		LAYOU	T SYMBOLS		
	CABLE, CONDUIT & WIRE			ТТВ	
	CONDUIT RUN ON SURFACE (WALL OR CEILING)	(A)	FIXTURE TYPE "A" SURFACE MOUNTED OR SUSPENDED FLUORESCENT		TELEPHONE TERMINAL BOAR TELEPHONE OUTLET – WALI
	CONDUIT RUN IN SLAB (OR BELOW GRADE)				TELEPHONE OUTLET - FLOO
——————————————————————————————————————	CONDUIT CAPPED		RECESSED FLUORESCENT FIXTURE	$\overset{\triangleleft}{\blacklozenge}$	INTERCOM HANDSET OUTLET ITS LAN DATA OUTLET
0	CONDUIT GOING UP		SURFACE MOUNTED OR SUSPENDED 610 x 610 FLUORESCENT FIXTURE	S	SPEAKER - CEILING MOUNT
•	CONDUIT GOING DOWN		RECESSED 610 x 610 FLUORESCENT FIXTURE	⊢S	SPEAKER – WALL MOUNTED
\sim	FLEXIBLE CONDUIT		FLUORESCENT STRIP FIXTURE	Ŭ	<u>GROUNDING</u>
			WALL MOUNTED FLUORESCENT FIXTURE	├ ───┤	GROUND BUS GROUND COMPRESSION COM
	CONDUIT HOME RUN c/w NUMBER OF WIRES CONDUIT SEAL		SURFACE MOUNTED OR SUSPENDED UNSWITCHED		EQUIPMENT GROUND CONNE
<u> </u>	WP-WEATHERPROOF, EP-EXPLOSION PROOF		FLUORESCENT FIXTURE RECESSED UNSWITCHED FLUORESCENT FIXTURE		THERMIT WELD GROUND CO
	CONDUIT UNION				GROUND ROD GROUND WELL & ROD
	CONDUIT EXPANSION JOINT	\bigcup	AREA LIGHTING FIXTURE SURFACE MOUNTED OR SUSPENDED LUMINAIRE		
¹	CONDUIT BEND	$\widetilde{\mathcal{Q}}$	SURFACE MOUNTED OR SUSPENDED LUMINAIRE		GROUND GRID w/ RODS ON
·	BARE GROUND WIRE		LUMINAIRE ON EMERGENCY POWER	••	
	OVERHEAD POWER SERVICE ENTRANCE	Ø	RECESSED LUMINAIRE		GROUND GRID w/ WELLS &
		X	RECESSED LUMINAIRE ON EMERGENCY POWER	•	
	OVERHEAD TELEPHONE SERVICE ENTRANCE	нÒ	WALL MOUNTED LUMINAIRE	← ^a	<u>CONTROL</u> SINGLE POLE SWITCH (SWIT
0	JUNCTION BOX - CEILING SPACE	•~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	POLE MOUNTED LUMINAIRE	\$ _{Ax}	CIRCUIT "x"
	JUNCTION BOX - FLUSH MOUNTED	\sim	CEILING MOUNTED EXIT SIGN c/w DIRECTION ARROW	\$	2 SWITCHES IN 2 GANG BC
	JUNCTION BOX – WALL MOUNTED JUNCTION BOX – MOTOR / EQUIPMENT			₩ ₩	3 SWITCHES IN 3 GANG BC 4 SWITCHES IN 4 GANG BC
	MULTI-CABLE TRANSIT (MCT)	⊢⊠↑	WALL MOUNTED EXIT SIGN c/w DIRECTION ARROW	\$ \$	
0	SPARE WIRE LOOP	\leftarrow	TENON MOUNTED LUMINAIRE	۹ [°]	TWO POLE SWITCH THREE WAY SWITCH
<u>ک</u>	CABLE OR CONDUIT DESIGNATION PC-POWER CC-CONTROL HC-HEATING		EMERGENCY LIGHTING UNIT c/w BATTERY PACK,	₽ €	FOUR WAY SWITCH
PC-101	TC-TELEPHONE IC-INSTRUMENTATION	4-4	CHARGER AND TWO HEADS	₽ \$ [×]	SWITCH c/w PILOT LIGHT
A10-b	PANEL "A", CIRCUIT "10", SWITCH "b"	P⊸	WALL MOUNTED SINGLE EMERGENCY LIGHTING HEAD c/w JUNCTION BOX	\$ • • • • • • • • • •	MANUAL MOTOR SWITCH
			WALL MOUNTED DOUBLE EMERGENCY LIGHTING HEAD c/w JUNCTION BOX	∮ [™]	MANUAL MOTOR SWITCH c/v
XFMR		B	1 LAMP BALLAST (REMOTE MOUNTED)	Φ \$	KEY OPERATED SWITCH
35	POWER TRANSFORMER		2 LAMP BALLAST (REMOTE MOUNTED)	. ^ĸ \$ \$ \$ \$	EXPLOSION PROOF SWITCH
PNL "A"	MAIN DISTRIBUTION PANEL "A"		FIRE ALARM	\$	WEATHERPROOF SWITCH
PNL "A"	LIGHTING OR BRANCH PANEL "A"		FIRE ALARM PANEL AND/OR ANNUNCIATOR	(S)°	LOW VOLTAGE SWITCH (CIRC
SPLTR	SPLITTER	F or PS	BREAK GLASS STATION	الله المعالم المحالي ال المحالي المحالي	LOW VOLTAGE SWITCH (K-K LIGHT)
MUA2D	MOTOR AND/OR EQUIPMENT TAG c/w NAME, PLANT	FO	FIRE ALARM BELL	S	DIMMER SWITCH SPECIAL LOW VOLTAGE SWIT
5005	AREA & NUMBER	F	FIRE ALARM HORN AND STROBE c/w CANDELA LEVEL		(SEE SPECIFICATIONS)
M	MOTOR		FIRE ALARM PHONE	RC	LOW VOLTAGE SWITCHING RI
Ð	MOTORIZED DAMPER	F	FIRE ALARM SPEAKER	M P	MOTION SENSOR SWITCH PHOTOELECTRIC CELL
MOV	MOTOR OPERATED VALVE	Ø	SMOKE DETECTOR		DISCONNECT SWITCH - FUS
SOV	SOLENOID OPERATED VALVE	$\overline{\mathbf{O}}$	SMOKE DETECTOR - DUCT MOUNTED		DISCONNECT SWITCH - UNF
•	ELECTRIC HEATER		COMBINATION HEAT DETECTOR		MANUAL MOTOR STARTER
Θ	SINGLE RECEPTACLE	Ø	HEAT DETECTOR – FIXED TEMPERATURE	N N N	MAGNETIC MOTOR STARTER COMBINATION MAGNETIC STA
€	DUPLEX RECEPTACLE	-		T	LOW VOLTAGE THERMOSTAT
ĕ	SPLIT DUPLEX RECEPTACLE	0	HEAT DETECTOR – RATE–OF–RISE FIRE ALARM STROBE LIGHT c/w CANDELA LEVEL	T	LINE VOLTAGE THERMOSTAT
⊖=	ISOLATED GROUND RECEPTACLE	F cd	,		HUMIDSTAT
━=	GROUND FAULT (GFCI) RECEPTACLE		END-OF-LINE RESISTOR		ON-OFF CONTROL STATION
₽	ABOVE COUNTER DUPLEX RECEPTACLE	(FS)	FLOW SWITCH		HAND-OFF-AUTO SELECTOR
⊕	ABOVE COUNTER SPLIT DUPLEX RECEPTACLE	PS	PRESSURE SWITCH		LOCKOUT STOP CONTROL S
	ABOVE COUNTER GROUND FAULT (GFCI) RECEPTACLE	Z	TAMPER SWITCH		LOCAL-OFF-REMOTE CONTR
\square	FLOOR MOUNTED SINGLE RECEPTACLE	G	GAS DETECTOR		SELECTOR SWITCH (HOA, LC
Φ	FLOOR MOUNTED DUPLEX RECEPTACLE	IN	INFRARED DETECTOR		START-STOP PUSHBUTTON
\bigcirc	SPECIAL SINGLE PHASE RECEPTACLE	U	ULTRAVIOLET DETECTOR	●LOS	SELECTOR SWITCH (HOA, LO LOCKOUT STOP PUSHBUTTO
	SPECIAL THREE PHASE RECEPTACLE OVERHEAD REEL DUPLEX RECEPTACLE		MAGNETIC DOOR RELEASE		START-STOP PUSHBUTTON
Ø₽					START-STOP PUSHBUTTON LOCKOUT STOP
	SINGLE PHASE POWER CONNECTION THREE PHASE POWER CONNECTION	FN ©R	PRE-SIGNAL BUZZER CONTROL RELAY MODULE	○@● SD	START-JOG-STOP PUSHBUT EMERGENCY SHUTDOWN PUS
	WELDING RECEPTACLE		ISOLATOR BASE MODULE		THERMISTOR CONTROL TRIP
W		\bigcirc	ADDRESSABLE ALARM RELAY MODULE	TS	TIME SWITCH
		ARM		LVT XX	LOW VOLTAGE TRANSFORMER (XX=TRANSFORMER NUMBER
				<u> </u>	
	EVIATIONS				NOTES:
CB – C	US DUCT DS – DISCONNECT SWITCH IRCUIT BREAKER MCC – MOTOR CONTROL CENTRE UCT BANK PDP – POWER DISTRIBUTION PANEL	SWB - SWIT	ICH PANEL BOARD CHBOARD ISFORMER		THIS DRAWING IS GENE SYMBOLS, ABBREVIATION CONTRACT DRAWINGS.

UPS - UNINTERRUPTIBLE POWER SUPPLY

			SINGLE LINE	DIAGRAM /	SCHEN	MATIC	SYMBOLS
UNICATIONS							
TERMINAL BOARD		EQUIPMENT BUS		OGRAMMABLE LOGIC CONTROLLE	ER		
OUTLET – WALL MOUNTED		BUS EXTENSION / CONNECTION					
OUTLET - FLOOR MOUNTED	4160 V		RE	ACTOR		(R101)	RELAY COIL (1 LINE)
ANDSET OUTLET – WALL MOUNTED A OUTLET	52 1200 A 150 MVA	POWER CIRCUIT BREAKER	<u> </u>	RMONIC FILTER		(R 101) R	RELAY COIL (2 LINE)
CEILING MOUNTED	4160 V 52 1200 A			ANSFER SWITCH		(4RT 101	RELAY COIL (3 LINE)
WALL MOUNTED	52 1200 A 150 MVA	DRAWOUT POWER CIRCUIT BREAKER	or R	ANSI EN SWITCH		$\overline{\bigcirc}$	TIMING RELAY COIL w/ TD <u>E</u> ENERGIZED, TD <u>D</u> —TIME DELA
<u>NDING</u>	AS	Ammeter switch	∽∽ FLI	EX CONNECTOR			& TIME RANGE
s Mpression connection	VS	VOLTMETER	JJJ	INCTION BOX MOUNTED NEAR M	IOTOR	LC	LIGHTING CONTACTOR COIL
GROUND CONNECTION	ТР	TRANSDUCER	RTD RE	SISTANCE TEMPERATURE DETEC	TOR	\leq	
LD GROUND CONNECTION		CURRENT TRANSFORMER c/w RATIO &		NR MAGNETIC STARTER c/w SIZ	ZE	м	MOTOR STARTER COIL
		ZERO SEQUENCING CURRENT	· · · · · · · · · · · · · · · · · · ·			CR	CONTROL RELAY
LL & ROD	E QTY	TRANSFORMER c/w RATIO & QUANTITY		R (REVERSING) STARTER c/w S TWO SPEED STARTER c/w S		\asymp	
D w/ RODS ONLY	XXX:X	BUSHING TYPE CURRENT TRANSFORMER c/w RATIO & QUANTITY		,		RA	AUXILIARY RELAY
,	EQTY		<u>۲</u>	THERMAL OVERLOAD RELAY		PFR	POWER FAILURE RELAY
	35	POTENTIAL TRANSFORMER c/w VOLTAGE RATING & QUANTITY	XXX:X E	ELECTRONIC OVERLOAD c/w	RATIO & QUANTITY		
D w/ WELLS & RODS	QTY	VOLIAGE NATING & QUANTITI				OTR	OVERLOAD TRIP RELAY
ROL	(K)	KEY OPERATED INTERLOCK	ΗŹ	VARIABLE SPEED DRIVE		(cc)	CLOSING COIL
E SWITCH (SWITCH "a") PANEL "A"	M	MOTOR OPERATED SWITCH	S/S	SOFT START REDUCED VOLTA	GE	НС	HOLDING COIL
IN 2 GANG BOX	DMS	DIGITAL METERING SYSTEM					INDICATING PILOT LIGHT c/w
IN 3 GANG BOX		UTILITY POWER METER	(\sim)	GENERATOR		(A)	G=GREEN, A=AMBER, Y=YEL
IN 4 GANG BOX			\asymp			ETM	ELAPSED TIME METER
WITCH		LIGHTNING ARRESTER w/ GROUNDED GA		SQUIRREL CAGE MOTOR		0/∟ ⊁f	MOTOR OVERLOAD CONTACT
SWITCH	│ ─ १ ► , 	LIGHTNING ARRESTER w/ GROUNDED GAP AND SURGE CAPACITOR) Ø				
WITCH	V-V		$\begin{pmatrix} -\\ HP \end{pmatrix}$	MOTORIZED VALVE		(db)	TEST SUPPLY PLUG
PILOT LIGHT	│ ≪⋤-3⊱≫	DRAWOUT FUSED CURRENT TRANSFORMER					FUSE c/w FUSE No. or AMI
OR SWITCH	L ∿ûu	DELTA-DELTA TRANSFORMER		LIGHTING OR POWER PANEL			DUMMY FUSE
OR SWITCH c/w PILOT LIGHT				LIGHTING OK FOWER FANEL		X kW HTR	ELECTRIC HEATER c/w KILOV
ED SWITCH		DELTA-WYE GROUND TRANSFORMER	PANEL "A"			X kW	MOTOR SPACE HEATER c/w
PROOF SWITCH			(\sim)	VALVE TRAVEL LIMIT SWITCH-	- NORMALLY OPEN	X OHMS	
OF SWITCH		DELTA-WYE RESISTOR GROUND TRANSFORMER	\sim			~~~~	RESISTOR c/w RESISTANCE I
E SWITCH (CIRCUIT "a")			(0-70)	VALVE TRAVEL LIMIT SWITCH-	- NORMALLY CLOSE	ຉୢ୰୵ଵ	SERIES COIL OR SOLENOID
E SWITCH (K-KEY OPERATED, P-PILOT	Δ	OPEN DELTA CLOSED DELTA	\bigotimes	SPECIAL SINGLE PHASE RECE	FPTACI F	тс -Iı -	TEMPERATURE CONTROLLER
		THREE PHASE WYE		SPECIAL THREE PHASE RECE			
V VOLTAGE SWITCH UNIT ICATIONS)	Ϋ́	THREE PHASE WYE TO GROUND					SURGE SUPPRESSOR
E SWITCHING RELAY CABINET			W	WELDING RECEPTACLE			
SOR SWITCH	¢ ×	THREE PHASE ZIGZAG TO GROUND	× kW	MOTOR SPACE HEATER			MOTOR SURGE SUPPRESSOR
RIC CELL	~~~~	THREE PHASE WYE w/ RESISTOR TO GROUND	→ [SOLID STATE SURGE ARREST	FR	×	
SWITCH - FUSED SWITCH - UNFUSED	= ≈	MALE & FEMALE DISCONNECT DEVICE					FUSE ASSEMBLY w/ INDICATI NUMBER AND CURRENT RATI
OR STARTER			TVSS	S TRANSIENT VOLTAGE SURGE	SUPPRESSION		
OTOR STARTER	(<u>225 AF</u> 100 AT	CIRCUIT BREAKER	<u> </u>		ö	ŦĨĞ	• INDICATING LIGHT PUSH TO
I MAGNETIC STARTER	3P '		CTS	CURRENT TRANSFORMER SHO	ORTING BLOCK		
e Thermostat e Thermostat	225 AF	DRAWOUT CIRCUIT BREAKER	29-1 مـــــــم	PT-CT TEST BLOCK			SEMICONDUCTOR DIODE
	3P		T B	TEST BLOCK		113	WIRE WITH WIRE NUMBERS
NTROL STATION		NON-FUSED DISCONNECT SWITCH	· · · · · · · · · · · · · · · · · · ·	GROUND TO EARTH			
AUTO SELECTOR SWITCH		FUSED DISCONNECT SWITCH	∔ ⊢	BATTERY			WIRES CROSSOVER
		FUSED HRC DISCONNECT SWITCH		DATIENT		-	WIRES CONNECTED
OP CONTROL STATION	×	LOAD BREAK DISCONNECT SWITCH	(50) QTY	PROTECTIVE RELAY c/w QUA	NTITY (1 LINE)		FIELD CONNECTION
REMOTE CONTROL STATION		FUSED LOAD BREAK DISCONNECT SWITC	H (50) 51) QTY	PROTECTIVE RELAY c/w QUA	NTITY (2 LINE)	പ്പ	NORMALLY CLOSED MUSHROO
WITCH (HOA, LOR, LO or OA)		HORN GAP SWITCH	- OO -	RELAY SHUNT			MOMENTARY NORMALLY OPEN PUSHBUTTO
PUSHBUTTON AND WITCH (HOA, LOR, LO or OA)		INTERRUPTER SWITCH				<u> </u>	
OP PUSHBUTTON				CONTROL POWER TRANSFORM	<i>I</i> ER		NORMALLY CLOSED PUSHBUT
PUSHBUTTON PUSHBUTTON c/w PILOT LIGHT &		FUSED INTERRUPTER SWITCH				- <u>`</u> -	
OP STOP PUSHBUTTON	ı - -	GROUND SWITCH				<u> </u>	THREE POLE CIRCUIT BREAK
STOP POSHBUTTON SHUTDOWN PUSHBUTTON	\$	MAGNETIC ELEMENT	(X HP)	SINGLE or THREE PHASE MO	DTOR	\rightarrow	ONLY)
CONTROL TRIPPING UNIT	X KVAR 🛧	CAPACITOR FOR PF CORRECTION c/w kVAR RATING				 010	
	-++ ≑	NORMALLY OPEN CONTACT	MOV	MOTOR OPERATED VALVE			THREE POLE DISCONNECT SI
E TRANSFORMER ORMER NUMBER)	** *	NORMALLY CLOSED CONTACT				00	SCHEMATIC ONLY)
/						040	

