	DESIGN CALCULATION CO		
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	4- Utilities	Calc. File No.	
Sub-Section	4M01-Administration Building	Calc. Index No.	

Subject: Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA) Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of floor.

Light Loss Factor (LLF) of each luminaire type

Work plane and luminaire plane.

Rev	Pre	pared	No. of	Che	cked	Re	viewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	M. Garcia	Feb/14/2002	8	7. Khowai	July 24, 62	19 FT	14 Aug. 62	
Α	Morit						11,60	
В	1/0							
С								

Project	Detailed Design	n on Port Reactiv	ation Pro	ject in	La Ur	ion					No					
Section	BUILDING WO	RK						Ca	alc.	Ind	ex N	10.				_
Subject	LIGHTING DES	SIGN CALCULAT	ION-ADI	MINIST	RATI	ON BI	DG.	Pa	ige	No	. 0			₹ev.		
T											R	efer		es/		
<u> </u>							<u> _</u> _	. _		_ -	N	otes	3		, [_
DESIGN	FACTORS					<u> </u>					- -			_		
						<u> </u>		+			_ _	-				
Recomm	rended Lighting	Levels (Acordin	<u>ig IESN</u>	A Spe	cifica	tion)				4	-				-	_
	, I <u>, . I</u> , J, J, J, J, J, J			_ _	├ -}-			-	 		-	-	\vdash	<u> </u> -		_
	AREA	LUX					╢	-	-							
1 1 1 1.	Offices	500	+	++-		1		- -	†	-	-1-	1-				_
	Cafeteria	150 -		-+	++-	††	†	1	Ħ		- -	-				
	Toilets	200		- - -												
	Storage	150						<u> </u>		_	_	_		_ _		_
	Waiting Area	200			. _	 		-		_						-
	Corridor	200					-		-		_ -	-	+	+	$\left - \right $	-
	Staircases	200	+		++-		╁╌┼		-	\dashv		+-	-		 	H
			-			+	十十	\dashv			- -	-	一		\vdash	r
Typical	Surface Reflect	ances (for Admi	nistratio	n Build	lina.	Indoc	r)	一		7	_	1		1		
	Juliace Relicon	1 1 1 1 1 1 1					7				_[-	+	Ħ			r
++++												\prod				Γ.
										_	-	_	_		_	L
	CONDITION	%	1.1				1				- -	+		-	<u> </u>	Ļ
	Ceiling	80%			++			+	-			+			+	T
	Wall	50%				+	+	-	+		-	+		\dashv	+-	t
· • • • •	Floor	20%		++	++-	++		+-	+-		- -	-		+	-	┢
				-	+	1-1-	ΤŤ		T		7	1		1	1	t
																I
Luminai	re Types (from	Lithonia Lighting	Catalo	g)								_			.	
					- -		1 1	_	╄-		-	-		_	<u> </u>	1
						+-	++	+	+-			+		+	i	╀
		I the state of		J., J.		LUME	 	1	LLF		-	+-	\vdash	-	+	Ť
- 	AREA	LUMIN			+	290		+	0.8		-				╁╌	t
Genera		Paramax 18 c	and the second second second	40.00	.					- · [1	†
Corrido	ors	6" open downl				180			0.8							I
Toilets		Paramax 9 cel	and the second			280			0.	1		+		_	<u> </u>	-
Verano	<u>lah</u>	Recessed Wa	<u>III MH. 1</u>	00W	_	850	J 	ㅗ.	U.	73		+-	-	-	+	+
				-++			+-	+	-	-	-				-	+
	- - - -		+ -		++	++-	+		- †	\vdash	-1			+		1
			+	++	+ †	++	$\dagger \dagger$	- -	-			Ť		Ť		t
				- - -	11		1		1							Ţ
								Ĺ.		<u>_</u>					1	ļ
					1-1	-	-		_	1		- -	1	-		
			1		+		+-	+		 -	\square	-	-		+	+
			_ -			++	-		+	\vdash	├ -┠		<u> </u>			+
								\dashv	-	+	╢	- -	1-		+	+
					+	++	+	+	+	\vdash	$\vdash 1$		Ì	+		+
	 		,		++	++	+1	\top	+	+	-	+	丁		†	1
		Prepare	d bv	MI			Cr	eck	ed b	у	7.	Kill	en e	<u> </u>	-	_
		1	arcia	(Eéb		10000		Kiku						41	200	_

Project	Detailed Design on	Port Reactivation Pro	ject in La Union	Calc. File	No.		
Section	BUILDING WORK			Calc. Index No.			
Subject		LCALCIII ATIONI ADA	MINISTRATION BLDG.	Page No.		Rev.	
Jubject	LIGITING DESIG	V CALCULATION-ADI	MINISTRATION BLDG.	rage No.		rences/	
		<u> </u>		┷┷┪╼╢╸	Note		
	ADMINIST	RATION BUILDING-FI	RST FLOOR	.	THOIC.		$\overline{}$
	. , , , , , , , , , , , , , , , , , , ,	REQUIRED LEVEL		VEL	1		
	AREA	LUX	LUX				
Inmigra	ion	500	567				
Custom		500	511				
Police		500	468				
First Aid		500	589		_ _ _	- - -	
	(Cafeteria)	500	522				
Cafeter Banks	<u>a</u>	150	195 456				
	ine/Oirsa	500 500	467		╂┼		-
SS-1	ille/Olisa	200	300			┞━┼╾┼━┼	
Storage		150	133				
First Aid	(Waiting Area)	150	198		1-		
Machine		500	711		1		
Informa	tion	500	511		1		\neg
Guard F		500	400				
Waiting	Area	200	286				
Kitchen		500	422				
Janitor	Room	150	142				
Toilets	- 4	200	347		-		
Vestibu Vestibu		200 200	290 273				
Corrido		200	229				
Staircas		200	88		1		
					1		
					1		i
	ADMINISTR	ATION BUILDING-SE					
		REQUIRED LEVEL		VEL			
	AREA	LUX	LUX	·			
	sionaries Offices	500	579		1		
Storage	Division	500 150	599 169		-		
Metered	ology	500	603				
	(Woman)	200	245		1		
Toilets		200	245		1		
Kitchen	<u>`</u>	500	533		1 1		
Janitor	Room	150	142				
	e Room	500	487				
Corrido		200	221				
Verand	ah	20	20				ļ_
		 		++++	-	 -	$-\downarrow$
		! 					
		 		╁╌╁╼┞╌┠			-
	 	 	┼┼╢┼┼┼┼		1	 	
		 - - - - - - - - - - - - - - - - - - -		 	- - -		
<u>' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' </u>	i i i i i i i i i i i i i i i i i i i	Prepared by	Che		カル		
				cked by	11K2	124 120	
		M. Garcia	Feb/14/2002 T. K	ikuchi	Jak	124-120	J02

