

CTR Catalogue

DED For Asset Security Enhancement Project

Project

Originating Company SCiN Engineering Design Office

Document Title CTR Catalogue

Document Number XXX-SCINDO-XXXXX-FA-6834-00001

Document Revision D0:

Document Status Issued For Review

Originator / Author Abraham Imarhiagbe

Security Classification Restricted

ECCN EAR 99

Issue Date 28-Sep-21

Revision History is shown next page

Rev Status	Date	Desscription	Originator	Checker	Approver
D01	28-Sep-21	Issued For Review	Abraham Imarhiagbe	Oluwaseun Durojaiye	Jide Odunlami

Restricted

ECCN: EAR 99 De Minimis

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Party	Ref Indicator	Name	Sign	Date				

Guidelines:

- 1. Please consider using hyperlink rather than embedding large documents.
- 2. Fonts must not be altered from the standard styles- (see SEDO Word Document Template).
- 3. Graphs to be without borders.
- 4. Use non-breaking spaces between numbers and units Ctrl+Shift+Space
- 5. Special Characters such as degree (°C) refer to: http://www.alt-codes.net/
- 6. Maps to follow Shell mapping standards.
- 7. Figures & tables to be incorporated in the text, with attachments if a larger figure will benefit
- 8. Units are Oil field Metric. If Oil field standard units are used (e.g. ft and psi, then the metric
- 9. Use m3 rather than bbl/ft3

Revision Philosophy:

- a. All FEED documents for review shall be issued at R01, with subsequent R02, R03, etc as required.
- b. All documents approved for issue, or approved for design shall be issued at A01with subsequent A02, A03, etc as required. (Management of Change is required for A02, A03, etc).
- c. All Detailed Design documents for review shall be issued at D01, with subsequent D02, D03, etc as required.
- d. All documents approved for construction shall be issued at C01with subsequent C02, C03, etc as required. (Management of Change is required for C02, C03, etc).
- e. All approved "As Built" documents shall be issued at Z01, with subsequent Z02, Z03, etc as required. (Use versions Z01.1, Z01.2, Z01.3, etc to review "As Built" document to Z02).

Revision History

Rev No	Date of issue	Reason for / Change
D01	9-Jul-21	Issued for Review

^{*} Note that your document, the document title shall substitute the title of this document which is- "SEDO Excel Document Template/Cover Page" wherever it exists.

SORTED BY DISCIPLINE

Discipline	CODE
Business Support	YA
Civil Structural	CX
Electrical	EA
HSE	HX
Instruments	IN
Information Management (inc DCC)	JA
Leadership Team	AA
Materials / Corrosion	RA
Mechanical (Static, Rotating & Piping)	MX
Pipelines	LA
Planning Engineer	FA
Process	PX
Project Engineer	AA
Project Leader	AA
Quality Assurance	QA
User Defined	X

SORTED BY CODE

Discipline	CODE
Change Control Manager	AA
Leadership Team	AA
Project Engineer	AA
Project Leader	AA
Civil Structural	CX
Electrical	EA
Planning Engineer	FA
HSE	HX
Instruments	IN
Pipelines	LA
Mechanical (Static, Rotating & Piping)	MX
Process	PX
Quality Assurance	QA
Materials / Corrosion	RA
User Defined	Х
Business Support	YA

DED For Asset Security Enhancement Project								
DISCIPLINES					TOTAL			
	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	Total Hours	<u>Manhours</u>	Amount (NGR)			
Electrical	<u>883</u>	<u>588</u>	<u>1471</u>	1,471	14,376,020			
<u>PACO</u>	<u>392</u>	<u>224</u>	<u>616</u>	616	6,049,628			
<u>Telecoms</u>	<u>429</u>	<u>18</u>	447	447	4,581,615			
<u>Civil</u>	<u>547</u>	<u>1120</u>	<u> 1667</u>	1,667	15,689,852			
<u>Planning</u>	<u>184</u>	<u>0</u>	<u>184</u>	184	1,895,771			
<u>QA</u>	<u>52</u>	<u></u>	<u>52</u>	52	535,761			
<u>DCC</u>	<u>196</u>	<u></u>	<u>196</u>	196	2,019,409			
<u>DIRECT_TOTAL_BUDGET</u>	2,683	1,950	4,633	4,633	45,148,057			
PROJECT SUPPORT SERVICES				116	988,132			
PROJECT MANAGEMENT				116	988,132			
<u>DIRECT + SUPPORT CHARGES</u>					46,136,189			
5% OVERHEAD CHARGES 3RD PARTY COST					<i>2,306,809</i>			
TOTAL COST ESTIMATE					48,442,998			

FULL DISCIPLINE SUMMARY DED For Asset Security Enhancement Project Designer Engineer **Total Hours Hours Hours** 3rd Party T&Es *588* Electrical *883 1471* **PACO** *392 224 616* 429 *18* 447 **Telecoms** 547 Civil 1667 *1120* **Planning** *184* 0 *184 52* <u>52</u> 0 DCC *196 196* 0 *2683* 1950 *4633* 0 <u>TOTAL</u>

DED For Asset Security Enhancement Project: Project Management								
	<u>Engineer</u> <u>Hours</u>	<u>vesigner</u> <u>Hours</u>	3rd Party	<u>T&E's</u>				
JA001 Project Mangement - IM/DCC	<u>36</u>	<u></u>	<u>\$</u> -	<u>\$</u>				
<u>JA002</u> <u>IM/DCC-2</u>	<u>160</u>	<u></u>	<u>\$</u> -	<u>\$</u>				
FA001 Project Management-Planning	<u>128</u>	<u></u>	<u>\$</u> -	<u>\$</u>				
<u>FA002</u> <u>Cost & Progress Activities</u>	<u>56</u>	<u></u>	<u>\$</u> -	<u>\$</u>				
QA001 Project Management-QA/QC	<u>40</u>	<u></u>	<u>\$</u> _	<u>\$</u>				
QA002 QUALITY ASSURANCE	<u>12</u>	<u>o</u>	<u>\$</u> -	<u>\$</u>				
	<u>432</u>	<u>o</u>	<u>\$</u> -	<u>\$ -</u>				

SEDO	COST	Γ - TIME - I	RESOUR	CE (C)	$_{\Gamma R)}$ SH	EET	
Client OU	Shel Petroleum Dev	elopment Company ((SPDC)	(CTR No.	GPW	QA 001
Project Title	DED For Asset Secu	rity Enhancement P	roject	Pro	ject No.	SCiNDO-	-PRJ-0627
Sub-Project/Phase	DED			Discipline	Qa & C		
	Project Managem	ent-QA/QC			-		
Schedule Start		Schedule Finish		Duration	Weeks		0
(Monday) INPUTS / DEP	ENDENCIEC	(Friday)		Durution	· · · · · · ·		0
,	Description Description						
bource / Biscipline	Description						
ACTIVITIES (in	ic. input to other disc	ipline's deliverables)	İ	MAN-H	IOURS	COSTS	(\$-USD)
Description	_	-		Eng	Design	3rd P	T&E
Review & Comment on	Work Request/BFD /Scope Clarifications Mee	ating		2			
ETC for Site Visit	Ocope Olarifications Mee	aung		0			
Site Visit				0			
Data Gathering Input to CTR Catalogue				0			
Challenge Session				0			
Inputs Deliverables Rev				0			
Input to Deliverables Re Input to Project Schedul				0			
Attend Weekly Project F	Progress Meeting			8			
Inputs to Weekly Progre General Discipline Admi				8			
Conduct Inter Discipline				8			
Attend Health Checks &	Project Internal Audit			0			
Attend HAZID Workshop Process Design Review	o - Roundtable						
Attend Bow-Tie							
Attend HAZOP Worksho Peer Review	op			0			
Attend SIL Workshop							
Attend SAFOP Worksho							
Site Selection workshop PDMS and Constructab				0			
Attend Independent Des	sign Review			2			
Interfaces with third part	ty and stakeholders ver Documentation & Clo	Out Demant		0			
inputs to Project Handov	ver Documentation & Gid	ise-Out Report					
DELIVERABLI	ES (that are your dis	cipline's responsibilit	y)	MAN-H	IOURS	COSTS	(\$-USD)
Deliverable No.	Description			Eng	Design	3rd P	T&E
		A	T momas of				
NOTES / ASSU	MPTIONS	OVERA	LL TOTALS	40.0	0.0	\$ -	\$ -
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DECDONCIDI	DADTIEC						
RESPONSIBLE		Discipline					
Prepared by Iwe Nwanchu	ıkwu	Check Jide Odunlan	ni	Date:	28 Sep 21	Revision:	Do1