<u>:S</u>: RAWING IS GENERAL IN NATURE. NOT ALL LS, ABBREVIATIONS ARE USED IN THESE

_ w/	TD <u>E</u> -TIME	DELAY
-TIME	DELAY DE-	ENERGIZED

r Coil

LIGHT c/w LENS COLOR R=RED, ER, Y=YELLOW, W=WHITE

CONTACT

o. or AMP RATING

c/w KILOWATT RATING

ATER c/w KILOWATT RATING

SISTANCE RATING

DLENOID VALVE

PRESSOR

v/ INDICATING LIGHT c/w FUSE RENT RATING

PUSH TO TEST c/w COLOR TYPE

MUSHROOM HEAD PUSHBUTTON -

JSHBUTTON – MOMENTARY

PUSHBUTTON - MOMENTARY

T BREAKER (CONTROL SCHEMATIC

ONNECT SWITCH (CONTROL



GOVERNMENT OF BERMUDA

MINISTRY OF PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL ENGINEERING SECTION P.O. Box HM 1365 Hamilton HMFX Bermuda Tel: (441) 295-5151 Fax: (441) 295-4675

		Date:
B	ISSUED TO BLDG CONTROL	AUG 2015
A	ISSUED TO PLANNING	MAY 2015

DESIGN	
Prepared By:	Date:
-	-
Checked By:	Date:
-	-
DRAWING	
Prepared By: DB	Date: <i>JAN 2015</i>
Checked By:	Date:
-	-
Approved By:	
MB	JAN 2015

Project Number:

Project Title:

BEAST SEPTAGE RECEIVING STATION

TYNES BAY WTE PLANT 31 PALMETTO ROAD DEVONSHIRE

Sheet Title:

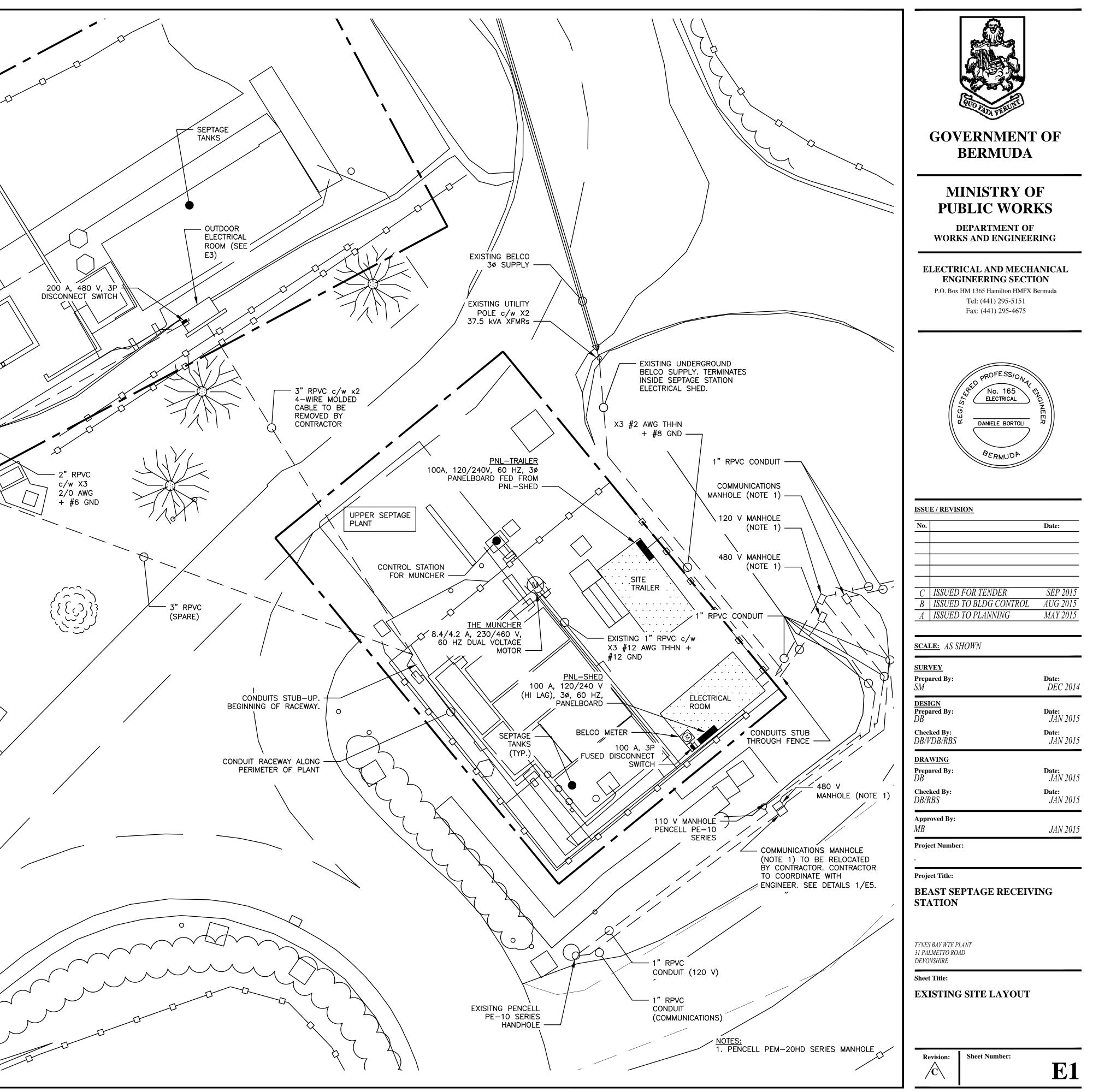
LEGEND OF SYMBOLS

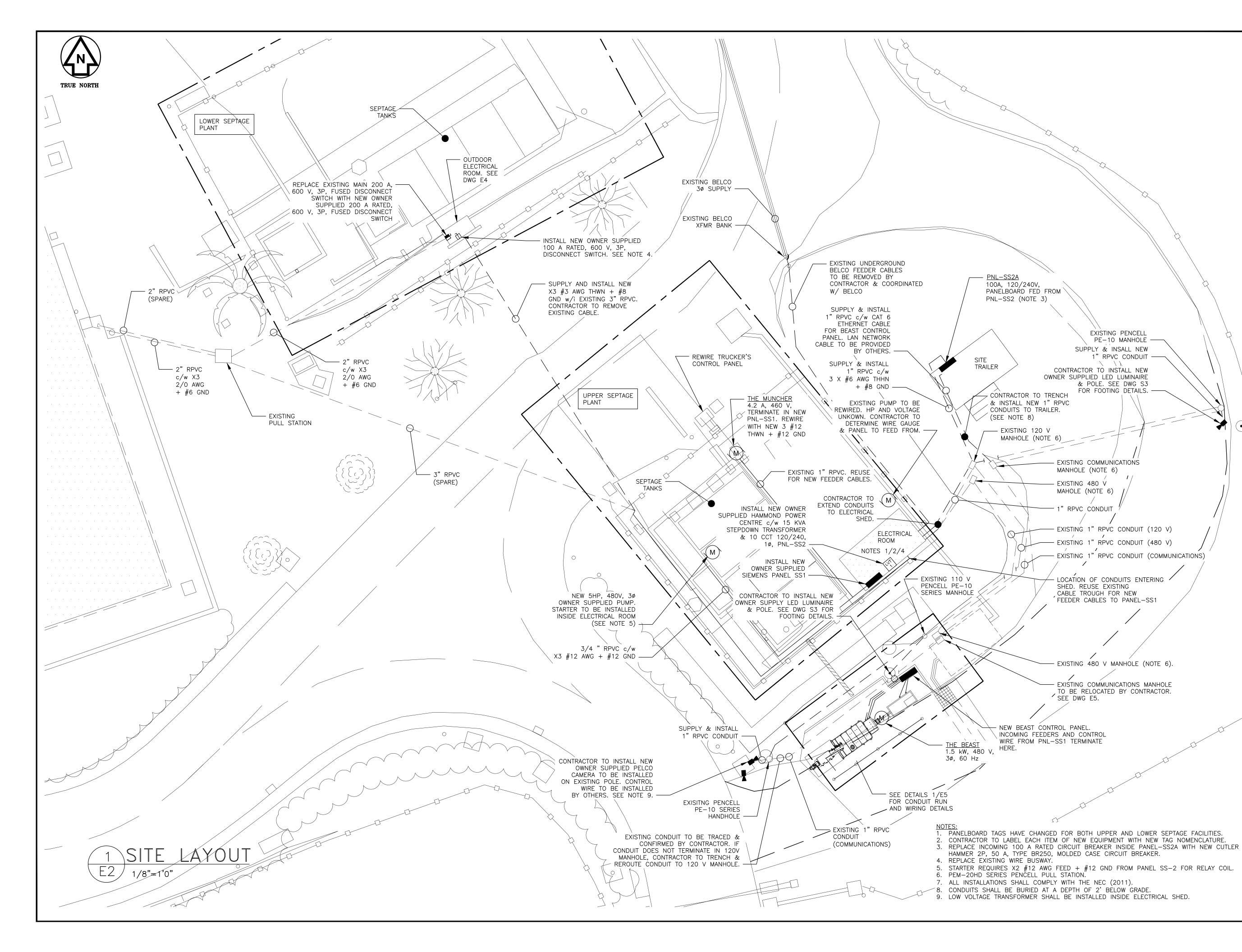
Sheet Number:

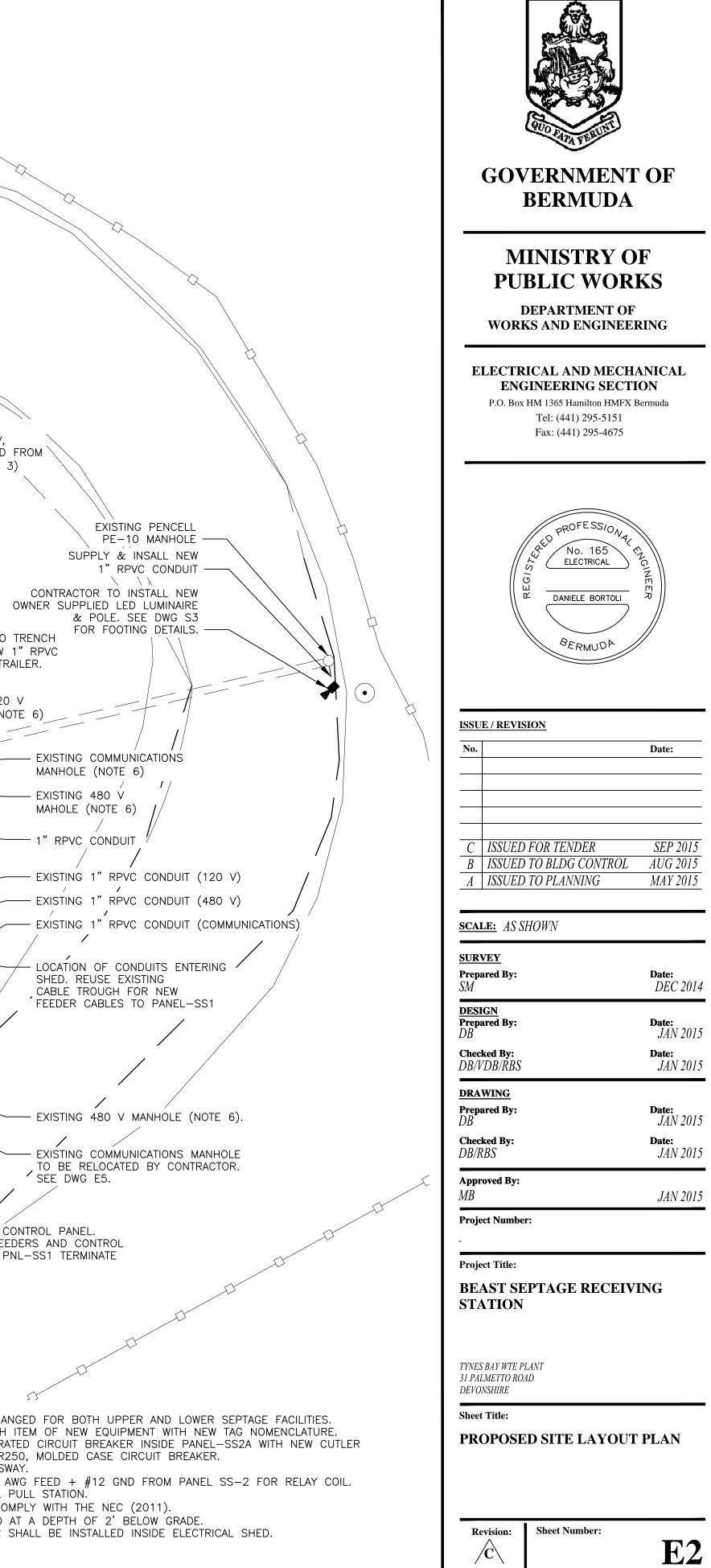
Revision: B

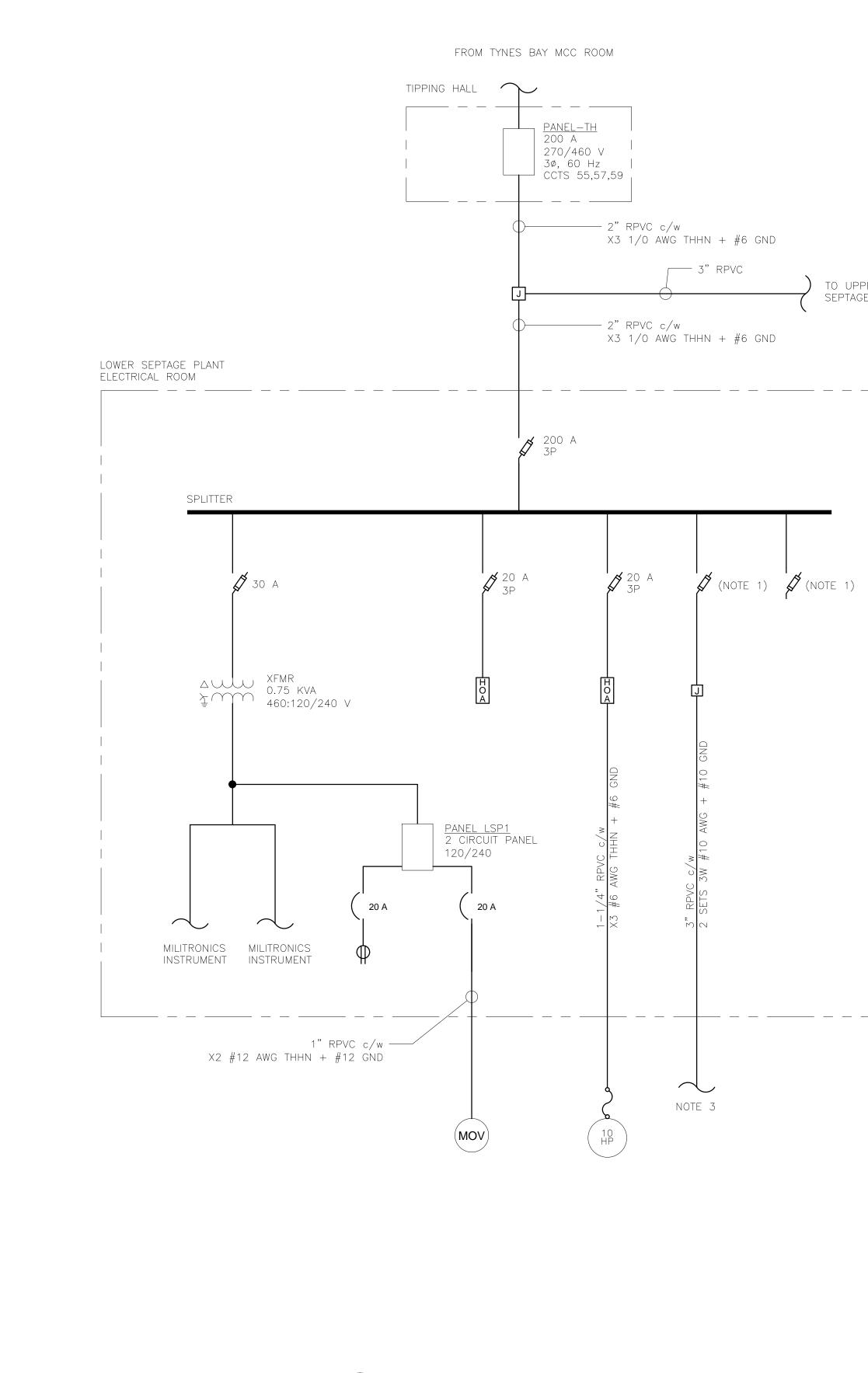


ŤRÚE NORTH . LOWER SEPTAGE . PLANT . - 2"RPVC 🗸 (SPARE) $\langle \rangle$. - 2" RPVC c/w X3 2/0 AWG + #6 GND . - PANEL-TH 400 A, 277/480 V, 60 HZ, 3ø 200 A BREAKER (CCTS# 55, 57, 59) . . . FEEDING LOWER SEPTAGE PLANT • • ••• . . . • TYNES BAY TIPPING HALL SITE LAYOUT



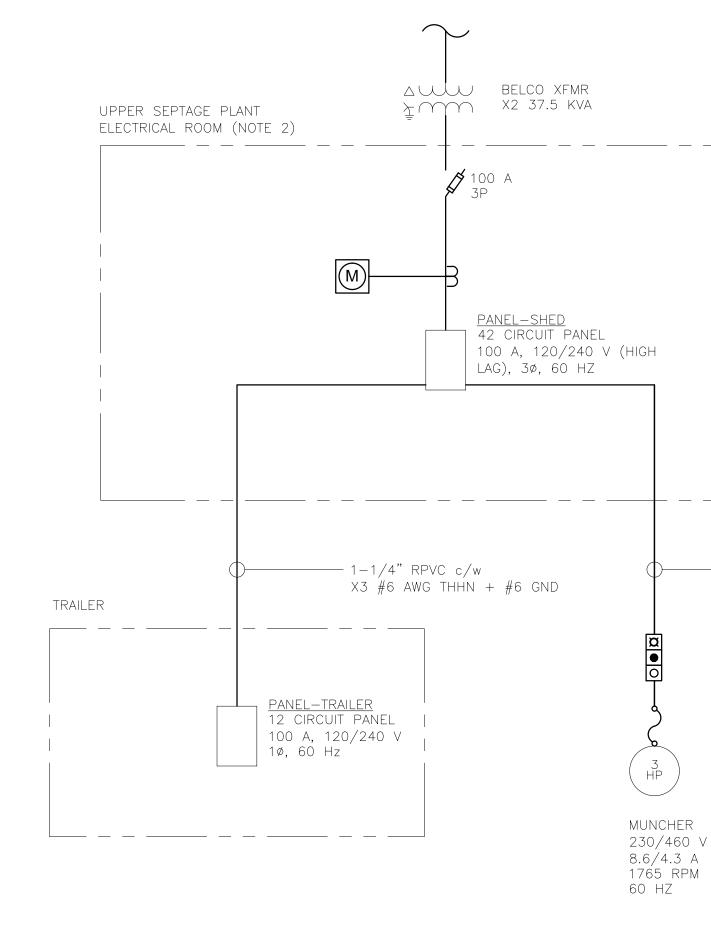






LOWER SEPTAGE PLANT N.T.S.

TO UPPER SEPTAGE FACILITY



<u>NOTES:</u>

- 1. NO FUSE PRESENT AT TIME OF SURVEY (OPEN CIRCUIT).
- 2. SQUARE D DISCONNECTS (X4), FLYGT PUMP CONTROLLERS & INTEGRATED HOA'S FOR PUMPS 1–6 ARE NO LONGER OPERABLE & ARE TO BE STRIPPED OUT ALONG W/ ALL COMPONENTS IN
- THE UPGRADE. THEY ARE NOT SHOWN ABOVE FOR SIMPLICITY. 3. TERMINATES INSIDE THE SEPTAGE SHED IN UPPER SEPTAGE FACILITY.





GOVERNMENT OF BERMUDA

MINISTRY OF PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL ENGINEERING SECTION P.O. Box HM 1365 Hamilton HMFX Bermuda Tel: (441) 295-5151 Fax: (441) 295-4675



ISSUE / REVISION

No.		Date:
С	ISSUED FOR TENDER	SEP 2015
В	ISSUED TO BUILDING CNTRL	AUG 2015
A	ISSUED TO PLANNING	MAY 2015

SCALE: AS SHOWN

<u>SURVEY</u> Prepared By: DB	Date: DEC 2014
<u>DESIGN</u> Prepared By: DB	Date: JAN 2015
Checked By: DB/VDB/RBS	Date: JAN 2015
DRAWING	
Prepared By: DB	Date: JAN 2015
Checked By: DB/RBS	Date: JAN 2015
Approved By:	
MB	JAN 2015

Project Title:

BEAST SEPTAGE RECEIVING STATION

TYNES BAY WTE PLANT 31 PALMETTO ROAD DEVONSHIRE

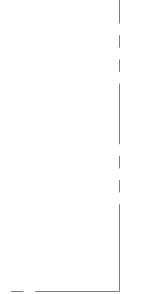
Sheet Title:

EXISTING SINGLE LINE DIAGRAM



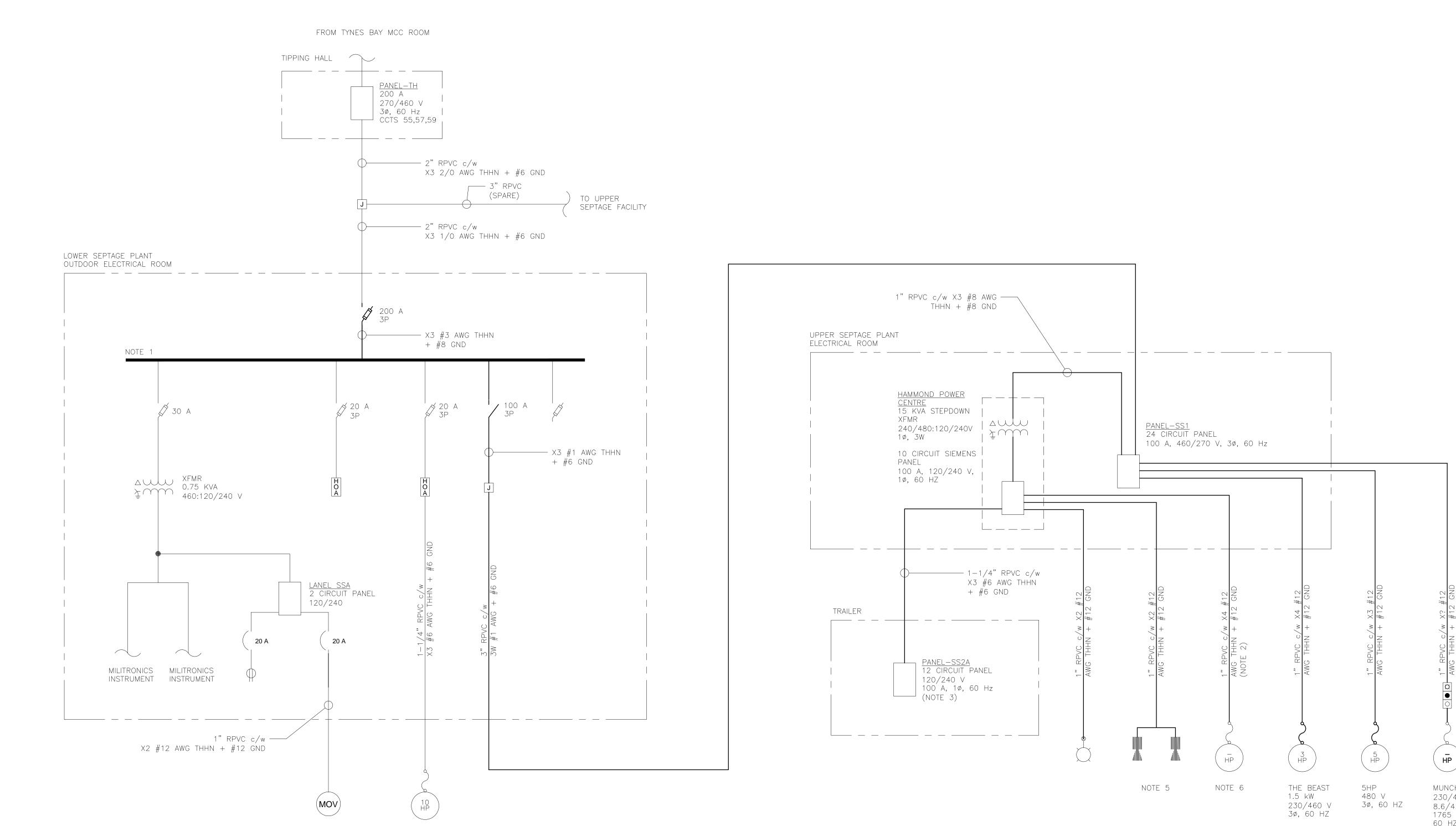
Sheet Number:





— 1"RPVC c/w X4 #12 AWG THHN + #12 GND





<u>GENERAL NOTES:</u> 1. GREYED DRAWING AND SYMBOLS DENOTE EXISTING EQUIPMENT WHICH IS TO REMAIN.

CHARACTERISTICS AND INFORM THE ENGINEER.

2. REUSE EXISTING CONDUIT. REWIRE AS NOTED.

DRAWING NOTES:

POINT.

100 A, 2P, MAIN CIRCUIT BREAKER.

4. UNFUSED DISCONNECT SWITCH SHALL BE RATED FOR MINIMUM 100 A, 30, 60 HZ SUPPLY. 5. LOW VOLTAGE TRANSFORMER FOR CCTV CAMERAS TO BE INSTALLED INSIDE ELECTRICAL SHED.

6. MOTOR ASSUMED TO BE SINGLE PHASE 120 V. CONTRACTOR TO DETERMINE UTILIZATION



GOVERNMENT OF BERMUDA

MINISTRY OF PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL ENGINEERING SECTION P.O. Box HM 1365 Hamilton HMFX Bermuda Tel: (441) 295-5151 Fax: (441) 295-4675



ISSUE / REVISION	

No.		Date:
ת	ISSUED FOR TENDER	SEP 2015
$\frac{D}{C}$	ISSUED FOR TENDER	AUG 2015
$\frac{c}{B}$	ISSUED TO PLANNING	MAY 2015
A	ISSUED FOR REVIEW	FEB 2015

SCALE: AS SHOWN **SURVEY** Prepared By: Date: DB^{-} DEC 2014 **DESIGN Prepared By:** *DB* **Date:** JAN 2015 Checked By: Date: JAN 2015 DB/VDB/RBS **DRAWING Prepared By:** DB **Date:** JAN 2015

Checked By: DB/RBS	Date: JAN 2015
Approved By: MB	JAN 2015
Project Number:	

Project Title:

BEAST SEPTAGE RECEIVING

STATION

TYNES BAY WTE PLANT 31 PALMETTO ROAD

DEVONSHIRE Sheet Title:

PROPOSED SINGLE LINE DIAGRAM

Revision: /**D**\

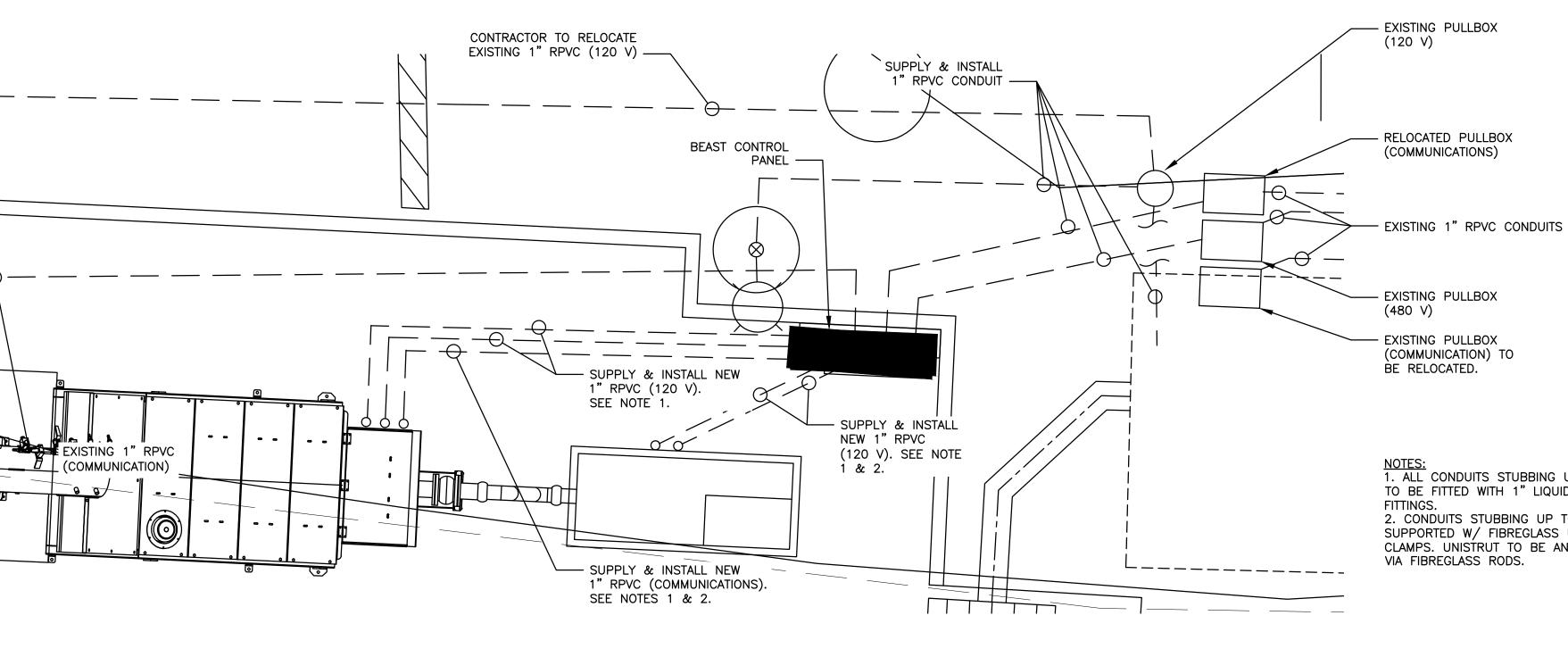


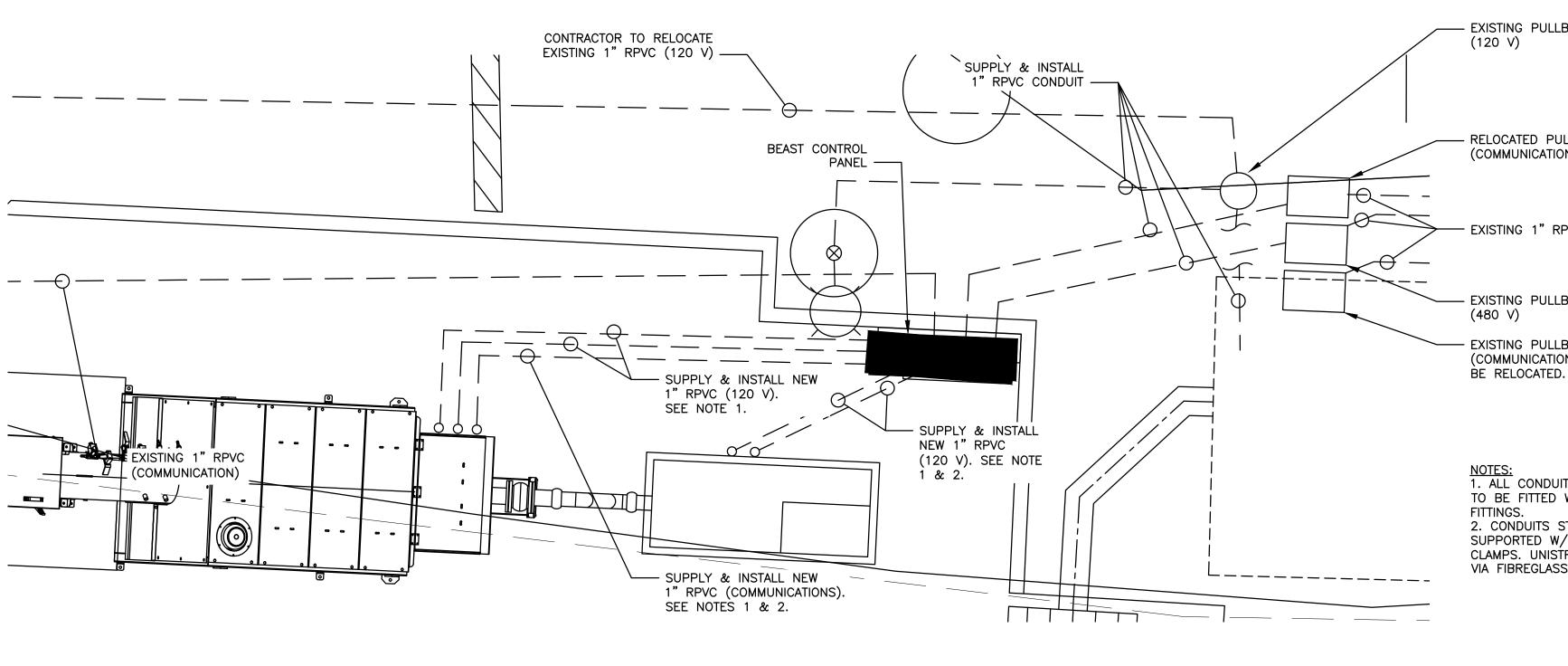
MUNCHER 230/460 V 8.6/4.3 A

1765 RPM 60 HZ

1. CONDUCTORS TERMINATE INTO 3-PHASE SPLITTER. BRANCH CIRCUIT ARE TAPPED FROM THIS

3. INSTALL NEW 50 A, 2P, TYPE BR250 CUTLER HAMMER CIRCUIT BREAKER IN PLACE OF EXISTING



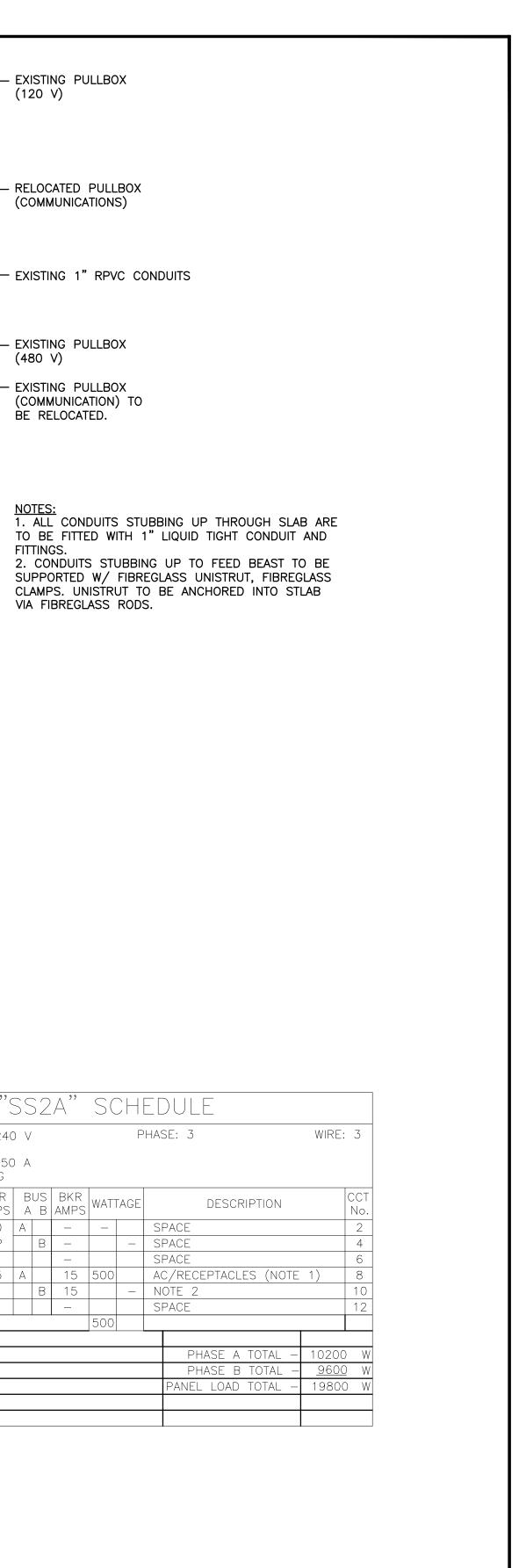


		PA	NE		"SS	51	"		SCH			Ē		
MO INC	ATION: ELECTRICAL SHED JNTING: SURFACE OMING LUGS: NO IUFACTURER: SIEMENS	BU: MAI	S RA IN B	ATING REAK	77/48 : ER: 10 AWG						РНА	SE: 、	3 WIRE: 3	
CCT No.	DESCRIPTION	WA	ATTAC	θE	BKR AMPS		BUS B		BKR AMPS	W/	ATTAC	ε	DESCRIPTION	CCT No.
1	HAMMOND POWER CENTRE	9600			40	Α			15	1216			5 HP MOTOR	2
3			9600		2P		В				1216			4
5	SPARE			_	15			С	3P			1216		6
7	THE BEAST (MOTOR)	4032			15	Α			15	-			SPARE	8
9			4032				В		15		-		SPARE	10
11				4032	3P			С	15			—	SPARE	12
13	MUNCHER	768			15	Α			_	-			SPACE	14
15			768				В		_		-		SPACE	16
17				768	3P			С	_			—	SPACE	18
19	SPACE	-			_	А			—	-			SPACE	20
21	SPACE		_		—		В		-		-		SPACE	22
23	SPACE	14400	14400	4800	—			С	—			—	SPACE	24
		14400	14400	4800						1216	1216	1216		
<u>N0</u>	ES:													
1.	PANEL SCHEDULE TO BE PREPA	ARED	BY C	CONT	RACTO	2							PHASE A TOTAL – 156	16 W
2.	X												PHASE B TOTAL – 156	16 W
3.	X												PHASE C TOTAL – <u>144</u>	<u>00</u> W
4.	X												PANEL LOAD TOTAL – 456	32 W



	PANEL "SS2" S	5	CHE					
MOU INC MAN	CATION: ELECTRICAL SHED JNTING: SURFACE OMING LUGS: NO NUFACTURER: SIEMENS TAGE: 120/240 V	BUS RATING: MAIN BREAKER: YES FEEDER: #4 AWG PHASE: 1 WIRE: 3						
CCT No.	DESCRIPTION	WATT	AGE	BKR AMPS		US B		
1	TRAILER		600		50	А		
2				600	2P		В	
3	SPARE		_		30	А		
4				_	2P		В	
5	SPARE		_		15	А		
6				_	2P		В	
7	CCTV		200		15	А		
8	SPARE			—	15		В	
9	5HP MOTOR STARTER		600		15	А		
10	MOTOR			1000	15		В	
			1400	1600				
	PHASE A TOTAL - 1400 W							
	PHASE B TOTAL - <u>1600</u> W							
PA	NEL LOAD TOTAL – 3000 W	'						
<u>N01</u>								
1.								
2.								
	Х							
4.	X							

					, , , , , , , , , , , , , , , , , , , ,	~ ~		. ??	
		┝	'AN	JEL	,,, 	25	52		S(
MOI INC	CATION: TRAILER JNTING: RECESSED OMING LUGS: NO NUFACTURER: HAMMOND	BUS MAI	s ra n bf	TING: REAKI	20/240 ER: 50 AWG				
CCT No.	DESCRIPTION		WAT	TAGE	BKR AMPS		US B	BKR AMPS	WATT
1	MAIN DISCONNECT		9600		50	Α		—	_
3				9600	2P		В	_	
5	SPACE				_			_	
7	LIGHTS (NOTE 1)		100		15	Α		15	500
9	SPACE			_	-		В	15	
11	SPACE				_			-	
			9700	9600					500
NO	T <u>ES:</u>								
1.	15A SPLIT CIRCUIT BREAKER	2							
2.	CONTRACTOR TO DETERMINE	CIR	CUIT						
3.	X								
4.	X								





GOVERNMENT OF BERMUDA

MINISTRY OF PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL ENGINEERING SECTION P.O. Box HM 1365 Hamilton HMFX Bermuda Tel: (441) 295-5151 Fax: (441) 295-4675



ISSUE / REVISION No. Date: B ISSUED FOR TENDER SEP 2015 AISSUED TO BLDG CONTROLAUG 2015

<u>scale:</u> AS SHOWN **SURVEY Prepared By:** SM **Date:** DEC 2014 DESIGN Prepared By: DB **Date:** JAN 2015 **Checked By:** DB/VDB/RBS **Date:** JAN 2015 **DRAWING Prepared By:** DB **Date:** JAN 2015 Checked By: **Date:** JAN 2015 DB/RBS Approved By: MB JAN 2015 **Project Number:**

Project Title:

BEAST SEPTAGE RECEIVING STATION

TYNES BAY WTE PLANT 31 PALMETTO ROAD DEVONSHIRE

Sheet Title:

DETAILS AND PANEL SCHEDULES

Revision:

ELECTRICAL SPECIFICATIONS

1. DEFINITIONS

.1 "PROVIDE" OR "SUPPLY AND INSTALL" MEANS "PROVIDE AND INSTALL, INCLUSIVE OF ALL LABOUR, MATERIALS, INSTALLATION, TESTING, AND CONNECTIONS, FOR THE ITEM REFERENCED."

2. GENERAL

- .1 THIS SPECIFICATION AND ANY ADDENDA HERETO FORMS PART OF THE CONTRACT DOCUMENTS AND SHALL BE READ IN CONJUNCTION WITH THEM. WORK SHALL INCLUDE THE FURNISHING OF ALL LABOUR AND MATERIALS, UNLESS SPECIFIED OTHERWISE, TO COMPLETE AND PUT INTO OPERATING CONDITION ALL ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN.
- .2 IT IS THE INTENT OF THE WORK TO PROVIDE COMPLETE, NEATLY FINISHED, AND OPERATIONAL SYSTEMS AND ANY LABOUR, MATERIAL PERMITS, LICENSES, APPROVALS AND INSPECTIONS REQUIRED FOR COMPLETION OF THE WORK, WHETHER SPECIFICALLY MENTIONED IN THE DRAWINGS OR SPECIFICATIONS OR NOT, SHALL BE INCLUDED IN THE TENDERED PRICE
- .3 RESPONSIBILITY AS TO WHICH TRADE PROVIDES REQUIRED ARTICLES OR MATERIALS RESTS SOLELY WITH THE GENERAL CONTRACT TRADE. EXTRAS WILL NOT BE CONSIDERED BASED ON GROUNDS OF DIFFERENCE OF INTERPRETATION OF SPECIFICATIONS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.
- .4 THE DRAWINGS AND SPECIFICATIONS FOR THE COMPLETE WORKS, INCLUDING ALL OF THOSE RELATED TO OTHER TRADES SHALL BE EXAMINED BEFORE SUBMITTING TENDERS. ALL ELECTRICAL AND COMMUNICATIONS REQUIREMENTS INDICATED SHALL BE INCLUDED IN THE SCOPE OF THE WORK.

3. DRAWINGS AND SPECIFICATIONS

- .1 DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY TO EACH OTHER AND WHAT IS CALLED FOR BY ONE SHALL BE BINDING AS IF CALLED FOR BY BOTH.
- .2 SHOULD ANY DISCREPANCY APPEAR BETWEEN DRAWINGS AND SPECIFICATIONS THAT LEAVES THE ELECTRICAL CONTRACTOR IN DOUBT AS TO TRUE INTENT AND MEANING, OBTAIN RULING FROM THE ENGINEER BEFORE SUBMITTING TENDER, OR ALLOW FOR THE MOST EXPENSIVE ALTERNATIVE.

4. EXAMINATION OF OTHER DRAWINGS

.1 EXAMINE CAREFULLY ALL DRAWINGS, AND THE WORK OF OTHER TRADES AND SATISFY HIMSELF THAT THE WORK UNDER THIS CONTRACT CAN BE SATISFACTORILY CARRIED OUT WITHOUT CHANGES TO THE BUILDING AS SHOWN ON THE PLANS, SHOULD ANY DIFFICULTY ARISE SHOWING CONFLICT WITH, OR REQUIRING ADDITIONAL WORK BEYOND THE WORK OF THESE DRAWINGS, BRING THIS MATTER TO THE ATTENTION OF THE ENGINEER BEFORE SUBMITTING TENDER.

5. UNIFORMITY OF EQUIPMENT

.1 UNLESS OTHERWISE SPECIFIED, UNIFORMITY OF MANUFACTURER SHALL BE MAINTAINED FOR ANY PARTICULAR ITEM THROUGHOUT.

6. CODES AND STANDARDS

.1 THE ENTIRE INSTALLATION, INCLUSIVE OF MATERIAL AND LABOUR, SHALL COMPLY WITH THE REQUIREMENTS OF THE LATEST EDITION OF APPLICABLE BUILDING CODES AND AUTHORITIES HAVING JURISDICTION, THE NATIONAL ELECTRICAL CODE (NEC), NFPA, REGULATIONS OF THE GOVERNMENT OF BERMUDA "OCCUPATIONAL HEALTH AND SAFETY ACT 1982", AND BERMUDA FIRE SERVICE.

7. PERMITS AND INSPECTIONS

- .1 OBTAIN AND PAY FEES FOR PERMITS AND INSPECTIONS REQUIRED FOR EACH STAGE OF WORK, AND UPON COMPLETION OF THE ENTIRE INSTALLATION.
- .2 FURNISH TO THE ENGINEER A CERTIFICATE OF FINAL INSPECTION AND APPROVAL FROM THE AUTHORITY'S INSPECTION DEPARTMENT.
- 8. STANDARDS OF MATERIAL AND WORKMANSHIP
- .1 ALL MATERIALS WHICH HAS NOT BEEN PROVIDED BY THE OWNER SHALL BE NEW AND OF THE QUALITY SPECIFIED, AND SHALL BE UL LISTED OR LISTED BY EQUIVALENT AGENCY RECOGNIZED BY THE AUTHORITY HAVING JURISDICTION.
- .2 ALL WORK SHALL BE EXECUTED IN A NEAT AND WORKMANLIKE MANNER BY QUALIFIED TRADESMEN. THE ELECTRICAL CONTRACTOR SHALL KEEP A COMPETENT FOREMAN AND NECESSARY ASSISTANTS ON THE SITE DURING THE PROGRESS OF THE WORK
- .3 ALL MATERIAL AND INSTALLATION SHALL MATCH EXISTING BUILDING STANDARD UNLESS NOTED OTHERWISE ON THE DRAWINGS.