Project		l Design	on Po	ort Reactiv	ation P	roject ir	ı La	Unior	<u> </u>		Cal	c. F	ile	No.	,	ļ			
Section	BUILDII	NG WOF	RK :		·						Cal	c. I	nde	x N	o.	l			
Subjec	LIGHTII	NG DES	GN C	ALCULA	ΓΙΟΝ-ΑΙ	MINIS	TRA	TION	BLD	G.	Pad	ae I	No.	03	 }		Re	٧.	
					1 1						,	Ť	1			rend	es	ī	
<u> </u>		1	 	-1	 	 				<u>-</u>	-		+		ote				
	AD	MINIST	RATIO	ON BUILD	ING-TH	IRD FL	OOR					_j_					T	ī	
				QUIRED I			CUL	ATE	D LE	VEL.								T	
	AREA		l	LUX				LUX						-					
Auditori	um			500				497						1					
Manage	r's Room		 	500	· · · · · · · · · · · · · · · · · · ·			475				7		1-				\top	
Secreta				500				512				1		1				Ť	_
Toilets (Woman)			200				222						-				╗	
Toilets			T	200				222				Ť		Г			T	T	
Adminis	tration Offic	ces	1	500				438				十	-	1			_	7	_
Mainten	ance Dept.	 		500				437				T		1			T	\top	
Storage				150				187				T		1			7	7	_
Kitchen	• •		T	500				328				1		T			十	T	_
Janitor	Room			150				142			\neg	\top	1	1	<u> </u>		7	\top	
Machine				500		[487	-		\neg	Ť	- -	1			1	寸	_
Corrido			1	200		1		194				_		Т	Ì		T	十	_
Veranda	ah			20				32						1	İ		Ţ	- -	
						11		- 1		1			1	-[-		\Box		Ť	_
1	 	· · · ·			<u> </u>							1		1				T	_
	ADN	MINISTR	ATIO	N BUILDII	NG-FOL	JRTH F	LOO	R			ľ								
			RE	QUIRED I	EVEL	CAL	.CUL	ATE	D LE	VEL			_				Ī		_
	AREA			LUX				LUX					1	1	T				_
Meeting				500				619											
Kitchen			†	500				195			寸	Ť	T	1			-	十	_
Hall			1	200				332				\top	\top			H	TÌ.		_
	Woman)			200		·		191					T	1		Ιİ	_	T	_
Toilets				200	· .			191				1	Ì	1	ļ	İİ		T	_
Multi Pu	rpose Roor	n	 	200				253			寸	 	Ť	1-			T	1	
Corrido			1	200				197						1	_		1	Ť	
Veranda				. 200				253			_	Ť	Ť	\top	İ	Ħ	Ť	寸	_
TIT			1			TT			T	T	П		7	1-	\vdash	П	1	寸	
		· · · · · · · · · · · · · · · · · · ·	1		<u>'</u>				<u> </u>	· <u>·</u>				1	<u> </u>	i			_
1	ΑE	MINIST	RATIO	ON BUILE	ING-FI	TH FL	OOR				-	1	İ	1	T			寸	_
				QUIRED					D LE	VEL		\top	Ì	1		Ħ	7	\exists	_
	AREA			LUX				LUX			_	1	\top	1		П	- †	\neg	_
Yard Co	ntroller Ro	om		500				619			一			_	i –	\Box		\top	
Stack R				200				195				\top	+	1			1	寸	_
Hall				200				332				Ť	1	1	_	\Box	\top	+	
Toilets			1	200	•			191			一	_	-	1		一		1	
Yard Co	ntroller Ro	om		200		1		191			7	ij	Ţ	Τ		H	1	\top	_
Corrido				200				253			_	i-	_;	1			Ì	T	_
							1			İ	П	\top	T	1			T	1	
		·	· ,		 							Ť		\top				丁	_
7	AD	MINIST	RATIO	ON BUILD	ING-SI	KTH FL	OOF	t	٠.		1	Ť	7	1	Г		T	十	_
T				QUIRED					D LE	VÉL		十		1	Ι	\Box	T	1	
_1	AREA			LUX				LUX		-		\top	1		Ι.		\top	\top	
Hall			1	500		1		619			\neg	\top	j	T	<u> </u>	\Box	1	十	
Toilets		· ·	1	200				195				T		1				\top	_
	ion Controll	er Room		200				332			_	Ť	Ť	1	<u> </u>		-	\dagger	_
	Master Roo		† <u> </u>	200				191			\dashv	十	1	1		П	j	十	
Bedroo			 	200			-	191			\neg	\top	\top	1	Π	ΙΤ	T	十	_
Corrido			1	200				253			7	十	1	1		\sqcap	\dashv	\dashv	_
1 1	1 1 1	\Box	<u> </u>		,	1.1	1		П	T	\sqcap	\top		1		İΤ		\top	_
, , ,		<u> </u>	<u> </u>				- 1			-4	<u> </u>	-	_		بر خ	ارب	_ '	, '	_
			1	Prepare	db∨ N	NVW			IC	hec	ked	hν		7.1	r,	K	,	•	