SEDO	COST	Γ - TIME -	RESOUR	CE (C	$_{\Gamma R)}$ SH	ŒET	
Client OU	Shell Petroleum Dev	velopment Compa	ny (SPDC)	(CTR No.	GPW	QA 002
Project Title	DED For Asset Secu	rity Enhancement	Project	Pro	ject No.	SCiNDO	-PRJ-0627
Sub-Project/Phase	DED			Discipline	Qa & C		
CTR Title	QUALITY ASSUR	ANCE					
Schedule Start (Monday)		Schedule Finis (Frida		Duration	n Weeks		0
	ENDENCIES						
Source / Discipline	Description						
ACTIVITIES (ii	nc. input to other disc	cipline's deliverable	es)	MAN-I	HOURS	COSTS	(\$-USD)
Description	•	•		Eng	Design	3rd P	T&E
DELIMEDADI	EC (1 . P			34137.7	TOTIBO	O O OTRIO	(\$ Hab)
Deliverable No.	ES (that are your dis Description	scipiine's responsit	omty)	MAN-F Eng	Design	3rd P	(\$-USD) T&E
GPW QA002 - 01	Project Quality Plan			4			
GPW QA002 - 02 GPW QA002 - 06	Internal Audit Report MoC Register			4			
		OVER	ALL TOTALS	12.0	0.0	\$ -	\$ -
NOTES / ASSU	MPTIONS					*	<u> </u>
RESPONSIBL	E PARTIES						
Prepared by Iwe Nwanch		Discipline Oharla Jide Odun	lami	Date:	28 Sep 21	Revision:	D01
* *		Check Side Odun			•		

SEDO	COS	Γ - TIME - R	ESOU	RCE ($_{ m CTR)}{f S}$		
Client OU	Shel Petroleum Dev	elopment Company (S	SPDC)	(CTR No.	GPW	FA 001
Project Title	DED For Asset Secu Project	DED For Asset Security Enhancement Project			ject No.	SCiNDO-	PRJ-0627
Sub-Project/Phase	,		Discipline	Planning	Engineer	ing	
CTR Title	Project Managen	nent-Planning					
Schedule Start		Schedule Finish		Duration	n Weeks		0
(Monday) INPUTS / DEP	ENDENCIES	(Friday)					
Source / Discipline	Description						
	nc. input to other disc	cipline's deliverables)		MAN-I			(\$-USD)
Description Review and Comment of	on Work Scope			Eng	Design	3rd P	T&E
Attend Project Kick-off	•			2			
Scope Clarifications Me Site Visit	etings			0			
Data Gathering				6			
CTR Catalogue develop Inputs Deliverables Rev				2			
Input to Deliverables Re	egister			2			
Input to Project Schedu Inputs to Weekly Progre				2 8			
Attend Weekly Project F	Progress Meeting			16			
Discipline Meetings, Hu Conduct Inter Discipline							
Project Internal Audit	@25% and 75% complet	lion)		2			
HAZID Workshop	•	uon)		2			
PEFS Review - Roundta Bow-Tie Workshop	able						
HAZOP Workshop							
Peer Review, Assist SIL Workshop							
SAFOP Workshop							
PDMS Model Review Constructability review	workshop						
Independent Design Re	view/PEER Review			•			
Interfaces with third par Risk Based Assessmen				2			
Lesson Learnt (Pr- and	Post project) ervention and Assessme	ant .					
Input to ITT		ant					
Technical Bid Evaluatio Input to project Closeou				4			
input to project closecu	сторогс			,			
DELIVERABL	ES (that are your dis	scipline's responsibilit	v)	MAN-H	HOURS	COSTS	(\$-USD)
Deliverable No.	Description	serprine s responsibilit,	,,	Eng	Design	3rd P	T&E
GPW FA001 - 01 GPW FA001 - 02	CTR Catalogue Project Schedule			24 56			
-							
VERALL TOTALS 128.0 0.0 \$ - \$						\$ -	
NOTES / ASSU	MPTIONS	, EK HE	-0-11110	120.0	0.0	Ψ -	7 -
PEGPOTATE	DADETEC						
RESPONSIBLE		Discipline Abida Conduct			1		
Prepared by Esther Chijio	ke-Amadi	Check Abiola Oyadeyi		Date :	28 Sep 21	Revision:	Do1

SEDO	COST	Γ - TIME - RESC	DURC	E (CTR	SHE	EET	
Client OU	Shell Petroleum Dev	velopment Company (SPDC)	(CTR No.	GPW FA 002		
Project Title	DED For Asset Secu Project		Pro	ject No.	SCiNDO-PRJ-0627		
Sub-Project/Phase	DED		Discipline	Planning	Engineer	ing	
CTR Title	Cost & Progress A	Activities					
Schedule Start (Monday)		Schedule Finish	Duration	n Weeks		0	
INPUTS / DEP		(Friday)					
Source / Discipline	Description						
ACTIVITIES a			25127.7		a.c. ama	(+ TTGD)	
Description	nc. input to other disc	cipline's deliverables)	MAN-F Eng	Design	3rd P	(\$-USD) T&E	
Cost Activities(SAP, PF	RPO SE Charge Backs)		24	8			
Weekly Schedule Upda Weekly Progress Upda			16 16				
Weekly Frogress opua	ite .		10				
DELIVERABLE Deliverable No.	ES (that are your dis Description	scipline's responsibility)	MAN-H	HOURS Design	COSTS 3rd P	(\$-USD) T&E	
GPW FA001 - 01	Description		Eng	Design	314 F	TXE	
GPW FA002 - 01 GPW FA003 - 01							
01 111000 01							
NOTES / ASSU	IMPTIONS		56.0	0.0	\$ -	\$ -	
DEGROSSOS	E DADETES						
RESPONSIBL		Discipline Abiala Ovaderi		1			
Prepared by Esther Chijic	oke-Amadi	Check Abiola Oyadeyi	Date :	28 Sep 21	Revision:	Do1	

SEDO	COS	Γ - TIN	ME - F	RESOURO	CE (CTI	R) SHI	EET	
Client OU	Shel Petroleum Development Company (SPDC)					CTR No.	GPW JA 001	
Project Title	DED For Asset Secu	rity Enhan	cement Pr	oject	Pro	ject No.	SCiNDO	-PRJ-0627
Sub-Project/Phase	DED				Discipline	Im & Dcc		
CTR Title	Project Mangemo	ent -IM/D	OCC					
Schedule Start (Monday)		Sche	dule Finish (Friday)		Duratio	n Weeks		0
INPUTS / DEP	ENDENCIES		(Triday)					
Source / Discipline	Description							
ACTIVITIES (in	ıc. input to other disci	ipline's deli	iverables)		MAN-I	HOURS	COSTS	(\$-USD)
Description		F			Eng	Design	3rd P	T&E
Review & Comment on Attend Project Kick-off	Work Request/BFD /Scope Clarifications Mee	etina			2			
ETC for Site Visit		9						
Site Visit Data Gathering					0			
Input to CTR Catalogue					2			
Challenge Session Inputs Deliverables Rev	iew Matrix				0 2			
Input to Deliverables Re	gister				2			
Input to Project Schedul Attend Weekly Project F					2 8			
Inputs to Weekly Progre	ess Update				8			
General Discipline Admi Conduct Inter Discipline	nistration Checks (IDCs)				1			
Attend Health Checks &	Project Internal Audit				0			
Attend HAZID Workshop Process Design Review	p - Roundtable				0			
Attend Bow-Tie								
Attend HAZOP Worksho Peer Review	op				2			
Attend SIL Workshop Attend SAFOP Worksho	nn.							
Site Selection workshop)				0			
PDMS and Constructab Attend Independent Des	ility review workshop				1			
Interfaces with third part	y and stakeholders				0			
Inputs to Project Hando	ver Documentation & Clo	se-Out Repo	ort		2			
	${f ES}$ (that are your disc	cipline's res	sponsibilit	y)	MAN-I	HOURS		(\$-USD)
Deliverable No.	Description				Eng	Design	3rd P	T&E
			OVERA	ALL TOTALS	26.0	0.0	¢	\$ -
NOTES / ASSU	MPTIONS		OVER	LL IVIALS	36.0	0.0	\$ -	φ -
RESPONSIBLE	E PARTIES							
Prepared by Onojaife Irik	efe	Discipline	Usanga Mfon	ı	Date :	28 Sep 21	Revision:	D01

SEDO	COS	Γ-TIME-	RESOUR	CE (CT	_{R)} SH	EET	
Client OU	Shel Petroleum Dev	elopment Compa	ny (SPDC)		CTR No.	GPW	JA 002
Project Title	DED For Asset Secu	ırity Enhancemen	t Project	Pro	ject No.	SCiNDO-	PRJ-0627
Sub-Project/Phase	DED			Discipline	Im & Dcc		
CTR Title	IM/DCC-2			l			
Schedule Start (Monday)		Schedule Fini (Frid		Duration	n Weeks		0
INPUTS / DEP	ENDENCIES	,	• • •	l			
Source / Discipline	Description						
ACTIVITIES (:	nc. input to other disc	rinlina's daliwanahl	(20)	MANII	IOLIDO	COSTS	(¢ IICD)
Description Description	ic. input to other disc	apime's denverabl	les)	MAN-F Eng	Design	3rd P	(\$-USD) T&E
Document Circulation/M				56	Ü	0	
Document Repository & Update of Deliverables	Archiving Register			56 48			
opadic of Benverables	riogistoi			40			
	\mathbf{ES} (that are your dis	scipline's responsi	bility)	MAN-H	HOURS	COSTS	(\$-USD)
Deliverable No. GPW JA001 - 01	Description			Eng	Design	3rd P	T&E
GPW JA002 - 01							
GPW JA003 - 01 GPW JA004 - 01							
01 W 071004 01							
NOTES / ASSU	MPTIONS	OVE	RALL TOTALS	160.0	0.0	\$ -	\$ -
RESPONSIBLE		Disciplin -					
Prepared by Onojaife Irik	tefe	Discipline Check Usanga M	Ifon	Date :	28 Sep 21	Revision:	Do1