9. ALTERNATE MANUFACTURERS

- .1 ALL REQUESTS FOR ALTERNATES SHALL BE SUBMITTED TO THE ENGINEER NOT LESS THAN 5 DAYS PRIOR TO THE CLOSE OF TENDER.
- .2 THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR ENSURING THAT ALTERNATE PRODUCTS MEET ALL SPACE, WEIGHT, CONNECTION, POWER, WIRING, AND PERFORMANCE REQUIREMENTS.

10. GUARANTEE

- .1 THE ELECTRICAL CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE, SIGNED BY AUTHORIZED PERSONNEL, STATING:
- .1 THAT ALL WORK EXECUTED UNDER THIS CONTRACT WILL BE FREE FROM DEFECTS OF MATERIAL AND WORKMANSHIP FOR A PERIOD OF 1 YEAR FROM DATE OF FINAL ACCEPTANCE.
- .2 THE ABOVE PARTIES FURTHER AGREE TO, AT THEIR OWN EXPENSE, REPAIR AND REPLACE ALL SUCH DEFECTIVE WORK, AND OTHER WORK DAMAGED THEREBY WHICH FAILS OR BECOMES DEFECTIVE DURING THE TERM OF THE GUARANTEE WARRANTY PROVIDED THAT SUCH FAILURE IS NOT DUE TO IMPROPER USAGE
- .3 THE PERIOD OF THE GUARANTEE SPECIFIED WILL IN NO WAY SUPPLANT ANY OTHER GUARANTEE OF A LONGER PERIOD BUT BE BINDING ON WORK NOT OTHERWISE COVERED.

10. OPERATION AND MAINTENANCE MANUALS

- .1 PROVIDE 3 SETS OF OPERATION AND MAINTENANCE MANUALS IN 3 RING BINDERS AND ONE DIGITAL PDF COPY. INCLUDE THE FOLLOWING INFORMATION:
- NAMES, PHONE NUMBERS, EMAILS, AND ADDRESSES OF
- SUPPLIERS. - TECHNICAL DATA, OPERATING MANUALS, PRODUCT DATA, PARTS LISTS. - CERTIFICATE OF ACCEPTANCE FROM AUTHORITY'S INSPECTION
- DEPARTMENT. - LOAD BALANCE REPORTS.
- WRITTEN GUARANTEE AND MANUFACTURERS' WARRANTIES.

12. AS-BUILT DRAWINGS

.1 THE ENGINEER WILL FURNISH TO THE ELECTRICAL CONTRACTOR ONE SET OF DRAWINGS TO BE USED FOR RECORD PURPOSES. THE ELECTRICAL CONTRACTOR SHALL ACCURATELY RECORD ON THESE PRINTS ALL REVISIONS TO THE ORIGINAL PLANS THAT ARE MADE ON SITE DURING CONSTRUCTION AND HAND OVER THE REVISED DRAWING TO THE ENGINEER UPON COMPLETION OF THE WORKS.

13. VALUATION OF CHANGES

- .1 PROVIDE COMPLETE BREAKDOWN OF MATERIAL, LABOUR, OVERHEAD, PROFIT, ETC. WHEN SUBMITTING QUOTATIONS FOR CHANGE OR VARIATION NOTICES.
- .2 THE HOURLY RATE SHALL BE INCLUSIVE OF ALL CHARGES FOR SUPERVISION, VARIABLE LABOUR FACTORS, HAND TOOLS, PAYROLL BURDENS, HEIGHT FACTORS, WARRANTIES, STORAGE, RENTALS,

ADDITIONAL BONDING, PARKING, CLEAN-UP, AS-BUILT DRAWINGS, HOISTING, FREIGHT, AND DELIVERY, BUT EXCLUSIVE OF OVERHEAD AND PROFIT

- .3 THE LABOUR HOURS SHALL BE BASED ON THE LATEST ISSUE OF THE NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA). 14. COMPLETION OF CONTRACT
- .1 ALL EQUIPMENT MUST BE CLEANED AND TESTED BEFORE ACCEPTANCE BY ENGINEER. NOTIFY THE ENGINEER WHEN READY FOR FINAL COMPLETION INSPECTION.
- .2 ONE SET OF AS-BUILT DRAWINGS AND O&M MANUALS SHALL BE TURNED OVER TO THE ENGINEER FOR REVIEW PRIOR TO SUBSTANTIAL COMPLETION.
- .3 SUBSTANTIAL COMPLETION SHALL NOT BE GRANTED UNTIL ALL SYSTEMS ARE DEEMED COMPLETED TO THE SATISFACTION OF THE ENGINEER.
- 15. EXAMINATION OF THE SITE
- .1 PRIOR TO SUBMITTING TENDER, THE ELECTRICAL CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND ASCERTAIN ALL CONDITIONS WHICH MAY AFFECT HIS TRADE. NO EXTRAS WILL BE ALLOWED FOR WORK RESULTING FROM CONDITIONS THAT SHOULD HAVE BEEN NOTICED AND ACCOUNTED FOR DURING A THOROUGH EXAMINATION OF THE SITE.
- 16. SETTING OUT OF THE WORK
- .1 THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR CORRECTING ALL WORK COMPLETED CONTRARY TO THE INTENT OF DRAWINGS AND SPECIFICATIONS AND SHALL BEAR ALL COSTS INVOLVED IN MAKING THE CORRECTIONS. WHERE INTENT OF DRAWINGS AND SPECIFICATIONS IS NOT CLEAR, OBTAIN CLARIFICATION FROM THE ENGINEER BEFORE PROCEEDING WITH WORK.
- .2 THE ELECTRICAL CONTRACTOR SHALL GIVE WORK HIS PERSONAL SUPERVISION, LAY OUT HIS OWN WORK, DO ALL NECESSARY LEVELING AND MEASURING OR EMPLOY A COMPETENT ENGINEER TO DO SO. FIGURES, FULL SIZE AND DETAIL DRAWINGS TO TAKE PRECEDENCE OVER SCALE MEASUREMENTS.
- .3 THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE CAUSED TO THE OWNER OR ANY OTHER TRADE BY IMPROPER LOCATION OR CARRYING OUT OF HIS WORK.
- .4 THE ELECTRICAL CONTRACTOR, IN THE SETTING OUT OF HIS WORK, SHALL MAKE REFERENCE TO ARCHITECTURAL, STRUCTURAL, AND MECHANICAL DRAWINGS. CONSULT WITH ALL RELEVANT TRADES IN SETTING OUT LOCATIONS FOR CONDUIT RUNS, LIGHTING FIXTURES, PANEL ASSEMBLIES, AND ALL OTHER ELECTRICAL EQUIPMENT, SO THAT CONFLICTS ARE AVOIDED AND SYMMETRICAL SPACING IS MAINTAINED.
- .5 ALLOW FOR WORK AFTER HOURS AS REQUIRED TO MEET PROJECT SCHEDULE AND COORDINATE WITH OWNER IF APPLICABLE.
- .6 STAINLESS STEEL SCREWS, BOLTS AND ANY OTHER FASTENING ITEMS TO HOLD EQUIPMENT IN PLACE SHALL BE USED THROUGHOUT THE FACILITY.

17. CUTTING AND PATCHING

- .1 THE GENERAL TRADE WILL BE RESPONSIBLE FOR ALL CUTTING AND PATCHING REQUIRED FOR ELECTRICAL INSTALLATION. STRUCTURAL MEMBERS MUST NOT BE CUT WITHOUT CONSENT OF THE ENGINEER.
- .2 WHERE WORK DONE BY THE ELECTRICAL CONTRACTOR DAMAGES THE WORK OF OTHER TRADES, THE ELECTRICAL CONTRACTOR SHALL REPAIR AND MAKE GOOD SUCH DAMAGE TO THE SATISFACTION OF EACH TRADE CONCERNED AND THE ENGINEER.
- 18. CLEAN UP
- .1 KEEP THE SITE FREE DURING CONSTRUCTION OF DEBRIS, BOXES, PACKING, AND OTHER MATERIALS ASSOCIATED WITH THE WORK OF THIS TRADE.
- .2 ALL WASTE MATERIAL SHALL BE DISPOSED OF IN A SAFE AND ENVIRONMENTALLY RESPONSIBLE MANNER AND IN ACCORDANCE WITH GOVERNMENT REGULATIONS.
- .3 UPON COMPLETION OF WORK. THE ELECTRICAL INSTALLATION SHALL BE LEFT IN A CLEAN AND FINISHED CONDITION TO THE SATISFACTION OF THE ENGINEER.
- **19. IDENTIFICATION**
- .1 PROVIDE TYPEWRITTEN DIRECTORIES IN PANELBOARD.
- .2 LABEL ALL RECEPTACLES WITH PANELBOARD AND CIRCUIT NUMBER (IE. A19, FOR PANEL A, CIRCUIT 19) USING P-TOUCH TYPE LABELS. BLACK ON WHITE BACKGROUND.

20. MECHANICAL EQUIPMENT

- .1 UNLESS SPECIFIED OTHERWISE, THE ELECTRICAL CONTRACTOR SHALL SUPPLY AND INSTALL ALL REQUIRED CONDUIT, WIRING, ELECTRICAL FITTINGS AND CONNECTIONS FOR ALL MOTORS (OR OTHER EQUIPMENT) AS REQUIRED TO MAKE THE SYSTEM COMPLETE AND OPERATIONAL.
- .2 WHERE REQUIRED BY THE DRAWINGS OR APPLICABLE REGULATIONS. DISCONNECT SWITCHES, STARTERS, OVERLOAD RELAYS AND OTHER NECESSARY PROTECTIVE DEVICES SHALL BE SUPPLIED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
- .3 MOTORS AND LOW VOLTAGE CONTROLS SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- .4 LINE VOLTAGE CONTROLS SHALL BE PROVIDED BY THE MECHANICAL CONTRACTOR, INSTALLED BY THE ELECTRICAL CONTRACTOR.
- .5 THE ELECTRICAL CONTRACTOR SHALL CONFIRM MOTOR (OR OTHER EQUIPMENT) LOCATIONS, RATINGS, AND SIZES WITH THE MECHANICAL CONTRACTOR SUPPLYING THE MOTOR (OR OTHER EQUIPMENT) BEFORE COMMENCING ANY ASSOCIATED ELECTRICAL
- WORK. 21. TESTS
- .1 ALL PORTIONS OF ELECTRICAL WORK SHALL BE TESTED FOR SATISFACTORY OPERATION.
- .2 BEFORE ENERGIZING ANY PORTION OF THE ELECTRICAL SYSTEM, THE ELECTRICAL CONTRACTOR SHALL PERFORM MEGGER TESTS ON ALL FEEDERS AND BRANCH CIRCUITS. ANY PROBLEMS DISCOVERED BY SUCH TESTING SHALL BE CORRECTED BY THE ELECTRICAL CONTRACTOR AND THE CIRCUITS IN QUESTION RETESTED. THE RESULTS OF ALL FINAL TESTING SHALL BE PROVIDED TO THE ENGINEER IN REPORT FORM.
- .3 UPON PROJECT COMPLETION, AND IMMEDIATELY PRIOR TO FINAL INSPECTION AND TAKEOVER, THE ELECTRICAL CONTRACTOR SHALL CHECK THE LOAD BALANCE ON ALL FEEDERS AND AT DISTRIBUTION CENTRES, LOAD CENTRES, AND PANELS. THESE CHECKS SHALL BE CARRIED OUT BY TURNING ON ALL LOADS AND CHECKING LOAD CURRENT BALANCE. IF LOAD UNBALANCE EXCEEDS 15 %, THE CIRCUITS SHALL BE RECONFIGURED AS NECESSARY TO BALANCE THE LOADS.

22. PULL BOXES AND JUNCTION BOXES

- .1 SUPPLY AND INSTALL PULLBOXES AND JUNCTION BOXES AS REQUIRED TO SUIT JOB CONDITIONS AND SHALL CONFORM TO NATIONAL ELECTRICAL CODE REQUIREMENTS.
- .2 A MINIMUM OF ONE PULL BOX SHALL BE INSTALLED FOR EVERY 100' OF CONDUIT.
- .3 NO MORE THAN TWO 90 DEG BENDS SHALL BE ALLOWED BETWEEN PULLING LOCATIONS.
- .4 PULLBOXES AND JUNCTION BOXES SHALL BE FINISHED IN GREY ENAMEL OVER CORROSION-RESISTANT PRIMER WITH SCREW-ON OR HINGED COVER.

23. SWITCHES AND RECEPTACLES

- .1 ALL SWITCHES AND RECEPTACLES SHALL BE SPECIFICATION
- COMMERCIAL GRADE IN WHITE UNLESS OTHERWISE NOTED.

