 WEST BITTERS RD, SUITE 106
CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231
PHONE: FAX:
SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A
TOTAL LINEAR FOOTAGE OF PIPE: 6" FM - 1,362 LF 12" GM - 8 LF PLAT NUMBER: 22-11800026
NUMBER OF LOTS: 0 SAWS JOB NO.: 22-1665

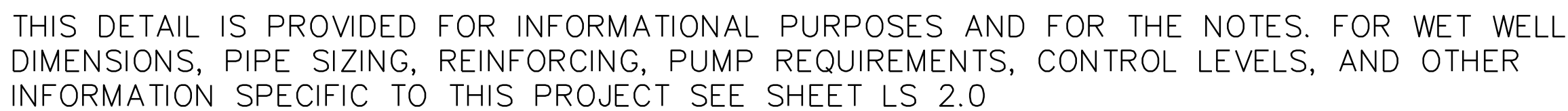
DESIGNED BY:
DRAWN BY:
APPROVED:
JOB NO.:

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY:
ALAN D. LINDSKOG, P.E.
NO. #39706
07/28/2023
ON: DATE

DESCRIPTION
REV DATE

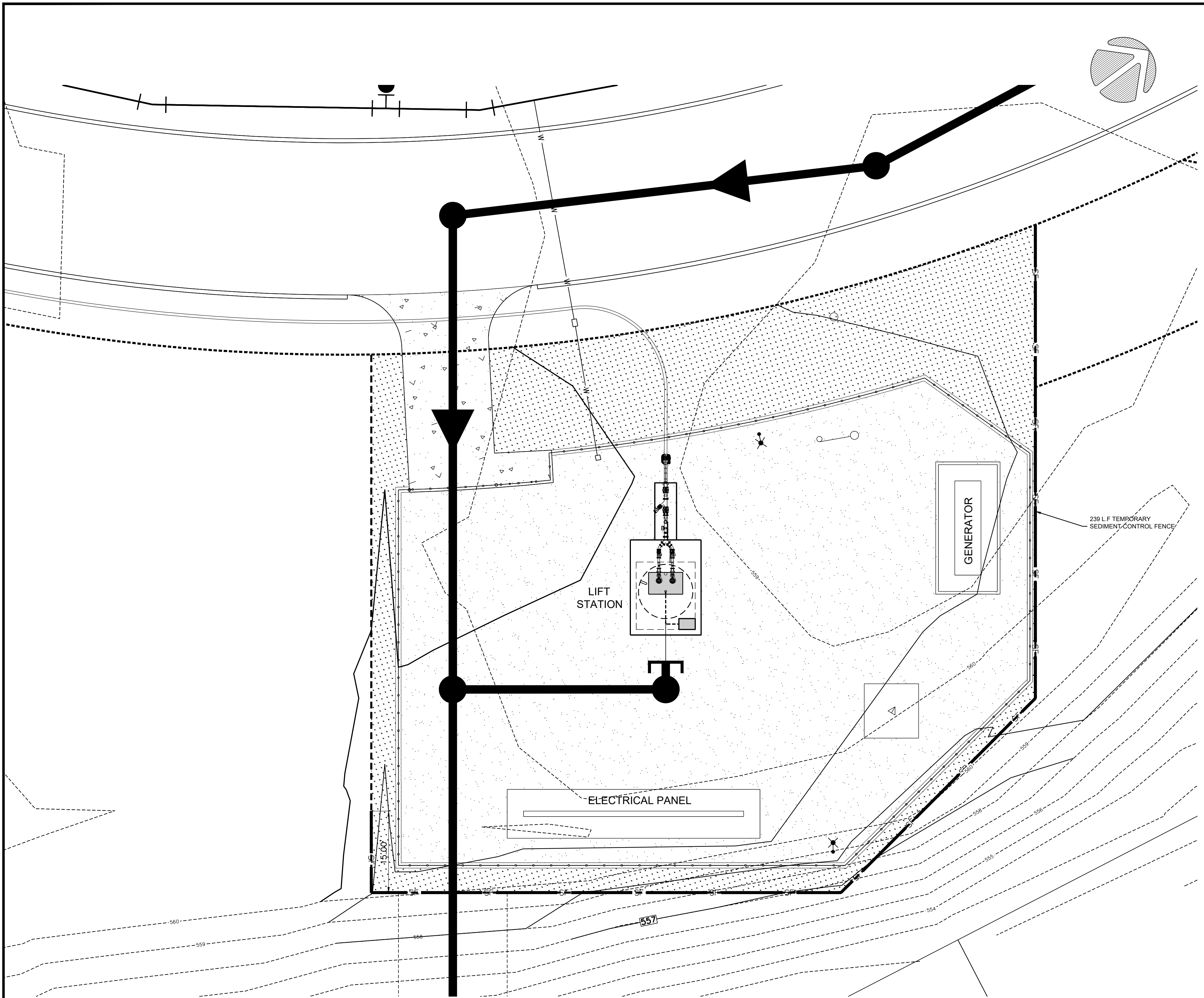
SAN ANTONIO WATER SYSTEM
EASTRIDGE UNIT 1
CIVIL DETAILS

LS3.1

LS3.2

Date: Jul 26, 2023, 10:39am User ID: Lance.Elling
File I: \\develop\\Proj_2021\\E0674101_Eastridge Unit 1\\cadd\\LIFT STATION\\E0674101_L3.2 LIFT STATION DETAILS.dwg

Date: Jul 26, 2023, 10:39am User ID: Lance Elling
File: L:\Views\Projects\2021\Eastridge Unit 1\LS4.dwg
Plot: L:\Views\Projects\2021\Eastridge Unit 1\LS4.dwg



HATCH LEGEND

- SF SILT FENCING
- GRAVEL BAGS OF OR EROSION CONTROL LOGS (SEE NOTES FOR LOCATIONS)
- ROCK BERMS

SWPPP PLAN

SCALE: 1" = 10'

SITE DESCRIPTION	
PROJECT LOCATION: ON HILDEBRANDT ROAD, APPROX. 7,800 FEET EAST OF THE INTERSECTION OF S. W.W. WHITE AND HILDEBRANDT RD.	TOTAL PROJECT AREA: 0.263 ACRES TOTAL AREA TO BE DISTURBED: 0.263 ACRES WEIGHTED RUNOFF COEFFICIENT (AFTER CONSTRUCTION): 0.72 EXISTING CONDITION OF SOIL AND VEGETATIVE COVER AND % OF EXISTING VEGETATIVE COVER: CULTIVATION WITH LESS THAN 5% TREES NAME OF RECEIVING WATERS: UNNAMED TRIBUTARY 04 IN FOSTER CREEK WATERSHED
PROJECT DESCRIPTION: CONSTRUCTION OF SANITARY SEWER LIFT STATION FACILITIES AND 6" FORCE MAIN	
MAJOR SOIL DISTURBING ACTIVITIES: SITE GRADING, CONCRETE DRIVE AND UTILITY CONSTRUCTION, LIFT STATION FOUNDATION CONSTRUCTION, FORCE MAIN INSTALLATION	
EROSION AND SEDIMENT CONTROLS	
SOIL STABILIZATION PRACTICES: ☒ TEMPORARY SEEDING ☒ PERMANENT PLANTING, SODDING, OR SEEDING ☒ MULCHING ☒ SOIL RETENTION BLANKET ☒ BUFFER ZONES ☒ PRESERVATION OF NATURAL RESOURCES OTHER:	OTHER EROSION & SEDIMENT CONTROLS: MAINTENANCE: All erosion and sediment controls will be maintained in good working order. If a repair is necessary, it will be done at the earliest date possible, but no later than 7 calendar days after the surrounding exposed ground has dried sufficiently to prevent further damage from heavy equipment. The areas adjacent to drainage ways shall have priority followed by devices protecting storm sewer inlets. INSPECTION: An inspection will be performed by the owner or contractor's representative every week as well as after every half inch or more of rain (as recorded on a non-freezing rain gauge to be located at the Project Site). An inspection and Maintenance Report will be made per each inspection. Based on the inspection results, the controls shall be revised per the inspection report. WASTE MATERIALS: All waste materials will be collected and stored in a securely lidded metal dumpster. The dumpster will meet all state and local city solid waste management regulations. All trash and construction debris from the site will be deposited in the dumpster. The dumpster will be emptied as necessary or as required by local regulations and the trash will be hauled to a local dump. No construction waste material will be buried on site. HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning, masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization or concrete curing compounds & additives. In the event of a hazardous material spill, the spill coordinator shall be contacted immediately.
STRUCTURAL PRACTICES: ☒ SILT FENCES ☒ HAY BALES ☒ ROCK BERMS ☒ DIVERSION, INTERCEPTOR, OR PERIMETER DIKES ☒ DIVERSION, INTERCEPTOR, OR PERIMETER SWALES ☒ DIVERSION DIKE AND SWALE COMBINATIONS ☒ PIPE SLOPE DRAINS ☒ PAVED FLUMES ☒ ROCK BEDDING AT CONSTRUCTION EXIT ☒ TIMBER MATTING AT CONSTRUCTION EXIT ☒ CHANNEL LINERS ☒ SEDIMENT TRAPS ☒ SEDIMENT BASINS ☒ STORM INLET SEDIMENT TRAP ☒ STONE OUTLET STRUCTURES ☒ CURBS AND GUTTERS ☒ STORM SEWERS ☒ VELOCITY CONTROL DEVICES ☒ GRAVEL FILTER BAGS OTHER:	HAZARDOUS WASTE (INCLUDING SPILL REPORTING): At a minimum, any products in the following categories are considered to be hazardous: paints, acids for cleaning, masonry surfaces, cleaning solvents, asphalt products, chemical additives for soil stabilization or concrete curing compounds & additives. In the event of a hazardous material spill, the spill coordinator shall be contacted immediately. SANITARY WASTE: All sanitary waste will be collected from portable units as necessary, or as required by local regulations by a Licensed Sanitary Waste Management Contractor. OFFSITE VEHICLE TRACKING: ☒ EXCESS DIRT ON ROAD REMOVED ON A REGULAR BASIS. ☒ STABILIZED CONSTRUCTION ENTRANCE OTHER:
NARRATIVE - SEQUENCE OF CONSTRUCTION (STORM WATER MANAGEMENT) ACTIVITIES: PHASE I: 1. INSTALLATION OF SWPPP MEASURES PHASE II: 1. SITE CLEARING AND GRADING PHASE III: 1. SLAB FOUNDATION AND UTILITIES PHASE IV: 1. DRIVEWAY CONSTRUCTION PHASE V: 1. VEGETATION STORM WATER MANAGEMENT: 1. SEE EASTRIDGE UNIT 1 SWPPP	REMARKS: Disposal areas, stockpiles, and haul roads shall be constructed in a manner that will minimize and control the amount of sediment that may enter receiving waters. Disposal areas shall not be located in any wetland, waterbody or streambed. Construction staging areas and vehicle maintenance areas shall be constructed by the Contractor in a manner to minimize the runoff of pollutants. All waterways shall be cleared as soon as practicable of temporary embankment, temporary bridges, matting, falsework, piling, debris or other obstructions placed during construction operations that are not a part of the finished work.

SWPPP REQUIREMENTS:

PRIOR TO START OF ANY CONSTRUCTION ACTIVITIES THE CONTRACTOR SHALL OBTAIN A SWPPP PERMIT FROM BEXAR COUNTY PUBLIC WORKS AND SUBMIT AN NOI TO TCED AND THE SAN ANTONIO WATER SYSTEM, POST REQUIRED SITE NOTICES, AND IMPLEMENT THE SWPPP MEASURES APPLICABLE TO THAT PHASE OF WORK. THE MINIMUM SWPPP MEASURES FOR THIS PROJECT ARE LISTED BELOW AND ABOVE. THE CONTRACTOR MAY MODIFY THESE MEASURES AS LONG AS THE SAME LEVEL OF PROTECTION IS PROVIDED:

EXISTING TREES AND VEGETATION ALONG FENCE LINES AND IN TREE PRESERVATION AREAS SHALL REMAIN UNLESS NOTED OTHERWISE ON LANDSCAPE OR DEMOLITION PLANS.

CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MAINTAINING CONSTRUCTION ENTRANCES, CONCRETE WASHOUT PITS, TRASH AND RECYCLING CONTAINERS AND RESTROOM FACILITIES.

- SITE WORK:**
- PROVIDE SILT FENCE WHERE SHOWN
 - INSTALL GRAVEL FILTER BAGS OR OTHER INLET PROTECTION DEVICES ON CURB AND GRATE INLETS AS INLETS ARE CONSTRUCTED
 - PROVIDE ROCK FILTER DAMS ON POND OUTFALL AND IN CLOVIS BARKER BAR DITCH.
 - REVEGETATE AREAS NOT SCHEDULED FOR PAVEMENT, BUILDINGS, OR AREAS ADDRESSED ON LANDSCAPE PLANS
 - PROVIDE EROSION CONTROL MATTING IN ALL DRAINAGE CHANNELS AND OTHER LOCATIONS SHOWN ON THE PLANS. MATTING SHALL EXTEND TWO FEET OUTSIDE TOP OF CHANNEL AND SHALL BE TOED DOWN A MINIMUM OF 12".

CONSTRUCTION ENTRANCE(S)
CONTRACTOR SHALL CONSTRUCT CONSTRUCTION ENTRANCE(S) AS REQUIRED TO PREVENT TRACKING OF SOIL ONTO ADJACENT STREETS.

CONCRETE WASHOUT "PITS"
CONTRACTOR SHALL ESTABLISH WASHOUT FACILITIES AS REQUIRED FOR CONCRETE WASHOUT WASTE. FACILITIES MAY BE PITS, TANKS, OR OTHER FACILITIES DESIGNED FOR THIS PURPOSE.

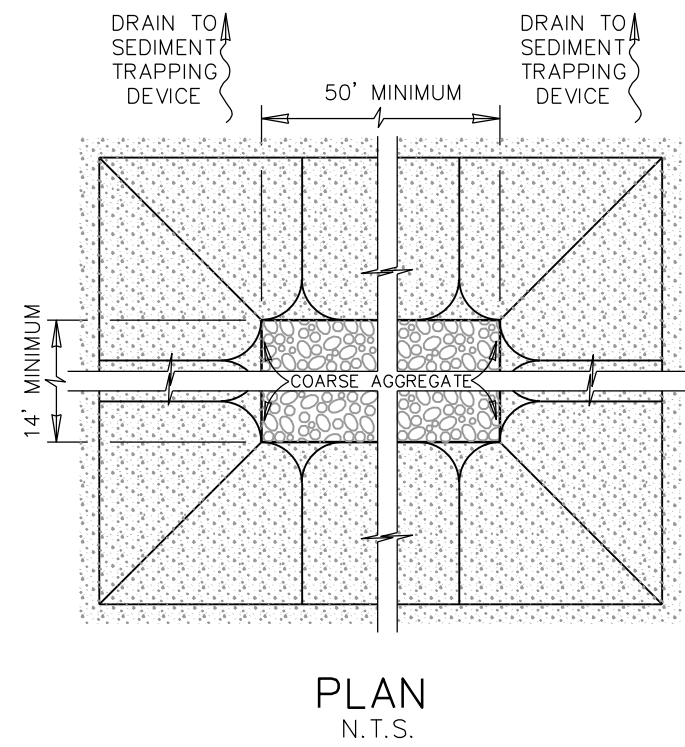
NOTES:
THE SCALE OF THIS SWPPP PRECLUDES SHOWING THE FULL EXTENT OF THE SITE GRADING. FINISH CONTOURS ARE SHOWN. ADDITIONAL INFORMATION ON THE GRADING AND VEGETATIVE RESTORATION MAY BE FOUND ON THE SITE, GRADING, UTILITY AND LANDSCAPE PLANS.
THE SWPPP PROGRAM SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION OF THE ENTIRE PROJECT.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

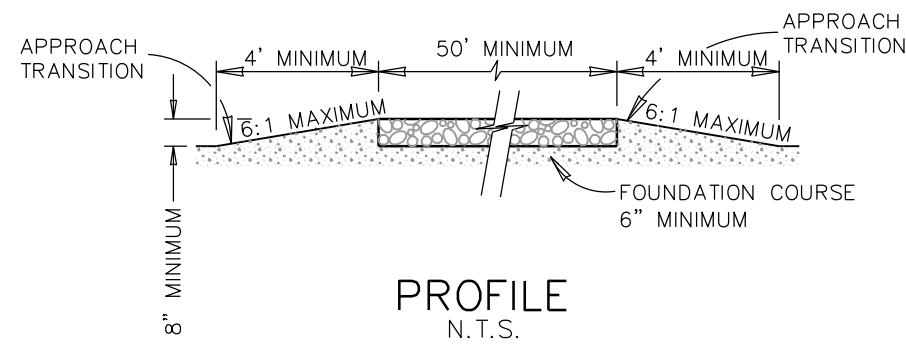
DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC	
ADDRESS: 2722 WEST BITTERS RD, SUITE 106	
CITY: SAN ANTONIO	STATE: TEXAS ZIP: 78231
PHONE:	FAX:
SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A	
6" FM - 1,362 LF	PLAT NUMBER: 22-11800026
12" GM - 8 LF	
TOTAL LINEAR FOOTAGE OF PIPE:	
NUMBER OF LOTS: 0	SAWS JOB NO.: 22-1665

DESIGNED BY:	DON DURDEN, INC.
DRAWN BY:	dba CIVIL ENGINEERING CONSULTANTS
APPROVED:	1550 IH 10 WEST, SUITE 395
JOB NO.:	SAN ANTONIO, TEXAS 78201-1037
	TEL: (210) 841-9980
	FAX: (210) 841-6440
	REGISTRATION #F-2214
CEC	
THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY:	ALAN D. LINDSKOG, P.E.
NO. #39706	07/28/2023
ON: DATE	
SEAL OF THE STATE OF TEXAS	
REGISTERED PROFESSIONAL ENGINEER	
NO. 39706	
EXPIRATION DATE 07/28/2023	
DESCRIPTION	REV DATE
SAN ANTONIO WATER SYSTEM	
EASTRIDGE UNIT 1	
6" FORCE MAIN	
SEDIMENTATION & EROSION CONTROL PLAN	
SHEET NO.	
LS4.0	

Date: Jul 26, 2023, 10:40am User ID: Lance.Elling File: L:\Viewsp\Proj\2021\Eastridge Unit 1\cadd\UFT STA TION\EDS74101_LS4_1_SWPDP DETAILS.dwg



PLAN
N.T.S.

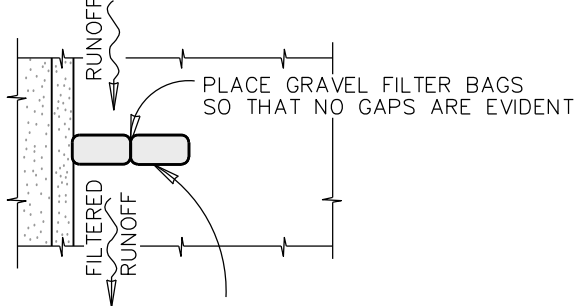


PROFILE
N.T.S.

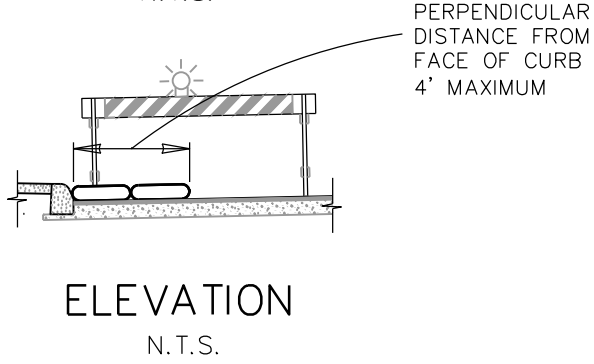
GENERAL NOTES

1. THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
3. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
4. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
6. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 1



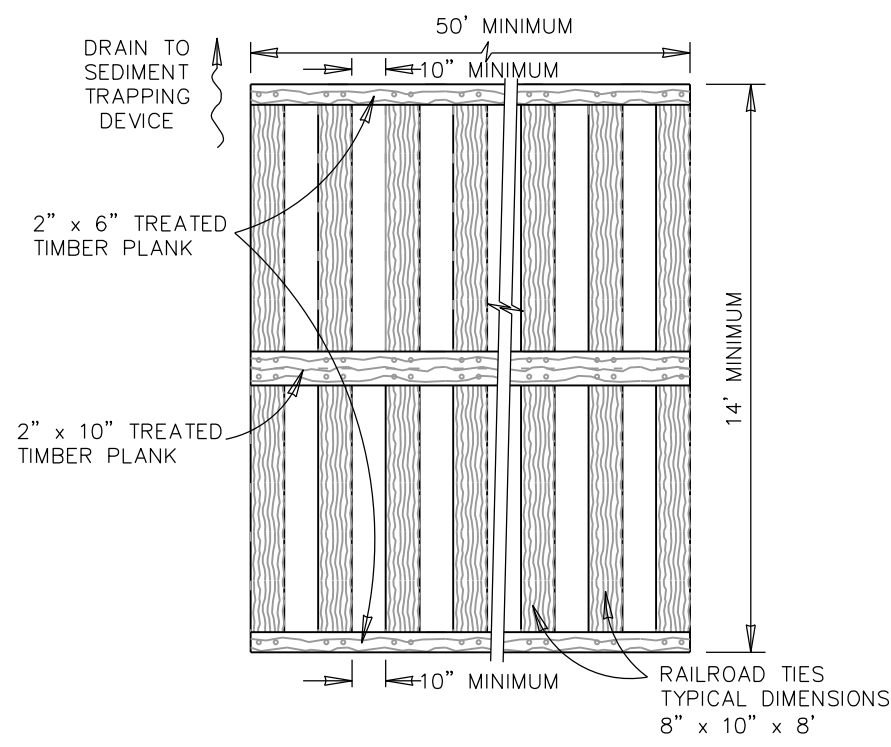
PLAN
N.T.S.



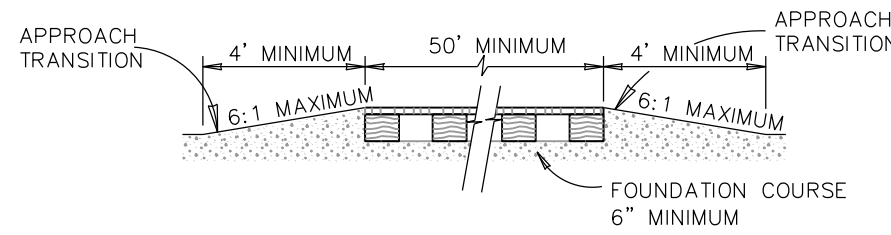
ELEVATION
N.T.S.

NOTE:
STRADDLE GRAVEL FILTER BAGS WITH TYPE 1 BARRICADES MOUNTED WITH TYPE "A" FLASHING WARNING LIGHT. SEE BARRICADE CONSTRUCTION SIGN DETAILS. PLACE FLASHING LIGHTS AWAY FROM GUTTER, FLUSH WITH OUTSIDE EDGE OF BAG CONFIGURATION.

GRAVEL FILTER BAGS



PLAN
N.T.S.

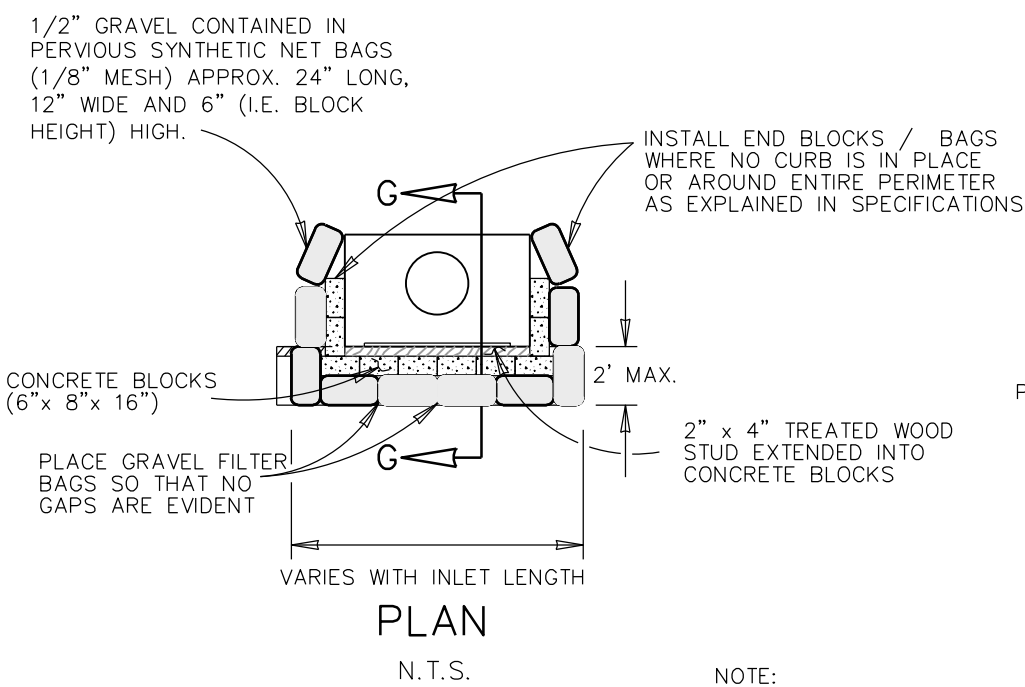


PROFILE
N.T.S.

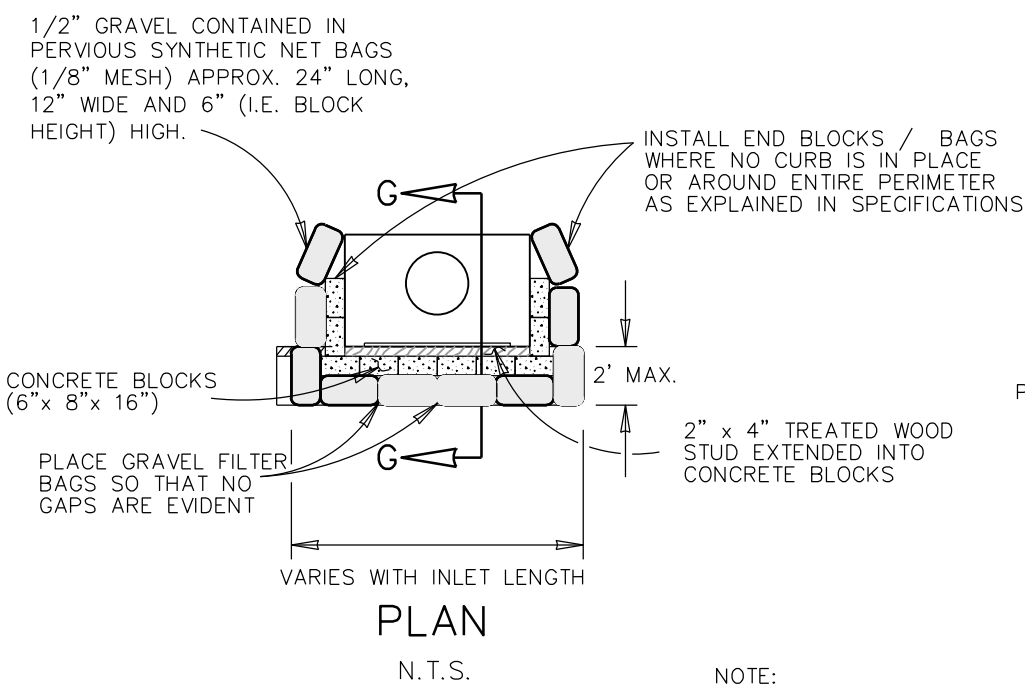
GENERAL NOTES

1. THE LENGTH OF THE TYPE 2 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 50'.
2. THE TREATED TIMBER PLANKS SHALL BE ATTACHED TO THE RAILROAD TIES WITH 1/2" x 6" MIN. LAG BOLTS. OTHER FASTENERS MAY BE USED AS APPROVED BY THE ENGINEER.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6 : 1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
5. THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
6. THE CONSTRUCTION EXIT SHOULD BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
7. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 2



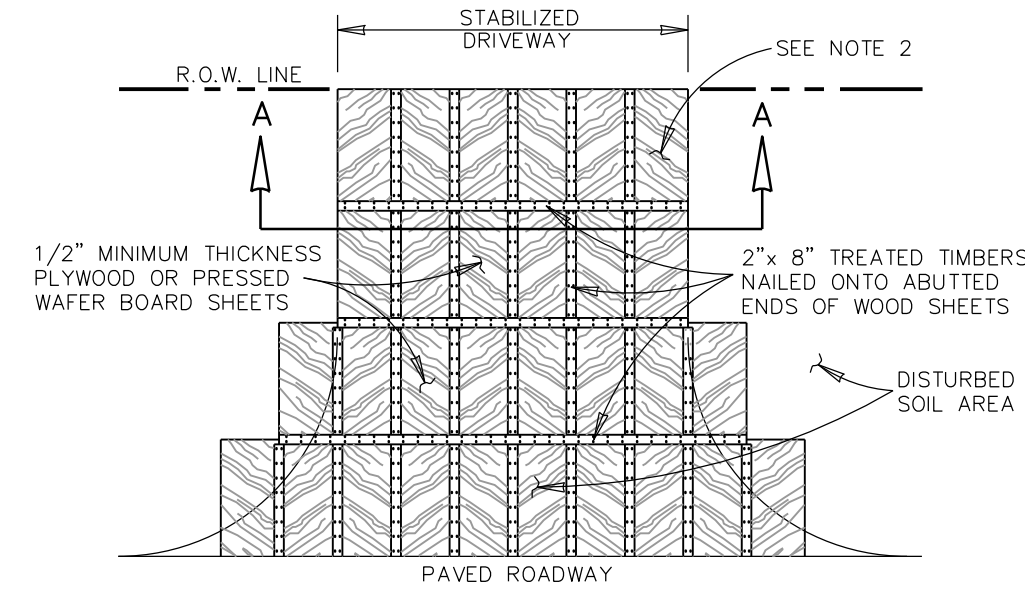
PLAN
N.T.S.



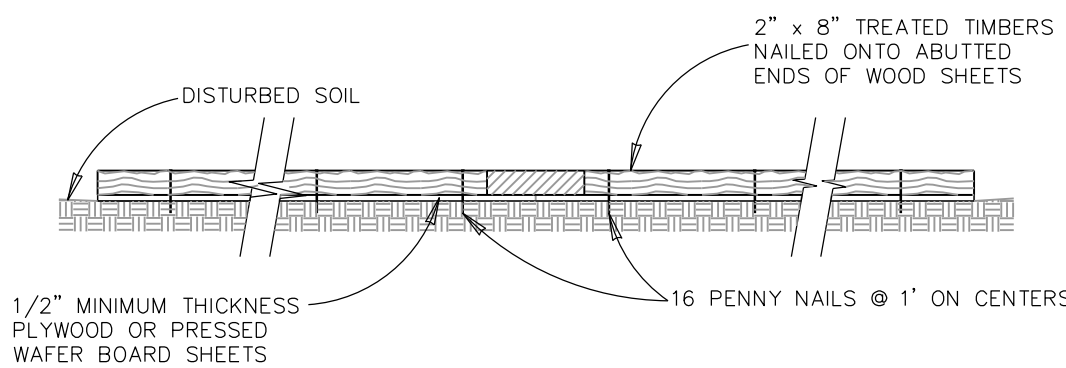
ELEVATION
N.T.S.

NOTE:
GRAVEL FILTERS CAN BE USED ON PAVEMENT OR BARE GROUND.

CURB INLET GRAVEL FILTER



PLAN
N.T.S.