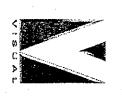
LUMII	NAIRE	SCI	LUMINAIRE SCHEDULE					ŧ	
Symbol	Label	g g	Catalog Number	Description	Lamp	File	Lumens	ררצ	Watts
	A	78	2PM3N G 3 32 18LD 1/3 ADDE	PARAMAX PARABOLIC TROFFER 3" LVR FAMILY 3 LAMP T8 18 CELL SEMI-SPEC LVR 1/3 ELECT	2900 LM LAMP	L6347.IES	2900	0.81	85
	ω	C h	2PM 3N 2U31 9LD TUB!	2PM 3N 2U31 9LD PARAMAX PARABOLIC TROFFER 3" LVR FAMILY 2X2 2 LAMP T8U 9 CELL LO IRR SEMISPEC LVR 1/3 ELECT.	2800 LM LAMP	L6238.IES	2800	0.81	57
•	. 0	32	LF6/F6O2A (2/26DTT)	6" OPEN DOWNLIGHT WITH SEMI-DIFFUSE REFLECTOR	TWO 26-WATT DOUBLE TWIN TUBE COMPACT FLUORESCENTS, HZ W/45-DEG CANT.	95110901.IES	1800	0.86	66

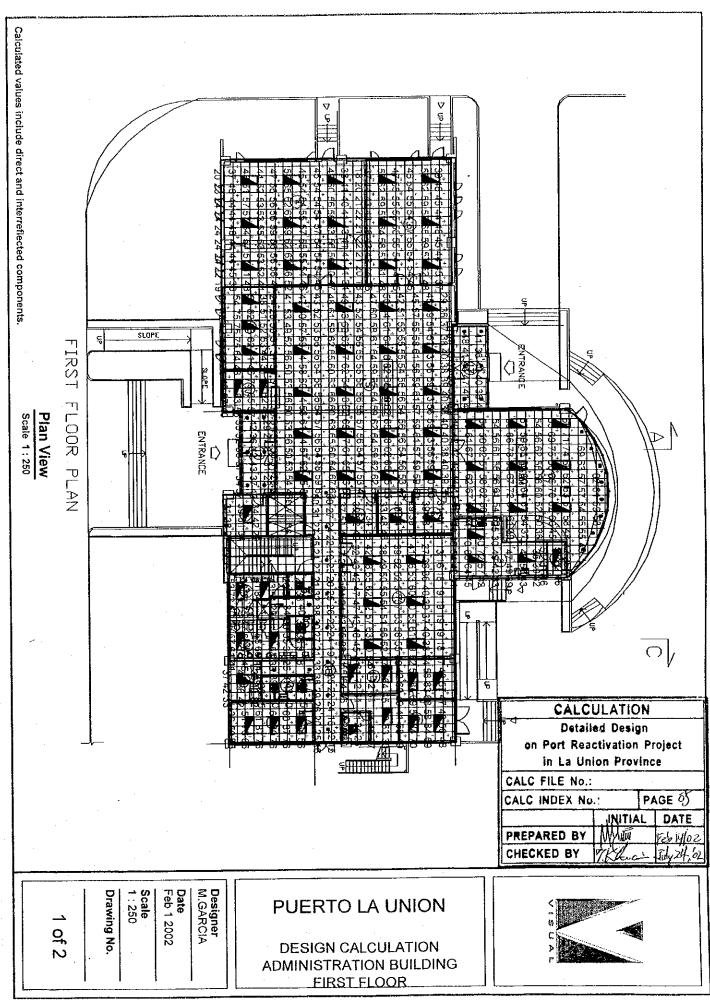
Ī	CALCULAT	ION
	Detailed De	sign
	on Port Reactivati	ion Project
	in La Union P	rovince
Г	CALC FILE No.:	
l	ALC INDEX No.:	PAGE 04
IL.		

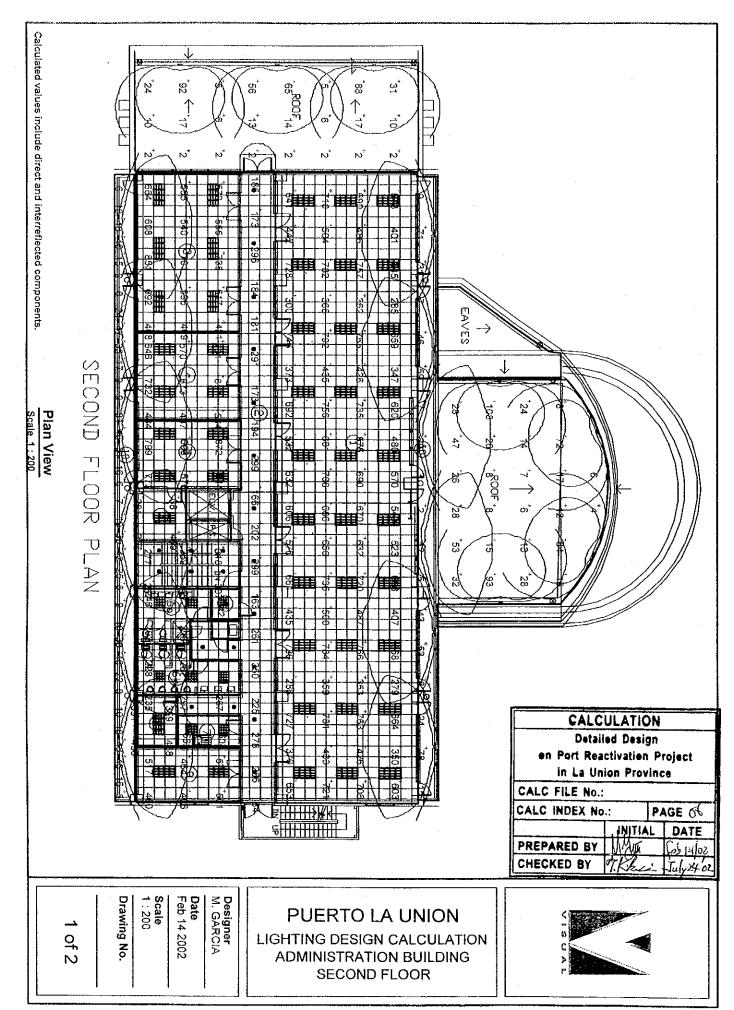
PREPARED BY CHECKED BY

Designer
M.GARCIA
Date
Jul 27 2002
Scale
Drawing No.