- .2 DUPLEX RECEPTACLES, NEMA TYPE 5-20R, 125V, U GROUND, WITH FOLLOWING FEATURES:
- .1 WHITE UREA MOULDED HOUSING (EXCEPT AS NOTED).
- .2 SUITABLE FOR #10 AWG FOR BACK AND SIDE WIRING.
- .3 BREAK-OFF LINKS FOR USE AS SPLIT RECEPTACLES. .4 EIGHT BACK WIRED ENTRANCES, FOUR SIDE WIRING SCREWS OR PIGTAIL CONNECTIONS
- .5 DOUBLE WIPE CONTACTS AND RIVETED GROUNDING CONTACTS. .3 SWITCHES SHALL BE 20A, 125V, SINGLE POLE, DOUBLE POLE, OR THREE-WAY SWITCHES AS INDICATED AND AS FOLLOWS:
- .1 TERMINAL HOLES APPROVED FOR #10 AWG WIRE.
- .2 SILVER ALLOY CONTACTS.
- .3 UREA OR MELAMINE MOULDING FOR PARTS SUBJECT TO CARBON TRACKING.
- .4 SUITABLE FOR BACK AND SIDE WIRING. .5 TOGGLE OPERATED FULLY RATED FOR TUNGSTEN FILAMENT AND FLUORESCENT LAMPS, AND UP TO 80% OF RATED CAPACITY OF MOTOR LOADS.
- .4 DUPLEX GFCI RECEPTACLES SHALL BE 20A, 125V, COMPLETE WITH LED INDICATOR LIGHT. ALL OUTDOOR, ROOFTOP, WASHROOM, AND KITCHEN RECEPTACLES AND RECEPTACLES MOUNTED WITHIN 6' OF A SINK SHALL BE GFCI TYPE.
- .5 COVER PLATES SHALL BE WHITE HIGH IMPACT NYLON.
- .6 WHERE DUPLEX RECEPTACLES ARE EXTERIOR MOUNTED OR NOTED AS "WP" PROVIDE WEATHERPROOF DOUBLE LIFT SPRING-LOADED CAST ALUMINUM COVER PLATES. COMPLETE WITH GASKETS. 24. SUPPORTS
- .1 ALL CONDUIT, RACEWAYS, AND OTHER ELECTRICAL EQUIPMENT SHALL BE SECURELY AND ADEQUATELY SUPPORTED, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.
- .2 WHERE INSERTS ARE REQUIRED IN CONCRETE, EXPANSION INSERTS, LEAD SHIELD INSERTS OR PLASTIC INSERTS SHALL BE USED IN DRILLED HOLES, SHOT DRIVEN PINS MAY BE USED IN STRUCTURAL CONCRETE ONLY WITH THE PERMISSION OF THE ENGINEER. 25. INCOMING UTILITY SERVICES
- .1 A POLE MOUNTED TRANSFORMER FOR SERVICE TO THE BUILDING WILL BE PROVIDED BY BELCO.
- .2 PROVIDE SECONDARY DUCT IN ACCORDANCE WITH BELCO REQUIREMENTS.
- .3 PROVIDE INDIVIDUAL 2" SERVICE CONDUITS FOR POWER AND DATA CABLES TO UTILITY POLE AT THE PROPERTY LINE FOR TELEPHONE AND CABLE TV SERVICE.
- .4 INCLUDE ALL COSTS FOR UTILITY CONNECTION CHARGES IN THIS CONTRACT.
- 26. SERVICE ENTRANCE
- .1 PROVIDE PULL BOX IN ACCORDANCE WITH BELCO REQUIREMENTS. .2 MAIN SWITCH AND FUSES TO BE RATED 100A, 2 POLE, 240V, WITH MINIMUM 42KA INTERRUPTING CAPACITY.
- 27. METERING
- .1 METERING EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH BELCO REQUIREMENTS.
- 28. GROUNDING AND BONDING .1 A COMPLETE GROUNDING AND BONDING SYSTEM SHALL BE
- SUPPLIED AND INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND THE ELECTRICAL INSPECTION DEPARTMENT. .2 ALL METAL PARTS NOT CARRYING CURRENT, INCLUDING BUT NOT LIMITED TO, SECONDARY FEEDER CIRCUITS, TRANSFORMERS,
- ELECTRICAL AND MECHANICAL EQUIPMENT, PANELBOARD ENCLOSURES. METAL RACEWAYS, PULL AND JUNCTION BOXES, SHALL BE PROPERLY GROUNDED. METAL RACEWAYS SHALL UTILIZE DOUBLE LOCKNUTS AND OTHER FITTINGS WHERE NECESSARY TO PROVIDE GROUND CONTINUITY.
- .3 A SEPARATE GREEN INSULATED GROUND CONDUCTOR SHALL BE INSTALLED IN ALL RACEWAY FEEDER RUNS, FLEXIBLE CONDUIT, AND IN CONDUIT INSTALLED IN SLAB OR UNDERGROUND.
- .4 PROVIDE AND INSTALL ONE 10' LONG COPPER GROUND RODS AND SOLID COPPER GROUND CONDUCTOR AND CONNECT TO MAIN GROUND BUS IN MAIN ELECTRICAL ROOM.
- GROUND BUSES SHALL BE BARE COPPER BAR WALL MOUNTED ON INSULATORS ON AT 1' AFF. 3" X 1/4" COPPER BUS.
- 29. STARTERS AND DISCONNECT SWITCHES .1 PROVIDE DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT AS INDICATED IN DRAWING E1.
- .2 PROVIDE LOCAL ISOLATING DISCONNECT SWITCHES AS REQUIRED BY NFC.
- .3 DISCONNECT SWITCHES SHALL BE RATED 240V, WITH POLES TO SUIT.
- .4 STARTERS AND DISCONNECT SWITCHES MOUNTED OUTDOORS SHALL BE HOUSED IN NEMA4X ENCLOSURES.
- 30. PANELBOARDS AND BREAKERS .1 PANELS SHALL BE SURFACE MOUNTED IN SERVICE ROOMS, COMPLETE WITH ALL TRIM, LOCKABLE DOORS AND INSTALLATION HARDWARE. ENCLOSURES SHALL BE MINIMUM NEMA 3 RATED.
- .2 TYPEWRITTEN PANEL DIRECTORIES SHALL BE PROVIDED.
- .3 BALANCE PANEL LOAD FOR EACH PHASE A & B. ALLOW FOR RELOCATING CIRCUITS WITHIN PANEL BOARD TO BALANCE THE LOAD.
- 31. LIGHTING SYSTEMS AND CONTROLS
- .1 INSTALL A COMPLETE AND FULLY OPERATIONAL LIGHTING SYSTEM IN CONFORMANCE WITH CODE AND UL LISTING REQUIREMENTS. .2 ALL LUMINAIRES SHALL BE COMPLETE WITH LAMPS, MOUNTING
- BRACKETS, BALLASTS, POWER SUPPLIES, AND ALL NECESSARY ACCESSORIES.
- .3 ALL LUMINAIRES SHALL BE CLEANED AND LAMPED UPON COMPLETION OF WORK AND PRIOR TO FINAL ACCEPTANCE.
- .4 INSTALL ALL LIGHTING CONTROLS WITH LINE VOLTAGE SWITCHES. ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH THE RECOMMENDATION OF THE MANUFACTURER AND COMPLY WITH CODES.
- .5 COORDINATE LIGHTING CONTROL PROGRAMMING WITH THE ENGINEER. 32. COMMUNICATIONS RACEWAY ROUGH-IN
- .1 NO CONDUIT RUN SHALL EXCEED TWO 90 DEGREE BENDS AND ONE 45 DEGREE SWEEPING BEND.
- .2 THE INSTALLATION OF COMMUNICATIONS EQUIPMENT, AND CONDUIT TO BE USED FOR COMMUNICATION WIRES, SHALL COMPLY IN ALL RESPECTS WITH THE REQUIREMENTS OF THE RESPECTIVE UTILITY COMPANY
- .3 PROVIDE DOUBLE GANG BOX C/W SINGLE GANG MUD RING, OUTLET BOXES AND EMPTY CONDUITS C/W PULL STRING FOR COMMUNICATIONS OUTLETS WHERE SHOWN ON DRAWINGS.
- .4 INSTALL 1: RPVC CONDUIT FROM EACH WALL MOUNTED COMMUNICATION OUTLET TO ELECTRICAL ROOM.
- .5 INFORM THE ENGINEER IF THE CONDUIT RUN EXCEEDS 230' IN LENGTH PRIOR TO INSTALLATION.



GOVERNMENT OF BERMUDA

MINISTRY OF PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL **ENGINEERING SECTION** P.O. Box HM 1365 Hamilton HMFX Bermuda Tel: (441) 295-5151 Fax: (441) 295-4675

ISSUE / REVISION

No.						Date:	
	T	10	777	1		0 D D T	

SEPT 2015 A | Issued for Tender

SCALE: AS NOTED

Date:
Date: SEP 2013
Date: JAN 2015
Date: JAN 2015
Date: JAN 2015
JAN 2015

Project Number:

Project Title:

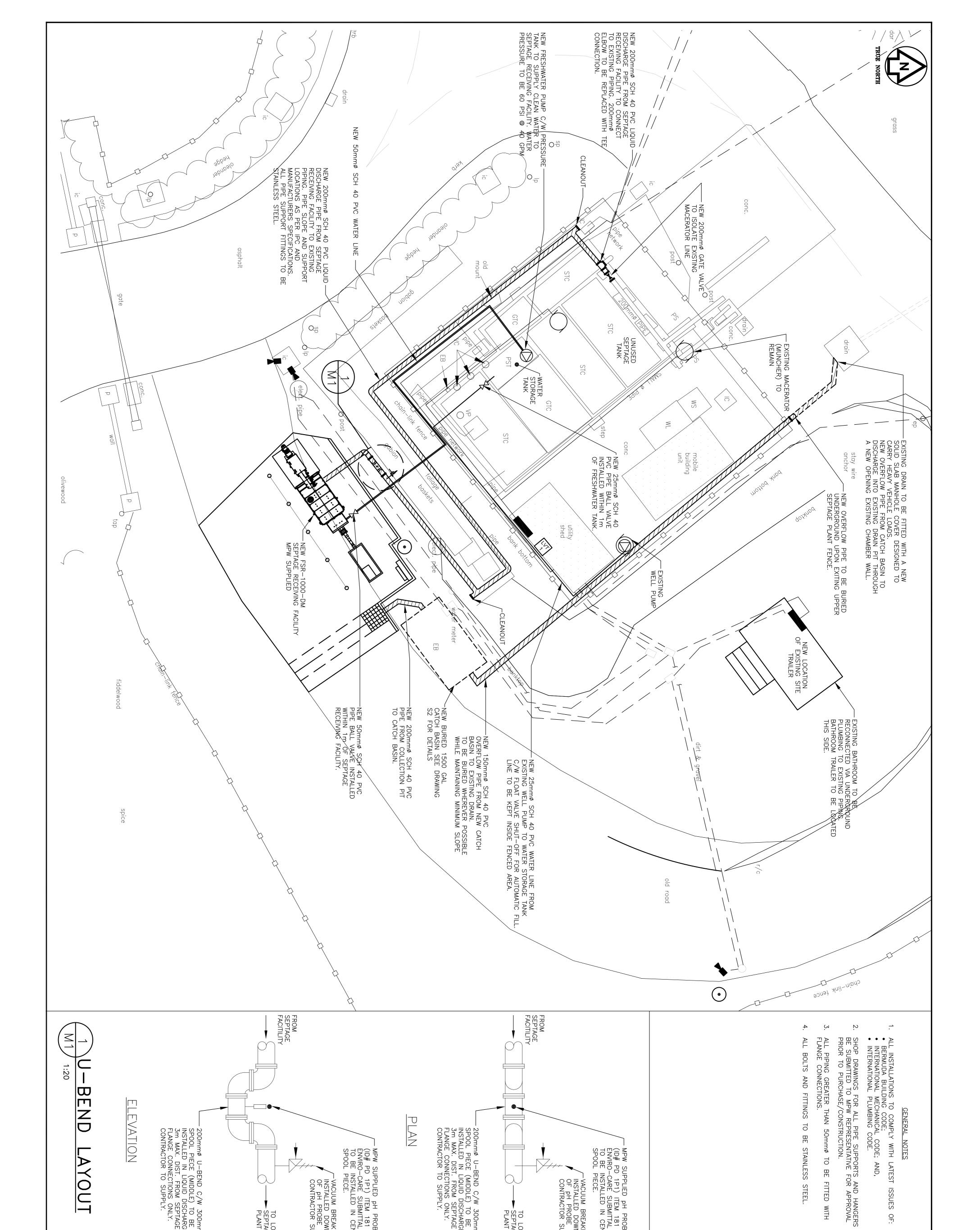
BEAST SEPTAGE RECEIVING STATION

TYNES BAY WTE PLANT 31 PALMETTO ROAD DEVONSHIRE

Sheet Title:

ELECTRICAL SPECIFICATIONS

Revision:





Number

PROPOSED LAYOUT PLAN

Sheet Title:

TYNES BAY WTE PLANT 31 PALMETTO ROAD DEVONSHIRE

BEAST SEPTAGE RECEIVING STATION

Project Title:

A ISSUED FOR TENDER	DEC 2015
<u>SCALE:</u> 1:75	
<u>SURVEY</u> Prepared By: SM	Date: DEC 2014
DESIGN Prepared By: MB	Date: JUL 2015
Checked By: MB	Date: JUL 2015
DRAWING Prepared By: DB	Date: JUL 2015
Checked By: DB	Date: JUL 2015
Approved By: MB	DEC 2015
Project Number: -	

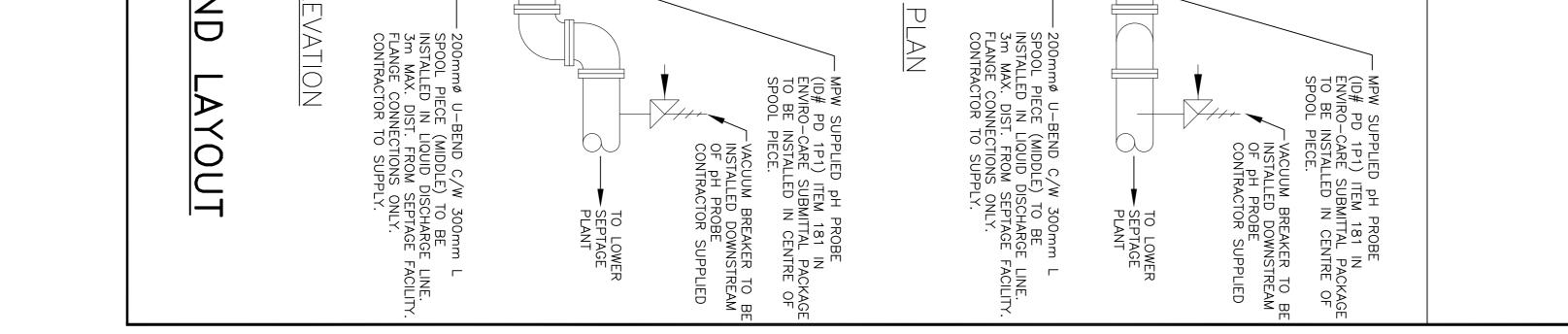
No.		Date:
ı	-	1
A	A ISSUED FOR TENDER	DEC 2015
SCAI	<u>SCALE:</u> 1:75	

	RE	SISTERED	
BERMUDA	MARTIN BIFFIN	No. 154 MECHANICAL	PROFESSION
	EER	ENGINE	r



	REGIST
BERMUDH	REGISTERED PROTESSION MECHANICAL MARTIN BIFFIN
	ENGINEER

No.	ISSUE / REVISION		
	VISION	REGISTERED PROFESSIONA MECHANICAL BERMUDE	





NOTES

OF:

б

GOVERNMENT OF BERMUDA

MINISTRY OF

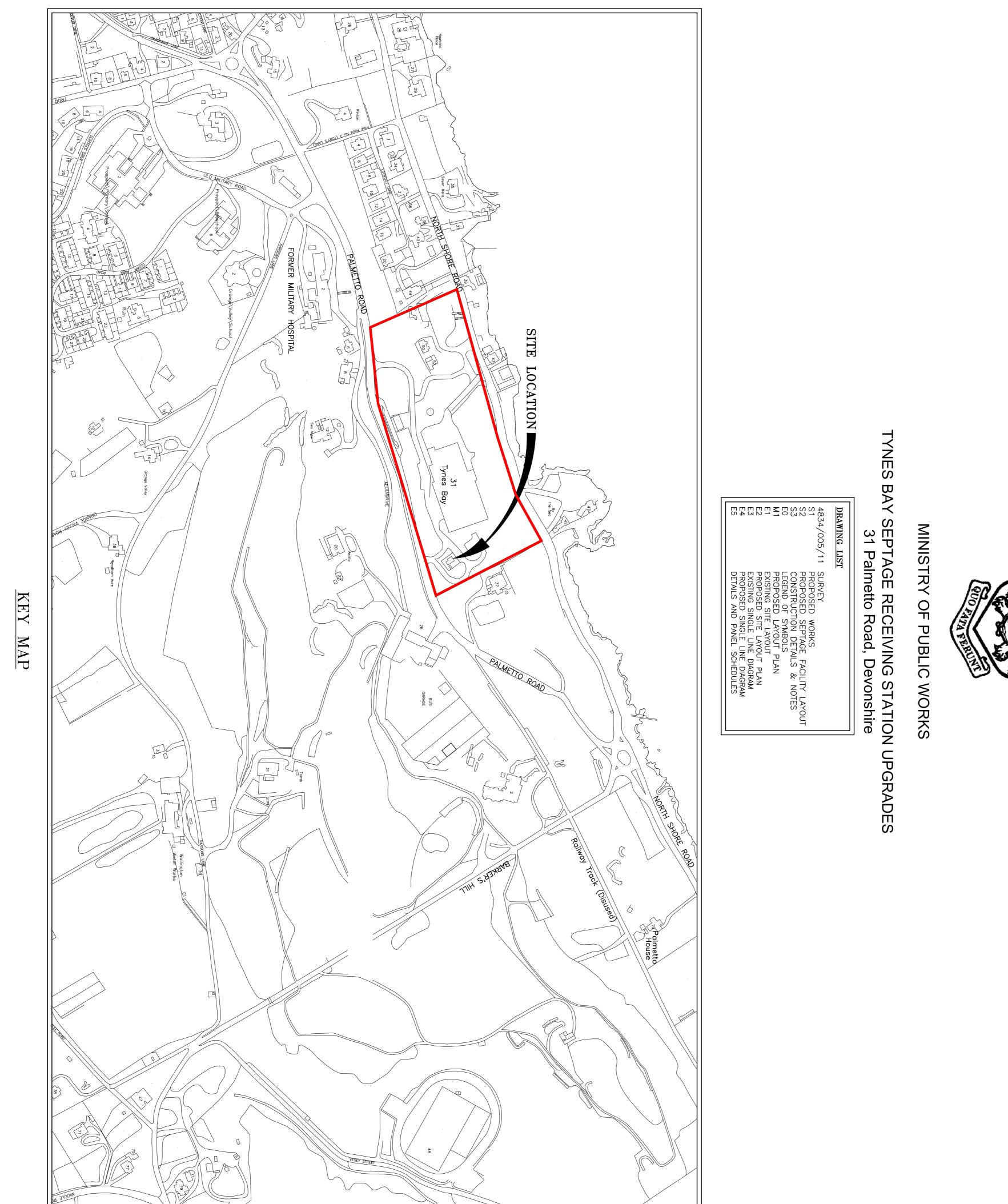
STEEL

PUBLIC WORKS

DEPARTMENT OF WORKS AND ENGINEERING

ELECTRICAL AND MECHANICAL ENGINEERING SECTION P.O. Box HM 1365 Hamilton HMFX Bermuda

Tel: (441) 295-5151 Fax: (441) 295-4675



	_
	Τ
DR/	

\rightarrow	REVISION

0SSHEET NUMBER:

SHEET TITLE: COVER

TYNE'S BAY SEPTAGE RECEIVING UPGRADES 31 PALMETTO ROAD DEVONSHIRE PARISH

PROJECT NAME:

	PROJECT NUMBER:
DATE:	APPROVED BY:
19/02/15	T. CHRISTOPHER
DATE:	CHECKED BY:
16/02/15	M. BIFFIN
DATE: 12/02/15	<u>DRAWING</u> PREPARED BY: T. HARMER
DATE:	CHECKED BY:
16/02/15	T. CHRISTOPHER
10/11/15	M. BIFFIN

<u>DESIGN</u> PREPARED BY: M. BIFFIN DATE: 10/11/ /15

DATE:

<u>SURVE</u>Y PREPARED BY: SCALE: .