DED For Asset Security Enhancement Project: Electrical

		<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	3rd Party	<u>T&E's</u>
<u>EA001</u>	Project Management	<u>232</u>	<u></u>	<u>\$</u> _	<u>\$</u>
<i>EA002</i>	Equipment Layout and Cable Routing	<u>350</u>	<u>476</u>	<u>\$</u>	<u>\$</u>
<i>EA003</i>	Power Transmission and Distribution	<u>147</u>	<u>112</u>	<u>\$</u> -	<u>\$ -</u>
<i>EA004</i>	Power System Calculations	<u>98</u>	<u></u>	<u>\$</u> _	<u>\$</u>
<i>EA005</i>	Equipment Specifications & Data She	<u>16</u>	<u></u>	<u>\$</u> -	<u>\$ -</u>
<u>EA006</u>	<u>MTO</u>	<u>40</u>	<u></u>	<u>\$</u> -	<u>\$ -</u>
		<u>883</u>	<u>588</u>	<u>\$</u> -	<u>\$</u>

SEDO	COS	I - TIME - RES	OURCE (CTR) SI				
Client OU	Shel Petroleum Dev	velopment Company (SPDC)		-	TR No.	XXX	EA 001
		urity Enhancement Project			ject No.		-PRJ-0627
Sub-Project/Phase	DED			Discipline Electrical Engineering			
CTR Title	Project Manager	nent					
Schedule Start		Schedule Finish		Duration	n Weeks		0
(Monday) INPUTS / DEP	PENDENCIES	(Friday)					
Source / Discipline	Description						
Source / Discipline	Description						
ACTIVITIES (i	nc. input to other dis	scipline's deliverables)		MAN-I	IOURS	COSTS	(\$-USD)
Description	•	expinie s denverasies)		Eng	Design	3rd P	T&E
Review and Comment of	on Work Scope			2			
Attend Project Kick-off Scope Clarifications Me	etinas			4			
Site Visit	ottingo			112			
Data Gathering				16			
CTR Catalogue develop Inputs Deliverables Rev				2			
Input to Deliverables Re	egister			4			
Input to Project Schedu				4			
Inputs to Weekly Progre Attend Weekly Project F				8 16			
Discipline Meetings, Hu				8			
Conduct Inter Discipline	Checks (IDCs)			16			
General Discipline Adm Project Internal Audit	inistration			4 0			
	@25% and 75% comple	etion)		0			
HAZID Workshop	•	,		0			
PEFS Review - Roundta Bow-Tie Workshop	able			0			
HAZOP Workshop				0			
HAZOP Closeout				0			
Peer Review, Assist SIL Workshop				8			
SAFOP Workshop				0			
PDMS Model Review &				0			
Constructability review of Independent Design Re				0			
Interfaces with third par				8			
Risk Based Assessmer	nt			0			
Lesson Learnt (Pr- and				0			
Equipment Criticality Int Input to ITT	ervention and Assessme	ent		0			
Technical Bid Evaluation	n			0			
	ngineering Package (BD	/		0			
Inputs to Project Hando	ver Documentation & Cl	lose-Out Report		8			
DEI IVERARI	FS (that are your di	iscipline's responsibility)		MAN-I	IOLIDO	COSTS	(\$-USD)
Deliverable No.	Description	iscipinie's responsibility)		Eng	Design	3rd P	T&E
	p			0	8		
			OVERALL TOTALS	232.0	0.0	\$ -	\$ -
NOTES / ASSU				-00	2.0	,	,
This page to be updated	d in line with the general	project management					
DECRONGING	E DADWIEG						
RESPONSIBL	E PARTIES	Discipline Soun Duroisive					
Prepared by Dele Kolajo		Check Seun Durojaiye		Date :	28 Sep 21	Revision:	D01

Client OU	Shell Petroleum Development Company (SPDC)	CTR No.		XXXXX EA 002		
Project Title	DED For Asset Security Enhancement Project		ect No.	. XXXXXX		
Sub-Project/Phase	-			l Engineering		
CTR Title	Equipment Layout and Cable Routing	Discipline 1	aectricar i	Engineering		
Schedule Start	Schedule Finish	Duration	Weeks	0		
(Monday) NPUTS / DEP	(Friday)					
Source / Discipline	Description					
MT	Work Request					
ACTIVITIES (ir	nc. input to other discipline's deliverables)	MAN-HO	OTTES	COSTS (\$-USD)		
Description (II	ic. input to other discipline's deriverables)	Eng	Design	3rd P T&E		
DELIVERABLI	ES (that are your discipline's responsibility)	MAN-HO	OURS	COSTS (\$-USD)		
Deliverable No.	Description Soku	Eng	Design	3rd P T&F		
XXXX EA002 - 02	DB Schedule	4				
XXXX EA002 - 03 XXXX EA002 - 04	Control Room Lighting & Small power layout Control Room Earthing & Lightning protection Layout	6	12.0 8.0			
XXXX EA002 - 05	Access control bay Lighting Layout	6	8.0			
XXXX EA002 - 06 XXXX EA002 - 07	Access control bay Earthing & Lightning protection layout Perimeter Fence Lighting Layout	6 8	8.0 16.0			
XXXX EA002 - 08 XXXX EA002 - 09	Electrical Cable Routing Drawing layout Electrical Cable Schedule	8	16.0			
- 10						
XXXX EA002 - 11 XXXX EA002 - 12	Gbaran DB Schedule	4				
XXXX EA002 - 13 XXXX EA002 - 14	Control Room Lighting & Small power layout Control Room Earthing & Lightning protection Layout	6	12.0 8.0			
XXXX EA002 - 15	Access control bay Lighting Layout	6	8.0			
XXXX EA002 - 16 XXXX EA002 - 17	Access control bay Earthing & Lightning protection layout Perimeter Fence Lighting Layout	6	8.0 16.0			
XXXX EA002 - 18	Electrical Cable Routing Drawing layout	8	16.0			
XXXX EA002 - 19 - 20	Electrical Cable Schedule	6				
XXXX EA002 - 21 XXXX EA002 - 22	Okoloma DB Schedule	4				
XXXX EA002 - 23	Control Room Lighting & Small power layout	6	12.0			
XXXX EA002 - 24 XXXX EA002 - 25	Control Room Earthing & Lightning protection Layout Access control bay Lighting Layout	6	8.0 8.0			
XXXX EA002 - 26 XXXX EA002 - 27	Access control bay Earthing & Lightning protection layout Perimeter Fence Lighting Layout	6 8	8.0			
XXXX EA002 - 28	Electrical Cable Routing Drawing layout	8	16.0 16.0			
XXXX EA002 - 29 - 30	Electrical Cable Schedule	6				
XXXX EA002 - 31	Imo River					
XXXX EA002 - 32 XXXX EA002 - 33	DB Schedule Control Room Lighting & Small power layout	6	12.0			
XXXX EA002 - 34 XXXX EA002 - 35	Control Room Earthing & Lightning protection Layout Access control bay Lighting Layout	6	8.0 8.0			
XXXX EA002 - 36	Access control bay Earthing & Lightning protection layout	6	8.0			
XXXX EA002 - 37 XXXX EA002 - 38	Perimeter Fence Lighting Layout Electrical Cable Routing Drawing layout	8	16.0 16.0			
XXXX EA002 - 39 - 40	Electrical Cable Schedule	6				
XXXX EA002 - 41	Nun River					
XXXX EA002 - 42 XXXX EA002 - 43	DB Schedule Control Room Lighting & Small power layout	6	12.0			
XXXX EA002 - 44	Control Room Earthing & Lightning protection Layout	6	8.0			
XXXX EA002 - 45 XXXX EA002 - 46	Access control bay Lighting Layout Access control bay Earthing & Lightning protection layout	6	8.0 8.0			
XXXX EA002 - 47 XXXX EA002 - 48	Perimeter Fence Lighting Layout Electrical Cable Routing Drawing layout	8	16.0 16.0			
XXXX EA002 - 49	Electrical Cable Routing Brawing layout	6	10.0			
- 50 XXXX EA002 - 51	Egbema					
XXXX EA002 - 52 XXXX EA002 - 53	DB Schedule	4 6	12.0			
XXXX EA002 - 54	Control Room Lighting & Small power layout Control Room Earthing & Lightning protection Layout	6	8.0			
XXXX EA002 - 55 XXXX EA002 - 56	Access control bay Lighting Layout Access control bay Earthing & Lightning protection layout	6	8.0 8.0			
XXXX EA002 - 57	Perimeter Fence Lighting Layout	8	16.0			
XXXX EA002 - 58 XXXX EA002 - 59	Electrical Cable Routing Drawing layout Electrical Cable Schedule	8	16.0			
- 60 XXXX EA002 - 61	Belema					
XXXX EA002 - 62	DB Schedule	4				
XXXX EA002 - 63 XXXX EA002 - 64	Control Room Lighting & Small power layout Control Room Earthing & Lightning protection Layout	6	12.0 8.0			
XXXX EA002 - 65	Access control bay Lighting Layout	6	8.0			
XXXX EA002 - 66 XXXX EA002 - 67	Access control bay Earthing & Lightning protection layout Perimeter Fence Lighting Layout	6	8.0 16.0			
XXXX EA002 - 68	Electrical Cable Routing Drawing layout	8	16.0			
XXXX EA002 - 69	Electrical Cable Schedule	6				
	OVERALL TOTAL	ALS 350.0	476.0	\$ - \$		
NOTES / ASSU	MPTIONS OVERALL TOTAL	350.0	4/0.0	Ψ - Φ		