PUERTO LA UNION
LIGHTING DESIGN CALCULATION
ADMINISTRATION BUILDING







THIRD FLOOR PLAN

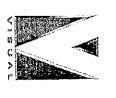
Plan View
Scale 1: 200

CALC	ULATIC	N					
Detail	ed Desig	m					
on Port Rea	ctivation	Pr	oject				
in La Un	ion Prov	inc	e				
CALC FILE No.:							
CALC INDEX No	.:	PA	GE 6				
	INITIA	L	DATE				
PREPARED BY	MAM		Feb 14/07				
CHECKED BY	7Kkm	~	Jaly 24, 02				

1 of 2	Drawing No.	Scale 1:200	Date Feb 14 2002	Designer M. GARCIA

PUERTO LA UNION

LIGHTING DESIGN CALCULATION ADMINISTRATION BUILDING THIRD FLOOR



Calculated values include direct and interreflected components.

4TH FLOOR PLAN

Plan View Scale 1: 200

64.6								
	ULATIO							
	led Desi							
on Port Reactivation Project								
in La Union Province								
CALC FILE No.:		_						
CALC INDEX No	.:	PA	GE 6%					
	INITIA	L	DATE					
PREPARED BY	MYLES		feb 14 /92					
CHECKED BY	7.Khu		111/24 02					

4 35	W (5	3 Jan 19 19 19 19 19 19 19 19 19 19 19 19 19
30 44	**************************************	$\rightarrow \begin{array}{cccccccccccccccccccccccccccccccccccc$
77	, 'N' o'	ω ⁺
27 25		25, 25, 25,
	2 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	
	\$ \$2 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
	75 2569 2269	
	723	
100	00 A T	42 22
26 18) / (v) (v)	19 PARAPEN 19 PARAPEN 19 727 19 19 19 19 19 19 19 19 19 19 19 19 19
	· · · · · · · · · · · · · · · · · · ·	→ 00°+ 00°+ 00°+ 00°+ 00°+ 00°+ 00°+ 00°
22 39	2 4	2, D ₃₀ 2, 1

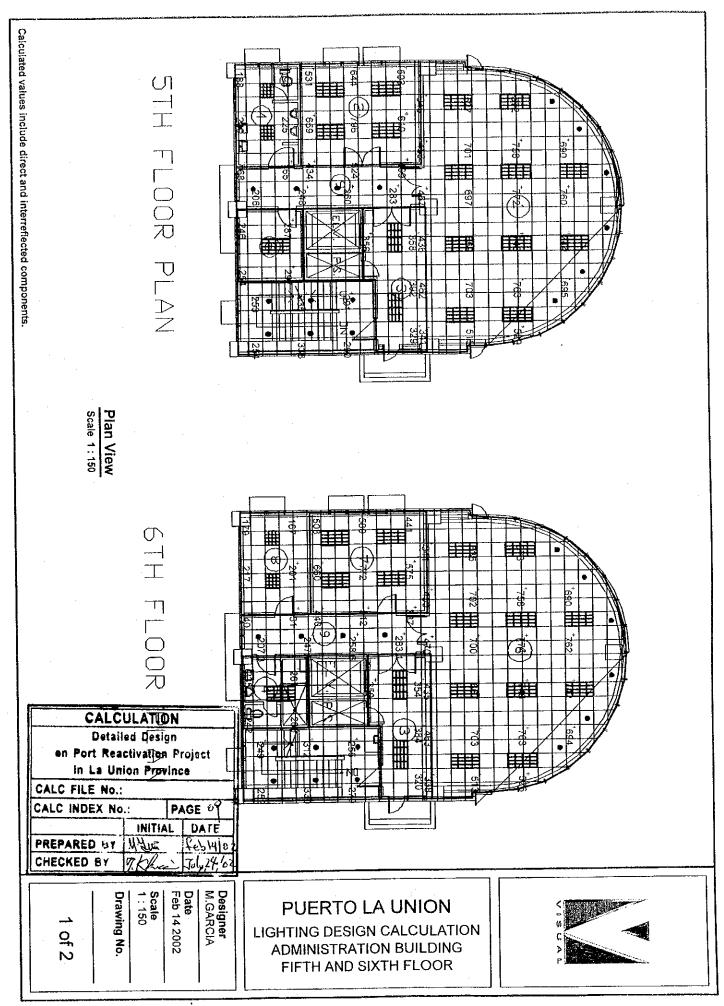
Date Feb 14 2002 Designer M. GARCIA **Scale** 1:200 Drawing No.

<u>야</u> 2

PUERTO LA UNION

LIGHTING DESIGN CALCULATION ADMINISTRATION BUILDING FOURTH FLOOR





	DESIGN CALCULATION CO		
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	4- Utilities	Calc. File No.	
Sub-Section	4M02- Container Freight Station	Calc. Index No.	

Subject: Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA) Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of ceiling, walls and floor.

Length, width and height of each room.

Work plane and luminaire plane.