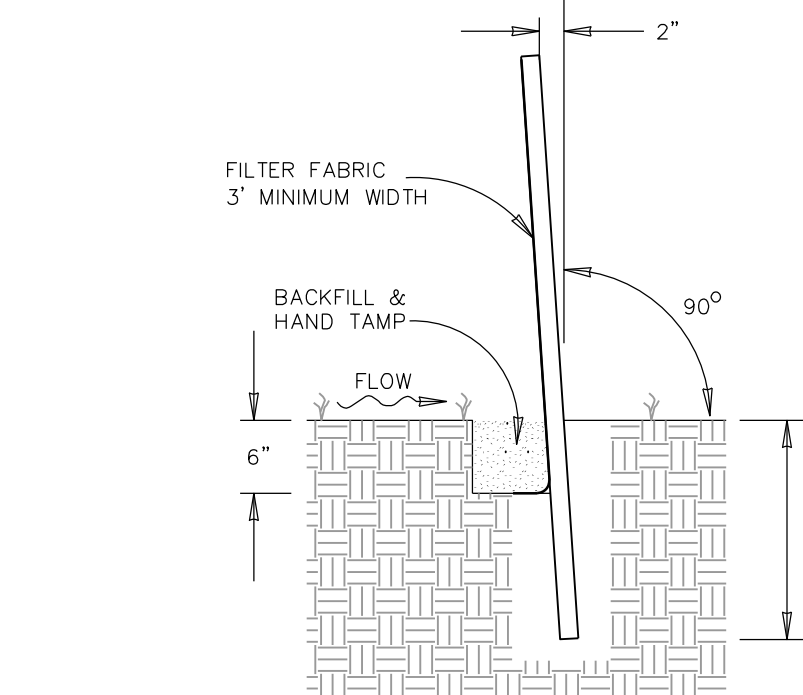


SECTION A-A
N.T.S.

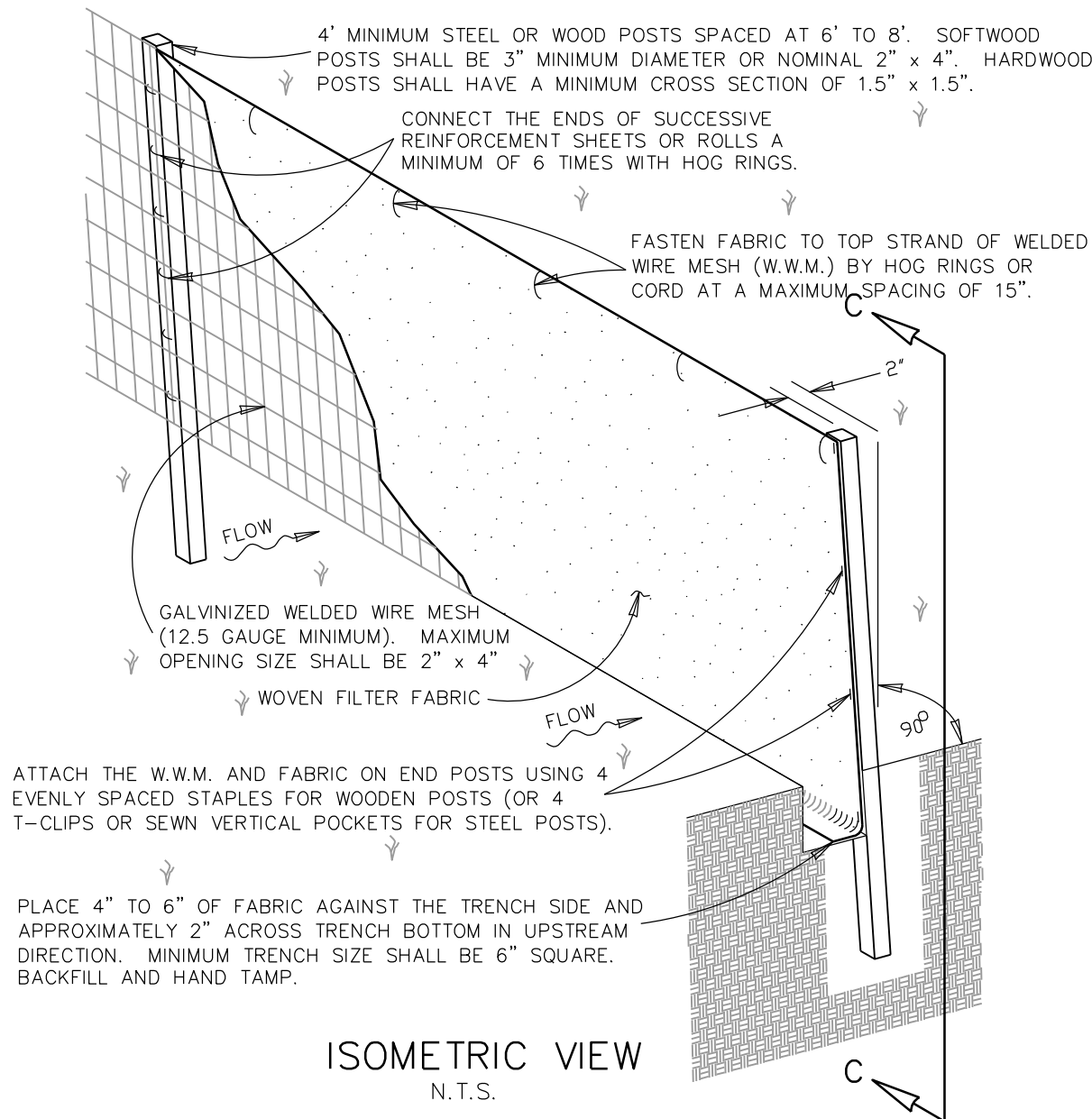
GENERAL NOTES

1. THE LENGTH OF THE TYPE 3 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, OR AS DIRECTED BY THE ENGINEER.
2. THE TYPE 3 CONSTRUCTION EXIT MAY BE CONSTRUCTED FROM OPEN GRADED CRUSHED STONE WITH A SIZE OF 2 TO 4 INCHES SPREAD A MINIMUM OF 4 INCHES THICK TO THE LIMITS SHOWN ON THE PLANS.
3. THE TREATED TIMBER PLANKS SHALL BE #2 GRADE MIN., AND SHOULD BE FREE FROM LARGE AND LOOSE KNOTS.
4. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

CONSTRUCTION EXIT – TYPE 3



SECTION C-C
N.T.S.



ISOMETRIC VIEW
N.T.S.

SEDIMENT CONTROL FENCE USAGE GUIDELINES

A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUN-OFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 100 GPM / FT SQUARED. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES.

GENERAL NOTES

1. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

TEMPORARY SEDIMENT CONTROL FENCE

EAST SEWERSHED (SALADO WATERSHED) – DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO

STATE: TEXAS

ZIP: 78231

PHONE:

FAX:

SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXX

TOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 6" FM – 1,362 LF

12" GM – 8 LF

PLAT NUMBER: 22-11800026

NUMBER OF LOTS: 0

SAWS JOB NO.: 22-1665

SAN ANTONIO WATER SYSTEM

EASTRIDGE UNIT 1

6" FORCE MAIN

SEDIMENTATION & EROSION CONTROL DETAILS

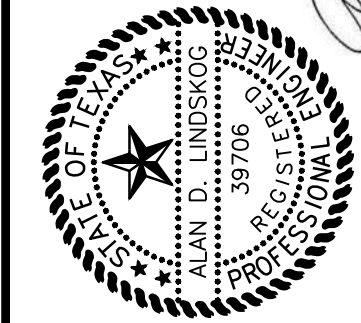
SHEET NO.

LS4.1

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY: ALAN D. LINDSKOG, P.E. NO. #39706

ON: 07/26/2023

DATE



DESCRIPTION

REV

DATE

DATE

DATE

DATE

DATE

DATE

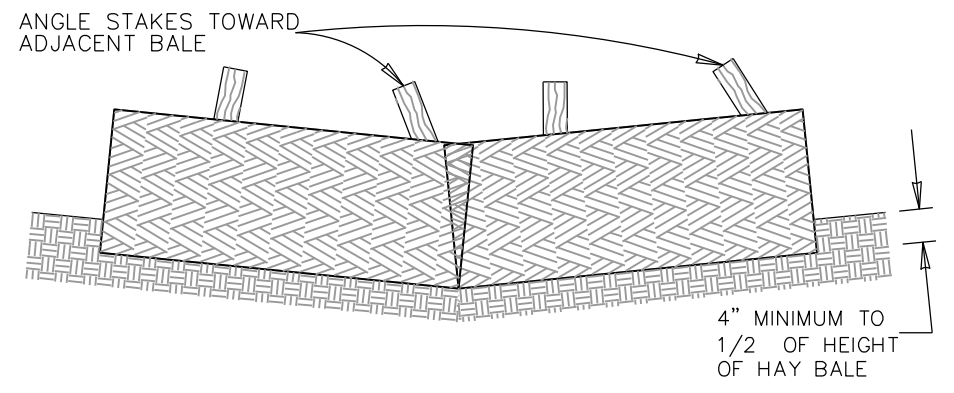
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DATE

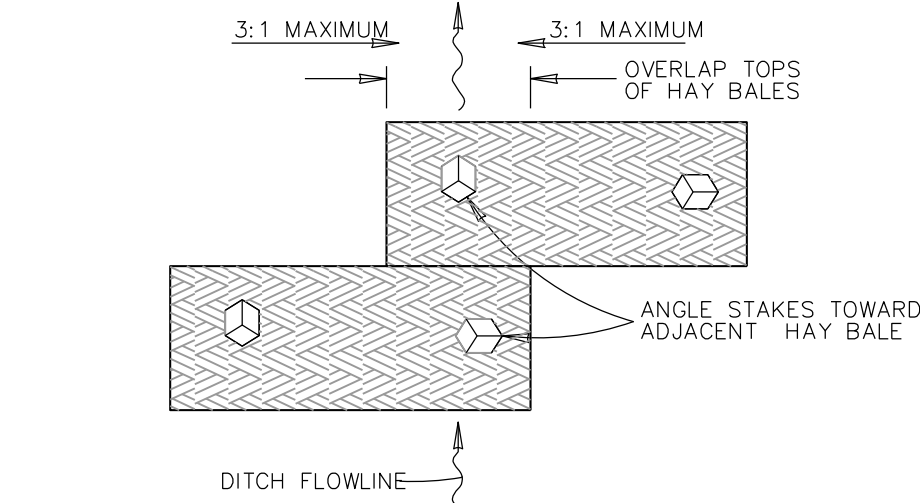
DESIGNED BY:
DRAWN BY:
APPROVED:
JOB NO:

DON DURDEN, INC.
dba CIVIL ENGINEERING CONSULTANTS
13550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78231
TEL: (210) 841-9980
FAX: (210) 841-6440
REGISTRATION #F-2214

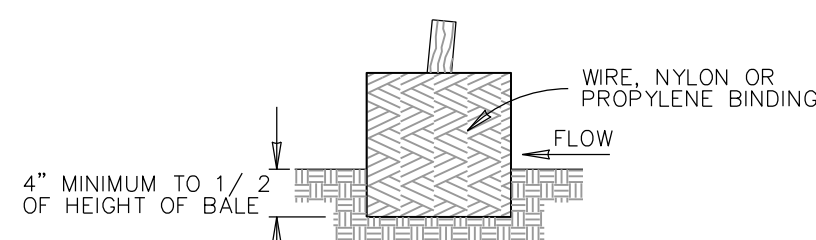




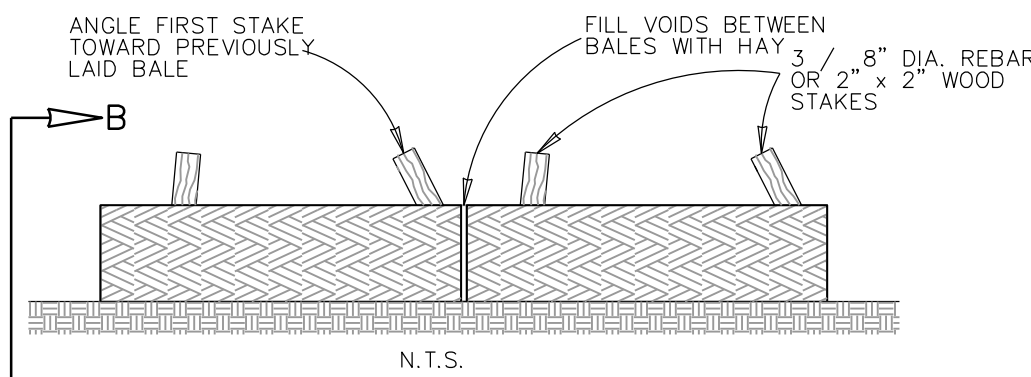
PROFILE VIEW
N.T.S.



PLAN VIEW
N.T.S.



SECTION B-B
SCALE : 1" = 1'



BALED HAY USAGE GUIDELINES

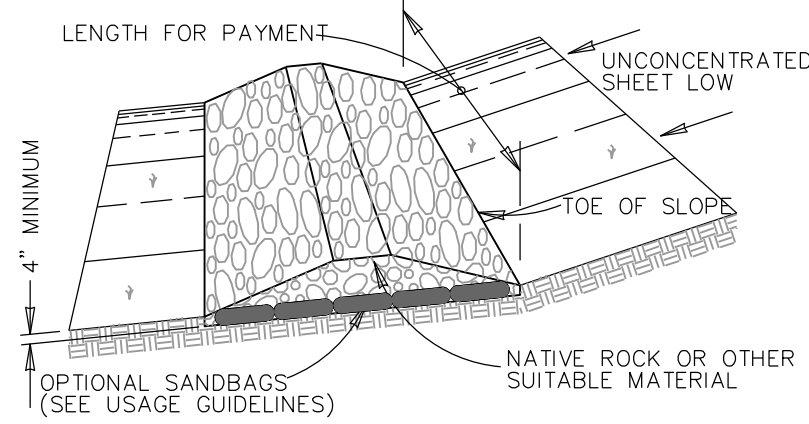
A BAILED HAY INSTALLATION MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A TWO YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. THE INSTALLATION SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 5 GPM / FT SQUARED OF CROSS SECTIONAL AREA. BALED HAY MAY BE USED AT THE FOLLOWING LOCATIONS:

- WHERE THE RUNOFF APPROACHING THE BALED HAY FLOWS OVER DISTURBED SOIL FOR LESS THAN 100'. IF THE SLOPE OF THE DISTURBED SOIL EXCEEDS 10 %, THE LENGTH OF SLOPE UPSTREAM OF THE BAILED HAY SHOULD BE LESS THAN 50'.
- WHERE THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 1/2 ACRE. FOR BALED HAY INSTALLATIONS IN SMALL DITCHES, THE FOLLOWING ADDITIONAL CONSIDERATIONS APPLY:
- A. THE DITCH SIDESLOPES SHOULD BE GRADED AS FLAT AS POSSIBLE TO MAXIMIZE THE DRAINAGE FLOW RATE THRU THE HAY.
- B. THE DITCH SHOULD BE GRADED LARGE ENOUGH TO CONTAIN THE OVERLAPPING DRAINAGE WHEN SEDIMENT HAS FILLED TO THE TOP OF THE BAILED HAY. BALES SHOULD BE REPLACED USUALLY EVERY 2 MONTHS OR MORE OFTEN DURING WET WEATHER WHEN LOSS OF STRUCTURAL INTEGRITY IS ACCELERATED.

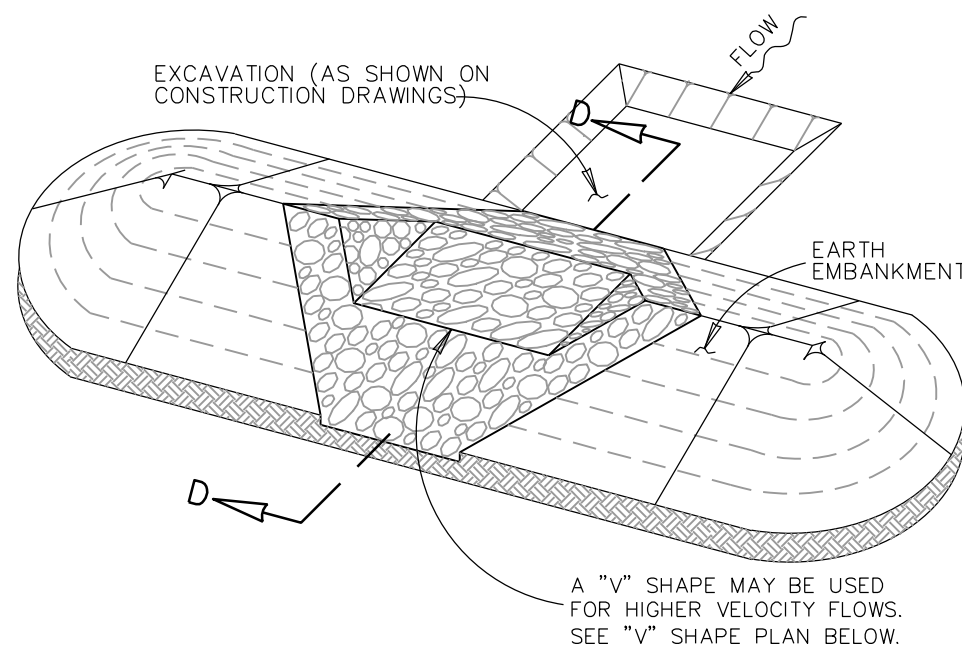
GENERAL NOTES

- HAY BALES SHALL BE A MINIMUM OF 30" IN LENGTH AND WEIGH A MINIMUM OF 50 LBS.
- HAY BALES SHALL BE BOUND BY EITHER WIRE OR NYLON OR POLYPROPYLENE STRING. THE BALES SHALL BE COMPOSED ENTIRELY OF VEGETABLE MATTER.
- HAY BALES SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4" AND, WHERE POSSIBLE, ONE-HALF THE HEIGHT OF THE BALE.
- HAY BALES SHALL BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES. THE BALES SHALL BE PLACED WITH BINDINGS PARALLEL TO THE GROUND.
- HAY BALES SHALL BE SECURELY ANCHORED IN PLACE WITH 3/8" DIA. REBAR OR 2"x 2" WOOD STAKES DRIVEN THROUGH THE BALES. THE FIRST STAKE SHALL BE ANGLED TOWARDS THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
- THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

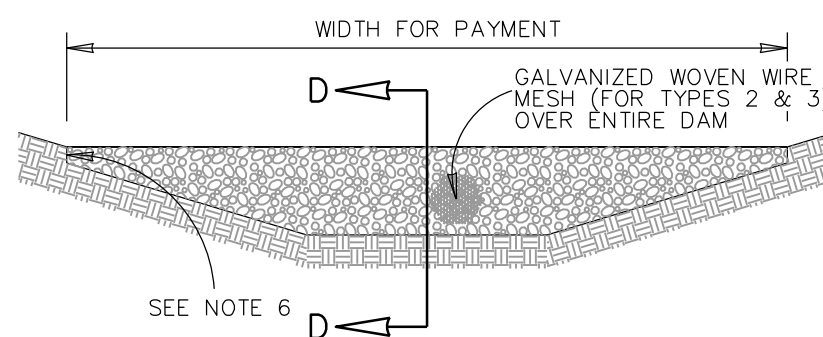
BALED HAY FOR EROSION CONTROL



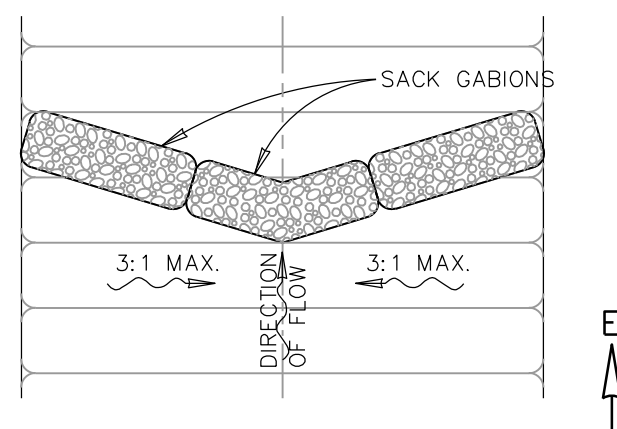
TYPE 1 FILTER DAM AT
TOE OF SLOPE
N.T.S.



TYPE 1 & 2 FILTER DAM AT
SEDIMENT TRAP
N.T.S.



TYPE 1, 2 & 3 FILTER DAM
AT CHANNEL SECTIONS
N.T.S.



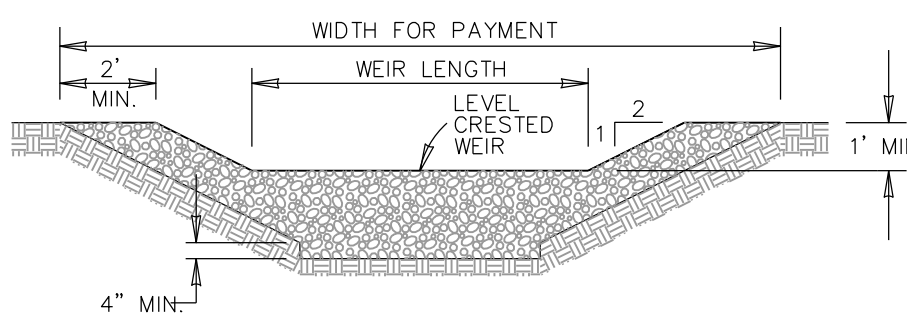
PLAN VIEW
N.T.S.

TYPE 4 FILTER DAM AT DITCHES
& SMALLER CHANNELS PLAN VIEW

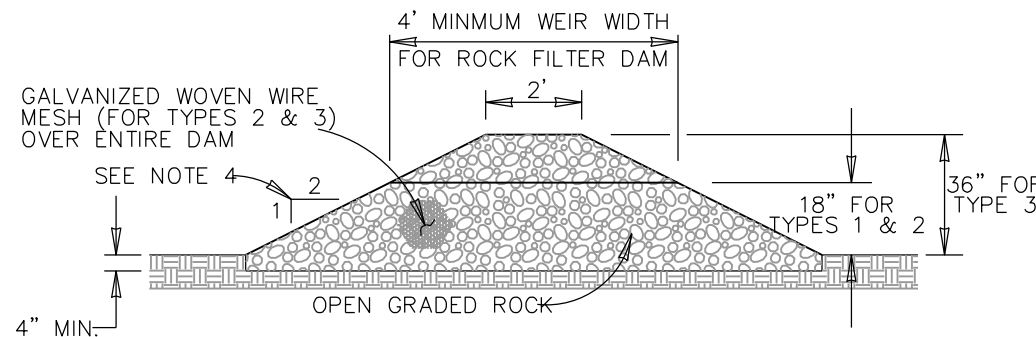
ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND / OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM / FT SQUARED OF CROSS SECTIONAL AREA. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE.

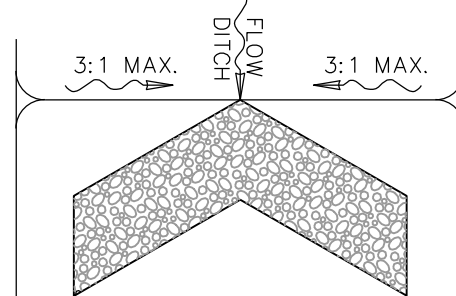
- TYPE 1 (18" HIGH WITH NO WIRE MESH) :
TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCENTRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT / SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- TYPE 2 (18" HIGH WITH WIRE MESH) :
TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.
- TYPE 3 (36" HIGH WITH WIRE MESH) :
TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.
- TYPE 4 (SACK GABIONS) :
TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION CONTROL DAM.



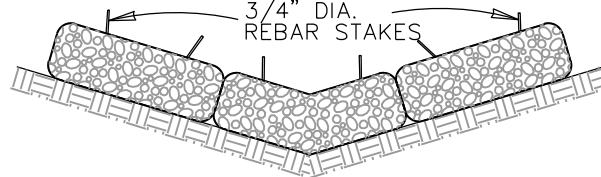
PROFILE OF TYPE 1 & 2 FILTER
DAM AT SEDIMENT TRAP
N.T.S.



SECTION D-D
N.T.S.



"V" SHAPE
PLAN VIEW
N.T.S.

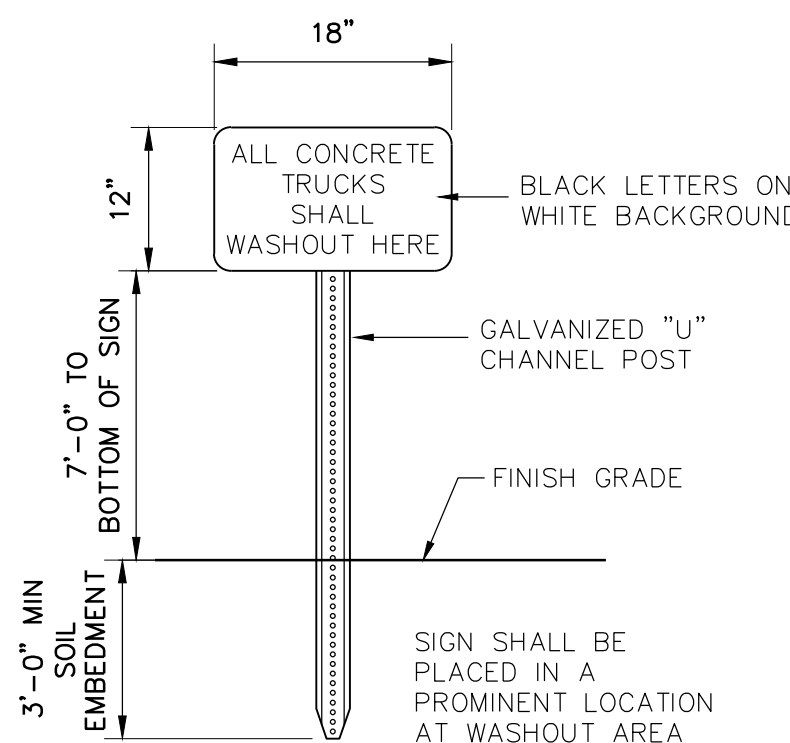


SECTION E-E
N.T.S.

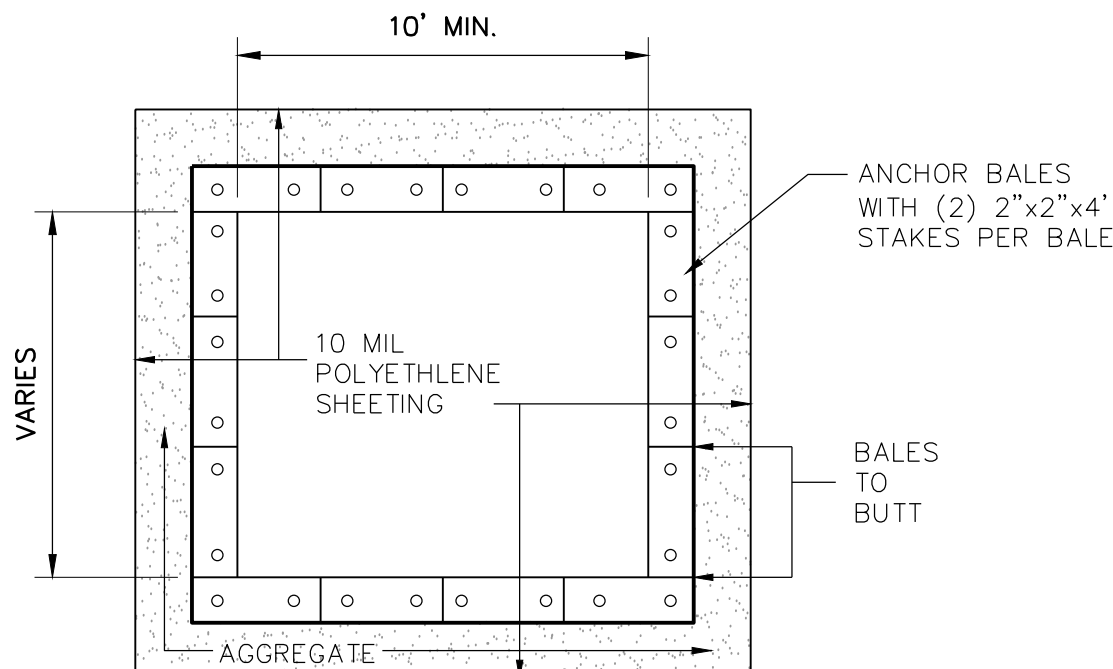
ROCK FILTER DAMS

GENERAL NOTES

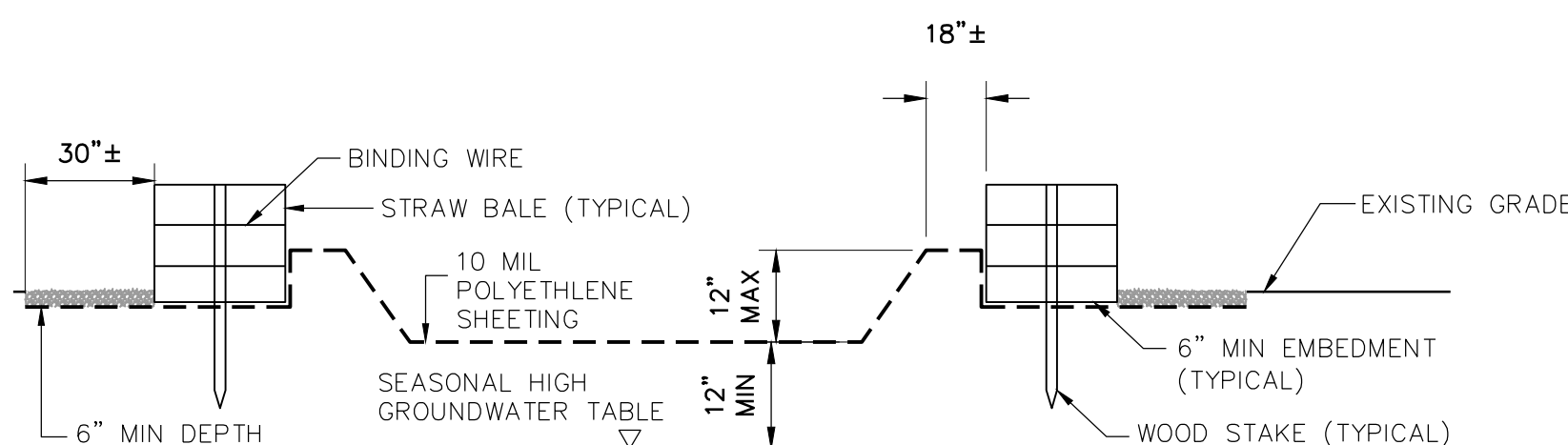
- IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND /OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.
- MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.
- THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.
- SIDE SLOPES SHOULD BE 2:1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6:1 OR FLATTER.
- MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.
- FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.
- THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.
- ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOO RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.
- SACK GABIONS SHOULD BE STAKED DOWN WITH 3/4" DIA. REBAR STAKES.
- FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).
- THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.



WASHOUT SIGN
NOT TO SCALE

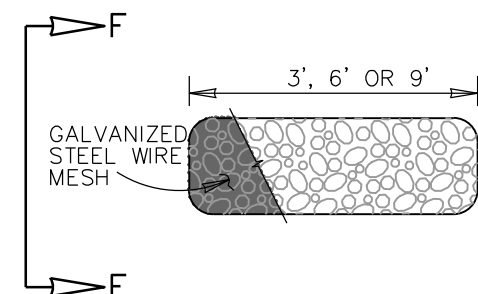


PLAN VIEW

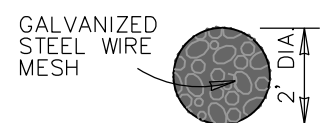


PROFILE VIEW

CONCRETE WASHOUT
NOT TO SCALE



TYPE 4 SACK GABION DETAIL
N.T.S.



SECTION F-F
N.T.S.