SEDO	COST - TIME - R	ESOURCE	(CTR)	SHEE	T	
Client OU	Shell Petroleum Development Company (S	SPDC)	CTR No. XXXXX EA			EA 003
Project Title	DED For Asset Security Enhancement Pro	iect	Pro	ject No.	XXX	XXXX
		,				
Sub-Project/Phas		L.	Discipline	Electrical	Engineer	ring
CTR Title		on 		_		
(Monday) (Friday)		Duratio	n Weeks		0
INPUTS / DEI	PENDENCIES Description					
PMT	Work Request					
ACTIVITIES (1 Description	nc. input to other discipline's deliverables)		MAN-F Eng	HOURS Design	COSTS 3rd P	(\$-USD) T&E
	oution Studies for the 7 locations		7.0	Design	5141	TGE
DEI IVED A DI	EC (day and a control of the control		34/37	IOURG	000000	(# Hob)
DELIVERABI Deliverable No.	ES (that are your discipline's responsibility) Description		MAN-I Eng	HOURS Design	COSTS 3rd P	(\$-USD) T&E
XXXXX EA003 - O1	Soku Power System Distribution Philosophy		4.0	Ĭ		
XXXXX EA003 - 01 XXXXX EA003 - 02	Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
XXXXX EA003 - O1	Gbaran		4.0			
XXXXX EA003 - 01 XXXXX EA003 - 02	Power System Distribution Philosophy Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
	Okoloma					
XXXXX EA003 - 01 XXXXX EA003 - 02	Power System Distribution Philosophy Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
	Imo River		4.0			
XXXXX EA003 - O1 XXXXX EA003 - O2	Power System Distribution Philosophy Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
XXXXX EA003 - O1	Nun River Power System Distribution Philosophy		4.0			
XXXXX EA003 - 01 XXXXX EA003 - 02	Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
VVVVV EARRO OI	Egbema		4.0			
XXXXX EA003 - O1 XXXXX EA003 - O2	Power System Distribution Philosophy Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - 03	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
XXXXX EA003 - O1	Belema Power System Distribution Philosophy		4.0			
XXXXX EA003 - 01 XXXXX EA003 - 02	Updated SLD (Normal Power)		4.0	8.0		
XXXXX EA003 - O3	Updated SLD (UPS)		6.0	8.0		
	Updated Utility data sheet		6.0			
	OVE	RALL TOTALS	147.0	112.0	\$ -	\$
NOTES / ASS	UMPTIONS		14/.0	112.0	Ψ -	т
RESPONSIBL	E PARTIES					
Prepared by Sunny Eko	Discipline Check	rojaiye	Date :	28 Sep 21	Revision:	Do1
	CHeck					

SEDO	COST	Γ - TIME - RES	SOURCE	(CTR)	SHEE	ET		
Client OU	Shell Petroleum Dev	velopment Company (SPD	C)	(CTR No.	XXXXX	EA 004	
Project Title	DED For Asset Secu	rity Enhancement Project		Pro	ject No.	XXX	XXXX	
Sub-Project/Phase	DED			Discipline Electrical Engineering				
CTR Title	Power System Ca	lculations						
Schedule Start		Schedule Finish		Duratio	n Weeks		0	
(Monday) INPUTS / DEP	ENDENCIES	(Friday)						
Source / Discipline	Description							
PMT	Work Request							
ACTIVITIES (in	nc. input to other disc	ipline's deliverables)		MAN-I	HOURS	COSTS	(\$-USD)	
Description				Eng	Design	3rd P	T&E	
DELIVERABL	ES (that are your dis	cipline's responsibility)	1	MAN-I	HOURS	COSTS	(\$-USD)	
Deliverable No.	Description	· · · · · · · · · · · · · · · · · · ·		Eng	Design	3rd P	T&E	
XXXXX EA004 - Q1	Soku Cable sizing & Selection	Poport		4.0				
XXXXX EA004 - 02	Equipment Sizing	·		4.0				
XXXXX EA004 - 03	Illumination Calculation	Report		6.0				
	Gbaran							
XXXXX EA004 - O1	Cable sizing & Selection	Report		4.0				
XXXXX EA004 - 02 XXXXX EA004 - 03	Equipment Sizing Illumination Calculation	Report		4.0 6.0				
	marrination Galdataton	rtoport		0.0				
XXXXX EA004 - Q1	Okoloma Cable sizing & Selection	Report		4.0				
XXXXX EA004 - 01	Equipment Sizing	ттерит		4.0				
XXXXX EA004 - 03	Illumination Calculation	Report		6.0				
	Imo River							
XXXXX EA004 - O1	Cable sizing & Selection	Report		4.0				
XXXXX EA004 - 02 XXXXX EA004 - 03	Equipment Sizing Illumination Calculation	Report		4.0 6.0				
XXXXX EA004 - Q1	Nun River Cable sizing & Selection	Report		4.0				
XXXXX EA004 - O2	Equipment Sizing	·		4.0				
XXXXX EA004 - 03	Illumination Calculation	Report		6.0				
	Egbema							
XXXXX EA004 - 01 XXXXX EA004 - 02	Cable sizing & Selection	Report		4.0				
XXXXX EA004 - 02	Equipment Sizing Illumination Calculation	Report		4.0 6.0				
J								
XXXXX EA004 - O1	Belema Cable sizing & Selection	Report		4.0				
XXXXX EA004 - 02	Equipment Sizing	·		4.0				
XXXXX EA004 - 03	Illumination Calculation	Report		6.0				
		O****	T TOTAL -					
NOTES / ASSU	MPTIONS	OVERA	LL TOTALS	98.0	0.0	\$ -	\$ -	
,								
DEGEO STORE	DARWES							
RESPONSIBLI	E PARTIES	Discipline Oleman Provide	П					
Prepared by Sunny Eko		Check Oluwaseun Durojaiy	e	Date :	28 Sep 21	Revision:	D01	

SEDO	COS	Γ - TIME - RESOURC	CE (CTR)	SHE	ET		
Client OU	Shell Petroleum Dev	velopment Company (SPDC)		CTR No.	XXXXX	EA 005	
Project Title	DED For Asset Secu	rity Enhancement Project	Pro	Project No. XXXXXX			
Sub-Project/Phase	DED		Discipline	Discipline Electrical Engineering			
	Equipment Speci	fications & Data Sheets	•				
Schedule Start (Monday)		Schedule Finish (Friday)	Duration	n Weeks		0	
INPUTS / DEP	ENDENCIES						
	Description						
PMT	Work Request						
ACTIVITIES (in	nc. input to other disc	inline's deliverables)	MAN-H	HOURS	COSTS	S (\$-USD)	
ACTIVITIES (inc. input to other discipline's deliverables) Description			Eng	Design	3rd P	T&E	
•							
DELIVERABLI	ES (that are your dis	scipline's responsibility)	MAN-H	HOURS	COSTS	S (\$-USD)	
Deliverable No.	Description	elpinic s responsionity)	Eng	Design	3rd P	T&E	
XXXXX EA005 - O1	Specification for UPS		8				
XXXXX EA005 - 02	UPS Data sheets		8				
NOTES / ASSU	MPTIONS	OVERALL TOTAL	S 16.0	0.0	\$ -	\$	
RESPONSIBLE	E PARTIES						
Prepared by Sunny Eko		Discipline Check Oluwaseun Durojaiye	Date :	28 Sep 21	Revision:	Do1	

SEDO	COST	Γ - TIME - RES	OURCE	E (CTR)	SHE	ET	
Client OU	Shell Petroleum Dev	relopment Company (SPDC	C)	(CTR No.	XXXXX	EA 006
Project Title	DED For Asset Secu	rity Enhancement Project		Pro	ject No.	XXXXXX	
Sub-Project/Phase	DED			Discipline	Electrica	l Enginee	ring
CTR Title							
Schedule Start (Monday)		Schedule Finish (Friday)		Duration	n Weeks		0
INPUTS / DEF		<u>.</u>					
Source / Discipline PMT	Description Work Request						
ACTIVITIES (i	nc. input to other disc	ipline's deliverables)	[MAN-H	HOURS	COSTS	(\$-USD)
Description	•	•		Eng	Design	3rd P	T&E
	T.C.						
DELIVERABL Deliverable No.	ES (that are your dis Description	cipline's responsibility)		MAN-H Eng	HOURS Design	COSTS (\$-USD) 3rd P T&E	
XXXXX EA006 - O1	MTO for the 7 locations			40.0	Design	31u i	T&E
NOTES / ASSU	J MPTIONS	OVERAL	L TOTALS	40.0	0.0	\$ -	\$
,							
RESPONSIBL	E PARTIES						
Prepared by Sunny Eko		Discipline Check Oluwaseun Durojaiye		Date :	28 Sep 21	Revision:	Do1