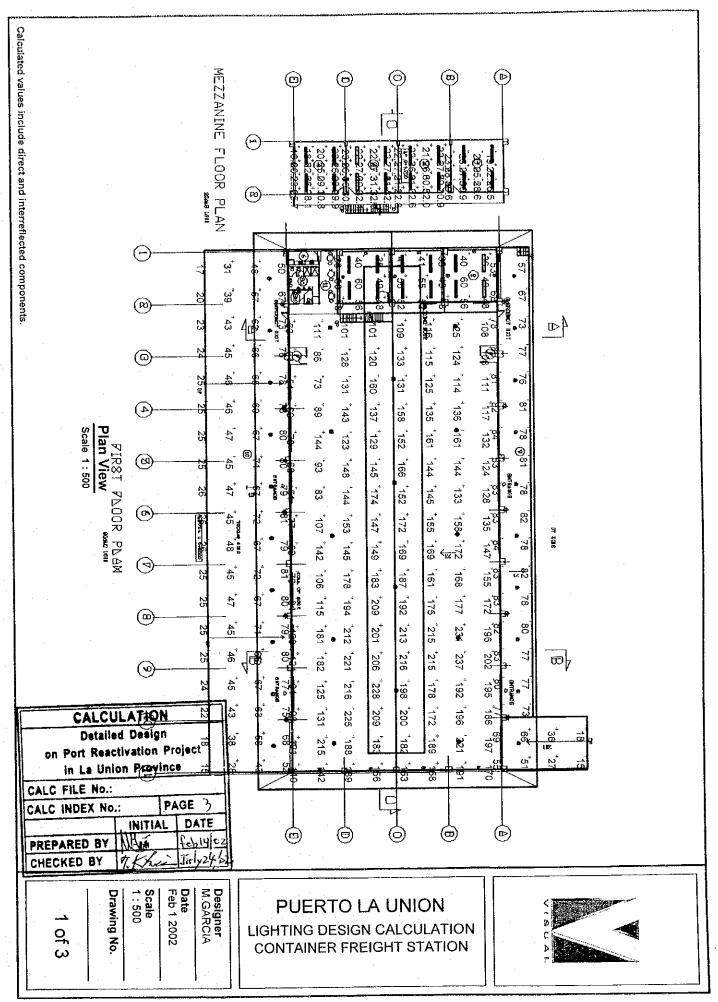
Light Loss Factor (LLF) of each luminaire type

Rev	Prep	pared	No. of	Che	cked	Rev	viewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	M. Garcia	Feb/18/2002	5	7. Klaice	July24,02	19 ST	iffue or	
Α	Mag						0	
В	1 100							
С		·						

Project	Detailed Design on Por	t Reactivation Project in La	Union	Calc. File N	ło.
Section	UTILITY WORK			Calc. Index	No.
Subject	LIGHTING DESIGN CA	LCULATION-CFS.			01 Rev.
					References/
DESIGN FA	CTORS				Notes
					
Recommend	led Lighting Levels (A	cording IESNA Specificat	ion)		
	L ADEA	LUX		+-+	
-	AREA	500		+	
+	Offices	150			
	Storage				
	Toilets	200			
	Cargo area	150			
	Exterior	30			
		-+			
Typical Surf	ace Reflectances (for	Administration Building.	ndoor)	1111	
, p.oa. Oari					
	CONDITION	%			
	Ceiling	10%			
	Wall	30%		+++-	
	Floor	10%	 		
				<u> </u>	
Luminaire T	ypes (from Lithonia L	ghting Catalog)			
_				 	
		4114463055	LUMEN	LLF	┨═┼═┼═┼┈┼
1	AREA	LUMINAIRE			
Offices		ax 18 cell 3xT8 32w	2900	0.81	
Storage		ial Fluorescent 2x32w	2900	0.88	
Toilets		ax 9 cell 3xT8 32w	2800	0.81	
Cargo a		ay Industrial MH 400w	41000	0.85	
Exterior		n HPS 175w	17500	0.8	
			<u> </u>		
				1-1-1-	1-1-1-1-1-1
				 	
	+ + + + + + + + + + + + + + + + + + + +		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	++++	1-1-1
		 	1 1 1 1		1-1-1-1-1
			1 1 1		-1
1 ! 1		D War	<u> </u>		nv/
<u></u>		Prepared by MATIN			7. Khusi
		M. Garcia	/2002 T. F	Kikuchi	July 124 1200