DESIGNED BY:

DRAWN BY:

APPROVED:

JOB NO:

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REGISTERED PROFESSIONAL ENGINEER
CIVIL
STATE OF TEXAS
NO. 39706
EXPIRATION DATE 07/28/2023

SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY:
ALAN D. LINDSKOG, P.E.
NO. #39706
ON: 07/28/2023
DATE

DESCRIPTION

REV

DATE

SAN ANTONIO WATER SYSTEM

EASTRIDGE UNIT 1
6" FORCE MAIN
SEDIMENTATION & EROSION CONTROL DETAILS

SHEET NO.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT LLC

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

PHONE: FAX:

SAWS BLOCK MAP: 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A

200544 6" FM - 1,362 LF

TOTAL LINEAR FOOTAGE OF PIPE: 12" GM - 8 LF PLAT NUMBER: 22-11800026

NUMBER OF LOTS: 0 SAWS JOB NO.: 22-1665

LS4.2

ELECTRICAL LEGEND																																																																																							
ELECTRICAL SYMBOLS		SWITCHGEAR / MCC SYMBOLS		I/O SYMBOL LEGEND		P&ID SYMBOLS																																																																																	
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION																																																																																
	CONVENIENCE RECEPTACLE-DUPLEX UNLESS SPECIFIED OTHERWISE CR = CORROSION RESISTANT WP = WEATHERPROOF GFI = GROUND FAULT INTERRUPTER		SOLID STATE OVERLOAD RELAY MOTOR OVERLOAD, PHASE LOSS,AND CURRENT UNBALANCE PROTECTION		DIGITAL INPUT		SWING CHECK VALVE																																																																																
	RECEPTACLE - 240V., 1ϕ OR 208V., 1ϕ	ELECTRICAL ABBREVIATIONS					GATE VALVE																																																																																
	CONTACT - NORMALLY OPEN	<table><tr><td>ATS</td><td>AUTOMATIC TRANSFER SWITCH</td><td>LS,LMS</td><td>LIMIT SWITCH</td></tr><tr><td>AUTO</td><td>AUTOMATIC</td><td>G</td><td>GREEN INDICATING LIGHT</td></tr><tr><td>AUX</td><td>AUXILIARY</td><td>M</td><td>MAGNETIC CONTACTOR COIL</td></tr><tr><td>BC</td><td>BYPASS CONTACTOR</td><td>M</td><td>ELECTRIC MOTOR</td></tr><tr><td>CC</td><td>CONTROL CABLE</td><td>M</td><td>MAIN CONTACTOR AUXILIARY</td></tr><tr><td>CPT</td><td>CONTROL POWER TRANSFORMER</td><td>MIN</td><td>MINUTES</td></tr><tr><td>CR</td><td>CONTROL RELAY</td><td>MTS</td><td>MANUAL TRANSFER SWITCH</td></tr><tr><td>CS</td><td>CONTROL SWITCH</td><td>N</td><td>NEUTRAL GROUNDED</td></tr><tr><td>CT</td><td>CURRENT TRANSFORMER</td><td>OC</td><td>OVERCURRENT</td></tr><tr><td>EI</td><td>ELECTRICAL INTERRUPT</td><td>PH</td><td>PHASE</td></tr><tr><td>ETM</td><td>ELAPSED TIME METER</td><td>RVSS</td><td>REDUCED VOLTAGE SOFT START</td></tr><tr><td>FLA</td><td>FULL LOAD AMPERE</td><td>SA</td><td>SURGE ARRESTOR</td></tr><tr><td>FU</td><td>FUSE</td><td>SEC</td><td>SECONDS</td></tr><tr><td>FVNR</td><td>FULL VOLTAGE NON-REVERSING</td><td>SPD</td><td>SURGE PROTECTIVE DEVICE</td></tr><tr><td>HOA</td><td>HAND OFF AUTOMATIC SWITCH</td><td>TR</td><td>TIMER</td></tr><tr><td>ISW</td><td>ISOLATION SWITCH</td><td>V</td><td>VOLT</td></tr><tr><td>J,JB</td><td>JUNCTION BOX</td><td>WP</td><td>WEATHER PROOF</td></tr><tr><td>KVA</td><td>KILOVOLT-AMPERE</td><td>XFMR</td><td>TRANSFORMER</td></tr><tr><td>KW</td><td>KILOWATT</td><td></td><td></td></tr><tr><td>LC</td><td>LINE CONTACTOR</td><td></td><td></td></tr></table>				ATS	AUTOMATIC TRANSFER SWITCH	LS,LMS	LIMIT SWITCH	AUTO	AUTOMATIC	G	GREEN INDICATING LIGHT	AUX	AUXILIARY	M	MAGNETIC CONTACTOR COIL	BC	BYPASS CONTACTOR	M	ELECTRIC MOTOR	CC	CONTROL CABLE	M	MAIN CONTACTOR AUXILIARY	CPT	CONTROL POWER TRANSFORMER	MIN	MINUTES	CR	CONTROL RELAY	MTS	MANUAL TRANSFER SWITCH	CS	CONTROL SWITCH	N	NEUTRAL GROUNDED	CT	CURRENT TRANSFORMER	OC	OVERCURRENT	EI	ELECTRICAL INTERRUPT	PH	PHASE	ETM	ELAPSED TIME METER	RVSS	REDUCED VOLTAGE SOFT START	FLA	FULL LOAD AMPERE	SA	SURGE ARRESTOR	FU	FUSE	SEC	SECONDS	FVNR	FULL VOLTAGE NON-REVERSING	SPD	SURGE PROTECTIVE DEVICE	HOA	HAND OFF AUTOMATIC SWITCH	TR	TIMER	ISW	ISOLATION SWITCH	V	VOLT	J,JB	JUNCTION BOX	WP	WEATHER PROOF	KVA	KILOVOLT-AMPERE	XFMR	TRANSFORMER	KW	KILOWATT			LC	LINE CONTACTOR				PUMP
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	CONTACT - NORMALLY CLOSED	INSTRUMENTATION SYMBOLS																																																																																					
	THERMAL OVERLOAD HEATER - AMBIENT COMPENSATED	SYMBOL	DESCRIPTION																																																																																				
	CIRCUIT BREAKER - THERMAL MAGNETIC 3 POLE UNLESS INDICATED OTHERWISE CONTINUOUS AMP TRIP SETTING INDICATED		FIELD MOUNTED INSTRUMENT																																																																																				
	MOMENTARY PUSHBUTTON NORMALLY OPEN		LOCAL CONTROL PANEL MOUNTED INSTRUMENT																																																																																				
	MOMENTARY PUSHBUTTON NORMALLY CLOSED		POINT MONITORED BY SCADA																																																																																				
	FUSED SWITCH - SWITCH AND FUSE CURRENT RATING INDICATED. 3 POLE UNLESS INDICATED OTHERWISE.	INSTRUMENTATION IDENTIFICATION																																																																																					
	SWITCH - CURRENT RATING INDICATED. 3 POLE UNLESS INDICATED OTHERWISE	LIC	LEVEL INDICATING CONTROLLER																																																																																				
	FUSED TERMINAL BLOCK	PIT	PRESSURE INDICATING TRANSMITTER																																																																																				
	ALARM HORN AND BEACON	LAH	LEVEL ALARM HIGH																																																																																				
<table><tr><td></td><td colspan="3">POSITION</td><td></td></tr><tr><td>POLE</td><td>HAND</td><td>OFF</td><td>AUTO</td><td></td></tr><tr><td>1</td><td>X</td><td>0</td><td>0</td><td>X = CLOSED CONTACT 0 = OPEN CONTACT</td></tr><tr><td>2</td><td>0</td><td>0</td><td>X</td><td></td></tr></table>		POSITION				POLE	HAND	OFF	AUTO		1	X	0	0	X = CLOSED CONTACT 0 = OPEN CONTACT	2	0	0	X		TAH	TEMPERATURE ALARM HIGH																																																																	
	POSITION																																																																																						
POLE	HAND	OFF	AUTO																																																																																				
1	X	0	0	X = CLOSED CONTACT 0 = OPEN CONTACT																																																																																			
2	0	0	X																																																																																				
	GROUND	TT	TEMPERATURE TRANSMITTER																																																																																				
	TRANSFORMER	P&ID ABBREVIATION INDEX																																																																																					
	MOTOR, SQUIRREL CAGE INDUCTION-HORSEPOWER INDICATED ON ONE LINE.	BYP/SS	BYPASS OR SOFT START SELECTION																																																																																				
	LUMINAIRE, POLE MOUNTED. • INDICATES FOUNDATION	ETM	ELAPSED TIME METER																																																																																				
	INDICATING LIGHT-PUSH TO TEST (PTT) LETTER INDICATES COLOR. A = AMBER Y = YELLOW G = GREEN B = BLUE R = RED W = WHITE	HOA	HAND OFF AUTOMATIC																																																																																				
	MOTOR OR STARTER ENCLOSURE SPACE HEATER	HLR	HIGH LEVEL RELAY																																																																																				
	BASIC RELAY SYMBOL-SOME RELAY FUNCTIONS: ALT = ALTERNATOR CR = CONTROL RELAY TR = TIMING RELAY M = MOTOR CONTACTOR	ILP	INFLUENT LIFT PUMP																																																																																				
	THERMOSTAT	IR	ISOLATION RELAY																																																																																				
	LEVEL FLOAT	LC	LINE CONTACTOR																																																																																				
	GROUNDING CONNECTION EXOTHERMIC OR COMPRESSION	LLR	LOW LEVEL RELAY																																																																																				
	GATE FLEXIBLE GROUNDING STRAP.	LS	LIFT STATION																																																																																				
	GROUND ROD CONNECTION 3/4" X 10' LONG.	OL	MOTOR OVERLOAD																																																																																				
	TEST WELL WITH GROUND ROD CONNECTION 3/4" X 10' LONG.	OT	OVERTEMPERATURE																																																																																				
	ABOVE GRADE TAIL FOR EQUIPMENT CONNECTION. TO BE LOCATED FOR PROPER EQUIPMENT ENTRANCE. PENETRATION THRU CONCRETE TO HAVE SCHEDULE 80 PVC PIPE SEGMENT.	PLR	PHASE LOSS RELAY																																																																																				
	GROUND MOISTURIZING PORT	TR	TIMING RELAY																																																																																				
		SL	SEAL LEAK																																																																																				
		SS	SELECTOR SWITCH																																																																																				
		TF	TRANSFER FAIL RELAY																																																																																				
		(*) WHEN USED, EXPLANATION IS SHOWN ADJACENT TO INSTRUMENT SYMBOL. SEE ABBREVIATIONS AND LETTER SYMBOLS.																																																																																					

EAST SEWERSHED (SALADO WATERSHED) – DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIOSTATE: TEXASZIP: 78231

PHONE: —FAX:

SAWS BLOCK MAP# 200542200544190542TOTAL EDU'S: XXXXTOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 8"FM– 2,201 LFTOTAL 12"GM– 10 LFTOTAL PLAT NUMBER: 22–1180026

NUMBER OF LOTS: 0SAWS JOB NO.: XX–XXXX

DESIGNED BY: CC, BD

DRAWN BY: SG

APPROVED: SM

JOB NO.: E0607100

D O N D U R D E N I N C
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-8440
REGISTRATION #F-2214

8/7/2023

DESCRIPTION

REV | DATE

SAN ANTONIO WATER SYSTEM

LIFT STATION
EASTRIDGE UNIT 1

ELECTRICAL LEGEND

SHEET NO.

E1



- B** 120/240V POWER PANEL
SCALE: N.T.S.

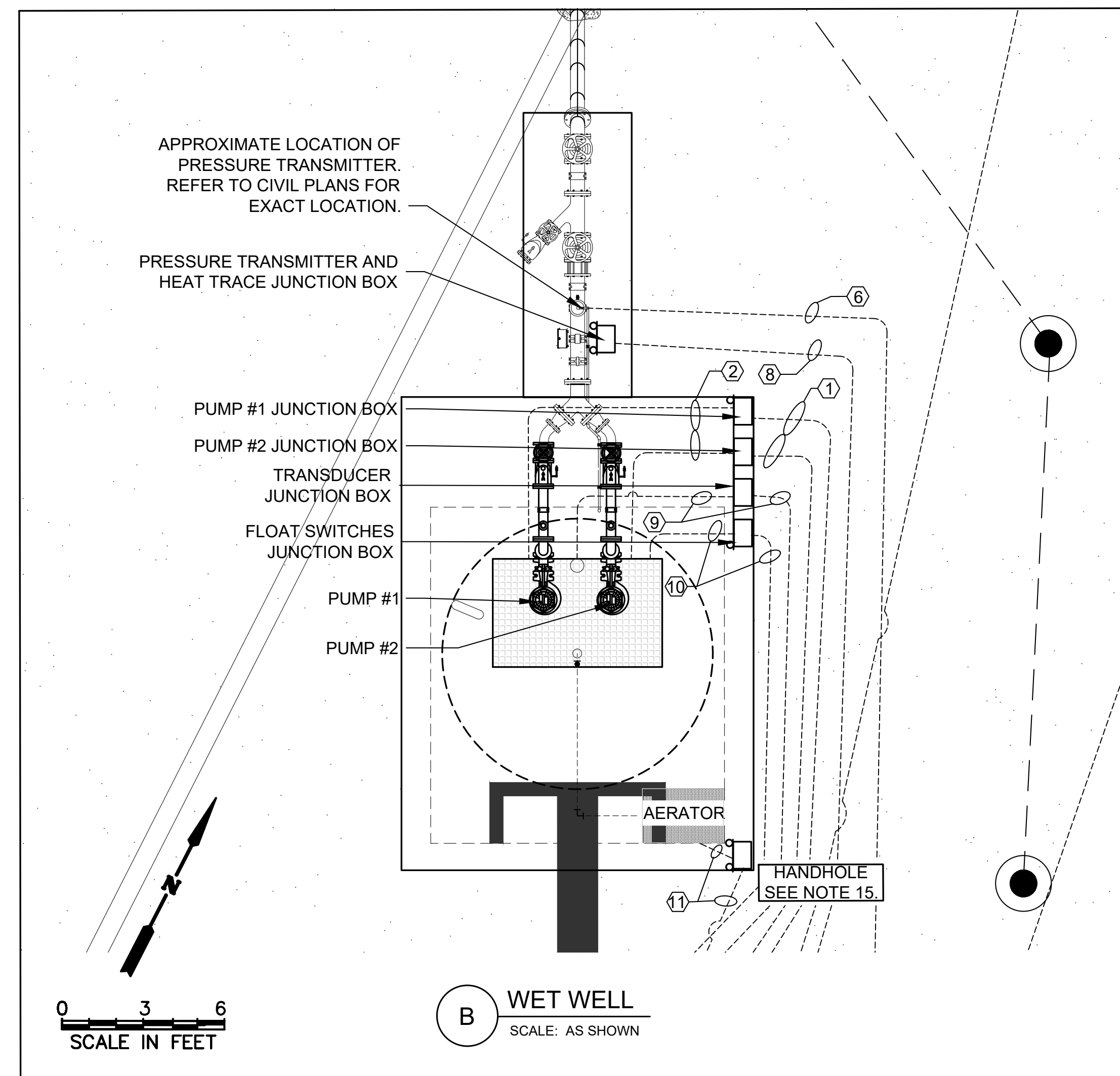
18. CONTRACTOR TO PROVIDE PHASE FAILURE RELAY (PLR) MACROMATIC MODEL #PMDU. FUSES FOR PHASE FAILURE RELAY BE DISCONNECTABLE AS MANUFACTURED BY BUSSMAN MODEL CCP2-3-30CF. ROTARY HANDLE NOT REQUIRED.
19. AUTOMATIC TRANSFER SWITCH (ATS) SHALL HAVE A COMMON SOLID NEUTRAL CONDUCTOR TO THE GENERATOR AND SERVICE.
20. MAIN DISTRIBUTION PANELBOARD (MDP) SHALL BE OF THE BOLTED TYPE CIRCUIT BREAKERS.
21. ALL BREAKERS MUST BE INDIVIDUALLY LOCKABLE. LOCKING MEANS MUST NOT BE READILY REMOVABLE. PORTABLE LOCKING MEANS ARE NOT ALLOWED.

NOTES:

1. CONTRACTOR TO COORDINATE BREAKER AND CABLE RATING WITH GENERATOR REQUIREMENTS.
2. EACH CIRCUIT SHALL HAVE SEPARATE HOT, NEUTRAL, GROUND WIRES. DO NOT SHARE NEUTRAL GROUND WIRE FROM OTHER CIRCUITS.

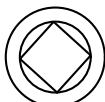
 **GRUBB ENGINEERING, INC.**
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBPE FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST., SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805





- ACCURACY. MODIFY PIPING AS NEEDED TO MEET THIS REQUIREMENT. REFER TO CIVIL PLANS FOR EXACT LOCATION.
22. CONTRACTOR SHALL COORDINATE WITH CPS ENERGY AND COVER ALL COST FOR LINE EXTENSION AND SERVICE DROP INSTALLATION.
23. REFER TO SHEET SHEET E2 FOR ADDITIONAL CABLES NOT LISTED IN DUCTBANKS ON THIS SHEET.
24. SEPARATION AMONG GROUNDING ELECTRODE RODS AND WET WELL SHALL BE 10-FEET.
25. TOWER GROUND RING MUST BE AT LEAST 2 FEET AWAY FROM TOWER BASE. TOWER RING CONDUCTOR SIZE TO BE #4/0 BARE TINNED COPPER AND BURIED THIRTY INCHES BELOW GRADE. BOND FENCE TO TOWER GROUND GRID.
26. CPS ENERGY TRANSFORMER POLE MUST HAVE 28 FOOT EASEMENT.
27. DUCTBANKS AND CONDUIT RUNS FOR POWER SCADA SIGNAL WIRING SHALL BE SEPARATED AND THEY SHALL MAINTAIN A MINIMUM OF 12-INCH SEPARATION BETWEEN DUCTBANKS.

- KEYED NOTES
- ① 2-1" C TO PUMP (1 SPARE)
REFER TO SHEET E2 FOR CABLE SIZES.
1-1" C TO PUMP MONITORING
PER CONTROLS
 - ② 2-2" C TO PUMP (1 SPARE)
CABLE PER PUMP MANUFACTURER
 - ③ 2-1" C TO AREA LIGHT (1 SPARE) TYPICAL
1"C, 2-#10 W/ 1-#12GND
 - ④ 2-2" C TO GENERATOR (1 SPARE)
REFER TO SHEET E2 FOR CABLE SIZES.
1-1" C TO GENERATOR CONTROL
4 -1/C #12, W/ 2- #12 GND
1-1" C TO GENERATOR BATTERY CHARGER
REFER TO SHEET E2 DETAIL B FOR CABLE SIZES.
2-1" C TO GENERATOR HEATER (1 SPARE)
REFER TO SHEET E2 DETAIL B FOR CABLE SIZES.
 - ⑤ 2-3" C TO ANTENNA (1 SPARE)
1-CAT6 CABLE
REFER TO SHEET E11 DETAIL B AND SECTION
16920 FOR CABLE SIZES.
 - ⑥ 2-1" C (1 SPARE) TO DISCHARGE
PRESSURE TRANSMITTER.
2X(#16 TW/SH/PR)
SEE CIVIL DRAWINGS FOR LOCATION.
 - ⑦ 2-2" C TO ELECTRICAL SERVICE POLE (1 SPARE)
REFER TO SHEET E2 FOR CABLE SIZES.
2-1" C SPARE CONDUITS FOR FUTURE TELEPHONE LINE
 - ⑧ 2-3/4" C (1 SPARE) TO JUNCTION BOX FOR
PRESSURE TRANSMITTER & HEAT TRACE POWER.
SEE SHEET E12 DETAIL B.
 - ⑨ 2-1" C TO TRANSDUCER (1 SPARE)
CABLE PER MANUFACTURER
 - ⑩ 2-1" C TO LEVEL FLOAT SWITCHES (1 SPARE)
8-#12
 - ⑪ 2-1"C TO AERATOR MOTOR(1 SPARE)
REFER TO SHEET E2 DETAILS A & B FOR CABLE DETAILS
2-1"C TO AERATOR CONTROLS
PER CONTROLS

LEGEND	
	GROUND MOISTURIZING PORT
	GROUNDING CONNECTION EXOTHERMIC OR COMPRESSION
	GATE FLEXIBLE GROUNDING STRAP.
	GROUND ROD CONNECTION 3/4" X 10' LONG.
	TEST WELL WITH GROUND ROD CONNECTION 3/4" X 10' LONG.
	ABOVE GRADE TAIL FOR EQUIPMENT CONNECTION. TO BE LOCATED AT PROPER EQUIPMENT ENTRANCE. PENETRATION THRU CONCRETE TO HAVE SCHEDULE 80 PVC PIPE SEGMENT.
	#4/0 STRANDED BARE TINNED COPPER WIRE, SOFT DRAWN AS SHOWN ON PLANS
	UNDERGROUND ELECTRIC DUCTBANK
	OVERHEAD SERVICE
	PROPOSED CPS ENERGY OVERHEAD ELECTRIC
	EXISTING CPS ENERGY OVERHEAD ELECTRIC

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

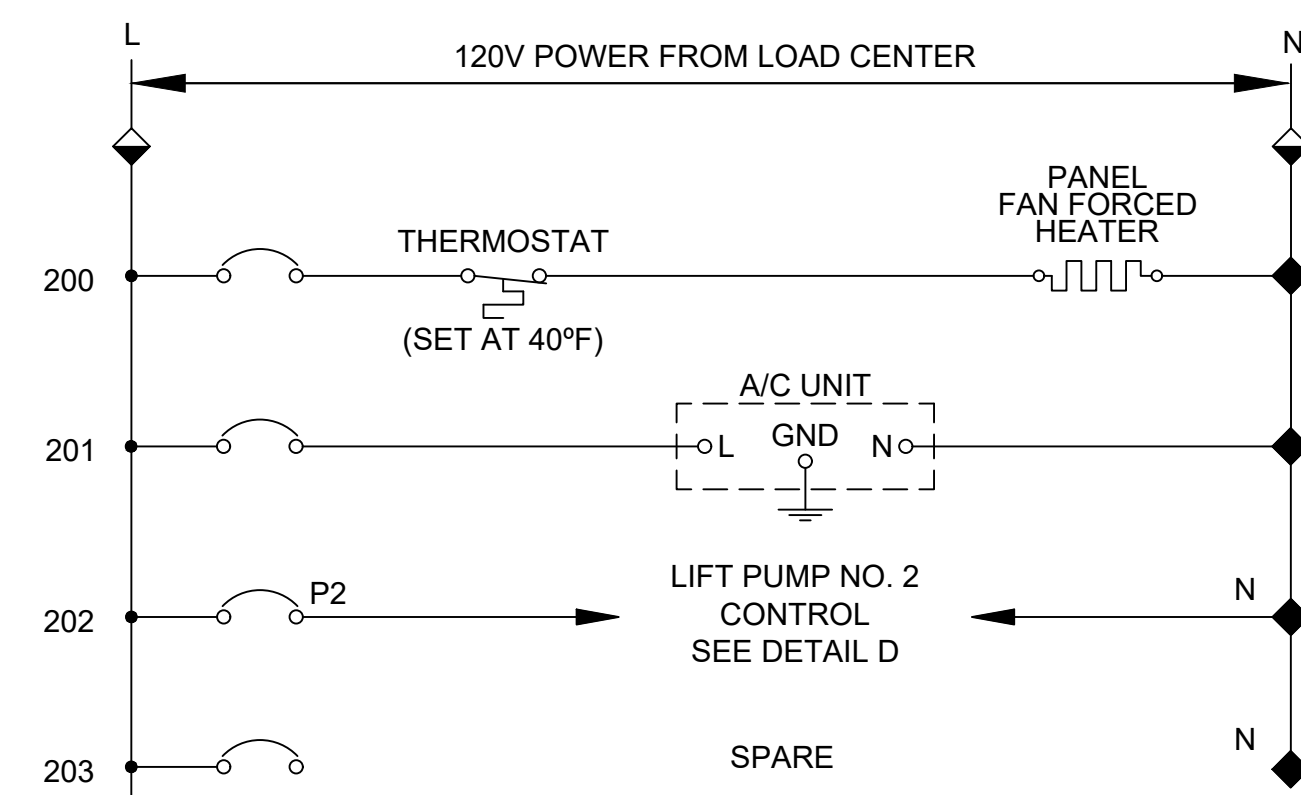
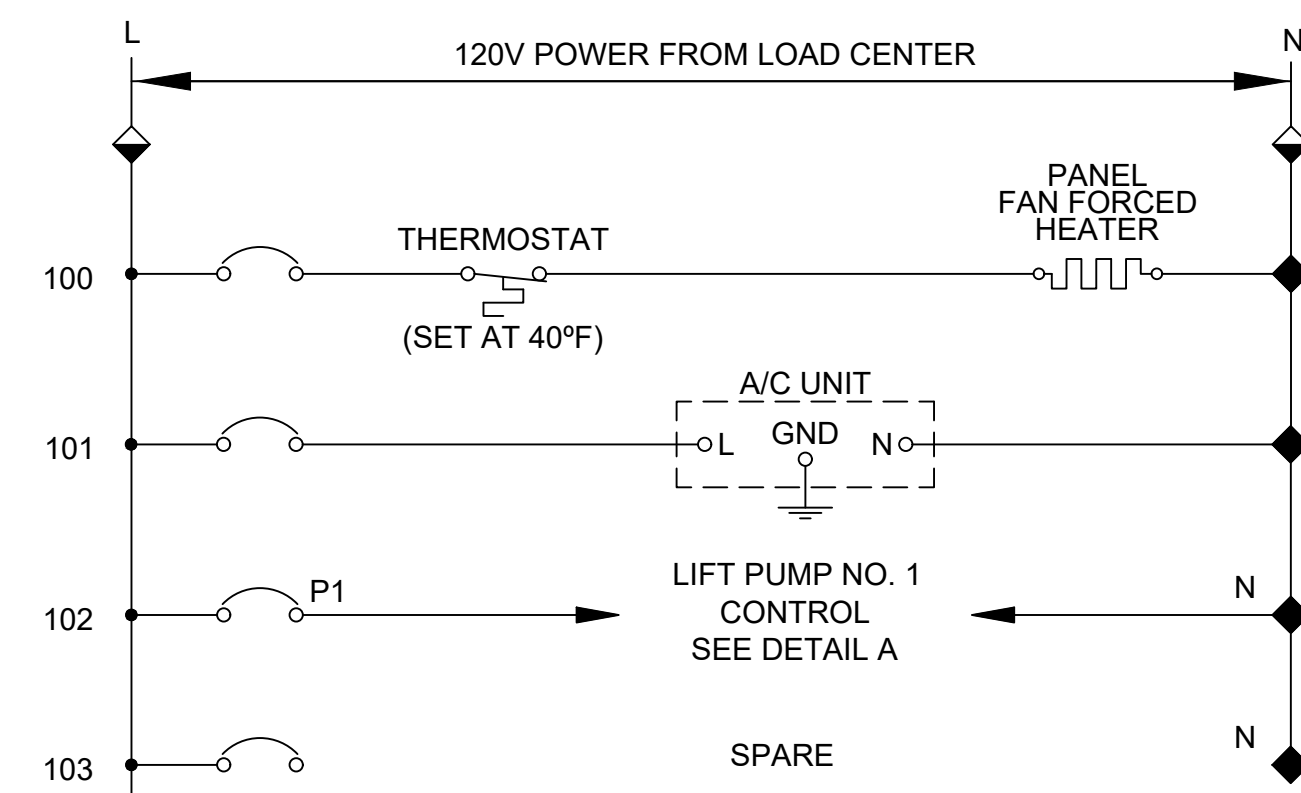
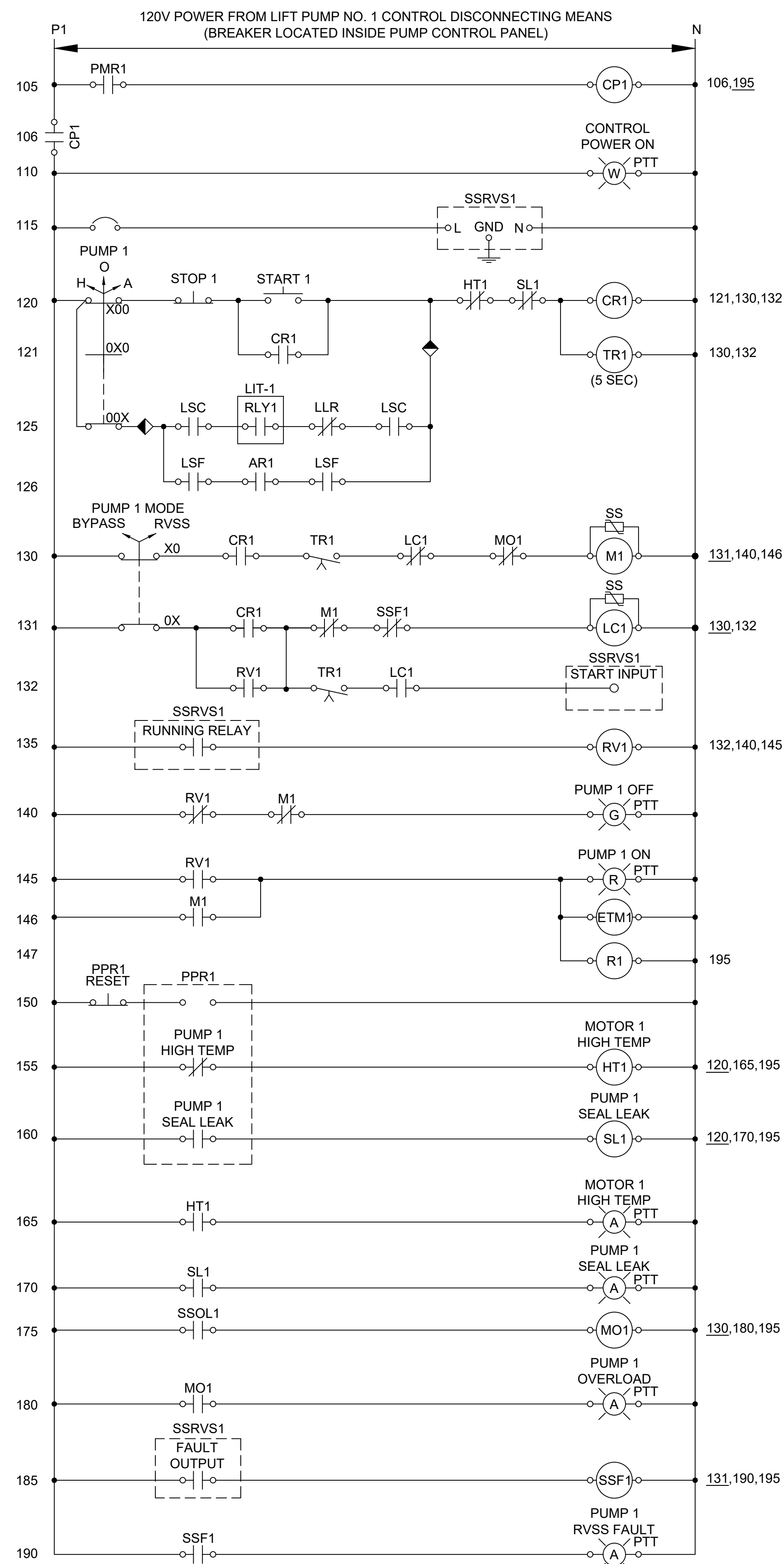
PHONE: — FAX:

SAWS BLOCK MAP# 200542 190542 TOTAL ACRES: XXXX TOTAL AGREED: N/A

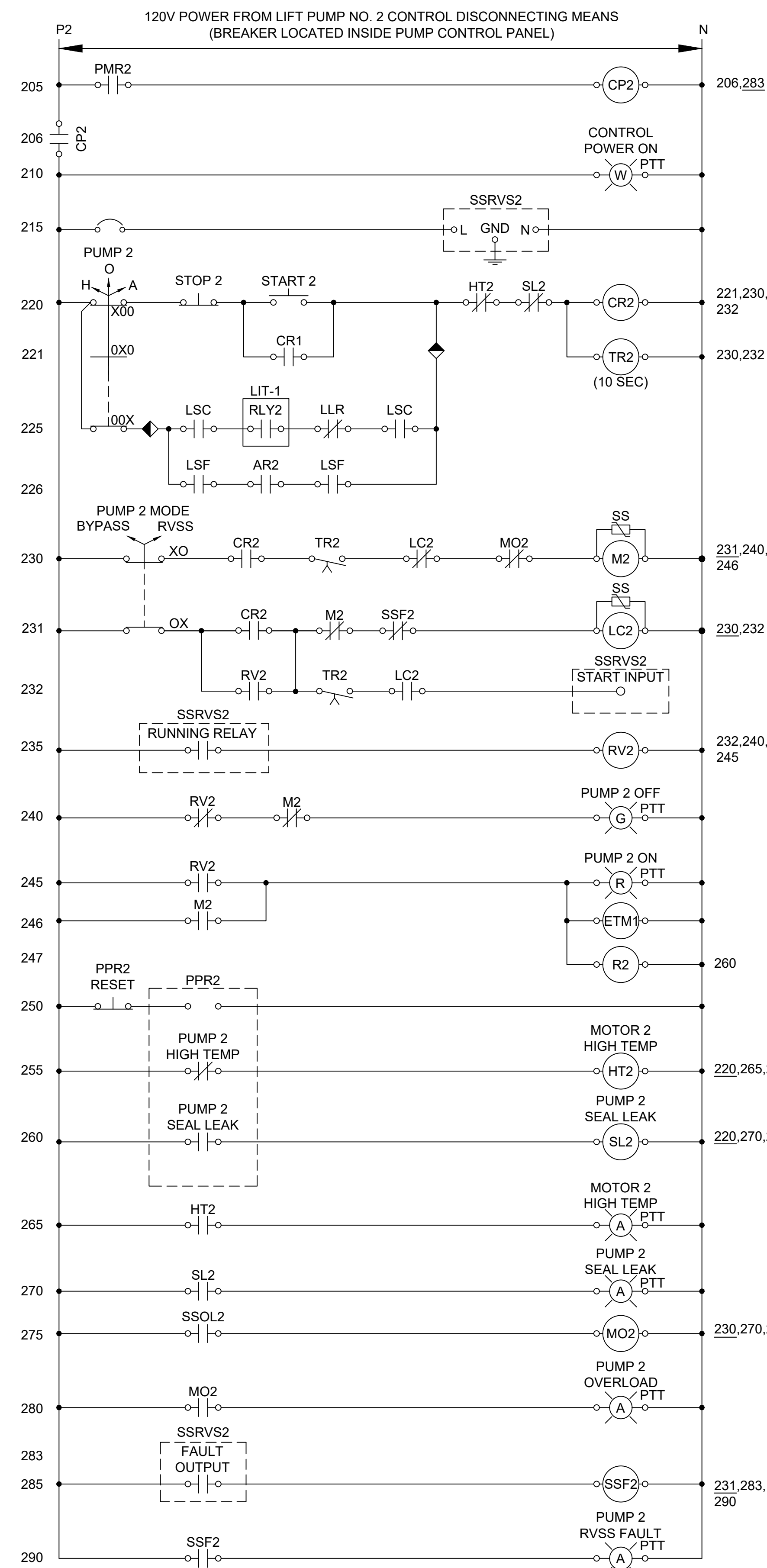
LINEAR FIDUCIAL OF PIPE: 8"TM - 2.201 LF
12"GM - 10 LF PLAT NUMBER: 22-1180026

NUMBER OF LOTS: 0 SAWS JOB NO: XXX-XXXX

 GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBPE FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST, SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

ELECTRICAL ABBREVIATIONS

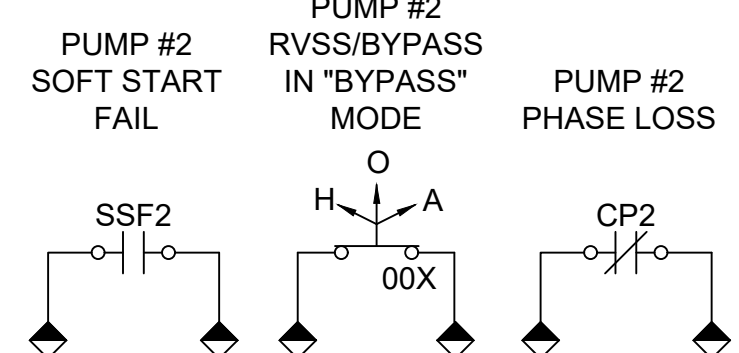
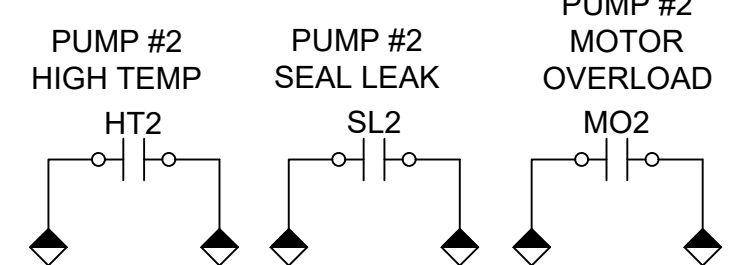
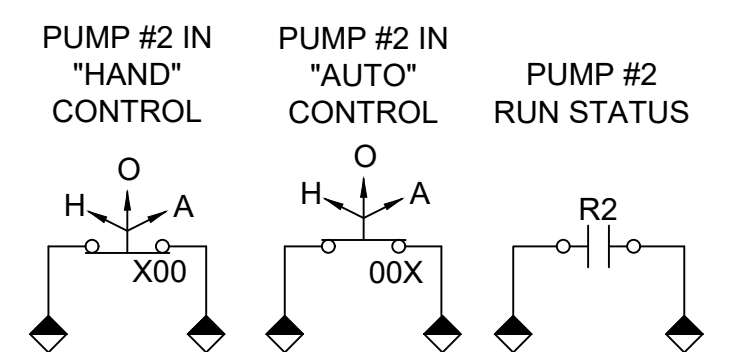
AR	ALTERNATING RELAY FOR FLOAT MODE
CCP	COMPACT CIRCUIT PROTECTOR
CP	CONTROL POWER RELAY
CR	CONTROL RELAY
ETM	ELAPSED TIME METER
HT	MOTOR HIGH TEMPERATURE RELAY
LC	RVSS LINE CONTACTOR
LIT	LEVEL CONTROLLER
LLR	LOW LEVEL RELAY CUTOFF
LSC	LEVEL SYSTEM WITH CONTROLLER
LSF	LEVEL SYSTEM WITH FLOATS
M	FULL VOLTAGE BYPASS STARTER
MO	MOTOR OVERLOAD RELAY
PMR	PHASE MONITORING RELAY
PPR	PUMP PROTECTION RELAY
PPT	PUSH-TO-TEST
R	RUN INDICATION RELAY
RV	SSRVS RUN AUXILIARY RELAY
SC	SSRVS INTERNAL SHORTING CONTACTOR
SL	SEAL LEAK RELAY
SS	COIL SURGE SUPPRESSOR
SSF	SOFT STARTER FAULT RELAY
SSOL	SOLID STATE OVERLOAD RELAY
SSRVS	SOLID STATE REDUCED VOLTAGE STARTER
TR	TIMING RELAY



- GENERAL NOTES

1. ALL INDICATING LAMPS SHALL BE PUSH-TO-TEST TYPE.
2. A PUMP PROTECTION RELAY SHALL BE PROVIDED FOR EACH PUMP INSTALLED. PROVIDE PROTECTION AGAINST MOTOR HIGH TEMPERATURE AND PUMP SEAL LEAK.
3. LEVEL SENSOR PROBES FOR PUMP CONTROL ARE NOT ALLOWED.
4. THE LOAD OF EACH INTERNAL DIGITAL RELAY OF THE LEVEL CONTROLLER MUST BE LIMITED TO NO MORE THAN ONE GENERAL PURPOSE RELAY COIL AND ONE TIME DELAY RELAY COIL, OR TWO GENERAL PURPOSE RELAY COILS.
5. PUMP PROTECTION RELAY CONTACT LOGIC SHALL BE AS FOLLOW:
 - 5.A. UNDER NORMAL CONDITIONS, N.C. HIGH TEMP CONTACT IS OPEN, AND N.O. SEAL LEAK CONTACT IS OPEN.
 - 5.B. UNDER MOTOR HIGH TEMP CONDITION, THE N.C. HIGH TEMP CONTACT CLOSSES.
 - 5.C. UNDER PUMP SEAL LEAK CONDITION, THE N.O. SEAL LEAK CONTACT CLOSSES.
6. SOFT STARTER FAULT OUTPUT RELAY SHALL BE OPEN UNDER NORMAL CONDITION AND SHALL CLOSE UNDER SOFT STARTER FAULT CONDITION.
7. THE CONTACT OF THE OVERLOAD RELAY FOR THE FULL VOLTAGE BYPASS STARTER SHALL BE OPEN UNDER NORMAL CONDITION AND SHALL CLOSE UNDER OVERLOAD CONDITION.

LEGEND	
	PUMP CONTROL PANEL (DARK SIDE INDICATES CONNECTION INTERNAL TO PANEL.)
----	EXTERNAL PANEL WIRING
————	INTERNAL PANEL WIRING



EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: **SAN ANTONIO** STATE: **TEXAS** ZIP: **78231**

PHONE: — FAX: —

SAWS BLOCK MAP# 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE:

TOTAL LINEAR FOOTAGE OF PIPE: 8"FM- 2,201 LF PLAT NUMBER: 22-1

NUMBER OF LOTS: 0 SAWS JOB NO.: YY-XXXX

GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBPE FIRM REGISTRATION NO. 3904
N. ST. MARY'S ST, SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

DESIGNED BY:	CG, BD
DRAWN BY:	SG
APPROVED:	SM
JOB NO.:	E0607100

D O N D U R D E N , I N C .
CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 395
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-6440
REGISTRATION #F-2214



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8/7/2023

STATE OF TEXAS

STEVEN MOUSER

103671

LICENSED

PROFESSIONAL ENGINEER

Steven Mouser

[illegible]

SAN ANTONIO WATER SYSTEM
LIFT STATION
EASTRIDGE UNIT 1
LIFT STATION CONTROL DETAILS #1
PUMP CONTROL PANEL SCHEMATIC

--	--

SHEET NO. _____

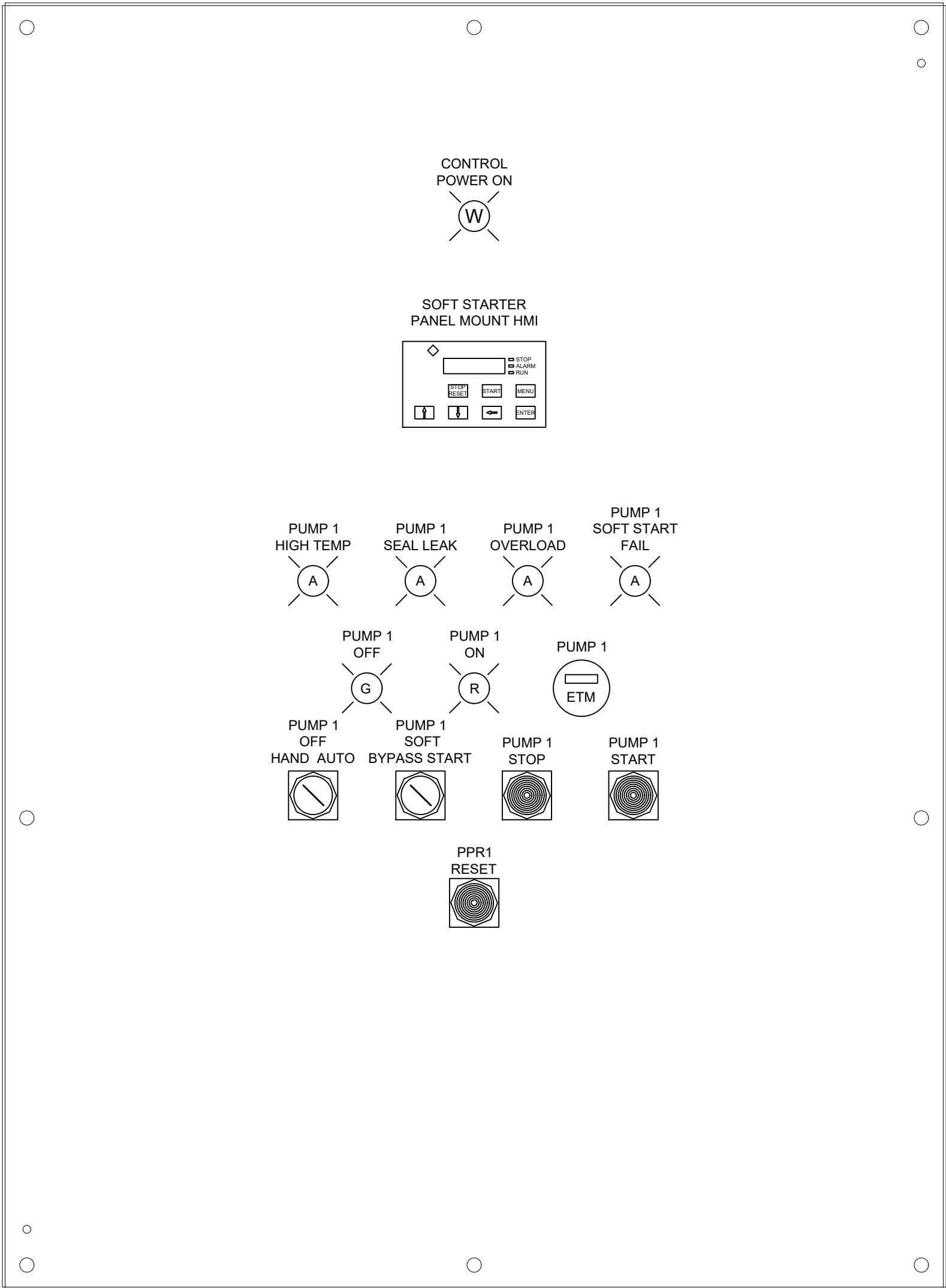
E5

2 FT CLEARANCE
REQUIRED FOR ALL PANEL A/C
UNITS

MINIMUM A/C PERFORMANCE:
2,800 BTU @ 80°F INTERNAL
ENCLOSURE AND 105°F
EXTERNAL AMBIENT
120 VAC,
R134A GAS ONLY

SEAL A/C UNIT PENETRATIONS WITH
APPROVED MEANS TO MAINTAIN THE
ENCLOSURE NEMA 4X CATEGORY

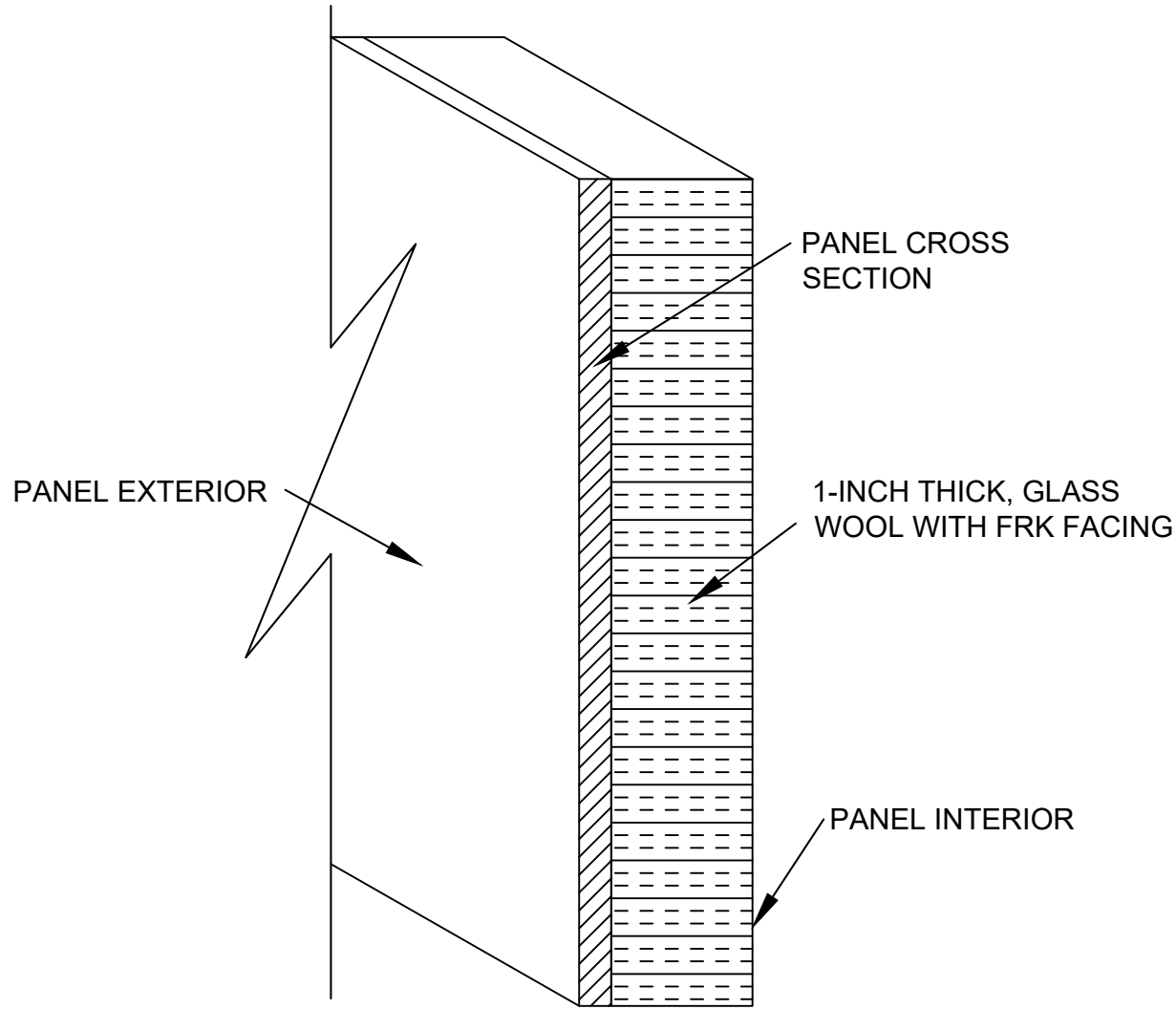
48"H x 36"W x 16"D
MINIMUM ENCLOSURE SIZE



INTERNAL SWING PANEL

A PUMP CONTROL PANEL LAYOUT (TYPICAL OF 2)
SCALE: N.T.S. SEE NOTES 1-11

- NOTES:
1. DISTANCE BETWEEN INTERIOR PANEL AND ANY COMPONENT SHALL BE AT LEAST 5".
 2. DISTANCE BETWEEN EXTERIOR PANEL AND INTERIOR PANEL SHALL BE AT LEAST 2".
 3. DESIGN WILL COMPLY WITH MINIMUM SEPARATION DISTANCES AMONG INTERNAL COMPONENTS AS SHOWN.
 4. THE CONTRACTOR SHALL REFER TO THE PLANS AND SPECIFICATIONS FOR MORE DETAILED EQUIPMENT REQUIREMENTS.
 5. SEE INTERNAL LAYOUTS FOR FURTHER PANEL DETAILS.
 6. PANEL MOUNT AIR CONDITIONER SIZE IS AN APPROXIMATION. CONTRACTOR TO SIZE AIR CONDITIONER PER EQUIPMENT AND ENCLOSURE SIZE. SEAL A/C UNIT PENETRATIONS WITH APPROVED MEANS TO MAINTAIN THE ENCLOSURE NEMA 4X CATEGORY. ENCLOSURE INTERNAL TEMPERATURE SHALL BE 80°F AND EXTERNAL AMBIENT TEMPERATURE OF 105°F.
 7. CONTRACTOR SHALL PROVIDE BARRIER BETWEEN ALL DISSIMILAR VOLTAGES.
 8. ALL INDICATING LAMPS SHALL BE PUSH-TO-TEST TYPE.
 9. PUMP PROTECTION RELAYS SHALL BE PROVIDED FOR EACH PUMP INSTALLED. AT A MINIMUM PROVIDE PROTECTION AGAINST MOTOR HIGH TEMPERATURE AND PUMP SEAL LEAK.
 10. INSULATION IS REQUIRED FOR ALL ENCLOSURES EQUIPPED WITH A/C UNIT, INCLUDING SCADA ENCLOSURES, RVSS ENCLOSURES AND LEVEL CONTROL ENCLOSURES. SEE DETAIL B.
 11. INSTALL INSULATING SHEETS IN THE INTERIOR SURFACES OF THE PANEL, INCLUDING DOOR(S). NOT REQUIRED FOR INTERNAL SWING PANELS.



B CLIMATE CONTROLLED PANEL INSULATION
SCALE: N.T.S. SEE NOTES 10-11.

EAST SEWERSHED (SALADO WATERSHED) – DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT			
ADDRESS: 2722 WEST BITTERS RD, SUITE 106			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78231	
PHONE: —	FAX: —		
SAWS BLOCK MAP# 200542	190542	TOTAL EDU'S: XXX	TOTAL ACREAGE: N/A
TOTAL LINEAR FOOTAGE OF PIPE: 8"FM– 2,201 LF		PLAT NUMBER: 22–1180026	
NUMBER OF LOTS: 0		SAWS JOB NO.: XX–XXXX	

GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBP# FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST., SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

DESIGNED BY: CC, BD	 DON D. CURDEN, INC. d.b.a. CIVIL ENGINEERING CONSULTANTS 11550 IH 10 WEST, SUITE 385 SAN ANTONIO, TEXAS 78230-1037 TEL: (210) 641-9999 FAX: (210) 641-6640 REGISTRATION #F-2214	DRAWN BY: SG
APPROVED: SM		JOB NO.: E0607100
STATE OF TEXAS 9/7/2023 STEVEN MOUSER 103671 LICENSED PROFESSIONAL ENGINEER		
DESCRIPTION		

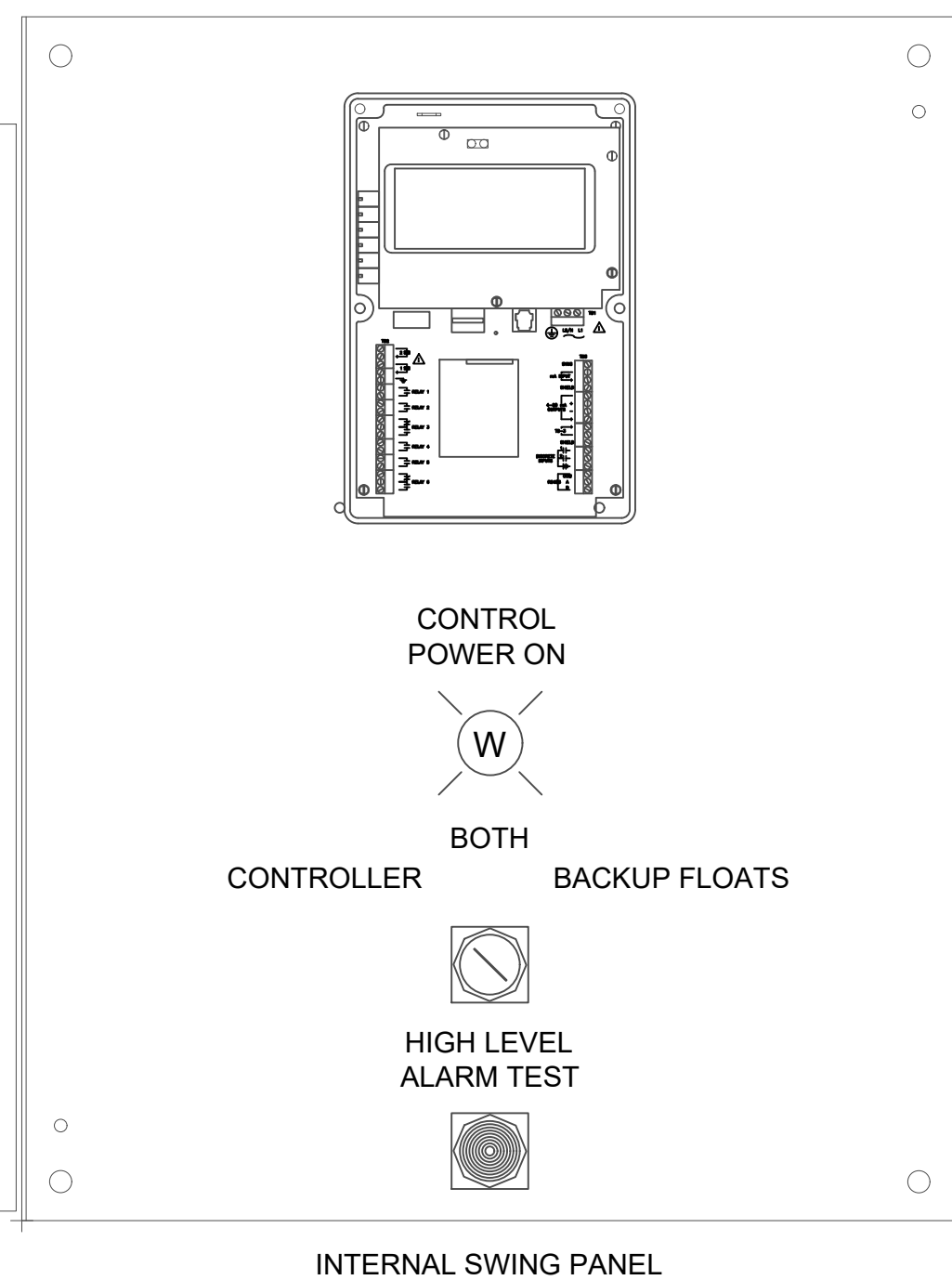
SAN ANTONIO WATER SYSTEM	LIFT STATION EASTRIDGE UNIT 1
LIFT STATION CONTROL DETAILS #2 PUMP CONTROL PANEL LAYOUTS	

SHEET NO.	E6
-----------	----

2 FT CLEARANCE
REQUIRED FOR ALL PANEL A/C
UNITS

MINIMUM A/C PERFORMANCE:
1,300 BTU @ 80°F INTERNAL
ENCLOSURE AND 105°F
EXTERNAL AMBIENT
120 VAC,
R134A GAS ONLY

SEAL A/C UNIT PENETRATIONS WITH
APPROVED MEANS TO MAINTAIN THE
ENCLOSURE NEMA 4X CATEGORY

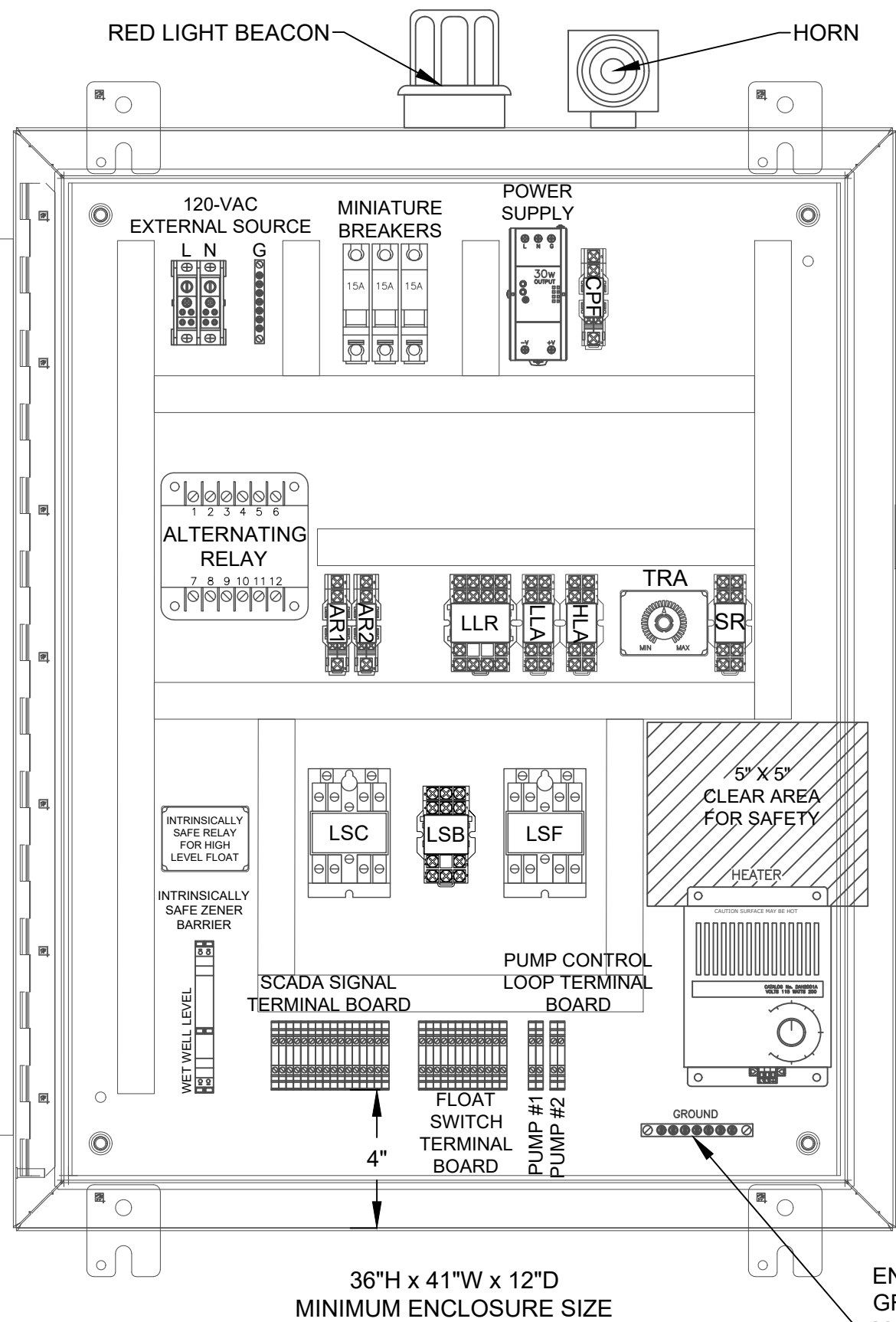


INTERNAL SWING PANEL

2 FT CLEARANCE
REQUIRED FOR ALL PANEL A/C
UNITS

MINIMUM A/C PERFORMANCE:
1,300 BTU @ 80°F INTERNAL
ENCLOSURE AND 105°F
EXTERNAL AMBIENT
120 VAC,
R134A GAS ONLY

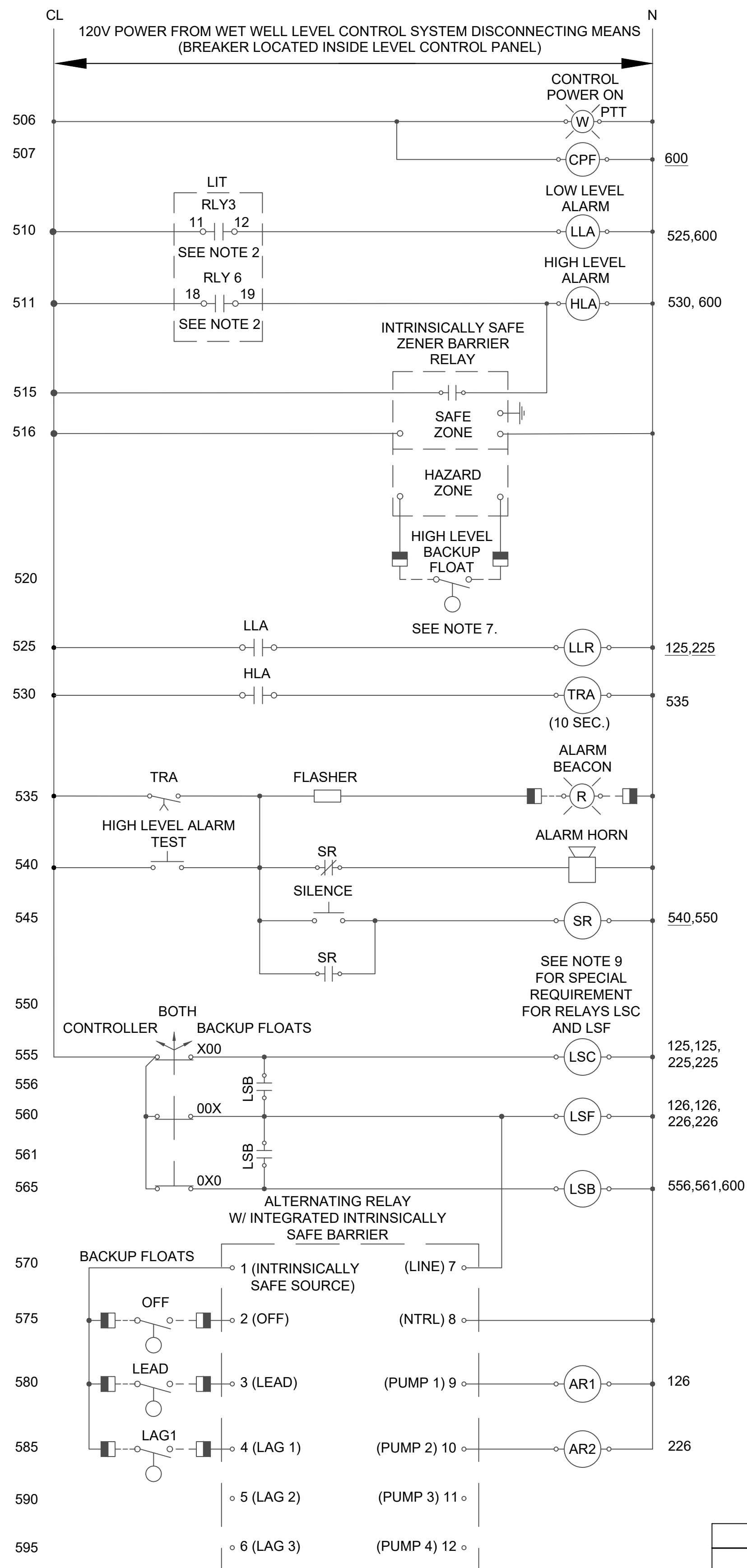
SEAL A/C UNIT PENETRATIONS WITH
APPROVED MEANS TO MAINTAIN THE
ENCLOSURE NEMA 4X CATEGORY