DED For Asset Security Enhancement Project: PACO									
	<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	3rd Party	<u>T&E's</u>					
IN001 Discipline Management Activities	<u>216</u>	<u></u>	<u>\$</u> _	<u>\$</u> -					
IN002 Specifications	<u>144</u>	<u></u>	<u>\$</u>	<u>\$</u> -					
IN003 Data Sheets, MTO, Others.	<u>32</u>	<u>224</u>	<u>\$ -</u>	<u>\$ -</u>					
	<u>392</u>	<u>224</u>	<u>\$</u> -	<u>\$</u>					

SEDO	COS	I - TIME - RESC	OURCE (CTR) SH				
Client OU	Shell Petroleum Dev	velopment Company (SPDC)			CTR No.	XXX	IN 001
Project Title	DED For Asset Secu	rity Enhancement Project]	Project No.	SCiNDO-	PRJ-0627
Sub-Project/Phase	DED			Discipline	Inst And Co	ntrols Eng	ineering
CTR Title	Discipline Manag	gement Activities		ı			
Schedule Start		Schedule Finish		Durati	ion Weeks		0
(Monday) INPUTS / DEP	ENDENCIES	(Friday)					
Source / Discipline	Description						
	nc. input to other disc	ipline's deliverables)			-HOURS		(\$-USD)
Description Review and Comment of	n Work Scope			Eng 4	Design	3rd P	T&E
Attend Project Kick-off				2			
Scope Clarifications Med Site Visit	etings			112			
Data Gathering				0			
CTR Catalogue develop Inputs Deliverables Rev				4 2			
Inputs Deliverables Rev				4			
Input to Project Schedul				4			
Inputs to Weekly Progre Attend Weekly Project P				8 16			
Discipline Meetings, Hu	ddle			8			
Conduct Inter Discipline General Discipline Admi				16			
Project Internal Audit				0			
Attend Health Checks (© HAZID Workshop	@25% and 75% completi	on)		0			
PEFS Review - Roundta	able			0			
Bow-Tie Workshop				0			
HAZOP Workshop HAZOP Closeout				0			
Peer Review, Assist				8			
SIL Workshop SAFOP Workshop				0			
PDMS Model Review &				0			
Constructability review v Independent Design Rev				0			
Interfaces with third part	y and stakeholders			8			
Risk Based Assessmen Lesson Learnt (Pr- and				0			
Equipment Criticality Inte	ervention and Assessme	nt		0			
Input to ITT Technical Bid Evaluation	n			0			
Input to Basic Design Er	ngineering Package (BDE			0			
Inputs to Project Handov	ver Documentation & Clo	se-Out Report		8			
	7.0						
DELIVERABLI Deliverable No.	ES (that are your discovery) Description	cipline's responsibility)		MAN Eng	-HOURS Design	COSTS 3rd P	(\$-USD) T&E
- 01	Description			Ling	Design	Jiui	TGE
- 02 - 03							
- 04							
- 05 - 06							
- 07							
- 08							
NOTES / ASSU	MPTIONS		OVERALL TOTALS	216.0	0.0	\$ -	\$
DECDONGIBLE	DADTIEC						
RESPONSIBLE		Discipline Empress of Ois disco		ъ.	-0.6	D	
Prepared by Marizu Nwao	chukwu	Check Emmanuel Ojediran		Date :	28 Sep 2021	Revision:	Do1

SEDO	COS	Γ - TIME - RESOURCE (CTR) SI	HEET		
Client OU	Shell Petroleum Dev	velopment Company (SPDC)		CTR No.	XXX	IN 002
Project Title	DED For Asset Secu	rity Enhancement Project		Project No.	SCiNDO	-PRJ-0627
Sub-Project/Phase	DED		Discipline Inst And Controls Engineering			
	Specifications					
Schedule Start (Monday)		Schedule Finish (Friday)	Durat	ion Weeks		0
INPUTS / DEP Source / Discipline	Description					
Source / Discipline	Description					
A CONTACTOR						
ACTIVITIES (in	nc. input to other disc	ipline's deliverables)		N-HOURS		(\$-USD)
Description			Eng	Design	3rd P	T&E
DELIVERABLI	ES (that are your dis	cipline's responsibility)		N-HOURS	COSTS	(\$-USD)
Deliverable No. XXX IN002 - 01 XXX IN002 - 02	Description Smoke detector Specific	cations	Eng 40	Design	3rd P	T&E
XXX IN002 - 02	Smoke detector Data sh	eets (7 sites)	56			
XXX IN002 - 03 XXX IN002 - 04	F&G Panel Specification F&G Philosophy	1	24 24			
NOTES / ASSU	MPTIONS	OVERALL TOTALS	144.0	0.0	\$ -	\$ -
-						
RESPONSIBLE	E PARTIES					
Prepared by Marizu Nwao	chukwu	Discipline Check	Date :	28 Sep 2021	Revision:	D01
		CHCCK	<u> </u>			

SEDO	COS	Γ - TIME - RES	OURCE (CTR) SH	HEET			
Client OU	Shell Petroleum De	velopment Company (SPDC)			CTR No.	XXX	IN 003
Project Title	DED For Asset Secu	ırity Enhancement Project		I	Project No.		PRJ-0627
Sub-Project/Phase	DED			Discipline	Inst And Co	ntrols Eng	gineering
CTR Title	Drawings				Institute co		,
Schedule Start		Schedule Finish		Dunati	ion Weeks		
(Monday)		(Friday)		Durau	ion weeks		0
INPUTS / DEP Source / Discipline	Description						
Bource / Discipline	Description						
	nc. input to other disc	cipline's deliverables)			-HOURS		(\$-USD)
Description				Eng	Design	3rd P	T&E
DELIVERABL	ES (that are your dis	scipline's responsibility)		MAN	-HOURS	COSTS	(\$-USD)
Deliverable No.	Description			Eng	Design	3rd P	T&E
XXX IN003 - 01 XXX IN003 - 02	Instrument Hook-Up/Instrument Loop/Wiring	stallation Drawings (7 sites) Drawings (7 sites)		8 8			
XXX IN003 - 03	Instrument Cable route	Layouts (7 sites)		8	56.0		
xxx IN003 - 04	F&G Cause and Effect I	Matrices (7 sites)		8	56.0		
NOTES / ASSU	IMPTIONS		OVERALL TOTALS	32.0	224.0	\$ -	\$ -
RESPONSIBLI	E PARTIES						
Prepared by Marizu Nwao		Discipline Emmanuel Ojediran		Date :	28 Sep 2021	Revision:	D01
- Spared by Mariza NWal		Check Emmander Ojediran		Date.	20 00p 2021	10.15011.	201

Di	<u>DED For Asset Security Enhancement Project:</u> <u>TELECOMS</u>							
		<u>Engineer</u> <u>Hours</u>	<u>Designer</u> <u>Hours</u>	3rd Party	<u>T & E`s</u>			
<u>TA001</u>	<u>Discipline Project Management</u>	<u>144</u>	<u>o</u>	<u>\$</u>	<u>\$</u>			
<u>TA002</u>	Concept Engineering	<u>182</u>	<u>18</u>	<u>\$</u>	<u>\$</u>			
<u>TA003</u>	<u>Systems Drawings</u>	<u>103</u>	<u>o</u>	<u>\$</u>	<u>\$</u>			
		<u>429</u>	<u>18</u>	<u>\$</u>	<u>\$</u>			