			_	Ì		İ												_	d l			4	بار							nec		L			了. 了.						
	t	_		-	t	-			\vdash	+				+	t	+	1		-	-	\vdash	-	-	-	-	1	-	-	 	_	-			<u> </u>	-		-	-	+	H	1
-	-	-		-	-	-	-	L	-	-			-	1	1	+	-		_	_	-	-	 	<u> </u>	-	ļ	_		<u> </u>	ļ	L		_	<u> </u>		_	_	ļ	L	L	1
Ì					1				-	1				1	-							<u> </u>	-	-	-															L	1
+	+			-	+	-		_	-	+	_		\vdash	-	+	1	-			<u> </u>	-	_			}		-	<u> </u>	 	-			-	-	 				<u> </u> _	-	+
ļ	Γ	1	_	-	1	1			-	1			L			I	1	_		_		-				Γ	_													Ì	Ţ
-	T				+	-		-	-	1		_	-			+	-		-	-	\vdash		<u> </u>		-	-	-	-	+-	-	-	-	-	-	-	-		-	-	\vdash	1
	Ł	-			+	-		_	-	1	_			-		1	-					-	ļ_	Ļ		F			ļ								_		L	L	1
	İ	-			†				Ĺ	†					t	-					-	-				上														-	1
+	1	-			+	-		-	-	+			-	┼-	+	+	-		-			-	-	-	-	_	\vdash		<u> </u>	<u> </u>	<u> </u>		-	<u> </u>	<u> </u>	_		_	<u> </u>	-	1
-	L	4		L	ļ				L	1				Ļ			1			ļ	_			Í		L			L				<u> </u>				<u> </u>		İ		ļ
-	+	+	-	+	+	-		-		+			-	十	+	+	-				-		-	-	<u> </u>	 -	-	-	<u> </u>	<u> </u>	-	-	-	-		_		-	-	-	1
	H				+	4			<u> </u>	1	_		L	-	L	-	4			_	_					ļ			<u> </u>	ļ	ļ		ļ	-	ļ			_		F	Ŧ
	ŀ	1			-					1		L		1-		1	1									 	_													\perp	t
+	+	-		<u> </u> 	+	4		<u> </u> 		1			-	ļ	+	+	-			-	\vdash			-	<u> </u>	<u> </u> -	<u></u>	_	<u> </u>		-		<u> </u>	+	 	<u></u>	_	-	<u> </u> 		1
	I		_	L	Ţ								<u> </u>			1	1				<u> </u>	_	L	_	<u> </u>								İ							L	1
+	╀			\vdash	+	_ 		_		+			H	-	-	-				\vdash	H	<u> </u> _	1	-	L		 	-	ļ	<u> </u>		ļ		-		_			-	-	\dagger
Γ	F	_			T					1						-	1			ļ		L.					<u> </u>				<u> </u>		<u> </u>		ļ		_		_	L	Ì
<u> </u>	+	- 1		L	+	-			_	+	_		\vdash	+-	-	+	+			-	\vdash	L		<u> </u>	-	+-	-		†	-	<u> </u>			-		-	-	-	\vdash	-	1
	\vdash				+	-		_		1			-	-	-	1	-				_	_				H			<u> </u>		-		-					-			-
	ļ.	1			1				L	1					1	1	7																							1	1
-	H	-		+	+	-				+				-	-	+	+		-	<u> </u>	-	-	-	-	<u> </u>	-	<u> </u> -	-			-	-	-	-	 	-	-	<u> </u>	-	-	-
<u> </u>	F	1			1	_	_			1					I	1					<u> </u>	ļ				Ļ	<u> </u>	L	<u> </u>					\Box			L				
-		-			-	+			-	-				-	-	-		•			-		-	-	-	-	-		-		-	-	-		-	<u> </u>	<u> </u>		_	-	-
1-		_			1					1				_	1	1	- 					i -				i	1	T		_]		_	• 	_				_	L	1
EX	TE	ĒR	ЮБ	RES	:						7	79 l	uх			1	115	เยา	:			10 [ux			1	1.5:1	ì			7.9	9:1			-	-	-		-	-	
Ca	lc.	Zo	ne	#5							1	10	lux			1	115	tux				81 !	uх			1	.4:1		•		1.4	1:1								L	1
Ça	tc.	Zo	ne	#4				_				56 I	υx				105	lux	(101	ux			10	0.5:1	I 			5.6	5:1						 	-	+	+
Ca	lc	Zo	ne	#3								381	их 				110	lux	•			11	ux ——			10	0,0:1	l 			6.2	2:1					L		F	ļ.	1
AF	Œ/	Α. [Œ	ME	ZA	NN	IINE	<u>-</u>			2	85	lux				366	cul :				224	lux			1	.6:1				1.3	3:1		-		<u> </u>	<u> </u>	<u> </u> 	\vdash	+	1
-		-		NA —	_						_	01		_			-	lux	-			21					0.3:1				14.									-	1
 -			otic						_			Av						ax				Mi					Mix					Min) 			<u> </u>	-	-	\vdash	-	1
├~				ST	10	. S	•												·	- · · ·																					1
Γ_																																		1	<u> </u>	-	-	F	ļ	-	1
-	╁	-		-	-	7				+	_		-	\dagger	+-	+	1		-	-	\vdash	-			-	\vdash	-	-	-		\vdash	+	+-	-		ote		ice	3 1		
ul) 	e	C	<u>t</u>	Ļ	10	3H	1IT	10] E	DE	S	G)	10	A	-C	U	A	TI	ON T	-C -	FS.		T	_	1	-	· T	T		Pa	age	N	0.			rer		ev.		
e	_	_			+-		_	ΤΥ																							•		. In	~-			<u></u>				
rc					7~									1	ort	K	ea	ct	va	tio	n P	roj	ect	m	La	Ur	ilor	1			1		. Fi				ļ.,				

FN: Calculation_Sheet



5	MINAIRE	SCI	LUMINAIRE SCHEDULE						
Symbo	Symbol Label	Qty	Qty Catalog Number Description	Description	Lamp	File	Lumens LLF		Watts
	≯	18	THP 400M A17 (1.8 PREMIUM OPEN S/MH) OPTICAL		ONE 400-WATT CLEAR METAL HALIDE, VERTICAL BASE-UP POS.	36303.ies	41000	0.85	455
(<u></u>	œ	28	TLA 2 32 TUBI	TANDEM INDUSTRIAL APERTURED 12" X 8' 4 LAMP T8 ELEC	32W T8 4100	36290.ies	2900	0.88	123
•	n	20	BA175PMH00XA	BANTAM 2000	175W CLEAR MH PS	46048.ies	17500	0.80	200

CALC	ULATIC	N	
Detail	ed Desig	3 11	
●n Port Rea in La Un			•
CALC FILE No.:			
CALC INDEX No	.:	P	GE 4
	INITIA	L	DATE
PREPARED 84	MA		feb 14/02
CHECKED BY	TVI	. `	71.240

Designer
M.GARCIA

Date
Feb 1 2002

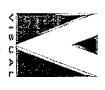
Scale

Drawing No.