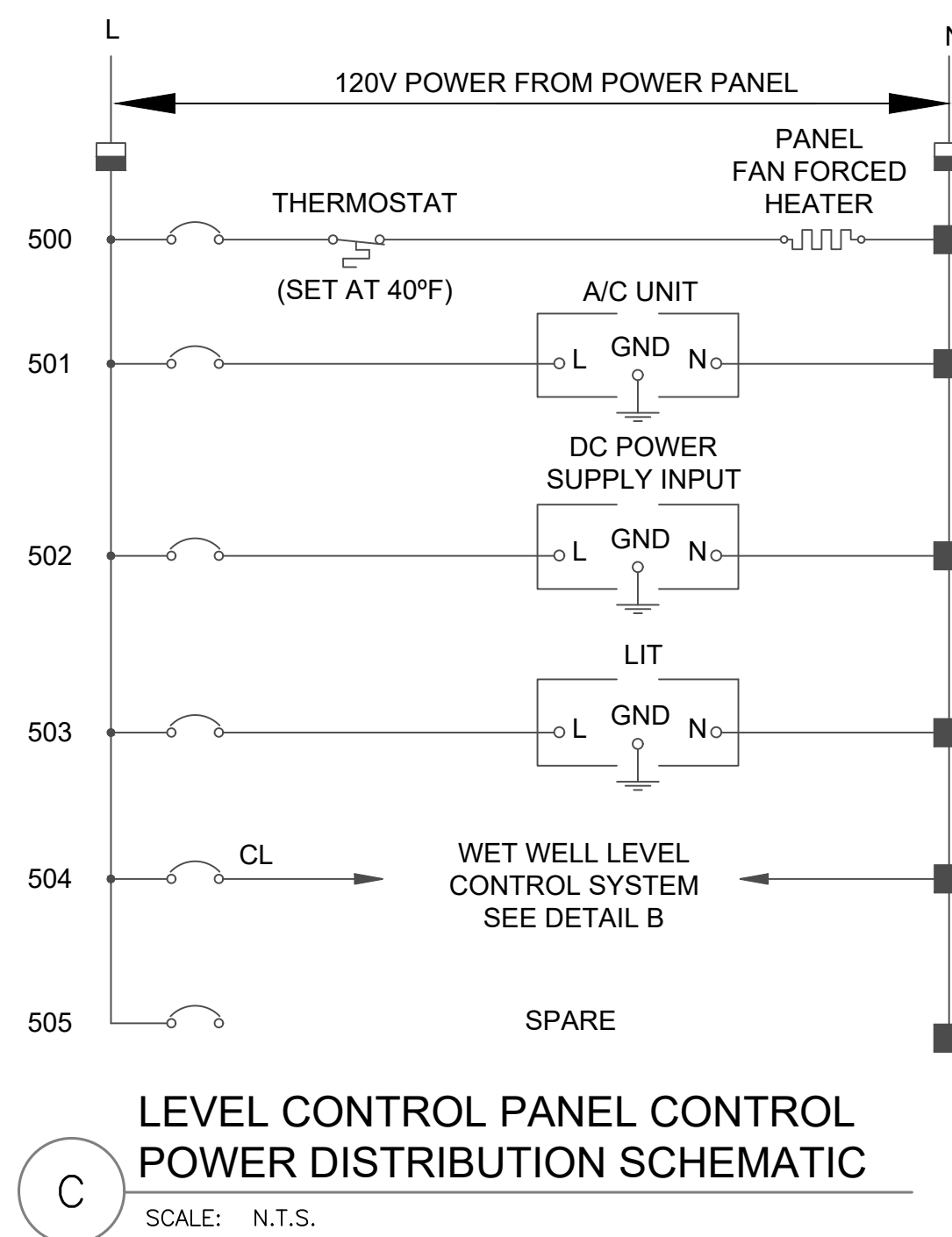
36"H x 41"W x 12"D
MINIMUM ENCLOSURE SIZE

ENCLOSURE
GROUNDING BAR
MADE OF TIN
PLATED COPPER.
SEE NOTE 10.

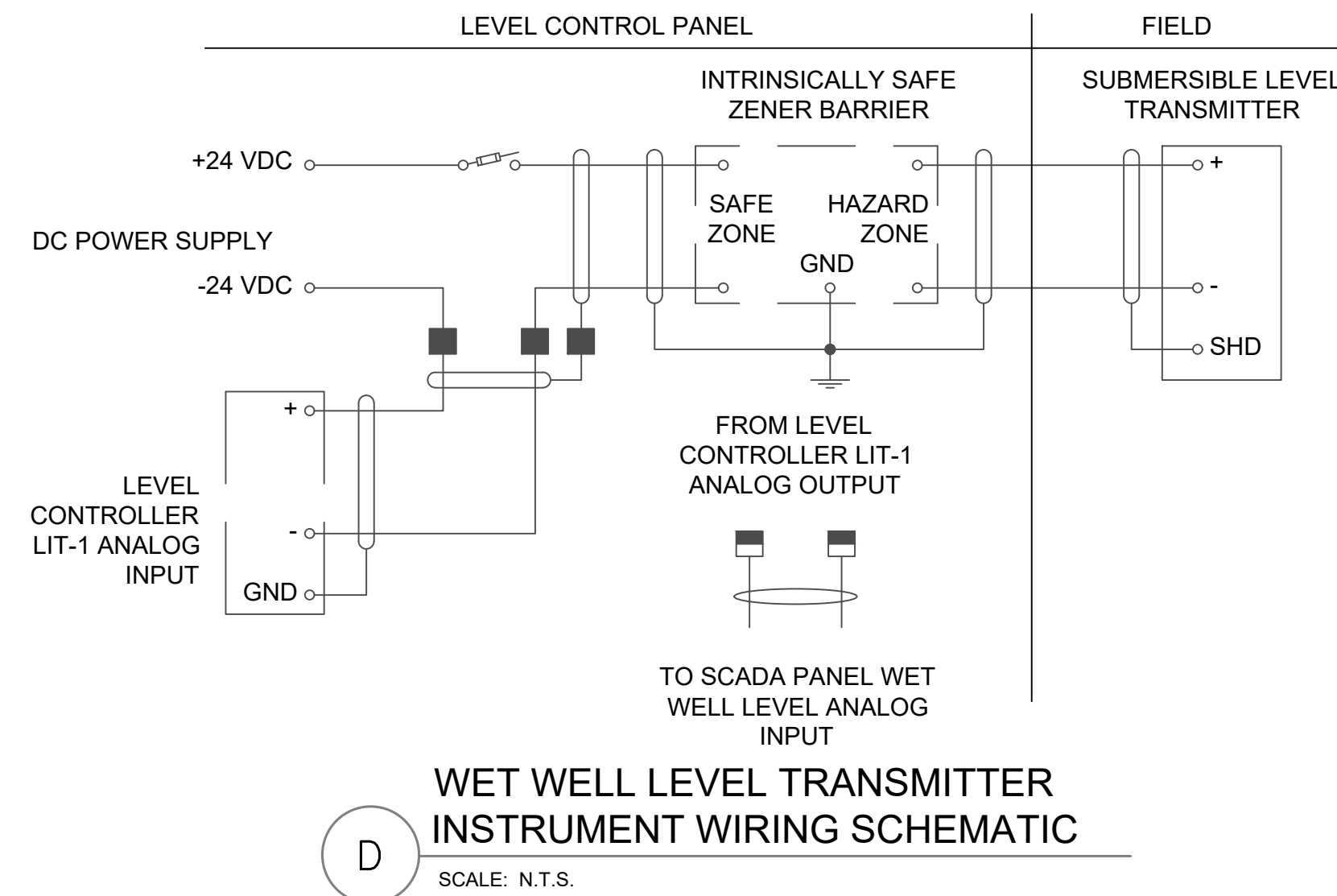
A LEVEL CONTROL PANEL LAYOUT
SCALE: N.T.S.



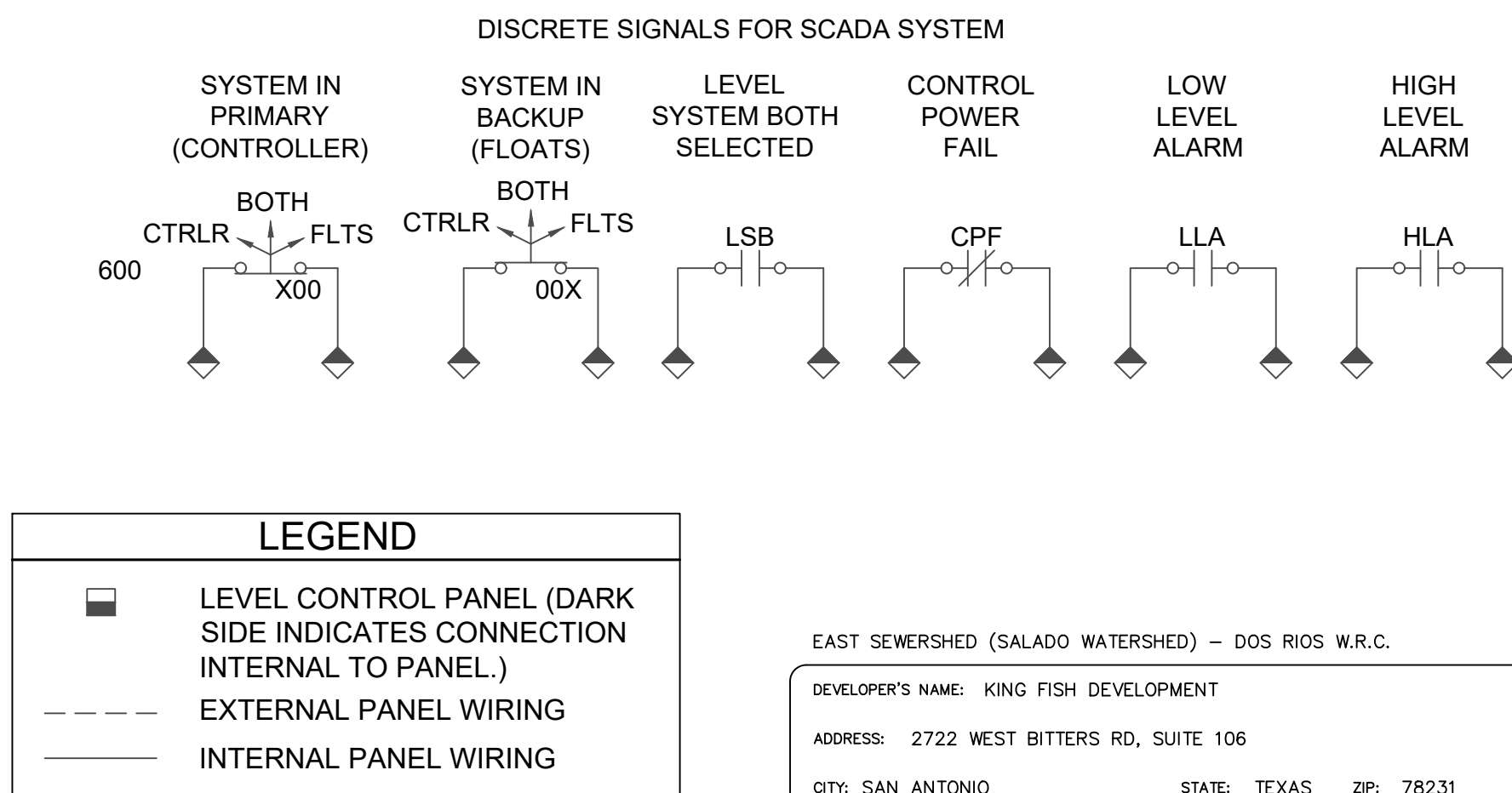
B LEVEL CONTROL SCHEMATIC LOCATED
IN LEVEL CONTROL PANEL
SCALE: N.T.S.



C LEVEL CONTROL PANEL CONTROL
POWER DISTRIBUTION SCHEMATIC
SCALE: N.T.S.



D WET WELL LEVEL TRANSMITTER
INSTRUMENT WIRING SCHEMATIC
SCALE: N.T.S.



NOTES:

- LEVEL CONTROLLER OUTPUT RELAYS RLY1 AND RLY2 SHALL BE ASSIGNED TO A PUMP FUNCTION AND SHALL BE MANAGED BY A PUMPING ALGORITHM TO ALTERNATE THE LEAD PUMP AND LAG PUMP FOR EACH PUMPING CYCLE.
- LEVEL CONTROLLER OUTPUT RELAYS RLY3 AND RLY6 SHALL BE ASSIGNED FOR WET WELL LOW LEVEL ALARM AND HIGH LEVEL ALARM RESPECTIVELY. UNDER NORMAL WET WELL LEVEL CONDITION, BOTH RELAYS SHALL BE DE-ENERGIZED AND CONTACTS OPEN. UNDER WET WELL LEVEL ALARM CONDITION, THE RESPECTIVE RELAY SHALL ENERGIZED AND CONTACT CLOSE.
- RELAY RLY3 (LOW LEVEL) IS A COMMON RELAY FOR ALL PUMPS INSTALLED.
- HIGH LEVEL ALARM SHALL BE GENERATED WITH BOTH RELAY RLY6 (HIGH LEVEL) AND THE HIGH LEVEL FLOAT.
- ALL INDICATING LAMPS SHALL BE PUSH-TO-TEST TYPE.
- THE LOAD OF EACH INTERNAL DIGITAL RELAY OF THE LEVEL CONTROLLER MUST BE LIMITED TO NO MORE THAN ONE GENERAL PURPOSE RELAY COIL AND ONE TIME DELAY RELAY COIL, OR TWO GENERAL PURPOSE RELAY COILS.
- BACKUP FLOAT SWITCHES SHALL BE PROVIDED AS SHOWN.
- ENCLOSURE SHALL INCLUDE A PANEL MOUNT A/C UNIT. THE CAPACITY OF THE A/C UNIT, FOR THE ENCLOSURE SIZE INDICATED, SHALL BE 1,300-BTU/HR FOR AN ENCLOSURE INTERNAL TEMPERATURE OF 80°F AND AND EXTERNAL AMBIENT TEMPERATURE OF 105°F.
- RELAYS LSC AND LSF SHALL BE OF THE NEMA INDUSTRIAL CONTROL RELAY TYPE WITH STACKABLE MULTIPLE CONTACTS, AND EACH RELAY SHALL BE PROVIDED WITH TWO (2) INDEPENDENT N.O. CONTACTS FOR EACH PUMP INSTALLED AND CONTROLLED RESPECTIVELY.
- INSTALL #6-AWG BARE STRANDED COPPER AND BOND TO COMMON GROUND FOR SUPPLEMENTAL GROUNDING.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

PHONE: - FAX: -

SAWS BLOCK MAP# 200542 190542 TOTAL EDU'S: XXXX TOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 8"FM= 2,201 LF 12"GM= 10 LF PLAT NUMBER: 22-1180026

NUMBER OF LOTS: 0 SAWS JOB NO.: XX-XXXX

GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBPE FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST. SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

DESIGNED BY: CC, BD
DRAWN BY: SG
APPROVED: SM
JOB NO.: E0607100

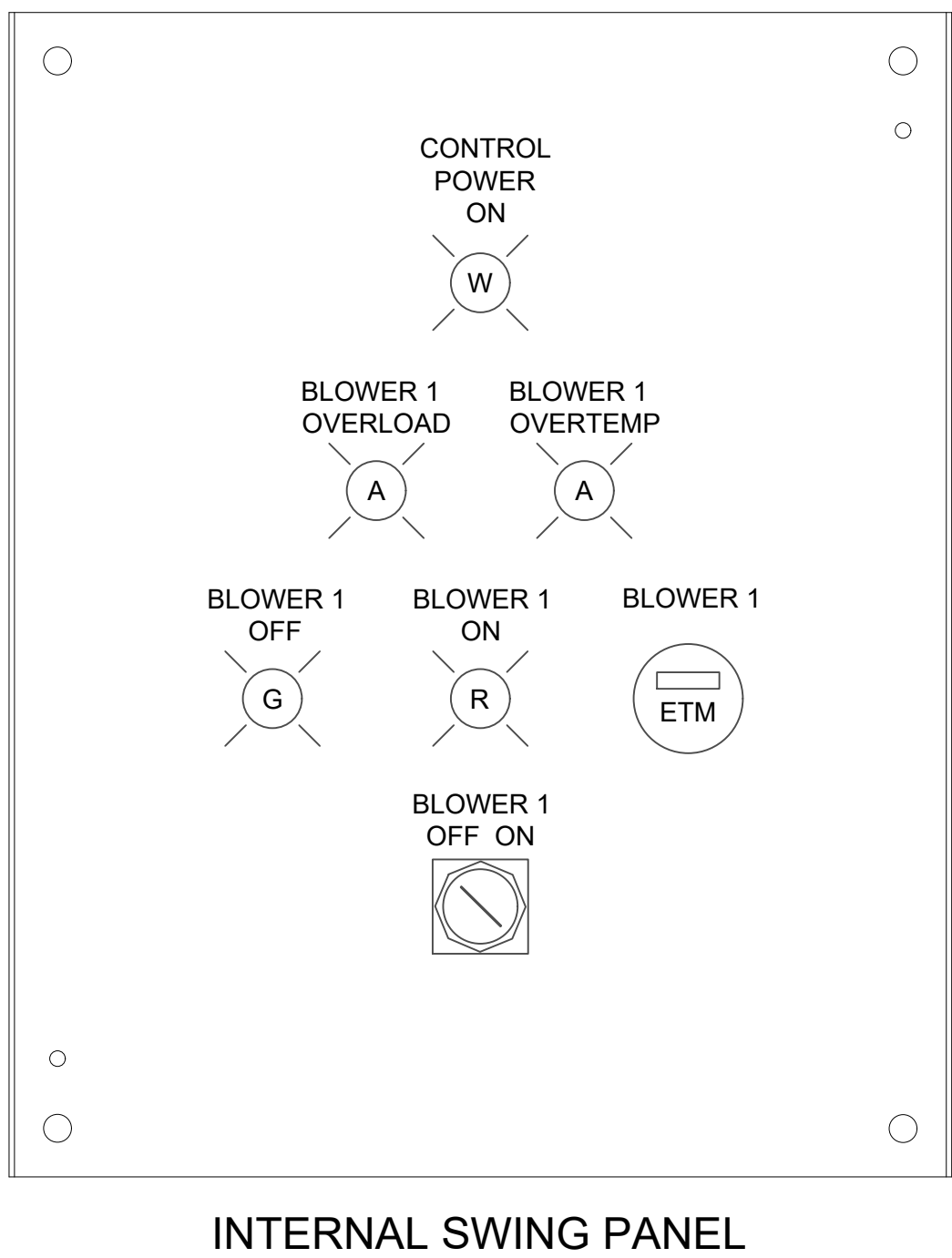
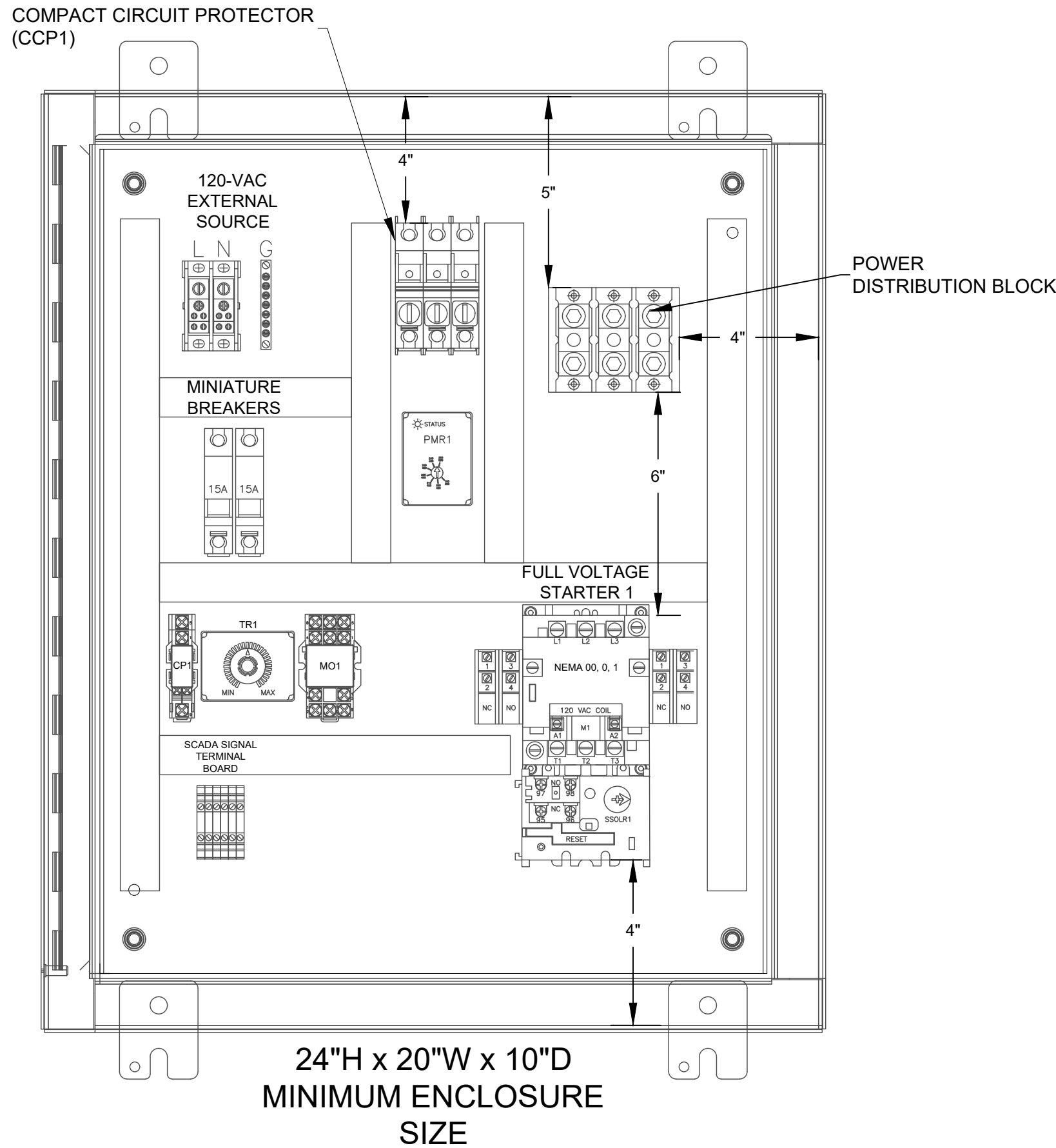
DON DURDEN, INC.
d.b.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 385
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-4646
REGISTRATION #F-2214

STATE OF TEXAS
STEVEN MOUSER
103671
LICENSED PROFESSIONAL ENGINEER

DESCRIPTION
REV
DATE

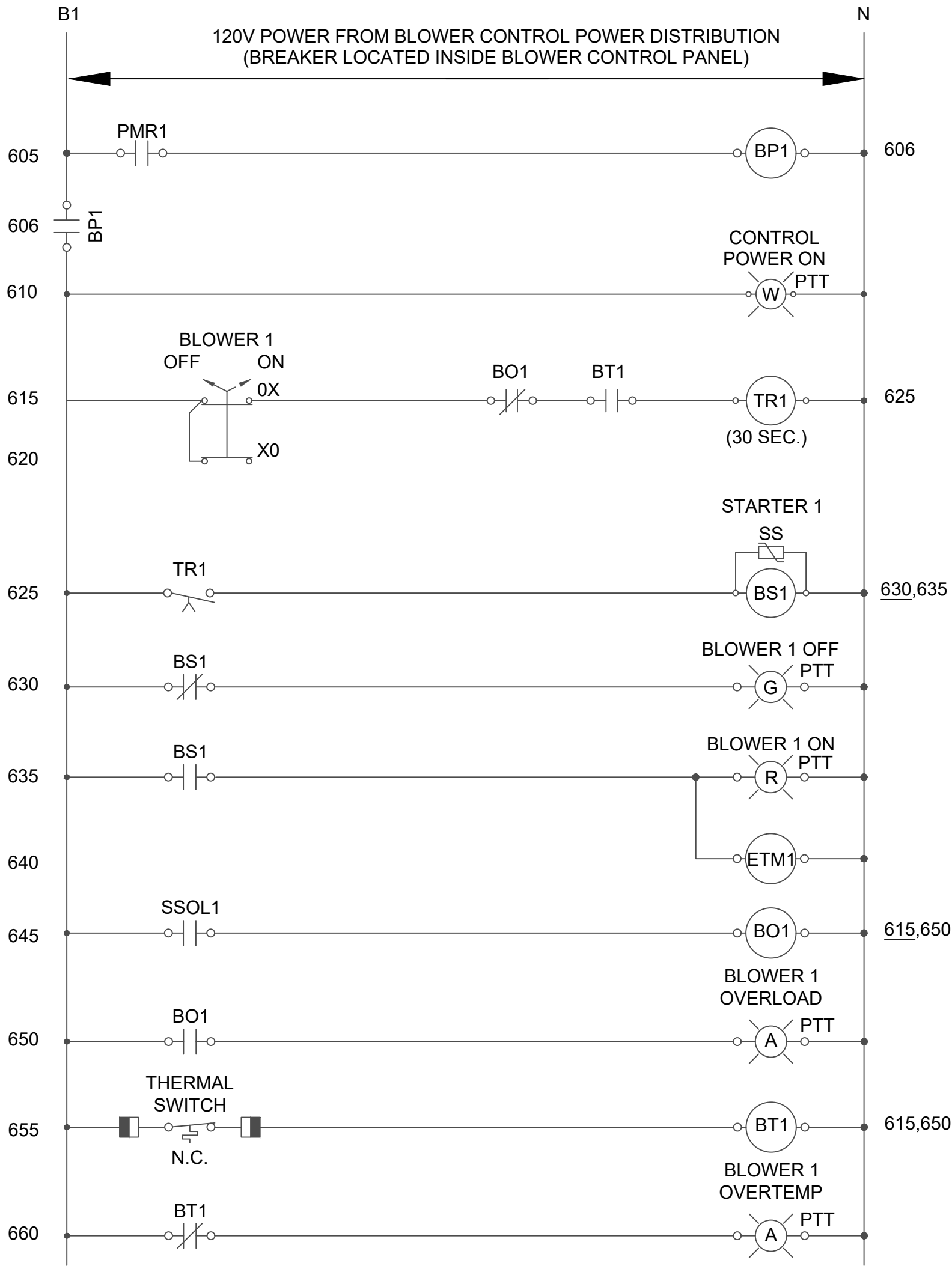
SAN ANTONIO WATER SYSTEM
LIFT STATION
EASTRIDGE UNIT 1
LIFT STATION CONTROL DETAILS #3
LEVEL CONTROL PANEL LAYOUT AND
CONTROL SCHEMATIC

SHEET NO.
E7



A ODOR CONTROL BLOWER PANEL LAYOUT

SCALE: N.T.S.

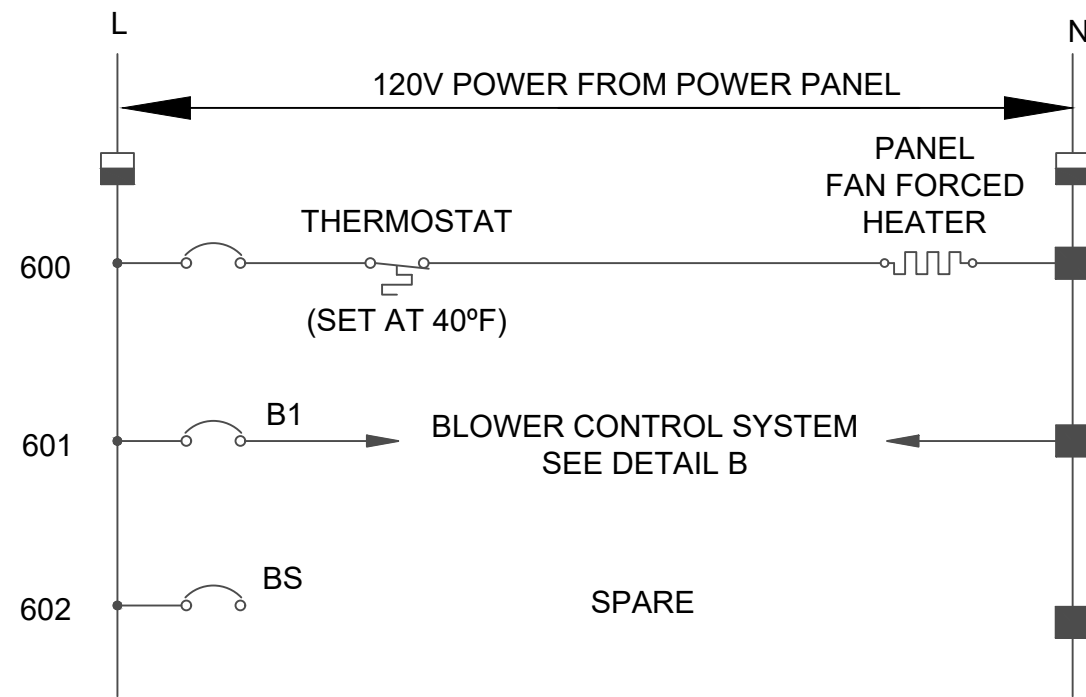


B ODOR CONTROL BLOWER CONTROL SCHEMATIC

SCALE: N.T.S.

NOTES:

- ALL INDICATING LAMPS SHALL BE PUSH-TO-TEST TYPE.
- THE BLOWER INTERNAL THERMAL SWITCH IS CLOSED UNDER NORMAL CONDITION AND SHALL OPEN UNDER BLOWER OVERTEMPERATURE CONDITION.



C ODOR CONTROL BLOWER CONTROL POWER DISTRIBUTION SCHEMATIC

SCALE: N.T.S.

ELECTRICAL ABBREVIATIONS

BO	BLOWER OVERLOAD RELAY
BS	BLOWER FULL VOLTAGE STARTER
BT	BLOWER OVER TEMPERATURE RELAY
CCP	COMPACT CIRCUIT PROTECTOR
CP	CONTROL POWER
ETM	ELAPSED TIME METER
M	STARTER CONTACTOR
MO	MOTOR OVERLOAD RELAY
PMR	PHASE MONITORING RELAY
PTT	PUSH-TO-TEST
SS	COIL SURGE SUPPRESSOR
SSOL	SOLID STATE OVERLOAD RELAY
TR	TIMING RELAY

LEGEND

	BLOWER CONTROL PANEL (DARK SIDE INDICATES CONNECTION INTERNAL TO PANEL.)
	EXTERNAL PANEL WIRING
	INTERNAL PANEL WIRING

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO

STATE: TEXAS

ZIP: 78231

PHONE: --

FAX:

SAWS BLOCK MAP# 200542

190542

TOTAL EDU'S: XXX

TOTAL ACREAGE: N/A

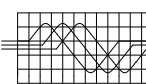
TOTAL LINEAR FOOTAGE OF PIPE: 8"FM- 2,201 LF

12"GM- 10 LF

PLAT NUMBER: 22-1180026

NUMBER OF LOTS: 0

SAWS JOB NO.: XX-XXXX



GRUBB ENGINEERING, INC.