24 of 32

SEDO	COST - TIME - RESOURCE $_{(\operatorname{CTR})}$ SHEET				
Client OU Project Title	Shell Petroleum Development Company (SPDC) DED For Gbaran Ox-Bow Project	CTR No. Project N		XXX	TA 001 PRJ-0627
Sub-Project/Phase	DED DED	Discipline		ds and Co	
	Discipline Project Management e Start Schedule Finish				
		Duratio	on Weeks		
INPUTS / DEP	ENDENCIES Description				
Source / Discipline BFD, Work Request	Postipuoi				
ACTIVITIES (:	ac. input to other discipline's deliverables)	MAN	-HOURS	COSTS	(\$-USD)
Description Description	ic. input to other discipline's deliverables)	Eng	Design	3rd P	T&E
Description Review and Comment o	n Work Scope	4.00			
Attend Project Kick-off Scope Clarifications Me Site Visit Data Gathering	tings	2.00 4.00			
Site Visit		24.00 16.00			
CTR Catalogue developi	nent	4.00			
Inputs Deliverables Rev	ew Matrix	2.00			
Input to Project Schedu	e e	4.00 4.00			
Inputs to Weekly Project I	ss Update	8.00 16.00			
Discipline Meetings, Hu	ddle	8.00			
Conduct Inter Discipline	Checks (IDCs)	16.00 4.00			
Project Internal Audit	ew Matrix gister e es Update rogress Meeting ddle Checks (IDCs) mistration 225% and 75% completion)	0.00			
Attend Health Checks (HAZID Workshop	25% and 75% completion)	0.00			
PEFS Review - Roundta	ble	0.00			
PEFS Review - Roundta Bow-Tie Workshop HAZOP Workshop		0.00 0.00			
HAZOP Closeout		0.00			
Peer Review, Assist		8.00 0.00			
SAFOP Workshop		0.00			
PDMS Model Review & Constructability review	constructability	0.00 4.00			
Independent Design Re	view/PEER Review	0.00			
Interfaces with third par Risk Based Assessment	ty and stakeholders	8.00 0.00			
Lesson Learnt (Pr- and	constructability workshop riew/PEER Review ty and stakeholders Post project) tervention and Assessment a asineering Package (BDEP)	0.00			
Equipment Criticality In Input to ITT	tervention and Assessment	0.00 0.00			
Technical Bid Evaluatio	1	0.00			
Input to Basic Design En Inputs to Project Hando	ngineering Package (BDEP) ver Documentation & Close-Out Report	0.00 8.00			
DELIVEDARI I	ES (that are your discipline's responsibility)			COSTS	(\$-USD)
DELIVERABL	Description	ı	Design	3rd P	T&E
	*				
				3	
_	OVERALL TOTALS	144.00	0	\$ -	\$ -
NOTES / ASSU	MPTIONS				
DECDONOIDA	DADTIEC				
Prepared Iroko Passary	Disciplina				
by koko Bassey	Check Mfon Usanga	Date :	28-Sep-21	Revision:	D01

SEDO	COST - TIME - RESOURCE (CTR) SHEET				
Client OU				XXX TA 002	
Project Title	DED For Gbaran Ox-Bow Project	Project 1)-PRJ-0627
Sub-Project/Phase	DED	Discipline	,	Telecom	S
CTR Title	Concept, Philosophy, Specifications and Detailed Design			ı	
Schedule	e Start Schedule Finish	Duratio	on Weeks		
INPUTS / DEPE	NDENCIES				
Source / Discipline	Description				
	Telecoms Concept /FEED Deliverables				
	Existing Telecoms As-built Documentation including the following: Existing LAN/WAN philosophy Document				
	Existing Cable Route Documentation				
	Existing CCTV architecture .				
ACTIVITIES (inc.	input to other discipline's deliverables)	MAN-	HOURS	COST	S (\$-USD)
Description (me.	input to other discipline s denverances)	Eng	Design	3rd P	T&E
	Procedures for Telecommunication Systems	4.00	Ü	Ü	
	neckout Procedures for Telecommunication Systems	4.00			
develop Operation / Maint Engineering Philosphy dev	renance Procedures for Telecommunication Systems	4.00 4.00			
functional definitions of al		4.00	6.0		
design of installation hard	ware, sensors,peripheral and main controllers	4.00	0.0		
design of security gate can		6.00			
design of signal backhaul o	arriers	4.00			
			ı	ı	
DELIVERABLES	(that are your discipline's responsibility)			COST	S (\$-USD)
	Description		Design	3rd P	T&E
XXXTA002 - 01		16.00			
- 02	,	16.00			
- 03 - 04		12.00 12.00			
- 05		12.00			
- 06	1	8.00			
- 07 - 08		8.00 12.00			
- 08	• •	8.00			
	Power Supply systems (Input into Electrical Power loading)	8.00			
- 11	Heat Dissipation calculation and Report	8.00			
- 12 - 13		16.00 12.00	12		
- 13	Dutt Officers	12.00	12		
	OVERALL TOTALS	182.00	18	\$ -	\$ -
NOTES / ASSUM	L. Control of the con		1		
-: 5122 / 1100 014	· · ·				
DECDONGIBLE	DADTIEC				
RESPONSIBLE	Dissipling		1	ı	
Prepared by koko	Bassey Discipline Check Mfon Usanga	Date:	28-Sep-21	Revision:	Do1

SEDO	COS	T - TIME - F	RESOURCE (CTR) SHEET				
Client OU	Shell Petroleum D	evelopment Company	(SPDC)	CTR No		YYV	TA 003
			(SI DC))-PRJ-0627
Project Title	DED For Gbaran C	x-Bow Project		Project 1	NO.		J-PKJ-0627
Sub-Project/Phase	DED			Discipline		MCI	
CTR Title	Systems Drawin						
Schedule	Start	Schedule Finish		Duratio	on Weeks		
DIDLYEG / DEDEN	IDENOIEC						
INPUTS / DEPEN							
Source / Discipline	Description						
PMT	Vendor and 3rd partie						
PMT	Vendor Documentatio		n 1)				
PMT		ment List (Devices, Cables					
PMT		cations and Device Wiring					
PMT		and Equipment General A	arrangements				
Civil	Security buildings and	locations architectures					
ACTIVITIES (inc. i	input to other discipl	ine's deliverables)		MAN-	HOURS	COST	S (\$-USD)
Description	•			Eng	Design	3rd P	T&E
Review Existing Access Cor	ntrol .and CCTV Systems	lavouts		8.00		3	
Review Security Concept St				2.00			
Physical Measurement for				10.00	6.0		
Physical Measurement for o			te houses	1.00	6.0		
Review of 3rd party package		,p gu		6.00			
Review of Civil/Structral de		ount		12.00	12.0		
Telecom Master Equipment				8.00	8.0		
	, , , , , , , , , , , , , , , , , , , ,				2,0		
DELIVERABLES	(that are your discin	line's responsibility)				COST	S (\$-USD)
	Description				Design	3rd P	T&E
XXXTA003 - 01		stem Detailed Drawings		8.00	12	Jiui	TCL
		Drawings (Location by loca	ation)	8.00	12		
	CCTV Systems drawin		,	8.00	12		
	ACS Camera Distribut			8.00	12		
	FIDS Camera Distribu			8.00			
		dules and Vendor fabricati	on drawings	8.00	12		
		(GA)Diagrams and equipm		8.00	12		
1			OVERALL TOTALS	103.00	118	\$.	\$ -
NOTE / 1 000	DELONIC		OVERVIEW TOTALS	103.00	110	Ψ -	φ -
NOTES / ASSUM	PTIONS						
RESPONSIBLE	PARTIES						
Prepared	Bassey	Discipline Mfon Usanga		Date :	28-Sep-21	Revision:	D01
by	Бассту	Check Mion Usanga		Date.	20-5ep-21	ACVISIOII:	101

DED F	or Asset Security	Enhanc	rement l	Project:	
		<u>Civil</u>			
		<u>Engineer</u> <u>Hours</u>	<u>vesigner</u> <u>Hours</u>	<u> 3rd Party</u>	<u> 7&Es</u>
<u>CX001</u>	Discipline Project Managem	<u>174</u>	<u>o</u>	<u>\$</u>	<u>\$</u>
<u>CX002</u>	<u>Specifications</u>	<u>24</u>	<u>o</u>	<u>\$ -</u>	<u>\$ -</u>
<u>CX003</u>	<u>Architectural Design</u>	<u>39</u>	<u>588</u>	<u>\$ -</u>	<u>\$ -</u>
<u>CX004</u>	Civil/Structural Engineering	<u>310</u>	<u>532</u>	<u>\$ -</u>	<u>\$ -</u>
		<u>547</u>	<u>1120</u>	<u>\$</u>	<u>\$</u>

SEDO	COST	Γ - TIME - RESOUR	CE (CT	$_{ m (R)}{ m SH}$	EET	
Client OU	Shell Petroleum Dev	velopment Company (SPDC)		CTR No.		CX 001
Project Title	DED For Asset Secu	rity Enhancement Project	Pro	ject No.	X	XXX
Sub-Project/Phase	DED		Discipline	Civil/Stru	ıctural	
CTR Title	Discipline Projec	t Management				
Schedule Start (Monday)		Schedule Finish (Friday)	Duratio	n Weeks		
INPUTS / DEP	ENDENCIES	(Filday)				
Source / Discipline	Description					
	Basis for Design (BfD)					
	Geotechnical Reports Existing As-built Docum	entation				
	Existing 7 to Sunt Doodin	Ondion				
	nc. input to other disc	ipline's deliverables)	_	HOURS		S (\$-USD)
Description Review and Comment o	n Work Scope		Eng 4	Design	3rd P	T&E
Attend Project Kick-off	н түсгк эсорс		2			
Scope Clarifications Me	etings		4			
Site Visit Data Gathering			70 8			
CTR Catalogue develop	ment		4			
Inputs Deliverables Rev			2			
Input to Deliverables Re Input to Project Schedu			4			
Inputs to Weekly Progre	ess Update		8			
Attend Weekly Project F			16 8			
Discipline Meetings, Hu Conduct Inter Discipline			8			
General Discipline Adm			4			
Project Internal Audit	@25% and 75% completion	00)	0			
HAZID Workshop	<u>@25% and 75% complete</u>	on)	0			
PEFS Review - Roundta	ble		0			
Bow-Tie Workshop HAZOP Workshop			0			
HAZOP Closeout			0			
Peer Review, Assist			0			
SIL Workshop SAFOP Workshop			0			
PDMS Model Review &	constructability		0			
Independent Design Re			16			
Interfaces with third par Risk Based Assessment	rty and stakeholders		0			
Lesson Learnt (Pr- and			0			
Equipment Criticality In Input to ITT	ntervention and Assessm	ent	0			
Technical Bid Evaluation	n		0			
	ngineering Package (BDI		0			
_*	ver Documentation & Cl	•	8			
DELIVERABLI Deliverable No.	Description	cipline's responsibility)	MAN-I Eng	HOURS Design	COSTS 3rd P	7&E T&E
Denverable 110.	Description		28	Design	Jiui	TGE
		OVERALL TOTALS	174.0	0.0	\$ -	\$ -
NOTES / ASSU	MPTIONS		1/4.0	0.0	φ -	Ψ
DECRONGIBLE	DADDIEC					
RESPONSIBLE		Discipline Coilei Timoshu				
Prepared by Ekele Ogorch	nuku	Check Saiki Timothy	Date :	28 Sep 21	Revision:	D01