USSI	ISSUED FOR: TENDER	TENDER		0	07/12/15
AMEN	AMENDMENTS:				
NO	NO REVISION		BY	APP	BY APP DATE
>			·	•	
)					

ISSI |

UED FOR:	IENDER	07/12/15
ENDMENTS:		
REVISION		BY APP DATE

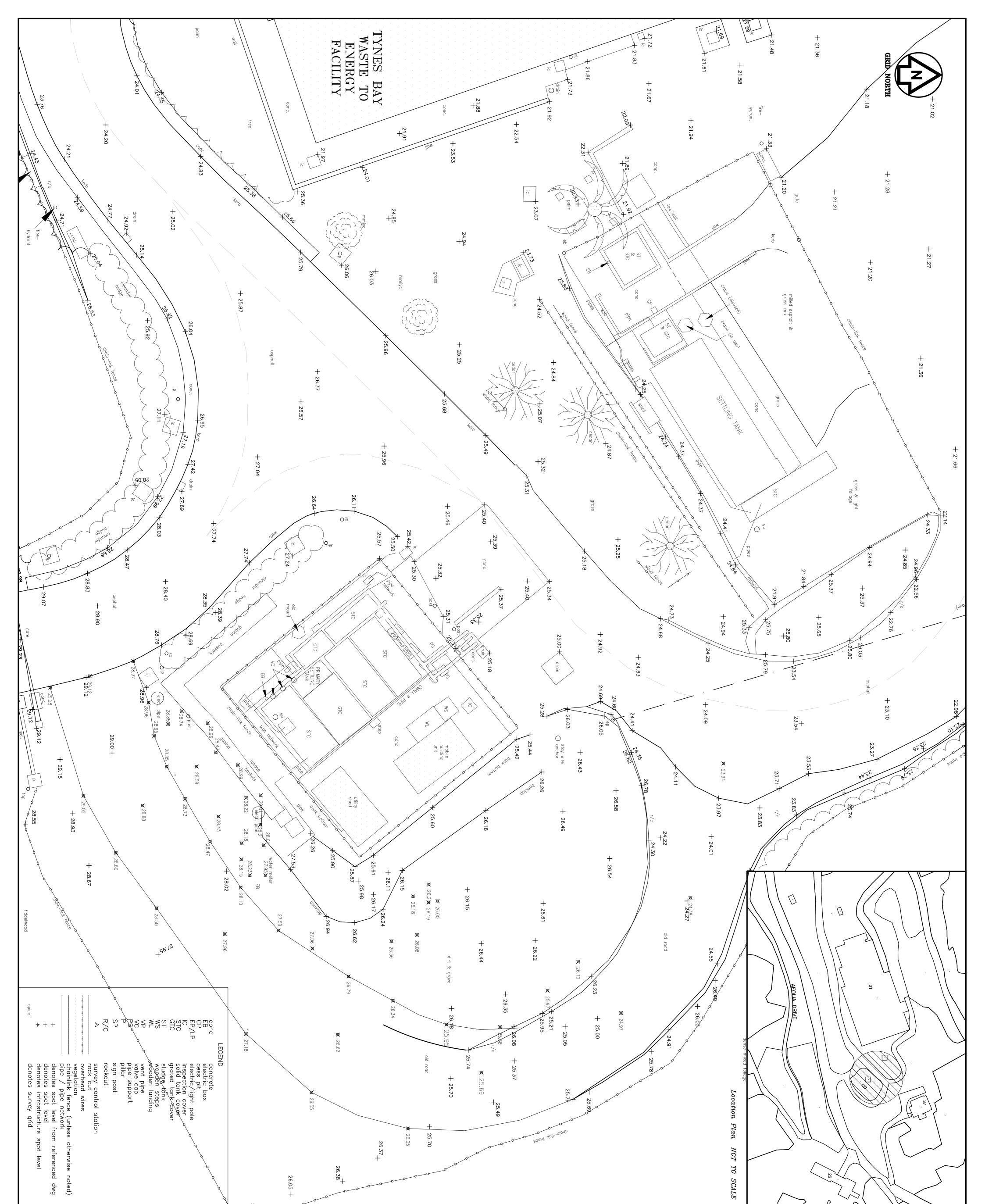
THE PU	
BLIC	4 1 4 4 4
WOR])]
KSOH)

P.0. Box HM525 Hamilton HMCX Bermuda Phone: (441)295–5151

DEPARTMENT OF WORKS & ENGINEERING Fax: (441)294–9087

Structures Section

D





SHEET NUMBER: 4834/005/11

TOPOGRAPHIC SURVEY TITLE:

SHEET

DRAWING FILE NO: CIVIL 3D 2011
PIMS\SURVEYPROJECTS\3024107\TN72234

31 PALMETTO ROAD DEVONSHIRE

TYNES SLUDGE BAY TANKS

PROJECT NAME:

PROJECT NUMBER: 30/241/07 TN72234

APPROVED BY: S. PATTERSON – SENIOR LAND SURVEYOR	CHECKED BY: SP	<u>DRAWING</u> PREPARED BY: C. SHANE MCILWAIN
LAND		
SURVEYOR	DATE: 14/04/14	DATE: 11/04/14

26.05 +

DESIGN	
PREPARED BY:	DATE:
CHECKED BY:	DATE:
DRAWING	

<u>awing</u> Epared by:	ECKED BY:	EPARED BY:
DATE:	DATE:	DATE:

26.38+

CKED BY:	DATE:
<u>WING</u> PARED BY: SHANE MCILWAIN	DATE: 11/04/1-
CKED RY:	DATE.

McILWAIN 04/0 BY: DATE:
04/04, DATE:

04/04/
4/14

DATE:	04/04/

DATE:

<u>SURVE</u>Y PREPARED BY: C. SHANE McIL

METRIC

1:100

SCALE:

^{90n9} Anil-nipdo}

AMENDMENTS: NO: | REVISION

ISSUED FOR:

THIS PLAN MUST NOT BE ALTERED IN ANY WAY UNLESS AUTHORISED BY THE REGISTERED LAND SURVEYOR ONLY AUTHENTICATED COPIES OF THIS PLAN SHOULD BE USED © COPYRIGHT – BERMUDA GOVERNMENT

N0:

APP

DATE:

70

/11/14

A PREVIOUS SURVEY TASK EXTENDED TO INCLUDE NEW EXTENTS

NOT TO SCALE

SURVEY GRID IS BNG2000.
 LEVELS ARE IN METRES ABOVE ORDNANCE DATUM.
 TED GAUNTLETT DRAWING TG1957_R14.DWG REFERENCED.

GENERAL NOTES:

STN

EASTINGS

NORTHINGS

LEVEL

SURVEY STATION COORDINATES

Ð

Department of Land Surveys & Registration

P.O. Box HMI364 Hamilton HMFX Bermuda Phone: (441) 295-5151 Fax: (441) 295-5658

 \sim

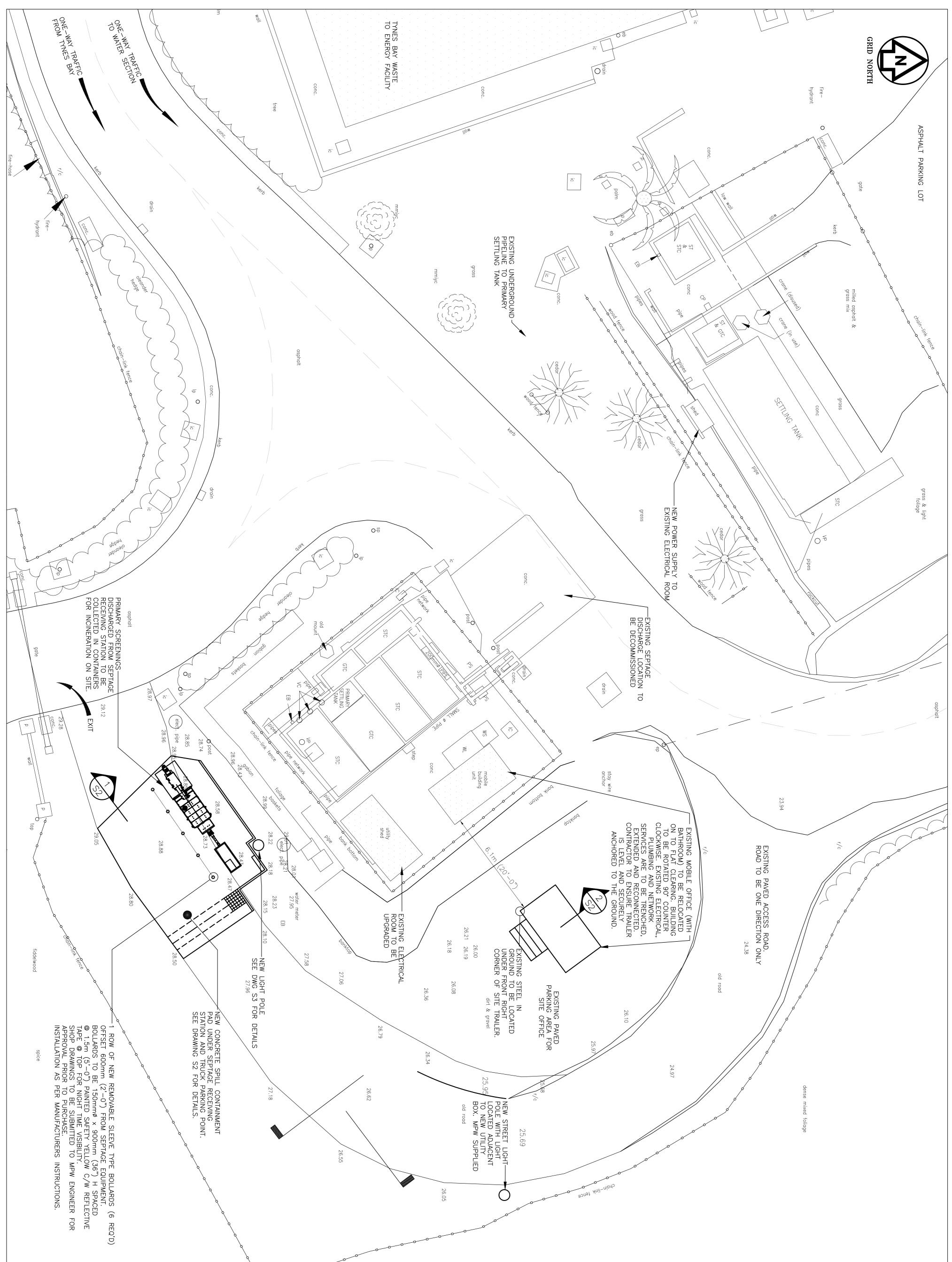
GOVERNMENT OF BERMUDA

Ministry of Public Works

25.70

26.05

^{26.37}+





SHEET S_{1} NUMBER:

PROPOSED WORKS

SHEET TITLE:

TYNE'S BAY SEPTAGE RECEIVING UPGRADES 31 PALMETTO ROAD DEVONSHIRE PARISH

PROJECT NAME:

	PROJECT NUMBER:
DATE:	APPROVED BY:
19/02/15	T. CHRISTOPHER
DATE:	CHECKED BY:
16/02/15	M. BIFFIN
DATE: 12/02/15	<u>DRAWING</u> PREPARED BY: T. HARMER
DATE:	CHECKED BY:
16/02/15	T. CHRISTOPHER

ESIGN	
REPARED BY:	DATE:
. BIFFIN	12/02/15
HECKED BY:	DATE:
CHRISTOPHER	16/02/15
RAWING	

S <u>URVE</u> Y DATE: DATE:

AMENDMENTS:			
NO REVISION	BY	APP	BY APP DATE
<u>, , </u> .		·	
SCALE: .			

07/12/15	ISSUED FOR: TENDER	ISSUED FO
CALL ONE WEEK AHEAD	/ CALL ONE	K

CALL ONE WEEK AHEAD
BELCO: 299–2800 TELCO: 295–1001 W&E WATER: 297–7637 BERMUDA WATER WORKS: 236–1288 CABLE VISION: 292–5544
BEFORE YOU DIG
PRIOR TO COMMENCING NEW CONSTRUCTION

RELOCATION TO BE MOVED BY CONTRACTOR PRIOR TO COMMENCING NEW CONSTRUCTION. BEFORE YOU DIG CHECK WHAT'S BELOW BELCO: 299–2800 TELCO: 299–2800 TELCO: 299–2800 TELCO: 299–2800 TELCO: 299–2800 TELCO: 295–1001 W&E WATER: 297–7637	ALL FYISTING SERVICES RECUIRING
--	---------------------------------

•		RIOR T
BERMUDA W		ELOCATION TO BE MOVED BY CONTRACTOF
BERMUDA WATER WATER: 2 CABLE VISION: 2	BEFORE YOU DIG CHECK WHAT'S BELOW BELCO: 299-2800	NG NEW CON
295–1001 297–7637 236–1288 292–5544	HE YOU DIG HAT'S BELOW BELCO: 299-2800	STRUCTIO

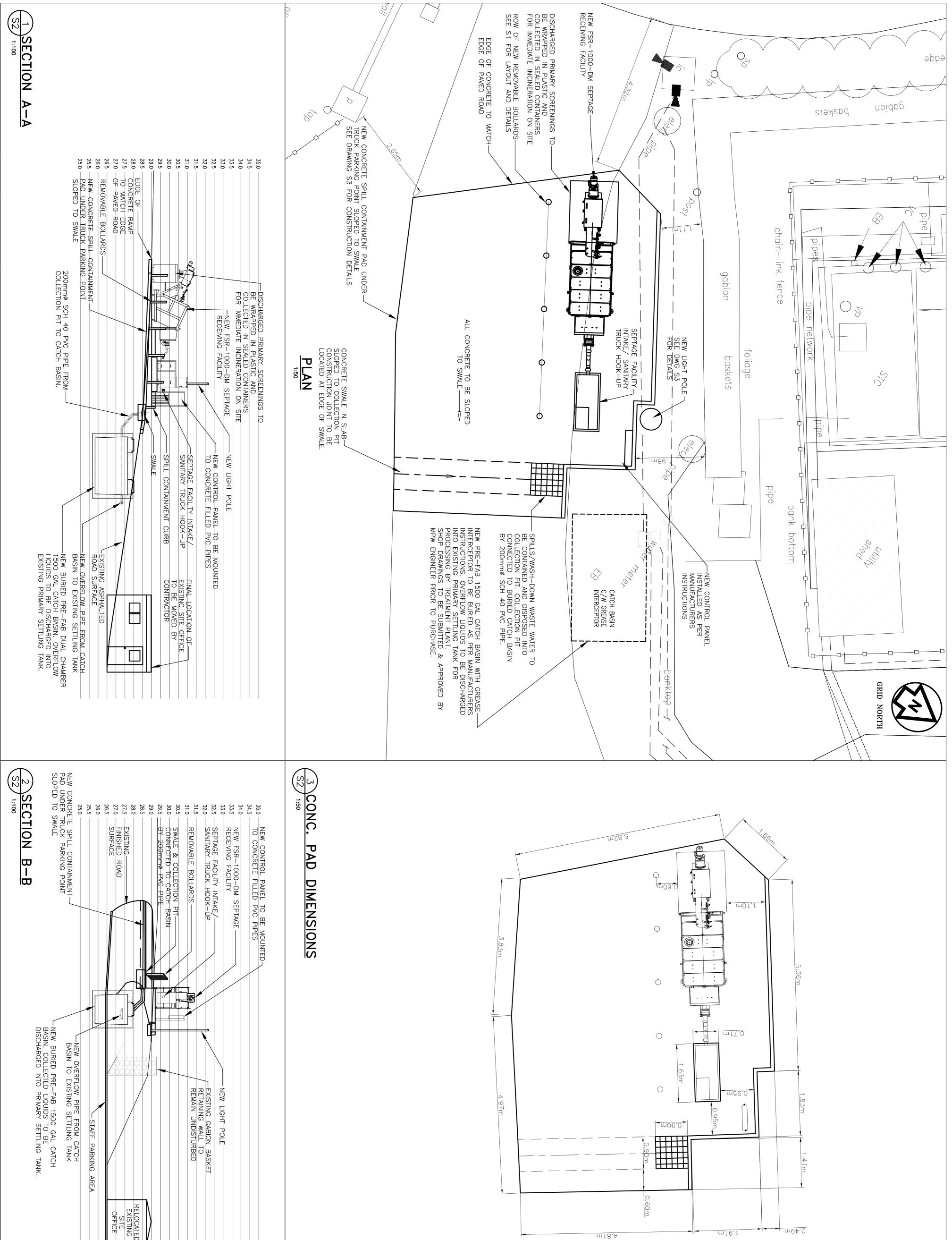
TE: L EXISTING SERVICES REQUIRING LOCATION TO BE MOVED BY CONTRACT(IOR TO COMMENCING NEW CONSTRUCTI