ELECTRICAL POWER SYSTEMS

DESIGN AND TESTING

TBPE FIRM REGISTRATION NO. 3904

2727 N. ST. MARY'S ST. SAN ANTONIO, TEXAS 78212

BUS: (210) 658 7250 FAX: (210) 658 9805

DESIGNED BY: CC, BD

DRAWN BY: SG

APPROVED: SM

JOB NO.: E0607100

DON D. DURDEN, INC.
d.d.a. CIVIL ENGINEERING CONSULTANTS
11550 IH 10 WEST, SUITE 385
SAN ANTONIO, TEXAS 78230-1037
TEL: (210) 641-9999
FAX: (210) 641-9940
REGISTRATION #F-2214



DESCRIPTION

REV

DATE

SAN ANTONIO WATER SYSTEM

LIFT STATION EASTRIDGE UNIT 1

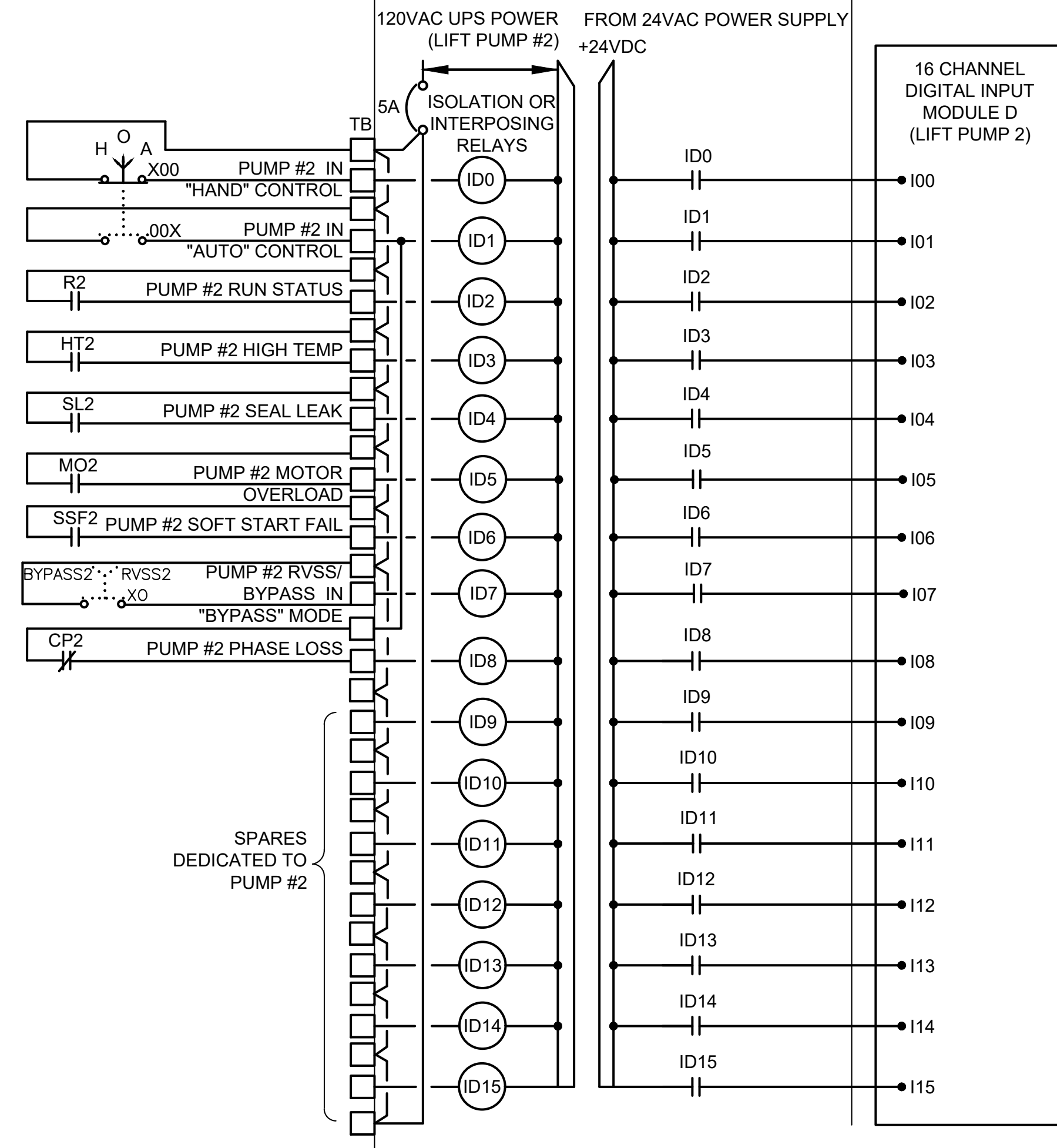
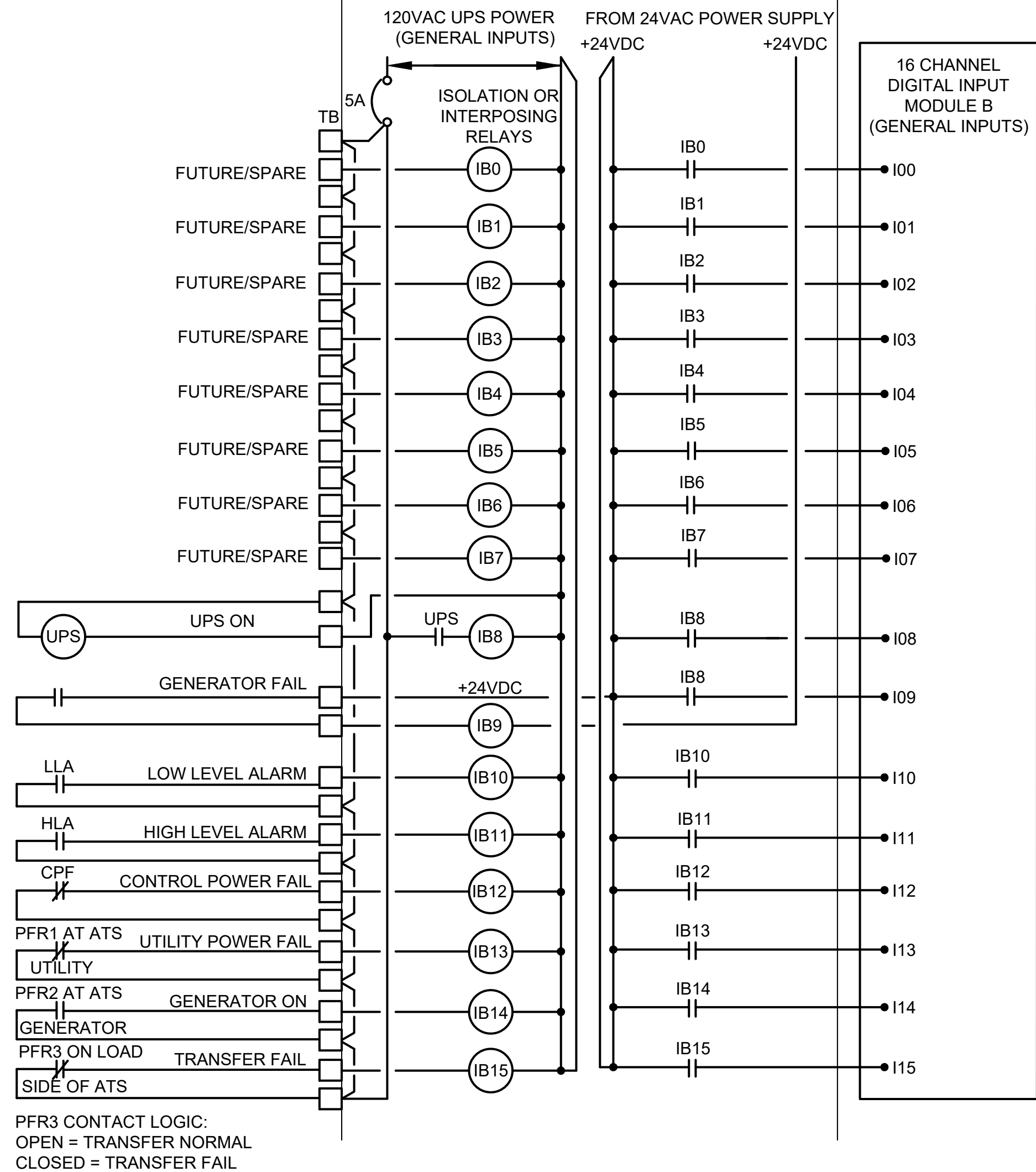
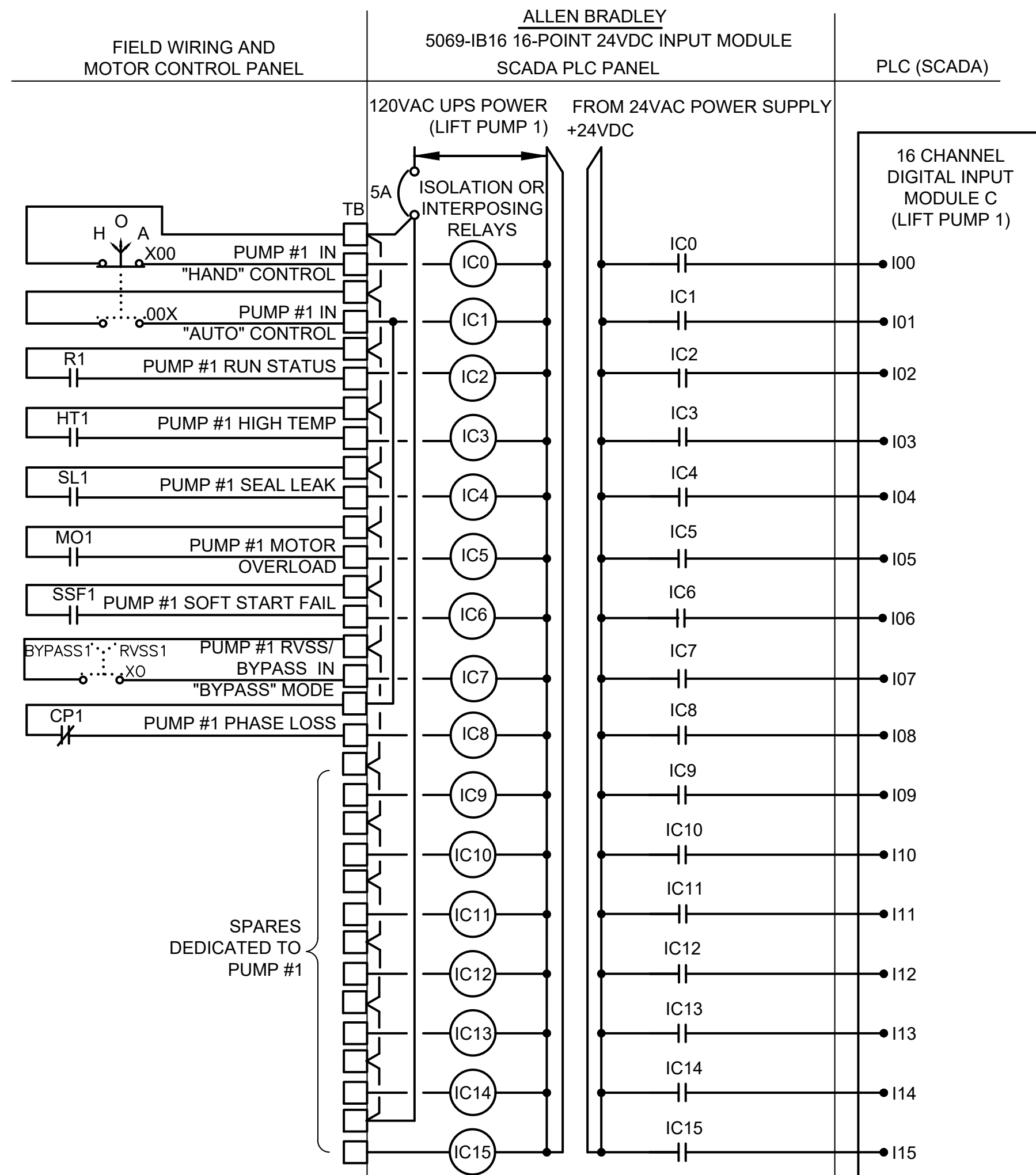
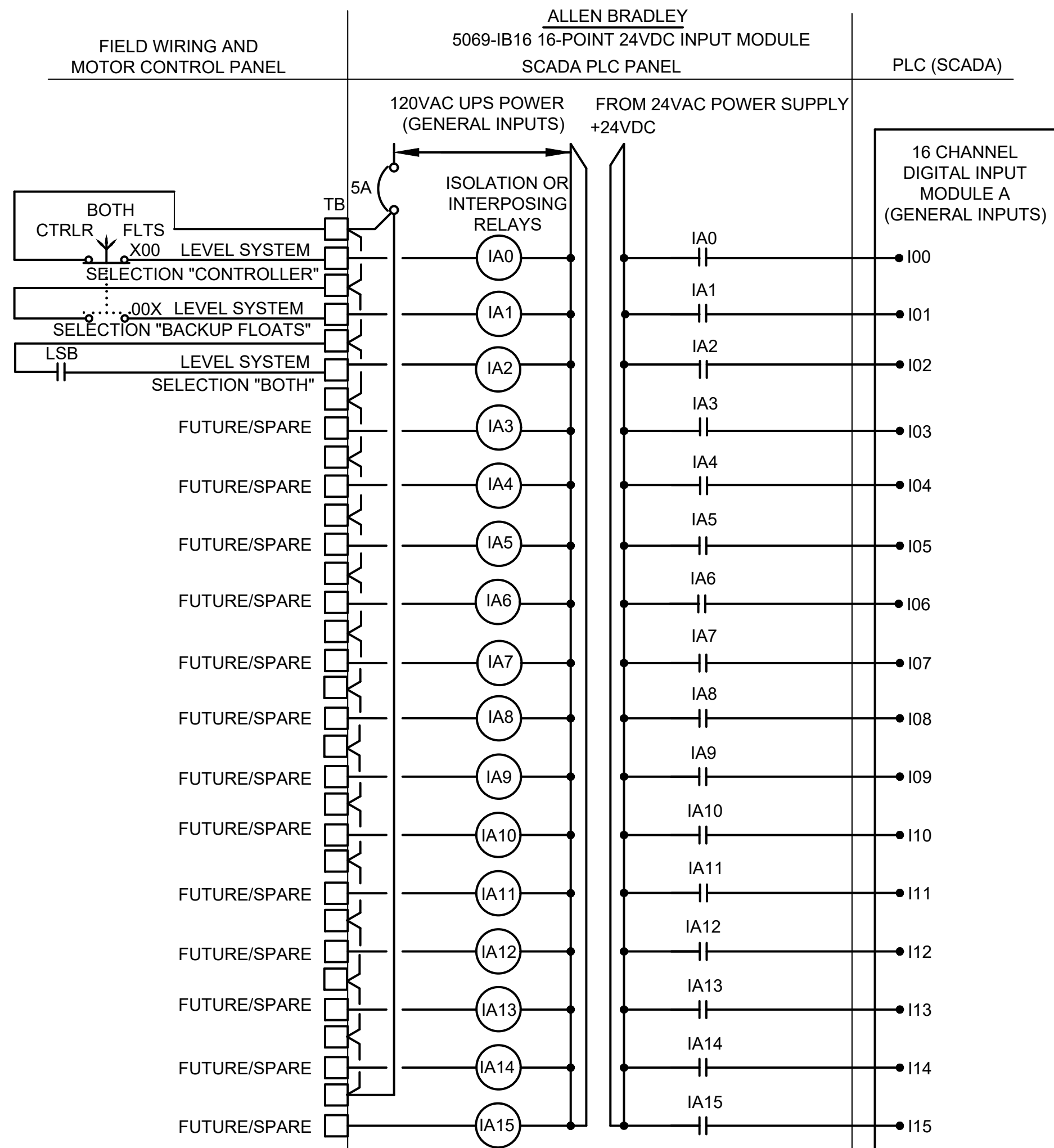
LIFT STATION CONTROL DETAILS #4

BLOWER CONTROL PANEL LAYOUT

AND CONTROL SCHEMATIC

SHEET NO.

E8



NOTES:

- ISOLATION RELAYS (IR*) ARE SINGLE POLE SINGLE THROW. WIRE ALL RELAYS TO INPUT CARDS INCLUDING SPARES.
- DESIGNATED POINTS MAY CHANGE DURING COORDINATION MEETING WITH SAWS. REFER TO SPECIFICATION 16921.
- INPUT SIGNALS SHALL BE DE-ENERGIZED (0) FOR ANY NORMAL CONDITION, AND EQUIPMENT AT REST. INPUT SIGNALS SHALL BE ENERGIZED (1) FOR ANY ALARM CONDITION AND FOR EQUIPMENT OPERATING.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

PHONE: - FAX:

SAWS BLOCK MAP# 200542 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 8"FM- 2,201 LF 12"GM- 10 LF PLAT NUMBER: 22-1180026

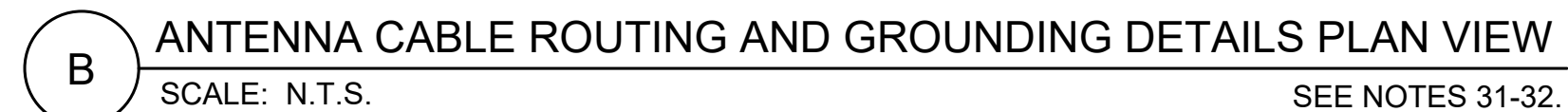
NUMBER OF LOTS: 0 SAWS JOB NO.: XX-XXXX

GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBPE FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST. SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

DESIGNED BY: CC, BD	SG	SM	E0607100
D O N D U R D E N I N C d.n.d.civilengineeringconsultants 11550 IH 10 WEST, SUITE 395 SAN ANTONIO, TEXAS 78230-1037 TEL: (210) 641-9999 FAX: (210) 641-9940 REGISTRATION #F-2214			
CEC			
9/7/2023 STEVEN MOUSER 1015671 LICENSED PROFESSIONAL ENGINEER			
DESCRIPTION			
REV DATE			
SAN ANTONIO WATER SYSTEM			
LIFT STATION EASTRIDGE UNIT 1			
LIFT STATION EASTRIDGE UNIT 1			
SCADA DETAILS #1			
SHEET NO.			
E9			

A SCADA DIGITAL INPUTS
SCALE: N.T.S.

- CONTRACTOR SHALL PROVIDE TOWER PER SPECIFICATION 17600.
- CONTRACTOR TO USE CABLE CLAMPS AND HANGERS BY ANDREW OR EQUAL SUITABLE FOR HANGING COAX CABLE. HOSE CLAMPS AND WIRE TIES ARE NOT ALLOWED.
- ANTENNA TOWER SHOWN IS FOR DIAGRAMMATIC PURPOSES ONLY. FOR REQUIRED MATERIAL SPECIFICATIONS, EQUIPMENT INSTALLATION, NOTES AND TOLERANCES SEE MANUFACTURER DRAWINGS.
- AZIMUTH IS BASED ON THE CLOCKWISE ANGLE FROM TRUE NORTH AS SHOWN.
- CONTRACTOR SHALL SUPPLY ALL ASSOCIATED EQUIPMENT FOR TOWERS PER SPECIFICATION 17600.
- REFER TO SAWS LATEST DESIGN GUIDELINES AS REQUIRED BY SAWS, FOR TOWER GROUNDING DETAIL. COMPLY WITH TOWER GROUNDING REQUIREMENTS PER TOWER MANUFACTURER.
- TOWER GROUND BAR OR LUG SHALL BE MADE OF TIN PLATED COPPER. DO NOT DRILL TOWER STRUCTURE. USE HARGER P/N TGB14212TGBKT FOR MOUNTING. USE TWO HOLE LUGS AT BUSBARS.
- CAT 6 CABLE SHALL BE ROUTED THROUGH PULLBOX AND UP TOWER USING CABLE CLAMPS. CABLE SHALL NOT BE ROUTED THROUGH TOP OF PULLBOX. TOP AND SIDE PENETRATIONS WILL NOT BE ACCEPTED.
- ALL UNDERGROUND ELECTRIC CONDUIT SHALL BE CONCRETE ENCASED 24 INCHES BELOW GRADE.
- ALL ENCLOSURES AND DISCONNECTS SHALL BE PAD-LOCKABLE.
- ALL MOUNTING HARDWARE AND STRUT CHANNEL SHALL BE 316 STAINLESS STEEL. ALL ENCLOSURES SHALL BE NEMA 4X, UNLESS OTHERWISE NOTED.
- GROUND RESISTANCE SHALL BE AS MINIMUM AS POSSIBLE, BUT IN NO CASE SHALL EXCEED 5 OHMS.
- CONTRACTOR SHALL PROVIDE ALL ASSOCIATED EQUIPMENT FOR MOUNTING ANTENNA TO THE TOWER AT AN ELEVATION OF 50 FOOT ON A 60 FOOT TOWER.
- REFER TO SPECIFICATION 17600 FOR ADDITIONAL DETAILS.
- THE COMPLETED INSTALLATION OF THE LIGHTNING PROTECTION SYSTEM SHALL MEET THE "INSTALLATION REQUIREMENTS FOR LIGHTNING PROTECTION SYSTEMS UL96A OF UNDERWRITERS LABORATORIES CURRENT EDITION AND NFPA 780 CURRENT EDITION. A CERTIFICATE OF COMPLETION FROM AN AUTHORITY HAVING JURISDICTION SHALL BE FURNISHED TO THE OWNER UPON COMPLETION. CONTRACTOR TO REFER TO TOWER MANUFACTURER GUIDELINES FOR INSTALLATION OF LIGHTNING PROTECTION SYSTEM. CONTRACTOR TO REFER TO RADIO MANUFACTURER FOR AIR TERMINAL MOUNTING REQUIREMENTS.
- 10-FOOT CLIMB GUARDS SHALL BE PROVIDED TO EACH SIDE OF THE TOWER. MUST BE CUSTOM MADE IF MANUFACTURER IS UNABLE TO PROVIDE THEM.
- THE LIGHTNING PROTECTION UNIT WILL BE CONTAINED IN AN NEMA 4 ENCLOSURE AT THE BASE OF THE TOWER TO INCLUDE A BUS BAR FOR BONDING AND GROUNDING. ONE BUS BAR AND A TOWER LIGHTNING 4 FT COPPER TINNED AIR TERMINAL SHALL BE REQUIRED TO BE BONDED AT TOP OF TOWER. LIGHTNING PROTECTION UNITS, SURGE PROTECTION MODULES, BUS BARS AND AIR TERMINALS WILL BE BONDED AND GROUNDED IN ACCORDANCE WITH MANUFACTURERS' STANDARDS AND MEET OR EXCEED TIA-607D STANDARDS. AS TECHNOLOGY ADVANCES OVER TIME, COORDINATE WITH SAWS STANDARDS ON LIGHTNING PROTECTION DEVICES.
- CONTRACTOR TO USE #6 AWG 19 STRAND CABLE WITH GREEN INSULATION.
- CONTRACTOR TO USE #2 AWG SOLID BARE TINNED COPPER. MUST BE ON THE TOWER AND AT THE CENTER OF THE BUS BAR
- TELECOMMUNICATIONS BONDING AND GROUNDING OF TOWER MUST COMPLY WITH ANSI/TIA/EIA-607-D AND TIA/EIA-222 LATEST EDITIONS.
- ALL MECHANICAL CONNECTIONS FOR BONDING AND GROUNDING MUST USE ANTIOXIDANT COMPOUND HARGER P/N HCAJC1/2 OR HCAJC8 OR OWNER APPROVED EQUAL.
- CONTRACTOR TO USE #4/0 BARE COPPER TINNED FOR TOWER GROUNDING RING SYSTEM.
- MUST BE EXOTHERMIC WELD AT THE CENTER OF THE BUS BAR AND AT THE TOWER GROUND RING.
- PROVIDE CABLE SERVICE LOOPS AT BOTTOM AND TOP OF TOWER
- FOR GROUNDING AND BONDING USE COMPRESSION LUGS LONG BARREL HARGER P/N GEC1B62A OR OWNER APPROVED
- REFER TO SPECIFICATION 16050 FOR SWITCH AND NAMEPLATE REQUIREMENTS.
- SEE STRUCTURAL PLAN DRAWINGS FOR FOUNDATION.
- CONTRACTOR TO REMOVE IRREGULARITIES AND TO PROVIDE SMOOTH FINISH, PAINT EXPOSED AREA SAFETY YELLOW.
- GROUND ROD SHALL BE BONDED TO SITE GROUNDING SYSTEM.
- LIGHT FIXTURE TO BE MOUNTED TWENTY-THREE FEET ABOVE GRADE, WHICH INCLUDES THE 3' BASE.
- WHERE THERE ARE OBSTRUCTIONS TO INSTALLING ONE OF THE SIDES OF THE GROUND RING AS SHOWN, EXTEND THE GROUND RING FROM THE MIDPOINT OF THE UNOBSTRUCTION PORTION DIRECTLY AWAY FROM THE EQUIPMENT. THIS SUBSTITUTE LENGTH OF CONDUCTOR SHALL BE EQUIVALENT IN LENGTH TO THE PORTION THAT WAS OBSTRUCTED AT THE END OF THIS SUBSTITUTE LENGTH, BOND TO A NEW GROUND ROD.
- ALL TELCOM GROUNDING CONDUCTORS ARE TINNED.
- AMERICAN PRODUCTS UTILITY WITH WOOD BACKER AND WALL MOUNT KIT ENCLOSURE: AMW-242410-A, BACKER: AMW-2420-WB WALL MOUNT: AMW-WM SEE NOTES 14, 17 AND 18.
- CAT6 STP FROM ANTENNA.
- #6 GROUND FROM LPU TO GROUND BUS BAR
- MECHANICAL DOUBLE LUG CONNECTION
- SURGE ARRESTOR TRANSECTOR CPX SYSTEM MODULE: 1000-1117, CHASSIS: 1101-1137
- EXOTHERMIC WELD TO TOWER GROUND RING CONDUCTOR FROM BUSBAR TO TOWER GROUND RING.
- GROUND BUS INSIDE ENCLOSURE. GROUND BUS SHALL BE HARGER - TGB14212TGB. LOCATED INSIDE THE ENCLOSURE (SHOWN HERE FOR CLARITY.)
- COPPER GROUND WIRE IN 1" FROM TOWER ENCLOSURE GROUND BUS
- HTCR* IMPLIES HEAT TRACE CURRENT SENSING RELAY.
- PROVIDE LITTELFUSE CURRENT SENSING RELAY ECS40A.
- MOUNT PHOTOCCELL ON NORTH SIDE OF CANOPY.
- CONTRACTOR SHALL PROVIDE ADEQUATE SPACE FOR COMPONENTS FROM ENCLOSURE EDGES
- INSTALL TAG AS SHOWN ON FRONT EXTERIOR OF PANEL.



EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

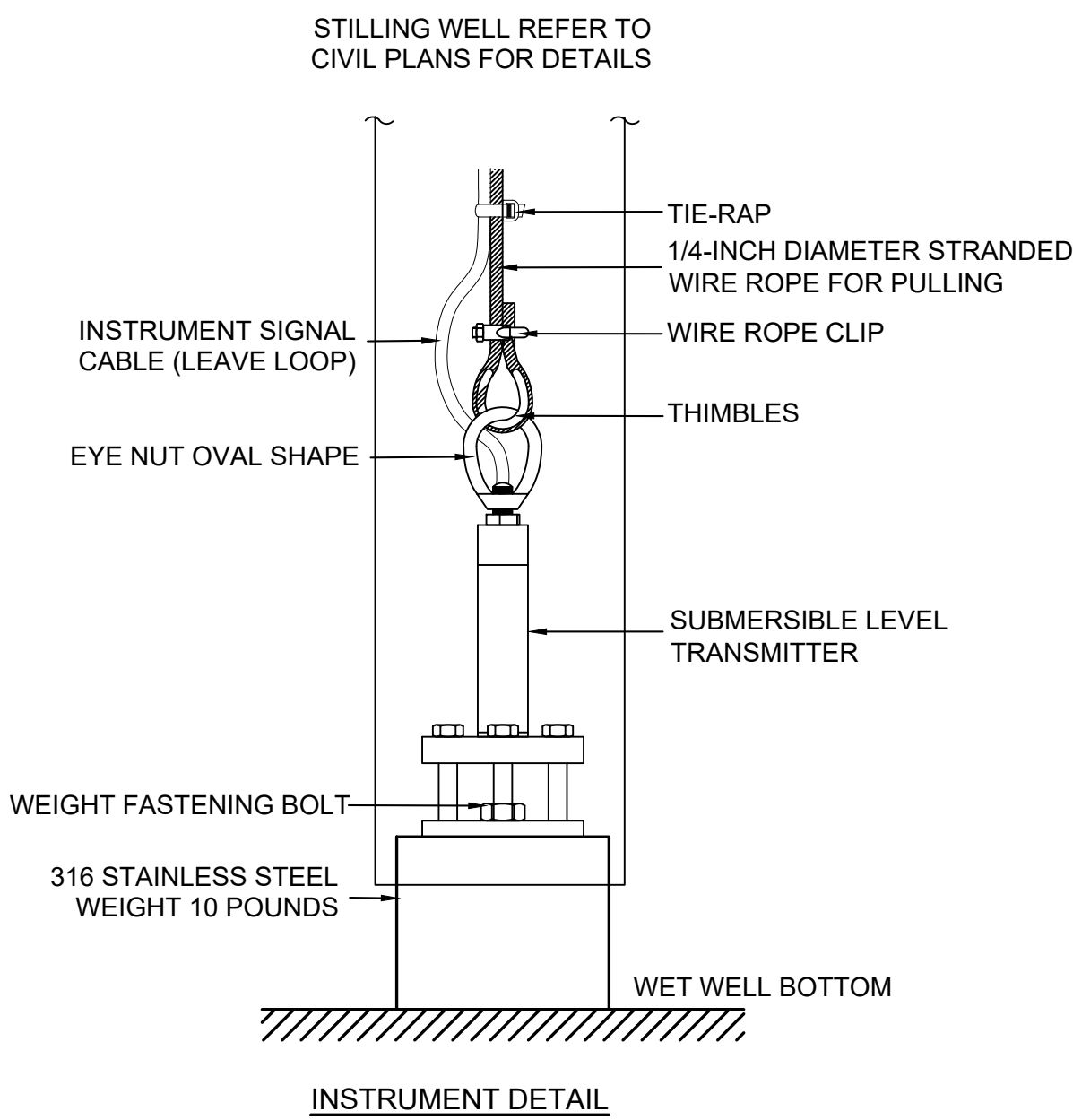
PHONE: - FAX:

SAWS BLOCK MAP# 200542 190542 TOTAL EDU'S: XXXX TOTAL ACREAGE: N/A

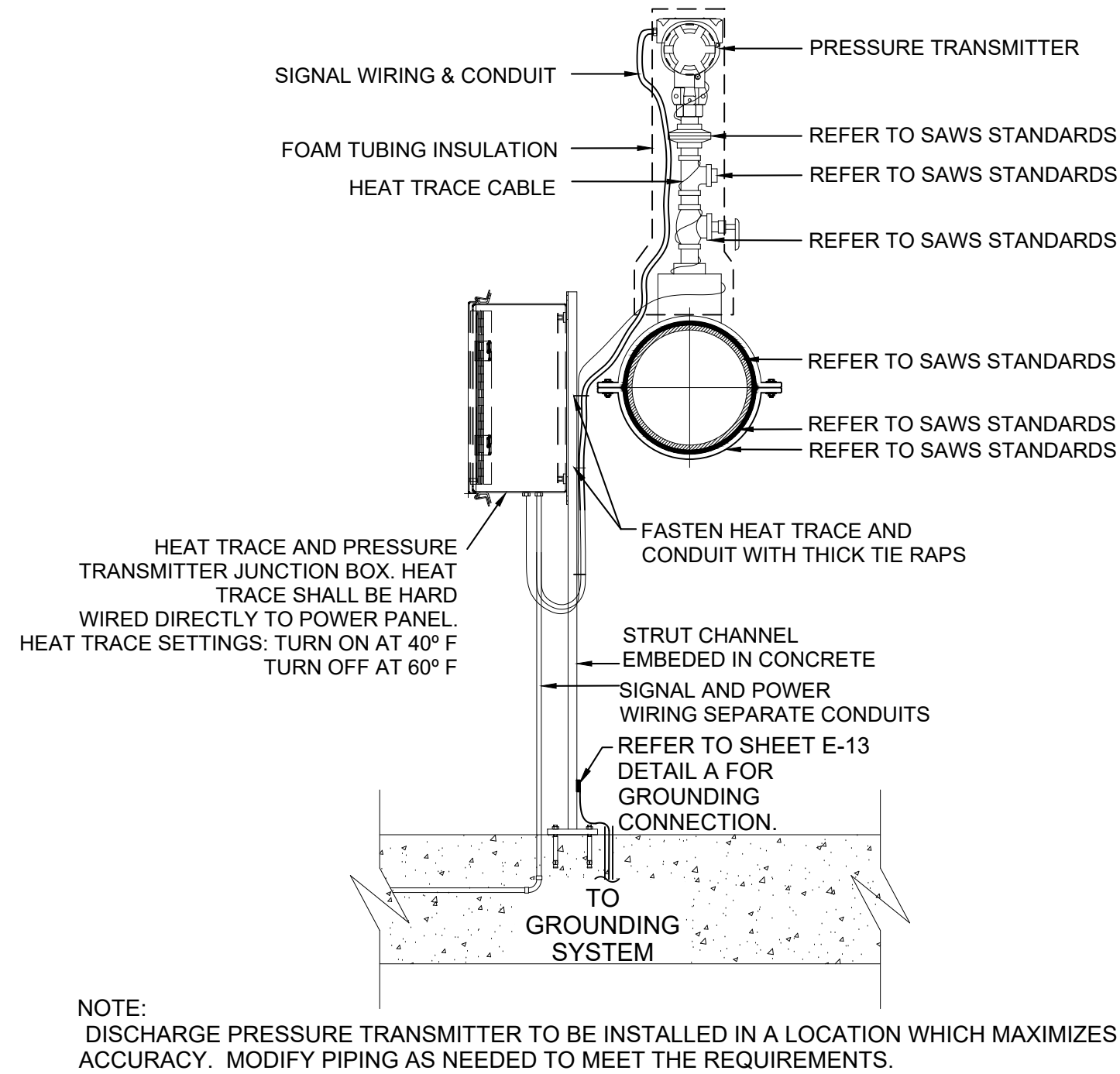
LINEAR FLOODED OF PIPE: 8"FM - 2,201 LF
12"GM - 10 LF

TOTAL NUMBER OF LOTS: 0 SAWS JOB NO.: XX-XXXX

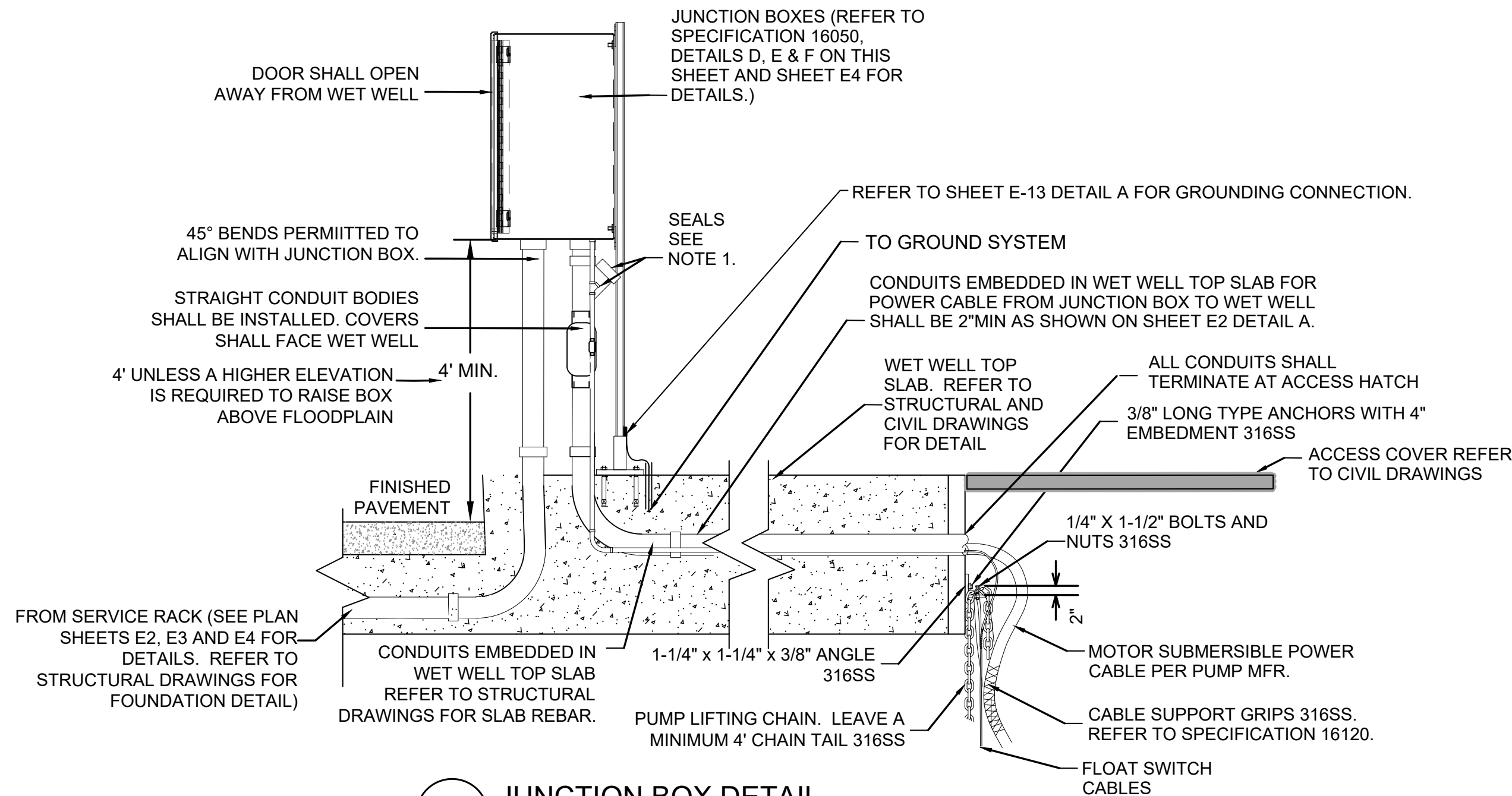
PLAN NUMBER: 22-1180026



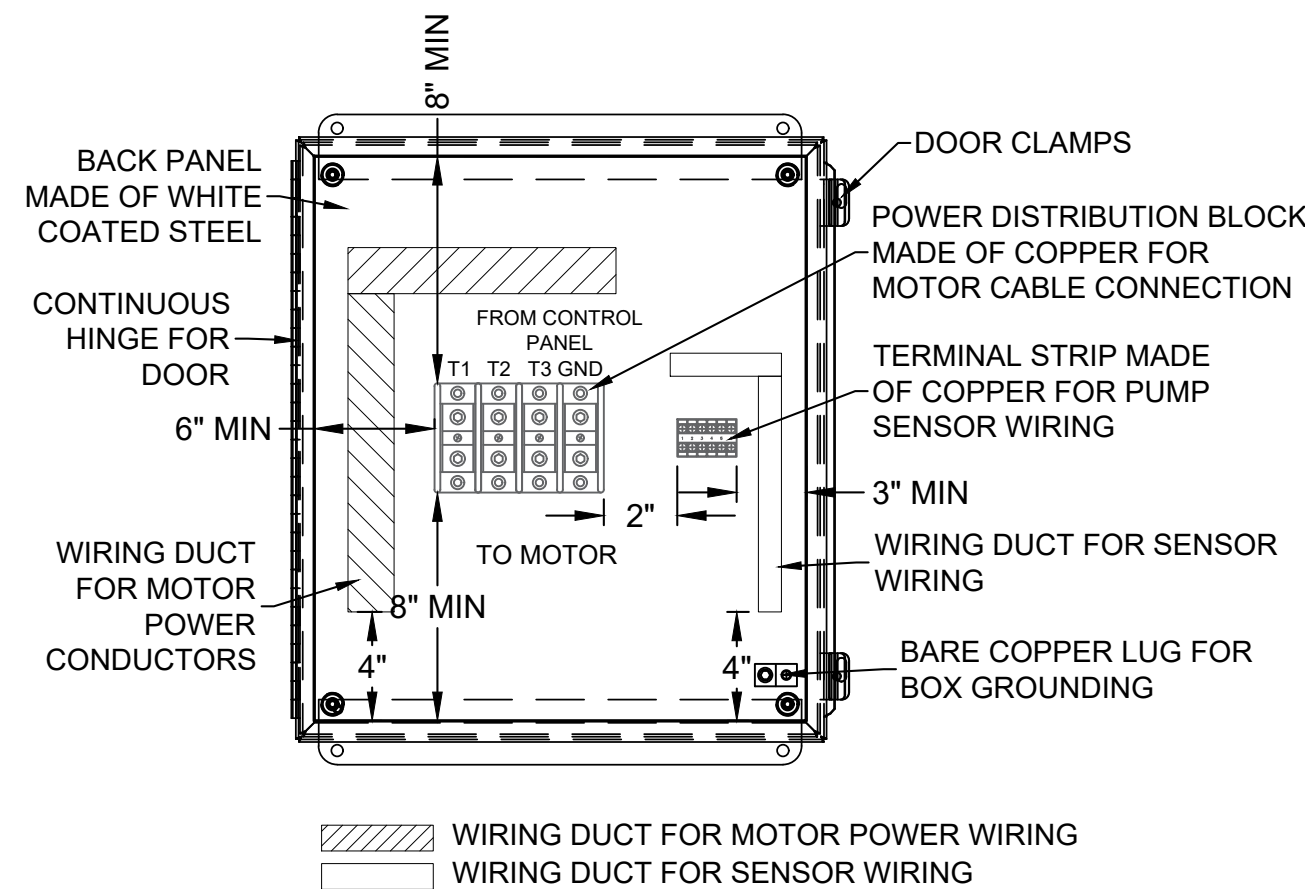
A SUBMERSIBLE LEVEL TRANSDUCER MOUNTING DETAIL
SCALE: N.T.S. SEE NOTES 16-22.



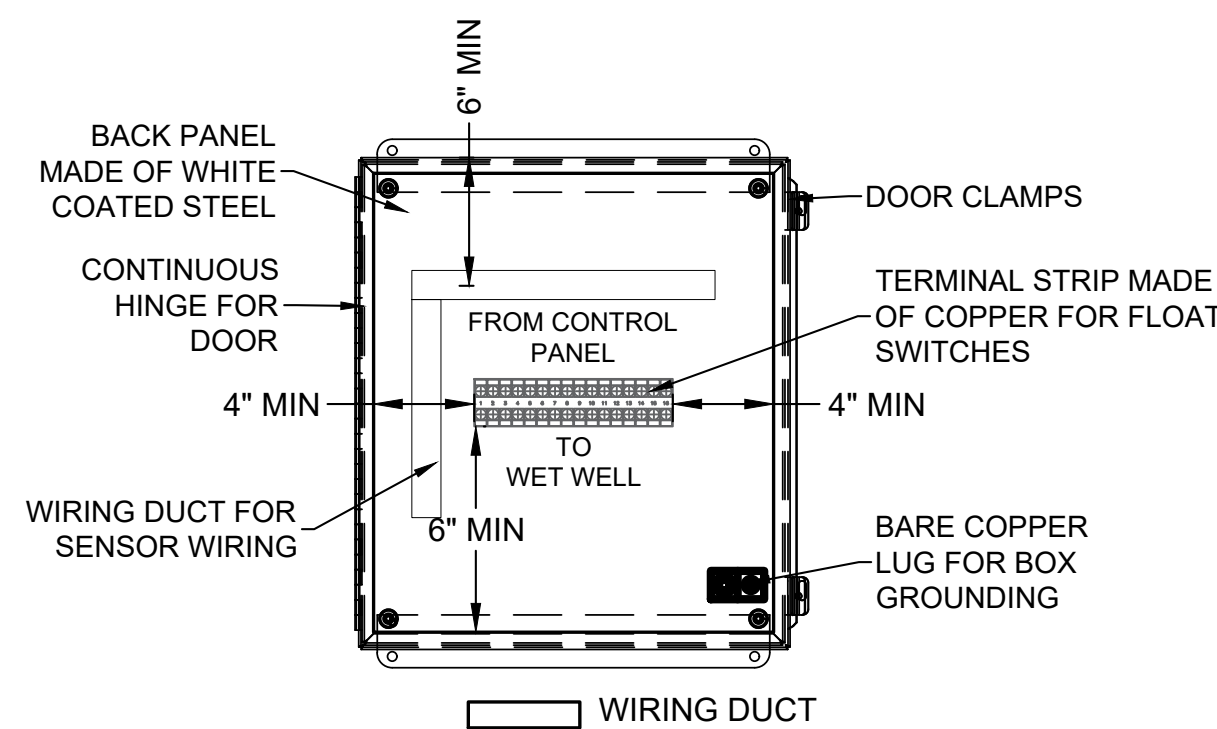
B DISCHARGE PRESSURE TRANSMITTER MOUNTING DETAIL
SCALE: N.T.S. SEE NOTES 12-15, 22-29.



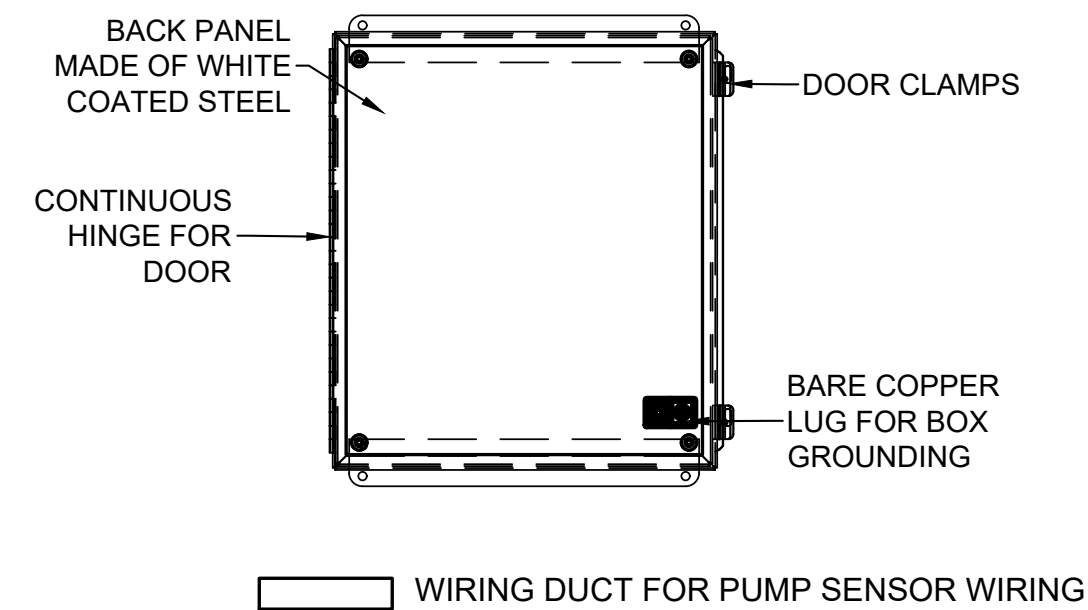
C JUNCTION BOX DETAIL
SCALE: N.T.S. SEE NOTES 1-2, 26-27.



D MOTOR JUNCTION BOX INTERNAL DETAIL
SCALE: N.T.S. SEE NOTES 3-7.



E INSTRUMENTATION AND CONTROL JUNCTION BOX INTERNAL DETAIL
SCALE: N.T.S. SEE NOTES 7-10.



F ANALOG SIGNAL WIRING JUNCTION BOX DETAIL
SCALE: N.T.S. SEE NOTES 7, 11-15.

NOTES:

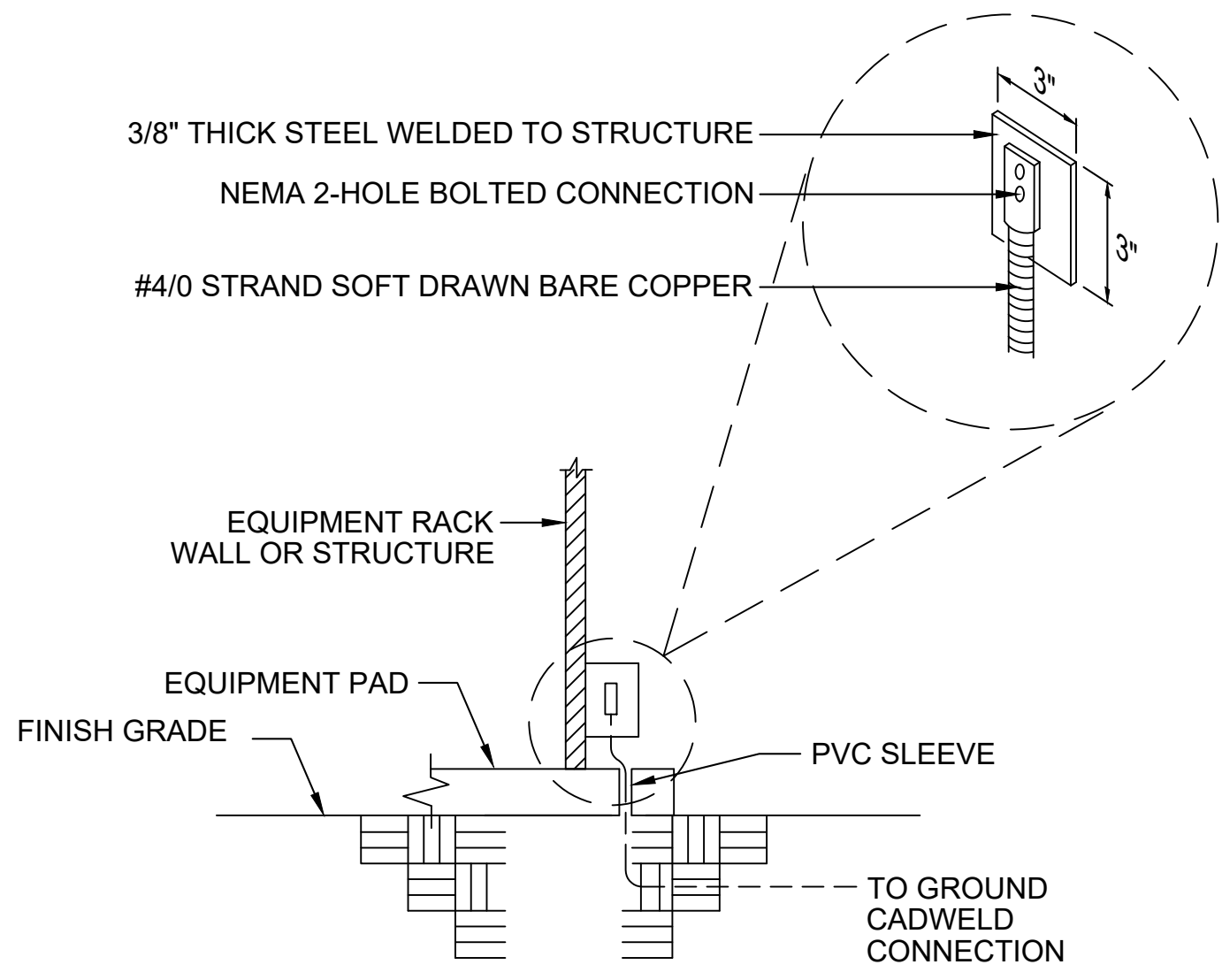
- SEAL ALL CONDUITS ENTERING WET WELL. SEALS SHALL BE INSTALLED ABOVE STRAIGHT CONDUIT BODIES. SEALS MUST BE LOCATED WITHIN 18" OF THE ENCLOSURE PER NEC. SEAL CONDUITS PROPERLY TO PREVENT GASES FROM ENTERING ELECTRICAL BOXES.
- SUBMERSIBLE TRANSDUCER CABLE SHALL BE ROUTED THROUGH CONDUIT EMBEDDED IN WET WELL TOP SLAB DIRECTLY TO LEVEL CONTROL PANEL.
- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED TO CONNECT MOTORS SUCH AS PUMPS, BLOWERS, OR ANY SPECIAL MOTOR APPLICATION REQUIRED BUT NOT SHOWN ON THESE STANDARD DRAWINGS.
- JUNCTION BOXES SHALL BE SIZED TO MEET THE INTERNAL DIMENSIONS, BASED ON THE REQUIRED SIZE OF POWER DISTRIBUTION BLOCK, WIRING DUCTS AND NUMBER OF TERMINAL STRIPS FOR PUMP SENSOR SIGNALS, BUT IN NO CASE SHALL THE PUMP JUNCTION BOXES BE SMALLER THAN 20(H)X16(W)X8(D)-INCHES.
- POWER DISTRIBUTION BLOCKS SHALL HAVE A SHORT CIRCUIT RATING THAT EXCEEDS THE MAXIMUM AVAILABLE FAULT CURRENT AT THE SERVICE ENTRANCE.
- SHOWN INTERNAL DIMENSIONS SHALL BE MEASURED FROM EDGE OF BACK PANEL AND NOT FROM THE ENCLOSURE BODY.
- ALL ALUMINUM CONDUITS SHALL BE PROVIDED WITH GROUNDING BUSHINGS AND SHALL BE GROUNDED.
- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED TO CONNECT FLOAT SWITCHES, OR ANY INSTRUMENTATION AND CONTROL DEVICE THAT IS INSTALLED BUT NOT SHOWN ON THESE DRAWINGS, IN WHICH THE WIRING CONSIST OF DISCRETE SIGNALS THAT OPERATE AT 120-VAC, OR ANY OTHER VOLTAGE SYSTEM, PROVIDED EACH VOLTAGE SYSTEM HAS ITS OWN DEDICATED JUNCTION BOX.
- INSTRUMENT WIRING SUCH AS FLOAT SWITCH CABLES SHALL TERMINATE AT THE TERMINAL STRIP.
- JUNCTION BOXES SHALL BE SIZED TO MEET THE INTERNAL DIMENSIONS, BASED ON THE REQUIRED SIZE AND NUMBER OF TERMINAL STRIPS, AND THE SIZE AND NUMBER OF WIRING DUCTS, BUT IN NO CASE SHALL THE INSTRUMENTATION AND CONTROL JUNCTION BOXES BE SMALLER THAN 16(H)X12(W)X8(D)-INCHES.
- THIS JUNCTION BOX DETAIL APPLIES TO ALL JUNCTION BOXES INSTALLED FOR ANALOG SIGNAL WIRING FOR INSTRUMENTATION AND CONTROL DEVICES SUCH AS SUBMERSIBLE LEVEL TRANSMITTERS, DISCHARGE PRESSURE TRANSMITTERS, OR ANY INSTRUMENTATION AND CONTROL DEVICE THAT IS INSTALLED BUT NOT SHOWN ON THESE DRAWINGS.
- ANALOG SIGNAL CABLES SHALL BE CONTINUOUS AND WITHOUT SPLICES, FROM INSTRUMENT, THROUGH JUNCTION BOX, TO RESPECTIVE ANALOG I/O MODULE OR DEVICE. ANALOG SIGNAL CABLE SHALL BE LOOPED AND TIED IN A NEAT MANNER AND WITHOUT OVER BENDING.
- ANALOG SIGNAL WIRING SHALL NOT BE MIXED WITH ANY OTHER POWER, CONTROL OR SIGNAL WIRING.
- JUNCTION BOXES SHALL BE SIZED BASED ON THE SIZE, BENDING RADIUS, NUMBER OF LOOPS, AND TOTAL NUMBER OF ANALOG SIGNAL CABLES CONTAINED, BUT IN NO CASE SHALL THE INSTRUMENTATION AND CONTROL JUNCTION BOXES BE SMALLER THAN 16(H)X12(W)X8(D)-INCHES.
- A DEDICATED GROUNDING CABLE SHALL BE INSTALLED TO GROUND THE JUNCTION BOX AND EACH CONDUIT BUSHINGS.
- INSTRUMENT, WIRE ROPE AND ALL FASTENERS SHALL BE OF STAINLESS STEEL 316 TYPE.
- WEIGHT SHALL BE DRILLED AND TAPPED AT THE CENTER TO ALLOW A BOLT TO SOLIDLY FASTEN INSTRUMENT TO WEIGHT.
- INSTRUMENT SIGNAL CABLE SHALL BE FASTENED TO WIRE ROPE WITH THICK HEAVY DUTY PLASTIC TIE-RAPS.
- EYE NUT THREADED TO INSTRUMENT AND OVAL SIZE SHALL BE LARGE ENOUGH TO ALLOW SIGNAL CABLE TO FREELY BEND AND PASS THROUGH.
- THIS DETAIL IS SHOWN PER SAWS LIFT STATION SCADA DESIGN GUIDELINES.
- REFER TO CIVIL DRAWINGS FOR SUBMERSIBLE LEVEL TRANSDUCER INSTALLATION WITHIN STILLING WELL DETAIL.
- INSTRUMENT SIGNAL CABLE SHALL NOT BE SPLICED AND SHALL BE CONTINUOUS FROM THE TRANSDUCER TO THE PUMP CONTROL PANEL.
- REFER TO DETAIL D OF SHEET E11.
- ALL PIPING NIPPLES AND FITTINGS SHALL BE MADE OF STAINLESS STEEL 316.
- INSTALL TAG LABELED "HEAT TRACE AND PRESSURE TRANSMITTER" ON FRONT EXTERIOR OF PANEL.
- CONTRACTOR SHALL PROVIDE ADEQUATE SPACE FOR COMPONENTS FROM ENCLOSURE EDGES.
- ENCLOSURE SHALL BE NEMA 4X 316SS WITH WHITE ENAMELED EXTERIOR.
- DISCHARGE PRESSURE TRANSMITTER TO BE INSTALLED IN A LOCATION WHICH MAXIMIZES ACCURACY. MODIFY PIPING AS NEEDED TO MEET THE REQUIREMENTS.
- CONTRACTOR TO REQUEST THE DETAILS FROM SAWS INSPECTOR.

EAST SEMWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

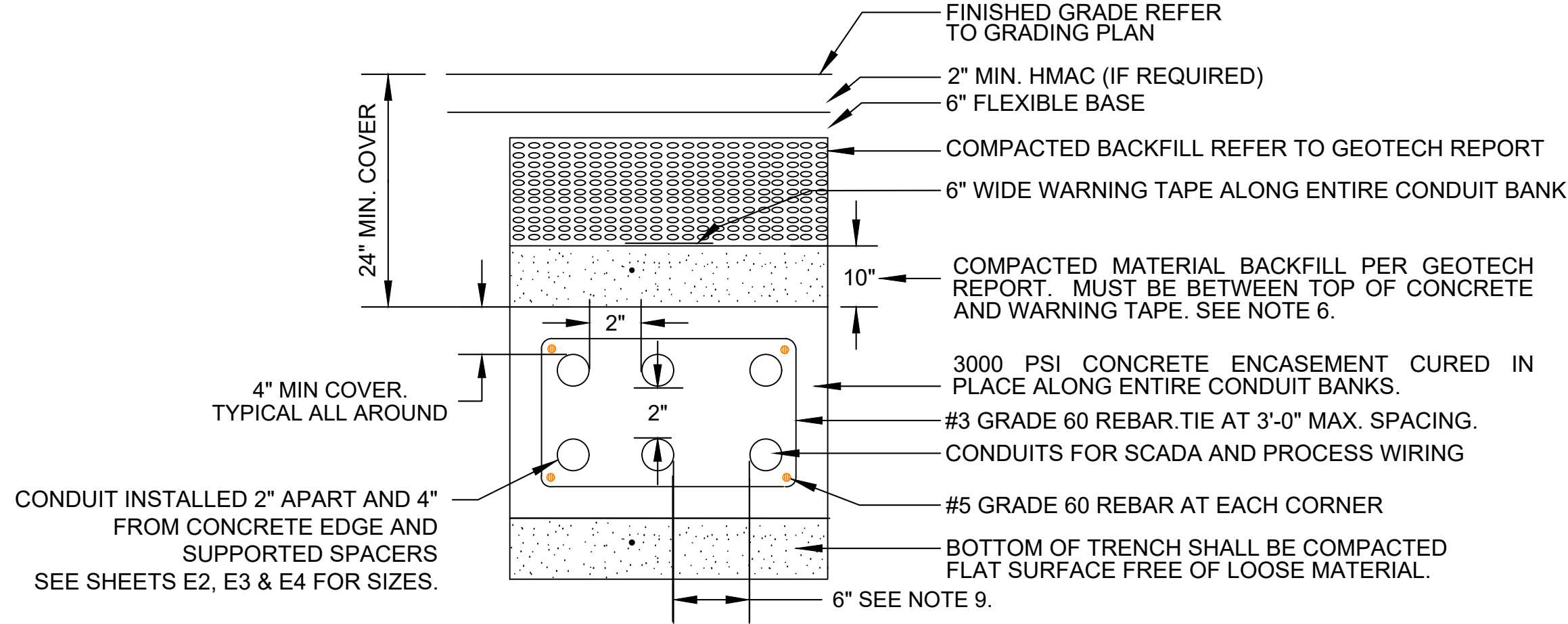
DEVELOPER'S NAME: KING FISH DEVELOPMENT			
ADDRESS: 2722 WEST BITTERS RD, SUITE 106			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78231	
PHONE: -	FAX: -		
SAWS BLOCK MAP# 200542	190542	TOTAL EDU'S: XXX	TOTAL ACREAGE: N/A
TOTAL LINEAR FOOTAGE OF PIPE: 8"FM- 2,201 LF		PLAT NUMBER: 22-1180026	
NUMBER OF LOTS: 0		SAWS JOB NO.: XX-XXXX	

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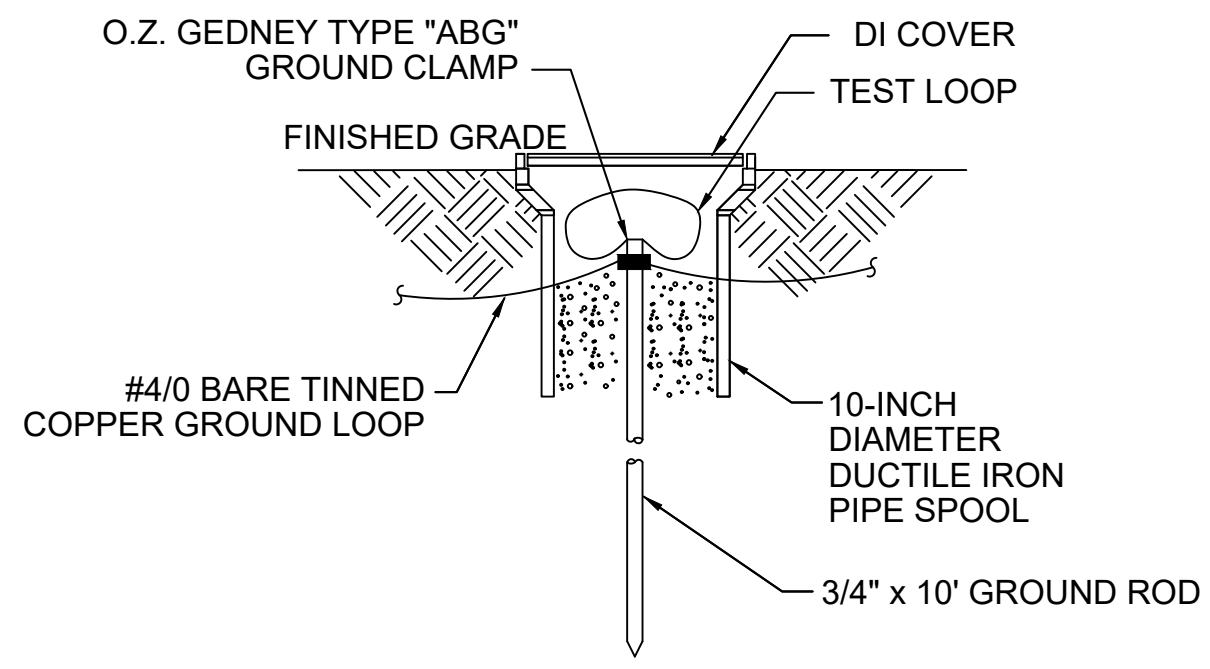
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CEC			
8/7/2023 STEVEN MOUSER 103671 LICENSED PROFESSIONAL ENGINEER			
DESCRIPTION			
REV	DATE		
SAN ANTONIO WATER SYSTEM			
LIFT STATION EASTRIDGE UNIT 1			
WET WELL JUNCTION BOXES & INSTRUMENTATION SCHEMATICS			
SHEET NO.			
E12			



A TYPICAL STRUCTURE GROUND DETAIL
SCALE: N.T.S. SEE NOTES 1-2.