SEDO	COS	T - TIME - RESOU	JRCE (CTR	SHI	EET		
Client OU	Shell Petroleum De	evelopment Company (SPDC)		CTR No.	XXXXX	CX 002	
Project Title	DED For Asset Sec	urity Enhancement Project	Pro	ject No.	XX	XXXX	
Sub-Project/Phase	e DED		Discipline	Discipline Civil/Structural			
CTR Title	Specifications						
Schedule Star (Monday		Schedule Finish (Friday)	Duratio	n Weeks		0	
NPUTS / DE	PENDENCIES	-			1		
Source / Discipline	Description						
	Basis for Design (BfD)						
	Geotechnical Reports						
	Existing As-built Docum	nentation					
ACTIVITIES	inc. input to other dis	cipline's deliverables)	MAN-I	HOURS	COSTS	S (\$-USD)	
Description	mor input to other this	espinie s deliverables,	Eng	Design	3rd P	T&E	
				Ü			
DELIVERABI	LES (that are your di	scipline's responsibility)	MAN-I	HOURS	COSTS	S (\$-USD)	
Deliverable No.	Description		Eng	Design	3rd P	T&E	
XXXX CX002 - 01	Civil Engineering Design		4				
XXXX CX002 - 02	Structural Steel Specifi	cation	4				
XXXX CX002 - 03	Specification for Concr		4				
XXXX CX002 - 04	Specification for Found		4				
XXXX CX002 - 05		vorks and Site Preparation	4				
XXXX CX002 - 06	Specification for Draina	age Works	4				
		OVERALL TOT	TAT S	2 -	¢	¢	
NOTES / ASS	UMPTIONS	OVERALL IUI	ALS 24.0	0.0	\$ -	\$	
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DECDONCIPI	E DADTIES						
RESPONSIBL	E PARTIES				I		
RESPONSIBL Prepared by Ekele Ogor		Discipline Check	Date :	28 Sep 21	Revision:	D01	

SEDO	COST - TIME - RESOU	RCE (CTR	SHI	TET	
Client O	U Shell Petroleum Development Company (SPDC)	-	CTR No.	XXXXX	CX 003
Project Title	e DED For Asset Security Enhancement Project	Pro	ject No.	XX	XXXX
ub-Project/Phas	se DED	Discipline	Civil/Stru	ıctural	
CTR Title					
(Monda	ay) (Friday)	Duratio	n Weeks		0
NPUTS / DE	PENDENCIES Description				
Source / Discipline	Basis for Design (BfD)				
	Existing As-built Documentation				
CTIVITIES ((inc. input to other discipline's deliverables)	MAN-I	HOURS	COST	S (\$-USD)
escription	ontrol Room (SCR) Technical and Safety Requirements	Eng 4	Design 0	3rd P	T&E
DELIVERABI	LES (that are your discipline's responsibility)	MAN-H	HOURS	COST	S (\$-USD)
Deliverable No.	Description Overall Site Master Plan Modification - Soku	Eng 0.5	Design 12	3rd P	T&E
XXXX CX003 - 02	SCR Building Detailed Layout - Soku	0.5	8		
XXX CX003 - 03 XXX CX003 - 04	Detailed Part Layouts of SCR Building - Soku SCR Building Plans (Floor Plan, Roof Plan) - Soku	0.5 0.5	8		
XXXX CX003 - 05 XXXX CX003 - 06	SCR Building Elevations - Soku SCR Building Sections - Soku	0.5	8		
XXXX CX003 - 07	SCR Building 3D Rendering - Soku	0.5	8		
XXXX CX003 - 08	SCR Building Doors and Windows Schedule - Soku SCR Building Furniture Layout and Schedule - Soku	0.5	8		
XXXX CX003 - 10	SCR Building Reflected Ceiling Plan - Soku	0.5	8		
XXX CX003 - 11 XXX CX003 - 12	Overall Site Master Plan Modification - Gbaran SCR Building Detailed Layout - Gbaran	0.5 0.5	12 8		
XXX CX003 - 13 XXX CX003 - 14	Detailed Part Layouts of SCR Building - Gbaran SCR Building Plans (Floor Plan, Roof Plan) - Gbaran	0.5	8		
XXXX CX003 - 15	SCR Building Elevations - Gbaran	0.5	8		
XXX CX003 - 16 XXX CX003 - 17	SCR Building Sections - Gbaran SCR Building 3D Rendering - Gbaran	0.5 0.5	8		
XXX CX003 - 18 XXX CX003 - 19	SCR Building Doors and Windows Schedule - Gbaran SCR Building Furniture Layout and Schedule - Gbaran	0.5	8 8		
XXX CX003 - 20	SCR Building Reflected Ceiling Plan - Gbaran	0.5	8		
XXXX CX003 - 21 XXXX CX003 - 22	Overall Site Master Plan Modification - Okoloma SCR Building Detailed Layout - Okoloma	0.5 0.5	12 8		
XXX CX003 - 23 XXX CX003 - 24	Detailed Part Layouts of SCR Building - Okoloma SCR Building Plans (Floor Plan, Roof Plan) - Okoloma	0.5 0.5	8		
XXX CX003 - 25	SCR Building Elevations - Okoloma	0.5	8		
XXX CX003 - 26 XXX CX003 - 27	SCR Building Sections - Okoloma SCR Building 3D Rendering - Okoloma	0.5	8 8		
XXX CX003 - 28 XXX CX003 - 29	SCR Building Doors and Windows Schedule - Okoloma SCR Building Furniture Layout and Schedule - Okoloma	0.5 0.5	8		
XXX CX003 - 30	SCR Building Reflected Ceiling Plan - Okoloma	0.5	8		
XXX CX003 - 31 XXX CX003 - 32	Overall Site Master Plan Modification - Imo River SCR Building Detailed Layout - Imo River	0.5	12 8		
CXXX CX003 - 33	Detailed Part Layouts of SCR Building - Imo River SCR Building Plans (Floor Plan, Roof Plan) - Imo River	0.5 0.5	8		
XXX CX003 - 35	SCR Building Elevations - Imo River	0.5	8		
XXX CX003 - 36 XXX CX003 - 37	SCR Building Sections - Imo River SCR Building 3D Rendering - Imo River	0.5 0.5	8		
XXX CX003 - 38 XXX CX003 - 39	SCR Building Doors and Windows Schedule - Imo River SCR Building Furniture Layout and Schedule - Imo River	0.5 0.5	8		
XXX CX003 - 40	SCR Building Reflected Ceiling Plan - Imo River	0.5	8		
XXX CX003 - 41 XXX CX003 - 42	Overall Site Master Plan Modification - Nun River SCR Building Detailed Layout - Nun River	0.5	12 8		
XXX CX003 - 43	Detailed Part Layouts of SCR Building - Nun River SCR Building Plans (Floor Plan, Roof Plan) - Nun River	0.5 0.5	8		
XXX CX003 - 44 XXX CX003 - 45	SCR Building Elevations - Nun River	0.5	8		
XXXX CX003 - 46 XXXX CX003 - 47	SCR Building Sections - Nun River SCR Building 3D Rendering - Nun River	0.5 0.5	8		
XXX CX003 - 48 XXX CX003 - 49	SCR Building Doors and Windows Schedule - Nun River SCR Building Furniture Layout and Schedule - Nun River	0.5	8		
XXX CX003 - 50	SCR Building Reflected Ceiling Plan - Nun River	0.5	8		
XXX CX003 - 51 XXX CX003 - 52	Overall Site Master Plan Modification - Egbema SCR Building Detailed Layout - Egbema	0.5	12 8		
XXX CX003 - 53	Detailed Part Layouts of SCR Building - Egbema SCR Building Plans (Floor Plan, Roof Plan) - Egbema	0.5	8		
XXX CX003 - 54 XXX CX003 - 55	SCR Building Elevations - Egbema	0.5	8		
XXX CX003 - 56 XXX CX003 - 57	SCR Building Sections - Egbema SCR Building 3D Rendering - Egbema	0.5	8		
XXX CX003 - 58	SCR Building Doors and Windows Schedule - Egbema	0.5	8		
XXX CX003 - 59 XXX CX003 - 60	SCR Building Furniture Layout and Schedule - Egbema SCR Building Reflected Ceiling Plan - Egbema	0.5 0.5	8		
XXX CX003 - 61 XXX CX003 - 62	Overall Site Master Plan Modification - Belema SCR Building Detailed Layout - Belema	0.5	12 8		
XXX CX003 - 63	Detailed Part Layouts of SCR Building - Belema	0.5	8		
XXX CX003 - 64 XXX CX003 - 65	SCR Building Plans (Floor Plan, Roof Plan) - Belema SCR Building Elevations - Belema	0.5 0.5	8		
XXX CX003 - 66 XXX CX003 - 67	SCR Building Sections - Belema SCR Building 3D Rendering - Belema	0.5 0.5	8		
XXX CX003 - 68	SCR Building Doors and Windows Schedule - Belema	0.5	8		
XXXX CX003 - 69 XXXX CX003 - 70	SCR Building Furniture Layout and Schedule - Belema SCR Building Reflected Ceiling Plan - Belema	0.5	8		
	OVERALLTOTA	LS 39.0	588.0	\$.	- \$
NOTES / ASS	UMPTIONS SVERALE TOTA		500.0	Ψ	Ψ
ESPONSIBI	LE PARTIES				
epared by Ekele Ogo	rchuku Discipline Check Saiki Timothy	Date :	28 Sep 21	Revision:	Doı