2 Of 3

PUERTO LA UNION

LIGHTING DESIGN CALCULATION CONTAINER FREIGHT STATION



Name Front	Reflec	Reflectances ont Back	×	Normal Y	2	Area (sq. m)
	10%	10%	0.0	-0.322	0.947	
	10%	10%	0.0	0.322	0.947	
	10%	10%	0.0	-0.322	0.947	
	10%	10%	0.0	0.322	0.947	
	10%	10%	0.0	1.0	0.0	
	10%	10%	0.0	1.0	0.0	
	10%	10%	0.0	0.0	1. 0	
	20%	20%	0.0	-1.0	0.0	
	10%	10%	1.0	0.0	0.0	
	10%	10%	1.0	0.0	0.0	
	10%	10%	0.0	-1.0	0.0	
	10%	10%	1.0	0.0	0.0	
	10%	10%	1.0	0.0	0.0	
	10%	10%	0.0	0.0	1.0	
	10%	10%	0.0	0.0	1.0	
	10%	10%	1.0	0.0	0.0	
Floor	10%	10%	0.0	0.0	1.0	
Wall 1	30%	30%	0.0	1.0	0.0	
Wali 2	30%	30%	-1.0	0.0	0.0	
Wall 3	30%	30%	0.0	-1.0	0.0	
Wall 4	30%	30%	1.0	0.0	0.0	
Wall 1	30%	30%	0.0	1.0	0.0	
Wall 2	30%	30%	-1.0	0.0	0.0	
Wall 1	30%	30%	0.0	1.0	0.0	
	30%	30%	-1.0	0.0	0.0	
	30%	30%	-1.0	0.0	0.0	
Floor	10%	10%	0.0	0.0	1.0	
Wall 1	30%	30%	0.0	1.0	0.0	
Wall 2	30%	30%	-1.0	0.0	0.0	
Wall 3	30%	30%	0.0	-1.0	0.0	
Wall 4	30%	30%	1.0	0.0	0.0	
	10%	10%	0.0	0.0	-1.0	

CALC FILE No.:

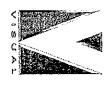
CALC INDEX No.: PAGE 5

PREPARED BY DATE Feb 14/02 CHECKED BY

Date Feb 1 2002 **Designer** M. GARCIA Drawing No. ω of 3

PUERTO LA UNION

LIGHTING DESIGN CALCULATION CONTAINER FREIGHT STATION



	DESIGN CALCULATION CO		
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	Utilities	Calc. File No.	
Sub-Section	4M03- Maintenance & Repair Shop	Calc. Index No.	

Subject: Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA)

Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of ceiling, walls and floor.

Length, width and height of each room.

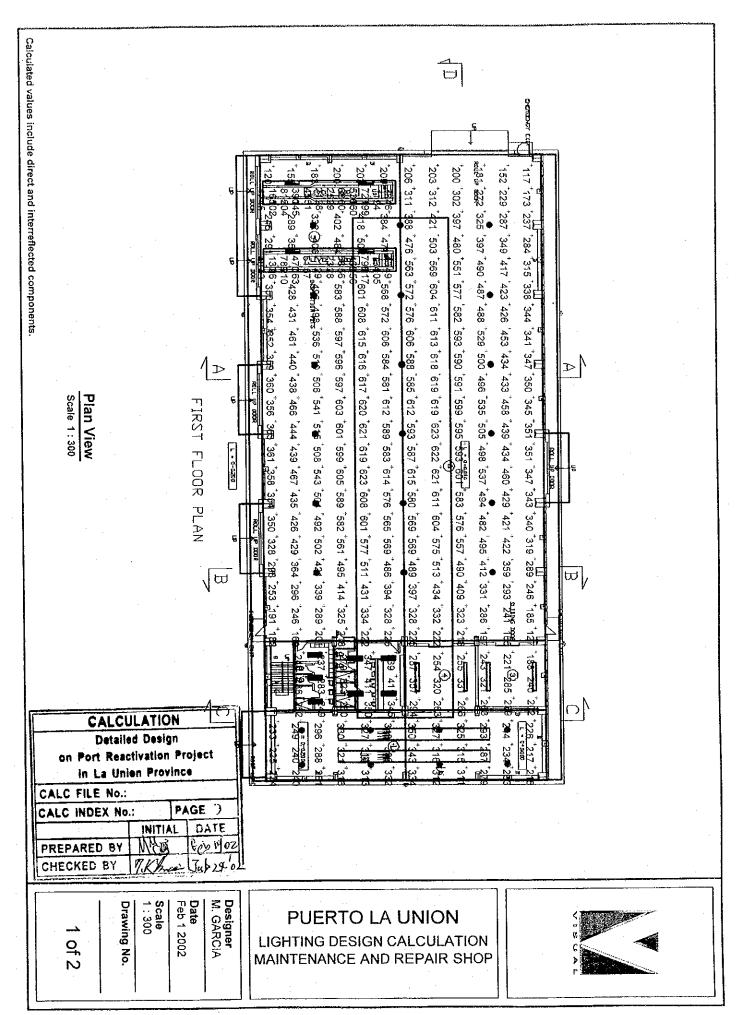
Work plane and luminaire plane.

Light Loss Factor (LLF) of each luminaire type

Rev	Prep	oared	No. of	Che	cked	Rev	riewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	М _а Garcia	Feb/14/2002	5	7. Kilow	July 24 02	\$ PJ	if Log or	
Α	Myan						. 0	
В								
С								