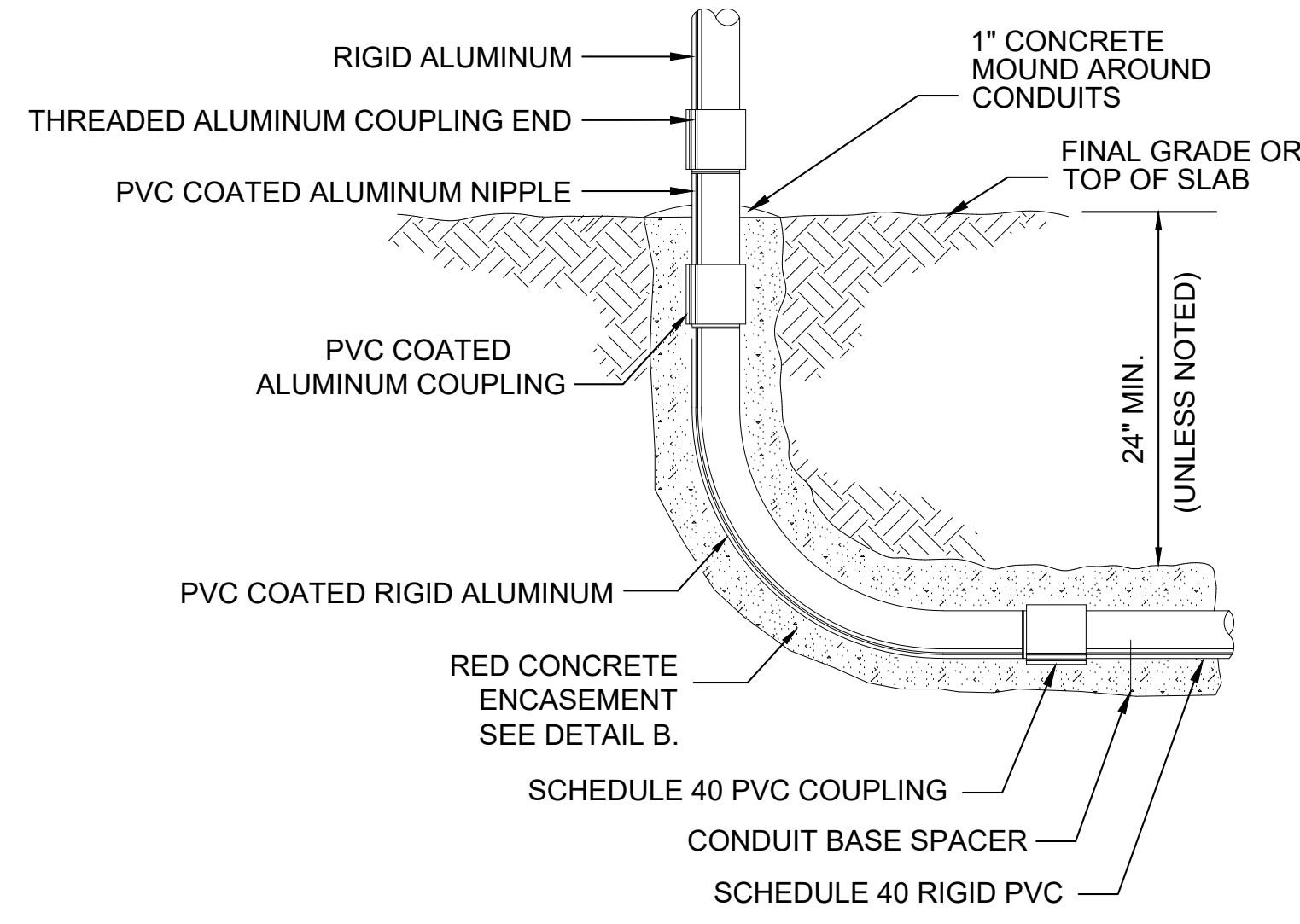


B TYPICAL LOW VOLTAGE DUCT BANK SECTION
SCALE: N.T.S. SEE NOTES 3-10.

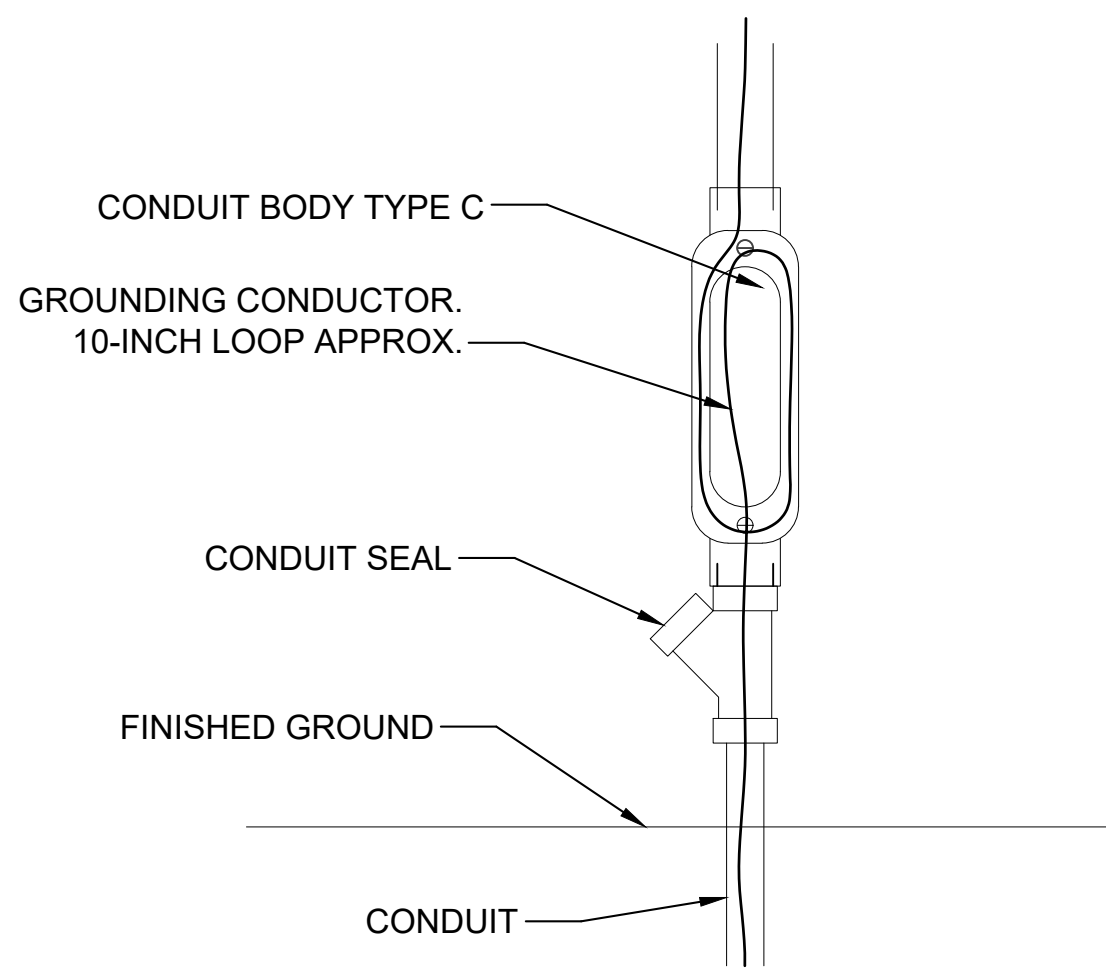


C GROUND TEST WELL ARRANGEMENT
SCALE: N.T.S.

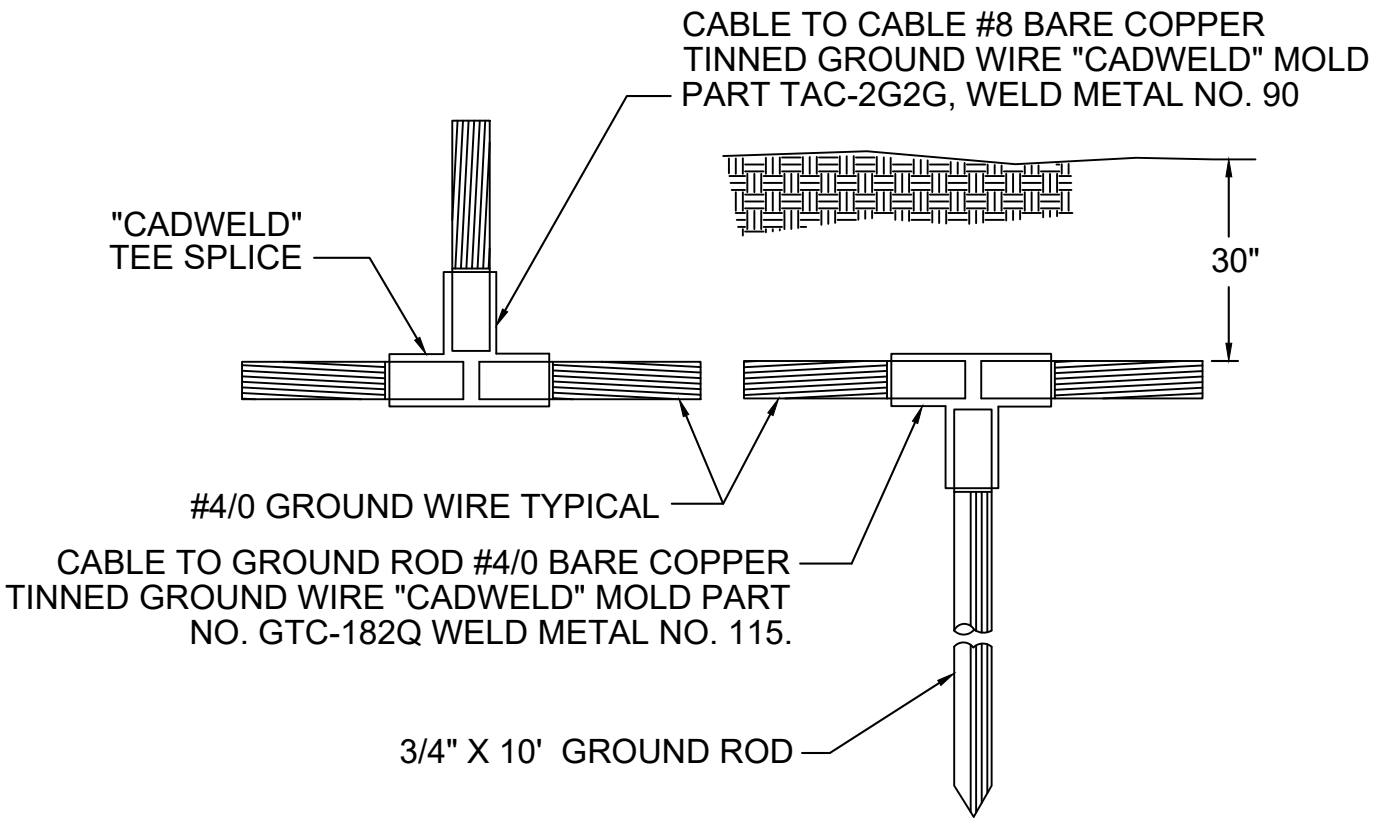
- NOTES:
- IF METAL STRUCTURES ARE NOT FURNISHED WITH PROVISION FOR BOLTED CONNECTION TO GROUNDING SYSTEM, CONTRACTOR SHALL PROVIDE WELDED PAD FOR GROUND CONNECTION. ALL RACKS MUST BE GROUNDED AT EACH END.
 - CABLES SHALL NOT BE DIRECTLY BOLTED TO STRUCTURES.
 - PROVIDE 100% CONCRETE ENCASEMENT BOTH HORIZONTALLY AND VERTICALLY.
 - CONTRACTOR SHALL COORDINATE LOCATION WITH EXISTING AND NEW UNDERGROUND WATER PIPE, AND ELECTRIC CABLE/CONDUIT.
 - REBAR SHALL BE WIRE TIED TO REBAR STIRRUPS TO PROVIDE STABILITY DURING CONCRETE POUR.
 - ALL BACKFILL SHALL BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY OR DETERMINED BY TXDOT TEST METHOD TEX-113E
 - REFER TO GEOTECH REPORT AND STRUCTURAL DRAWINGS FOR BACKFILL MATERIAL TYPE AND BACKFILL MOISTURE CONTENT.
 - REFER TO GEOTECH REPORT AND STRUCTURAL DRAWINGS FOR EXCAVATION.
 - 6\"/>
 - UNDERGROUND DUCT BANK BENDS 25 DEGREES AND LARGER SHALL BE PVC-COATED RIGID ALUMINUM. ALL PIPING NIPPLES AND FITTINGS SHALL BE MADE OF STAINLESS STEEL 316.
 - CONTRACTOR SHALL PROVIDE HANDHOLE EQUIPPED WITH 1\"/>
 - CONNECT ALL NON CURRENT-CARRYING METAL PART AN ANY METALLIC RACEWAY GROUNDING BUSHINGS TO GROUND ROD CONNECTOR WITH #4/0 AWG COPPER CONDUCTOR.



D TYPICAL DUCT-BANK TRANSITION DETAIL
SCALE: N.T.S.

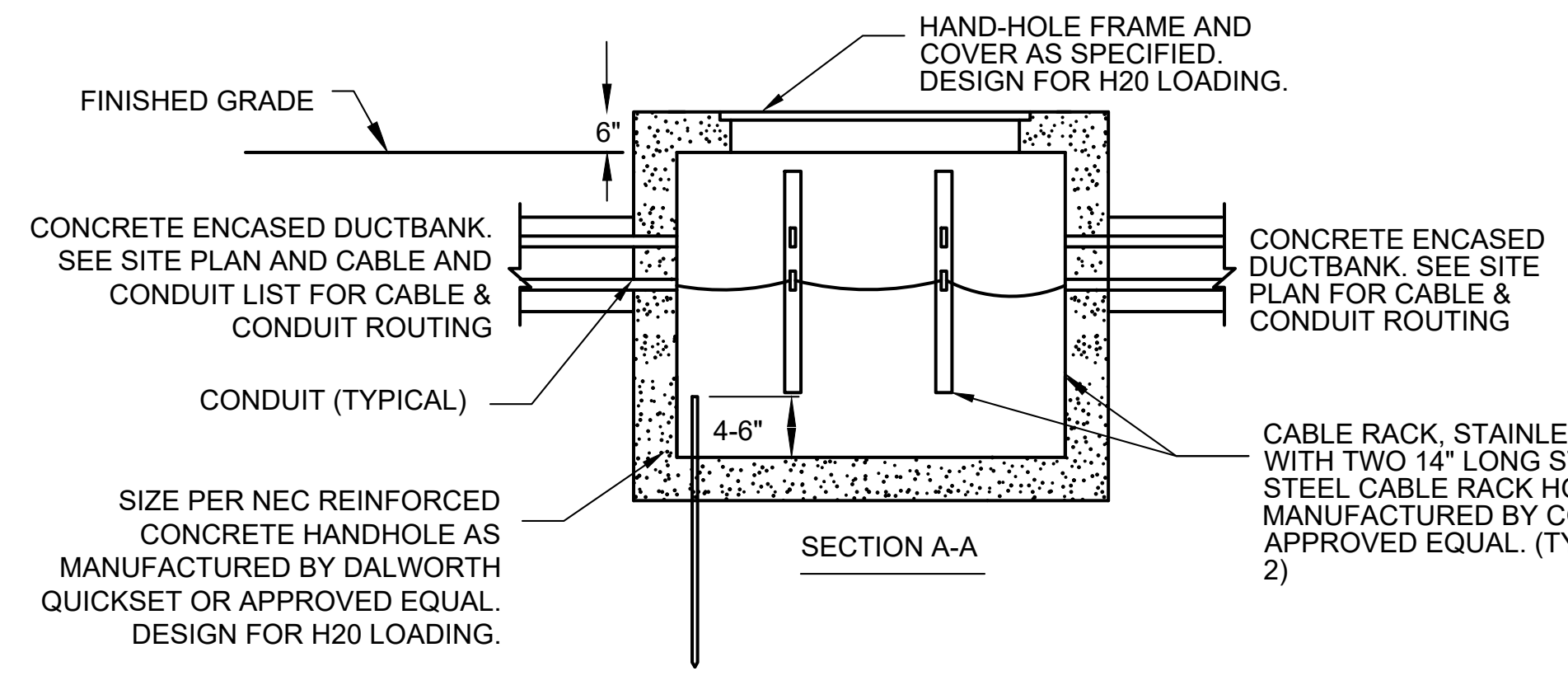


E CONDUIT BODY FOR GROUND RESISTANCE TEST DETAIL
SCALE: N.T.S.

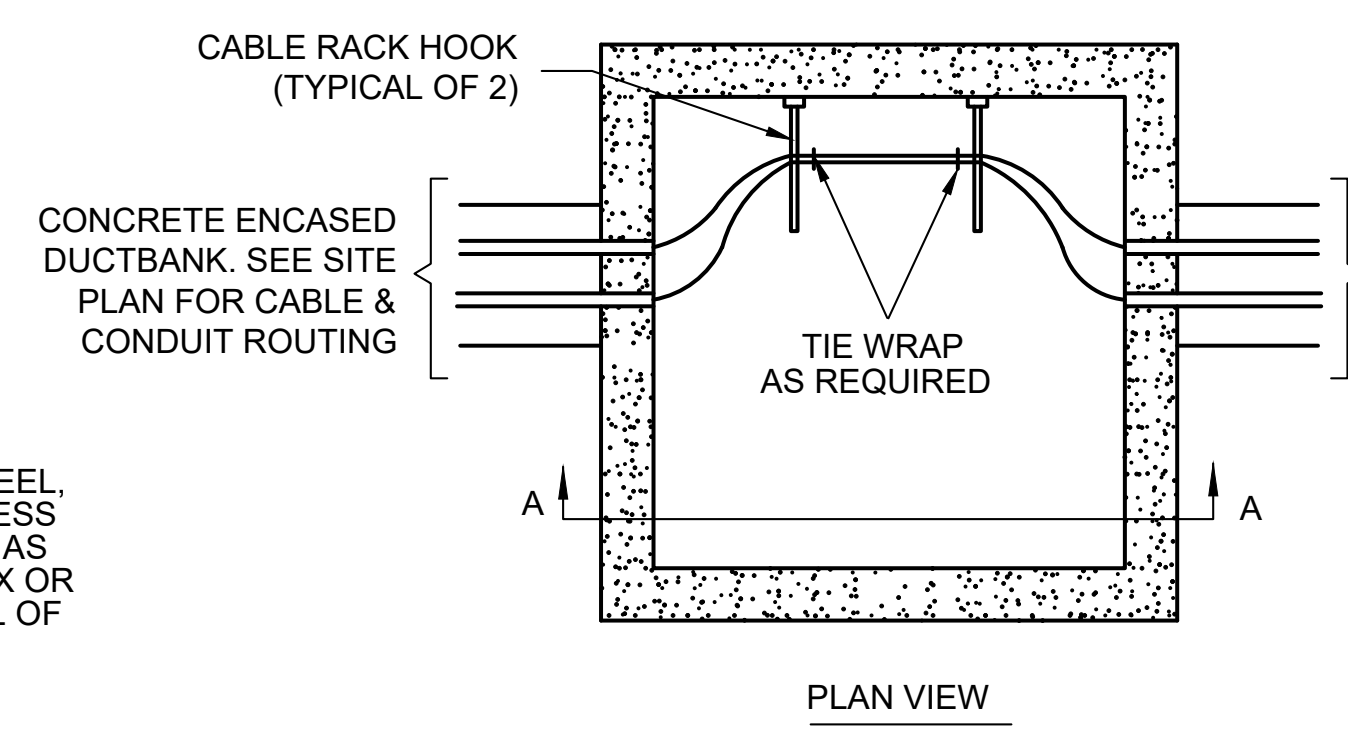


NOTE: THIS DETAIL DOES NOT EXCLUDE CONTRACTOR FROM USING OTHER APPROVED PRODUCTS.

F TYPICAL GROUND DETAIL
SCALE: N.T.S.



G PRE-CAST HAND-HOLE DETAIL
SCALE: N.T.S. SEE NOTES 11 AND 12.

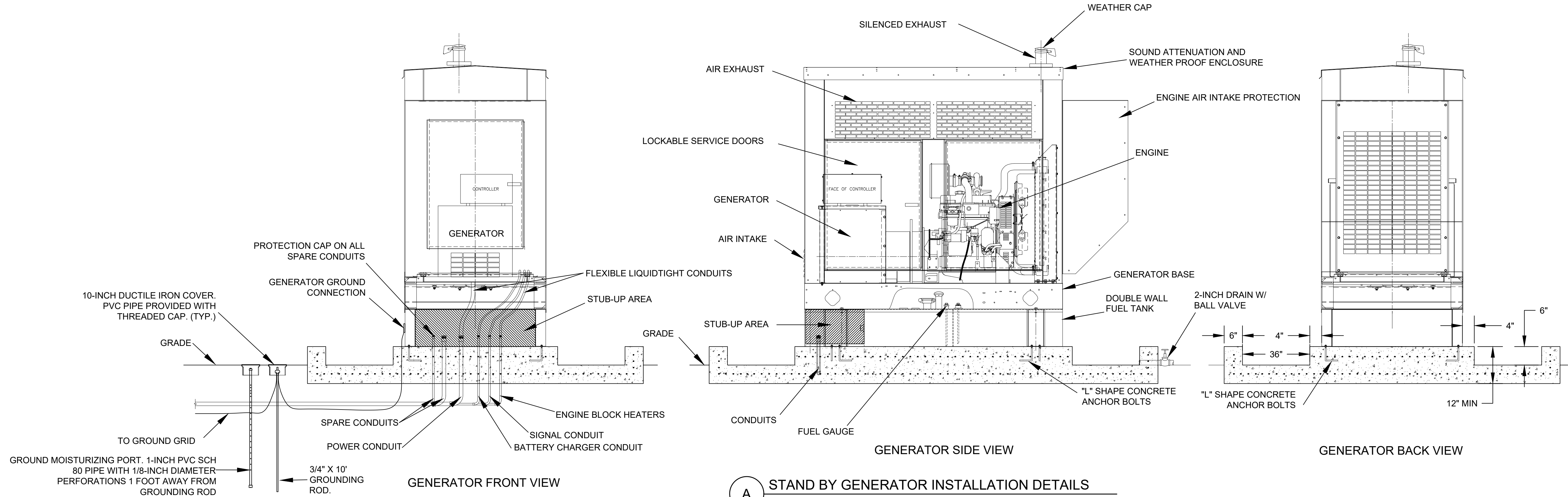


EAST SEMERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT			
ADDRESS: 2722 WEST BITTERS RD, SUITE 106			
CITY: SAN ANTONIO	STATE: TEXAS	ZIP: 78231	
PHONE: --	FAX: --		
SAWS BLOCK MAP# 200542	190542	TOTAL EDU'S: XXX	TOTAL ACREAGE: N/A
TOTAL LINEAR FOOTAGE OF PIPE: 8\"/>		PLAT NUMBER: 22-1180026	
NUMBER OF LOTS: 0		SAWS JOB NO.: XX-XXXX	

GRUBB ENGINEERING, INC.
ELECTRICAL POWER SYSTEMS
DESIGN AND TESTING
TBP# FIRM REGISTRATION NO. 3904
2727 N. ST. MARY'S ST., SAN ANTONIO, TEXAS 78212
BUS: (210) 658 7250 FAX: (210) 658 9805

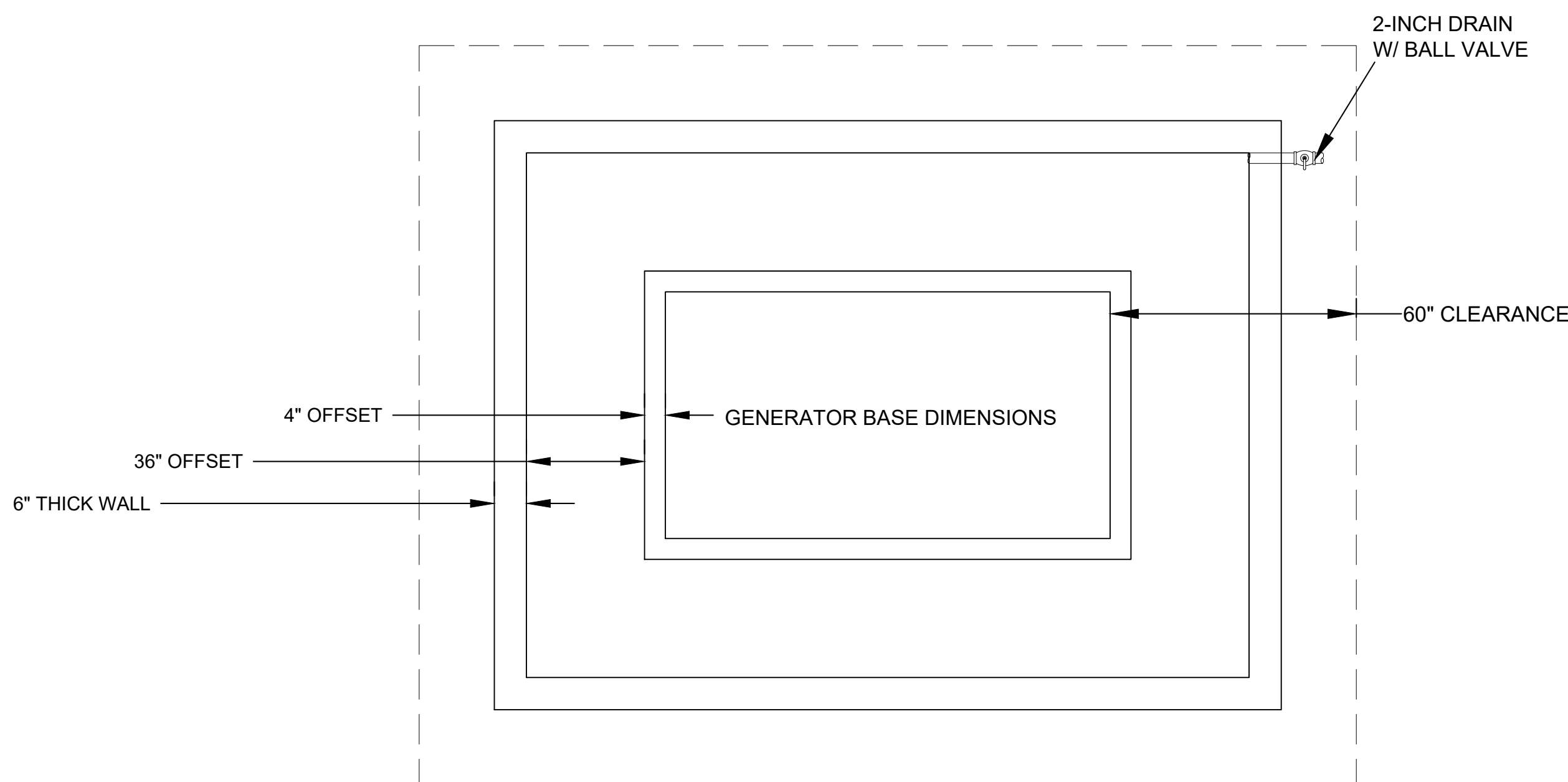
DESIGNED BY: CC, BD	DRAWN BY: SG	APPROVED: SM	JOB NO.: E0607100
DON D. DURDEN, INC. d.d.a. CIVIL/ENGINEERING CONSULTANTS 11550 IH 10 WEST, SUITE 385 SAN ANTONIO, TEXAS 78230-1037 TEL: (210) 641-9999 FAX: (210) 641-4646 REGISTRATION #F-2214			
DESCRIPTION			
REV. DATE			
SAN ANTONIO WATER SYSTEM LIFT STATION EASTRIDGE UNIT 1 DUCTBANK AND GROUNDING DETAILS			
SHEET NO. E13			



A STAND BY GENERATOR INSTALLATION DETAILS
SCALE: N.T.S.

NOTES

1. GENERATOR GROUND AND FRAME SHALL BE SOLIDLY BONDED TO THE REST OF THE GROUNDING SYSTEM AT EACH CORNER. GROUND RESISTANCE MEASURED AT THE GENERATOR SHALL HAVE THE SAME MAGNITUDE AS THE REST OF THE GROUNDING SYSTEM, AND IT SHALL NOT EXCEED 5 OHMS.
2. GENERATOR SHALL BE PROVIDED WITH SOUND ATTENUATION ENCLOSURE AND EXHAUST, AND MUST BE WEATHER PROOF. SEE SPECIFICATIONS FOR OTHER GENERATOR REQUIREMENTS.
3. GENERATOR FRAME SHALL BE SOLIDLY ANCHORED TO CONCRETE SLAB. ALL COMPONENTS USED TO FASTEN THE GENERATOR SHALL BE MADE OF STAINLESS STEEL 316.
4. CONDUITS SHALL INCLUDE AC POWER, BATTERY CHARGER, ENGINE BLOCK HEATER, SIGNAL AND SPARE.
5. FUEL TANK SHALL BE DOUBLE WALL TYPE.
6. CONCRETE SLAB SHALL BE MADE OF CONCRETE MIX WITH A COMPRESSIVE STRENGTH OF 3,000 PSI. CONCRETE SLAB MUST INCLUDE A CONTAINMENT STRUCTURE AS SHOWN IN DETAIL B OF THIS SHEET. A 2-INCH DRAIN PIPE AND BALL VALVE SHALL BE PROVIDED. REFER TO STRUCTURAL SHEETS FOR PAD DETAILS.
7. A 5-FOOT DEDICATED CLEARANCE AROUND GENERATOR CONTAINMENT SLAB SHALL BE PROVIDED IN STRICT COMPLIANCE WITH SAWS LIFT STATION STANDARDS.
8. CONDUIT STUB-UP AREA SHOWN IN THIS DRAWING IS FOR ILLUSTRATION PURPOSES ONLY. CONTRACTOR MUST VERIFY THE LOCATION OF THE STUB-UP AREA WITH THE GENERATOR MANUFACTURER.
9. CONTRACTOR SHALL VERIFY GENERATOR INSTALLATION REQUIREMENTS WITH GENERATOR MANUFACTURER.
10. VOLTAGE DIP SHALL NOT DROP BELOW 15% AND FREQUENCY SHALL NOT DROP BELOW 5% WHEN STARTING ACROSS-THE-LINE THE LARGEST MOTOR WHILE ALL OTHER LIFT STATION MOTORS AND AUXILIARY TRANSFORMER ARE RUNNING AT FULL LOAD.
11. GENERATOR SHALL BE WIRED AS A NON-SEPARATELY DERIVED SYSTEM, IN STRICT COMPLIANCE WITH NEC CURRENT REQUIREMENT.



B CONTAINMENT BASE DETAILS
SCALE: N.T.S.

EAST SEWERSHED (SALADO WATERSHED) - DOS RIOS W.R.C.

DEVELOPER'S NAME: KING FISH DEVELOPMENT

ADDRESS: 2722 WEST BITTERS RD, SUITE 106

CITY: SAN ANTONIO STATE: TEXAS ZIP: 78231

PHONE: - FAX:

SAWS BLOCK MAP# 200542 200544 190542 TOTAL EDU'S: XXX TOTAL ACREAGE: N/A

TOTAL LINEAR FOOTAGE OF PIPE: 8"FM- 2,201 LF 12"GM- 10 LF PLAT NUMBER: 22-1180026

NUMBER OF LOTS: 0 SAWS JOB NO.: XX-XXXX