	Shell Petroleum Development Company (SPDC)		CTR No.	XXXXX	CX 004
Client OU Project Title	DED For Asset Security Enhancement Project		ject No.		XXXX
ub-Project/Phase	DED	Discipline	Civil/Str		
CTR Title	Civil/Structural Engineering Design		civily out	- Column	
Schedule Start (Monday)	Schedule Finish (Friday)	Duratio	n Weeks		0
NPUTS / DEP	ENDENCIES				
Source / Discipline	Description Basis for Design (BfD)				
	Geotechnical Reports Existing As-built Documentation				
CTIVITIES C.	toward to other Martin In the Adhermatica	27137	TOTING	acama	(+ trap)
escription	ac. input to other discipline's deliverables)	MAN-I Eng	HOURS Design	3rd P	(\$-USD) T&E
eview of Geotechnical eview of Design Input		8			
esign of SCR Building esign of Lighting and C	and Foundation CCTV Poles Foundation	24 12			
esign of Turnstile Four		12 12			
	chicle Gate Support Column and Foundation	12			
		12			
DELIVERABLI Deliverable No.	ES (that are your discipline's responsibility) Description	MAN-I Eng	HOURS Design	COSTS 3rd P	(\$-USD) T&E
XXX CX004 - O1 XXX CX004 - O2	Civil/Structural Design Report - Soku Civil/Structural Material Take Off - Soku	12	0	J	
XXX CX004 - 03	Givil Plot Plan - Soku Lighting and CCTV Poles Foundation Drawings - Soku	2	12		
XXX CX004 - 04 XXX CX004 - 05 XXX CX004 - 06	Lighting and CCTV Poles Foundation Drawings - Soku Turnstile Foundation Drawings - Soku Fencing Details and Foundation Drawings - Soku	1	8		
XXX CX004 - 06 XXX CX004 - 07 XXX CX004 - 08	Fencing Details and Foundation Drawings - Soku Automated Vehicle Gate Support Column and Foundation Drawings - Cable Trench Drawings - Soku	1			
XXX CX004 - 09	Security Control Room Foundation Drawings - Soku	1	8		
XXX CX004 - 10 - 11	Security Control Room (Beam and Column Layout and Details) - Soki Security Control Room Roof Truss Drawings - Soku	1	8		
XXX CX004 - 01 XXX CX004 - 02	Civil/Structural Design Report - Gbaran Civil/Structural Material Take Off - Gbaran	12 8			
XXX CX004 - 03	Civil Plot Plan - Gbaran Lighting and CCTV Poles Foundation Drawings - Gbaran	1	12 8		
XXX CX004 - 05 XXX CX004 - 06	Turnstile Foundation Drawings - Gbaran Fencing Details and Foundation Drawings - Gbaran	1	8		
XXX CX004 - 07 XXX CX004 - 08	Automated Vehicle Gate Support Column and Foundation Drawings - Cable Trench Drawings - Gbaran	1	8		
XXX CX004 - 09 XXX CX004 - 10	Security Control Room Foundation Drawings - Gbaran Security Control Room (Beam and Column Layout and Details) - Gba	1	8		
- 11 XXX CX004 - O1	Security Control Room Roof Truss Drawings - Gbaran Civil/Structural Design Report - Okoloma	1 12	8		
CXXX CX004 - 02	Civil/Structural Material Take Off - Okoloma Civil Plot Plan - Okoloma	8	0 12		
CXXX CX004 - 04 CXXX CX004 - 05	Lighting and CCTV Poles Foundation Drawings - Okoloma Turnstile Foundation Drawings - Okoloma	1			
XXX CX004 - 06 XXXX CX004 - 07	Fencing Details and Foundation Drawings - Okoloma Automated Vehicle Gate Support Column and Foundation Drawings -	1	8		
XXXX CX004 - 07 XXXX CX004 - 08	Cable Trench Drawings - Okoloma Security Control Room Foundation Drawings - Okoloma	1			
CXXX CX004 - 10	Security Control Room (Beam and Column Layout and Details) - Oko	1	8		
- 11 XXXX CX004 - 01	Security Control Room Roof Truss Drawings - Okoloma Civil/Structural Design Report - Imo River	12	0		
XXX CX004 - 02 XXX CX004 - 03	Civil/Structural Material Take Off - Imo River Civil Plot Plan - Imo River	8 2	0 12		
XXX CX004 - 04 XXX CX004 - 05	Lighting and CCTV Poles Foundation Drawings - Imo River Turnstile Foundation Drawings - Imo River	1			
XXX CX004 - 06 XXX CX004 - 07	Fencing Details and Foundation Drawings - Imo River Automated Vehicle Gate Support Column and Foundation Drawings -	1	8		
XXX CX004 - 08 XXX CX004 - 09	Cable Trench Drawings - Imo River Security Control Room Foundation Drawings - Imo River	1			
CXXX CX004 - 10 - 11	Security Control Room (Beam and Column Layout and Details) - Imo Security Control Room Roof Truss Drawings - Imo River	1	8		
XXX CX004 - 01 XXX CX004 - 02	Civil/Structural Design Report - Nun River Civil/Structural Material Take Off - Nun River	12	0		
XXX CX004 - 03	Civil Plot Plan - Nun River Lighting and CCTV Poles Foundation Drawings - Nun River	2	12		
CXXX CX004 - 05	Turnstile Foundation Drawings - Nun River Fencing Details and Foundation Drawings - Nun River	1	8		
XXX CX004 - 07 XXX CX004 - 08	Automated Vehicle Gate Support Column and Foundation Drawings - Cable Trench Drawings - Nun River	1	8		
XXX CX004 - 08 XXX CX004 - 09 XXX CX004 - 10	Cable Trench Drawings - Nun Hiver Security Control Room Foundation Drawings - Nun River Security Control Room (Beam and Column Layout and Details) - Nun	1	8		
- 11	Security Control Room Roof Truss Drawings - Nun River	1	8		
XXX CX004 - 01 XXX CX004 - 02	Civil/Structural Design Report - Egbema Civil/Structural Material Take Off - Egbema	12 8	0		
XXX CX004 - 03	Civil Plot Plan - Egbema Lighting and CCTV Poles Foundation Drawings - Egbema	1	12 8		
XXX CX004 - 05 XXX CX004 - 06	Turnstile Foundation Drawings - Egbema Fencing Details and Foundation Drawings - Egbema	1			
XXX CX004 - 07 XXX CX004 - 08	Automated Vehicle Gate Support Column and Foundation Drawings - Cable Trench Drawings - Egbema	1	8		
XXX CX004 - 09 XXXX CX004 - 10	Security Control Room Foundation Drawings - Egbema Security Control Room (Beam and Column Layout and Details) - Egb	1	8		
- 11 XXXX CX004 - O1	Security Control Room Roof Truss Drawings - Egbema Civil/Structural Design Report - Belema	12			
XXX CX004 - 02 XXX CX004 - 03	Civil/Structural Material Take Off - Belema Civil Plot Plan - Belema	8 2	0		
XXX CX004 - 04 XXX CX004 - 05	Turnstile Foundation Drawings - Belema Turnstile Foundation Drawings - Belema	1	8		
XXX CX004 - 06 XXX CX004 - 07	Fencing Details and Foundation Drawings - Belema Automated Vehicle Gate Support Column and Foundation Drawings -	1	8		
XXX CX004 - 08	Cable Trench Drawings - Belema	1	8		
XXX CX004 - 09 XXX CX004 - 10	Security Control Room Foundation Drawings - Belema Security Control Room (Beam and Column Layout and Details) - Bele	1	8		
- 11	Security Control Room Roof Truss Drawings - Belema	1	8		
	Olimp III momit of				
OTES / ASSU	IMPTIONS OVERALL TOTALS	310.0	532.0	\$ -	\$