P.0.
Box
P.O. Box HM525 Hamilton HMCX Bermuda Phone: (441)295–5151

THE MINISTRY OF PUBLIC WORKS

Structures Section

	//CHECK		: EXISTING SERVICES REQUIRING CATION TO BE MOVED BY CONTRACTO R TO COMMENCING NEW CONSTRUCTIO
BELCO:	WHAT'S	ORE Y	REQUIRIN YED BY C NEW CO
BELCO: 299-2800	CHECK WHAT'S BELOW	BEFORE YOU DIG	NG CONTRACTO NSTRUCTIO



	\. /	>	REVISION

SHEET \widetilde{S} NUMBER:

SHEET FACILITY PROPOSED TITLE: LAYOUT SEPTAGE

31 PALMETTO ROAD DEVONSHIRE PARISH SEPTAGE RECEIVING UPGRADES

TYNE'S BAY PROJECT NAME:

	PROJECT NUMBER:
DATE:	APPROVED BY:
19/02/15	T. CHRISTOPHER
DATE:	CHECKED BY:
16/02/15	M. BIFFIN
DATE: 12/02/15	<u>DRAWING</u> PREPARED BY: T. HARMER
DATE:	CHECKED BY:
16/02/15	T. CHRISTOPHER

DESIGN	
PREPARED BY:	DATE:
M. BIFFIN	12/02/15
CHECKED BY:	DATE:
T. CHRISTOPHER	16/02/15
DRAWING	

Ο	
BY:	BY:
DATE:	DATE:

SCALE:

· · · · · · · · · · · · · · · · · · ·			AMENDMENTS:	ISSUED FOR: TENDER 07/
				07/12/15

SUED FOR:	TENDER	07/12/15
ENDMENTS:		

BY APP DATE	Y APP	 2	REVISION	RE
		-	NDMENTS:	NDN
07/12/15	0	IED FOR: TENDER	FOR:	IED

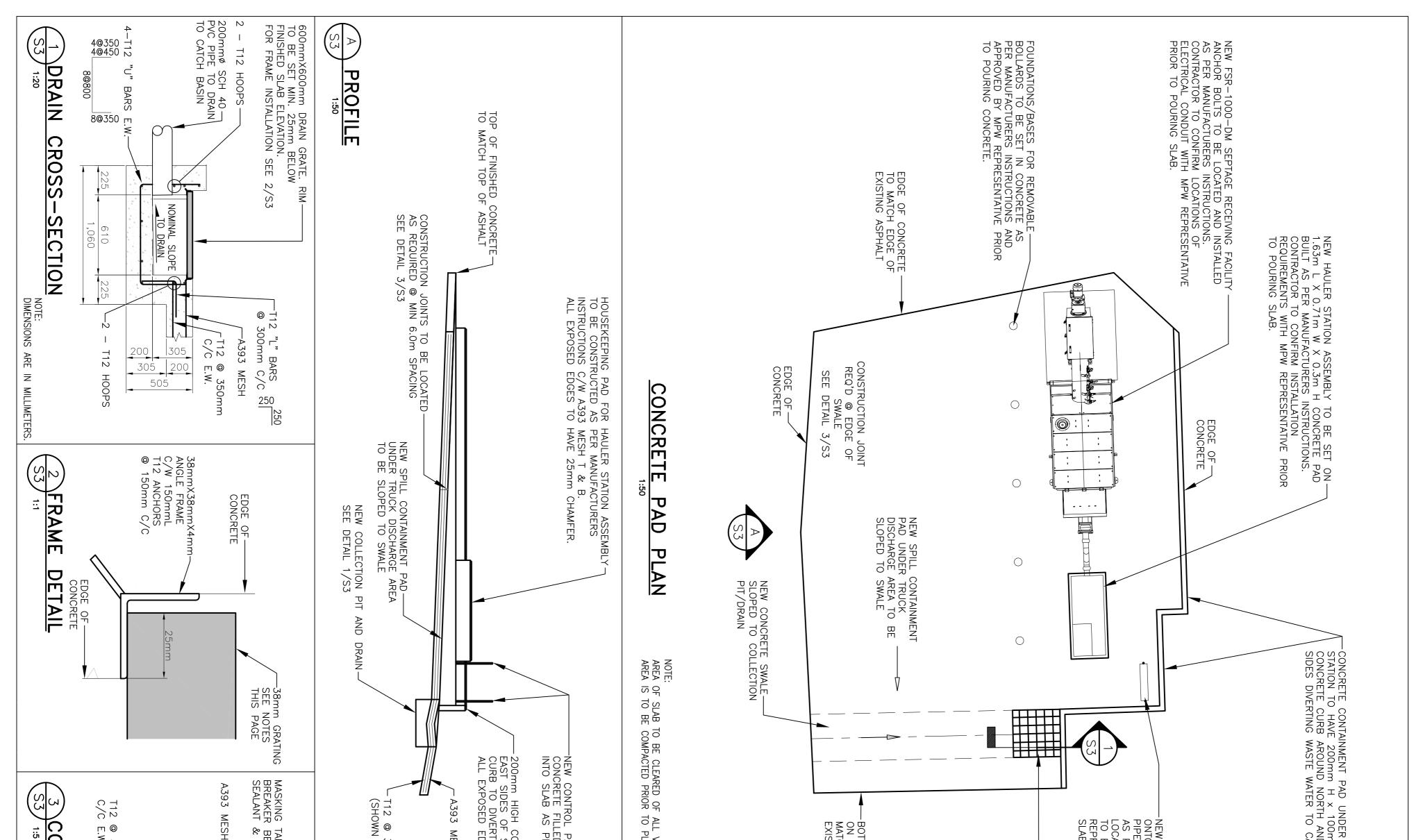
THE MINISTRY OF PUBLIC WORKS

P.0. Box HM525 Hamilton HMCX Bermuda Phone: (441)295–5151

DEPARTMENT OF WORKS & ENGINEERING Fax: (441)294-9087

Structures Section

IPE FROM CATCH S SETTLING TANK 1500 GAL CATCH UIDS TO BE



E.W. JOINT 200mm (TYP)	@ 350mm C/C E.W. WN FOR CLARITY) TAPE BOND BETWEEN & CONCRETE SIKAFLEX 2C-SL JOINT SEALANT		- PANEL TO BE MOUNTED TO 2 – 3"¢ LED PVC PIPES ANCHORED AND SET S PER MANUFACTURERS INSTRUCTIONS CONCRETE CURB AROUND NORTH AND OF SEPTAGE STATION CONTAINMENT PAD. ERT WASTE WATER TO CATCH BASIN. EDGES TO HAVE 25mm CHAMFER. MESH (SHOWN FOR CALRITY)	L VEGETATION AND 200mm OF TOPSOIL/ASPHALT. PLACING CONCRETE. L VEGETATION AND 200mm OF TOPSOIL/ASPHALT. 1.1 CONTRACTOR TO 2.2 CONCRETE TO E	TING ASPHALT 5.2 REINFOR 5.3 COVER 5.4 REBAR A APPLIC 6.0 GRATI			DRAIN PIT CONSTRUCTION DETAILS.	CATCH BASIN. 4.5 CONCRETE	SH-DOWN WASTE	INTATIVE PRIOR TO POURING 4.2 CON 4.3 CON	HORED AND SET INTO SLAB ANUFACTURERS INSTRUCTIONS. 4.0 CONCRE OF ALL ELECTRICAL CONDUITS PROVED BY MPW 4.1 ALL CON	NTROL PANEL TO BE MOUNTED 3.1 , DNCRETE FILLED 75mmø PVC 3.2 (2.1 UNLESS NOT 2.2 THE WORK IN 3.0 EXCAVATION	1.7 CONTRACTOR 2.0 SCOPE OF 1	ALL DET	BROUG 1.5 DO NOT		1.1 THESE NOTE	1.0 GENERAL
FOR POLES LOCATED IN ROCK	1,219 1,219 100 1,219 100 FOR POLE ANCHOR BO FOR POLE ANCHOR BO 112 TIES 5 © 75 112 TIES 2 © 300 T12 TIES 2 © 300	LIGHT POLE BAS	20mmø x 510mm POLE ANCHOR BOLTS ON 215mmø BOLT CIRCLE INSTALLED AS PER MANUFACTURERS INSTRUCTIONS. LOCATION TO BE FIELD VERIFIED. 4 No. REQUIRED. T12 TIES 6 No T25 VERTICAL	IN BE 38mm DEEP GALVANIZED STEEL GRAIING BARS TO BE 38mm X 4mm @ 25mm CENTERS ER TO BE BANDED INATIVE GRATING IS APPROVED, ADJUST SUMP SIZE AND DETAILS TO SUIT ON AND TESTING OR TO PROVIDE 24 HOURS NOTICE FOR THE INSPECTION OF ALL REINFORCING, INCLUDING TO BE TESTED BASED ON SPECIFICATION REQUIREMENTS. TESTING TO BE DONE BY SUPP	EEL TO BE GALVANIZED IN ACCORDANCE WITH PART 1.1, SECTION 03200 OF TH 50mm UNLESS NOTED OTHERWISE. OF CONCRETE LINTELS, STAIRS, PAD FOOTINGS, BEAMS AND SLABS ARE TO HAY OF A 'ZINC' RICH PAINT APPLIED TO THE ENDS AND DAMAGED AREAS TO THE /	G STEEL STEEL SHALL CONFORM TO CAN/CSA G30.18-M92(R1998) GRADE 400 DEFORMED	CHAIRS TO BE PLASTIC, OR CONCRETE. TO BE USED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. NO WATER SHALL TOR SHALL BE RESPONSIBLE FOR PROVIDING QUALIFIED PERSONNEL FOR ALL TEST ON. THE CUBES OR CYLINDERS SHALL BE TESTED AT THE CONTRACTOR'S EXPENSE FOR EACH POUR SHALL BE CARRIED OUT AT THE RATE OF 4 CYLINDERS OR CUBES FOR SHALL GIVE A MINIMUM OF 24 HOURS NOTICE TO THE ENGINEER PRIOR TO P	SLABS 50 mm LIGHT POLE FOOTING 75mm	COVER ON REINFORCING STEEL TO BE AS FOLLOWS:	STRENGTHS AND SLUMPS TO BE AS FOLLOWS: LOCATION MIN. SPECIFIED 28 DAY STRENGTH SLABS 30 MPA	DESIGNS TO BE SUBMITTED TO THE ES TO BE DESIGNED ACCORDING TO	TE IS TO BE IN ACCORDANCE WITH THE SPEC	ITION AND EARTHWORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION AND EARTHWORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THE SPECIFICATION AND AND AND AND AND AND AND AND AND AN	OTED OTHERWISE THE CONTRACTOR SHALL SUPPLY ALL THE NECESSARY MATERIALS TO INVOLVES PREPARATION OF THE PROPOSED SITE AND THE CONSTRUCTION OF A NEW O DN AND EARTHWORK	R TO MAKE GOOD ANY DAMAGES CAUSED ON SITE, REPAIRING TO MATCH EXISTING OR	AND ARRANGEMENTS OF EXISTING CONDITIONS, DIMENSIONS, ETC. TO	THE ENGINEER'S ATTENTION. THE DRAWINGS. DIMENSIONS ARE TO BE USED AS A GUIDE ONLY. CONTRACTOR TO	ARE TO BE READ IN CONJUNCTION WITH THE MINISTRY OF WORKS AND ENGINEERING STA	ES APPLY TO STRUCTURAL DRAWINGS S1 TO S3. IONS ARE IN METERS UNLESS NOTED OTHERWISE.	CONSTRUCTION
230	SPACING SPACING T T T T T T T T T T T T T T T T T T T	<u>SE PLAN</u>	 POLE NOTES (ADDITIONAL TO NOTES ABOVE): PEDERIS PRIOR SHALL BE CLEANED OF ANY LOOSE MATERIAL AND DEBRIS PRIOR TO PLACING REINFORCING AND CONCRETE. AND DEBRIS PRIOR TO PLACING REINFORCING AND CONCRETE. AND EXCAVATED & FORM WORK PROVIDED FOR CONCRETE. BACKFILL AROUND CONCRETE TO BE GRANULAR MATERIAL COMPACTED TO 100% STANDARD PROCTOR DENSITY, OR FILLED WITH 10MPd CONCRETE. ANCHOR BOLTS TO BE F1554 GRADE 55. POLE MODEL: LITHONIA RTS 20 5–9B POLE LIGHTING MODEL: LITHONIA KADT 150M–R2–120–RPD04–LP1–DDB SOFT SQUARE CUTOFF 	<u>G MASONRY REINFORCING PRIOR TO POURING CONCRETE.</u> PLIER.	SPECIFICATION. STANDARD 90° BENDS. ANY REBAR WHICH IS CUT AND BENT ON SI PROVAL OF THE ENGINEER.	STEEL	. BE ADDED TO THE MIX ON SITE WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. ING AND SAMPLING OF CONCRETE AS DESCRIBED IN THESE NOTES AND THE STANDARD AND THE RESULTS OF ALL TESTS SHALL BE SUBMITTED TO THE ENGINEER. TESTING ANI S FOR EVERY 10 CUBIC METERS OF CONCRETE IN THAT POUR.				IE SPECIFICATION.		DNS FOR THIS PACKAGE.	COMPLETE THE WORK. CONCRETE SLAB.	AS APPROVED BY THE MINISTRY OF WORKS AND ENGINEERING.	OR TO CONSTRUCTION. ANY DISCREPANCIES S	MEASURE FOR ALL DIMENSIONAL REQUIREMENTS.	ANDARD SPECIFICATION, DATED 1993. WHERE A DISCREPANCY EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS IT SHALL		NOTES

	\ /	>	REVISION

 \mathcal{S} SHEET NUMBER: 8

SHEET CONSTRUCTION DETAILS TITLE: NOTES

31 PALMETTO ROAD DEVONSHIRE PARISH

TYNE'S BAY SEPTAGE RECEIVING UPGRADES

PROJECT NAME:

	PROJECT NUMBER:
DATE:	APPROVED BY:
19/02/15	T. CHRISTOPHER
DATE:	CHECKED BY:
16/02/15	M. BIFFIN
DATE:	PREPARED BY:
12/02/15	T. HARMER
	DRAWING
16/02/15	T. CHRISTOPHER

PREPARED BY: M. BIFFIN DESIGN CHECKED BY: DATE: 12/02/15 DATE:

B≺: DATE:

PREPARED .

				NO H	AMENE
				NOREVISION	AMENDMENTS:
·				ΒY	
•				APP	
.				BY APP DATE	

ISSUED FOR: TENDER 07/12/15

SURVEY SCALE:

1554 GRADE 55. NA RTS 20 5–98 POLE

RESSIVE STRENGTH OF 400 MPA (OR PROVED EQUAL).

BROUGHT Б THE ENGINEER'S

BE

THE MINISTRY OF PUBLIC WORKS

Box HM525 Hamilton HMCX Bermuda Phone: (441)295–5151

Structures DEPARTMENT OF WORKS & ENGINEERING Fax: (441)294–9087 Section

P.0.