Project	Detailed Desi	gn on Po	t Rea	activa	tion F	roj	ect i	n L	a U	nio	n			Ca	ılo.	Fi	le N	١o.		<u> </u>			
Section	BUILDING W	ORK						_						Ca	ılc.	In	dex	(N	о.	L			
Subject	LIGHTING DE	SIGN CA	NLCU	LATIC	ON-M	AIN	ITEN	IΑ	NCE	8	RS	SHO	OΡ	Pa	ige	N	٥.	01			R	€ν.	
						1		1								-			efe	ren	ce	s/	
DESIGN FA	CTORS																	No	ote	ş			
																		L	_	ļ			
Recommend	led Lighting L	evels (A	cord	ing IE	<u>ESN/</u>	S	peçi	fic	atio	<u>n)</u>		<u> </u>							_				
						-				_	-	ļ_				_			ļ 	<u> </u>	-		
				$\vdash \vdash$		-	-		+	-		-						-	<u> </u>				
- - - -	I ADEA	<u> </u>		LUX	1		-		-	+-	╁┈	ļ	 							 - -			\vdash
	AREA			500				1	-[-	-	\dagger	<u> </u>	H							<u> </u>			
	Offices Overhaul			150																L	<u> </u>		
	Toilets			200	1.5	<u> </u>		_	_	-	ļ	<u> </u>			_	_				ļ			-
	literation and a second control of	1.		150	··· 1 I		-				-	-				<u> </u>	<u> </u>	H	-	<u> </u>	-	-	
	Wash unit		.			╁	\vdash	+		-	+	-	\vdash					-	-	<u> </u>	-		
	Maintenan	_c area		200	_1.		†-†	+		1	-	†								 			
								†			T	1											
Typical Surfa	ace Reflectar	ices						T			\Box							Ĺ					
						<u> </u>				1	-	ļ						_			_		
				<u> </u>	 			-			+	-				_	-	-	_	-		,	
	CONDITIO	N		%		 		-+	+	+	-	╁				-		-	-	-	 		
	Ceiling			09		\vdash		\dagger	-	+	╁.	-	-				 ,	一	<u> </u>				<u> </u>
	Wall			109	. 1			7	7														
	Floor		L	109	6						ļ.,	_					<u> </u> _	_		_	<u> </u>		
					<u> </u>	 _		4	-	+	ļ	-				_	-			-	-	-	-
Luminaira T	ypes (from Li	thonia Li	ahtin	n C2	talog	<u> </u>		+		+	+	-					-	\vdash	-	-	-		
Lummane	ypes (nom Ei	uionia Li	gritii 	iy Ca	laiog	\perp		+	+	+	+-	┼-	\vdash		 	-			-				
				-	1-1-	1		7	\forall	+	\top			_			<u> </u>		-	-	İ		
_ AREA	LI LI	JIMNAIR	Œ	!				Ĺ	Ulv	ΙEΝ	1		T	L	LF].							
- Offices	:	Param:	ax 18	3 cell	ЗхТ	3 3	2w	T	29	00				(0.8	1	ļ		<u> </u>		-		
— Overhaul	: :	Industri	0.00					,	29				1	().8	8	<u> </u>	-	<u> </u>	<u> </u>	_		
Toilets		Wrap a							29	00		•		(9.0	8	H		H	├-	-		
 Exterior		Bantan							175	00) .				0.	8	 	_	 		Г		
 Cargo are	ea :	High Ba			area or a selection	H 4	100v	νĺ	410	000) :		ľ	(j.8	5							
— Wash un	the state of the s	High B							410	000)			().8	5	<u> </u>	<u> </u>	L	<u>L</u>	<u> </u>		
						Ţ		1				T	-		-		ļ		ļ.—	-	ļ i		
			-		1.	-	-	-		╬	+	├	1 1		_		\vdash	-	<u> </u>				1 1
						-			\dashv	\dagger	\dagger	-					-	-	 	-	-		
	 					†		ij	_	Ť	İ												
						Γ	П				I							_					
_	<u> </u>					ļ.,	14	1	_		1				_		<u> </u> _		<u> </u>				-
				$\vdash \vdash$	1 1	+		-	+	+		\vdash			H		<u> </u>	⊢	<u> </u>	 			
				-	+	╂	++	- †	-	+	1	<u> </u>	+			<u>i </u>	-	-		<u> </u>	-		
						+		+	+	+	+	T			H		\vdash			├ 	† 		\vdash
			1			1				j	İ	Ĺ		_						<u> </u>			
											I									_			
						4		Î		Ţ	1	Ĺ					<u> </u>	<u> </u>	ب	,	_		<u> </u>
			Prep	ared	by	//K	(Igi					[ci	hec	ke	d b	y_	<u>Ż</u> .	K	K			>_	
			N /	l. Gar	cia	77	~~	h/4	4/2	กกว	,	_	Kil						_				002

ection	BUIL					Por	t R	ea	ctiv	ati	on	Pr	oje	ct	in I	.a	Un	ior	<u> </u>			1	alc				N		-	-			
ubject	_					1.04		· · · ·	 Λ **	10			18.5	T		NIC	·-	0 1							_					·			
ubject	LIGH	TIN	3 DI	10	יוטו	ICA	LC	JUI.	JA I	10	V-1/	VIA	III	11	NA	INC) E	ά.	K :	SH	T.	P	ag T	e I	10.		02 Dz				≀eγ es/		
	 		+	+-	+-		1		+	+	\dashv	+	-		-	\dashv			-	┪╌	+-	-		- -			rce No			IC	25/		
	İ		1	\top	İ		1		1		_								ļ	\top	-	-	-	Ť	+	1			Ĺ	Τ		\top	T
STATIST	ICS							•									_							**** <u>*</u>]	_					- -		
Description				Αv	9			Ma	x			h	/lin			N	lax	Min	1		A	vg/N	lin							-	-		
INTERIOR NAV	/E		3	301	lux		4	26	ux			21	l lux	:			20.	3:1				14.4	1			-			-	+	+	-	\dashv
AREA DE MEZ	ANNINE			285	lux		3	366	ux 			22	4 lu:	ζ			1,6	1				1,3:	1			1			-	1		1	1
Calc Zone #3				68 li	uх		1	10	ux			11	lux				10.0	0:1				6.2:	1					_			-		1
Calc Zone #4				56 k	υx		1	05	υx			10) lux				10.	5:1				5.6:	1	•						-	+	-	1
Calc Zone #5			1	110	lux		1	15	ux			81	tux				1.4	:1				1.4:	1			_				‡			1
EXTERIORES				79 li	ux		1	15 1	ux			10) lux				11.	5:1				7.9:	1				_			$\frac{1}{1}$	_	+	1
			1	Τ	1	T i	1	-	-	-	_	\dashv		-	1					1	1	1	1	_	-j-	-			┞	+	-		-
							1							7		\neg				1	 	1	\dagger	t	Ť	1				-	t	+	i
	<u> </u>		T																						Í							İ	
071707			******																						٦	-			⊣	╁-	-	+	\dashv
STATIST	CS							•																	╛	+			-	+	+	+	+
Description				Αv	g			Ma	ıx			١	Min			!	Max	/MI	n		F	(vg/	Mir	1		1							Ì
Wash Unit			٠.	287	1			210									1	6:1				1.3	.4		l				1				
		<u> </u>		ZO1	ıux		- 3	348	lux			21	15 lu	iX			•••	•			*	1.0			4	- 1						- 1	
Electric Overha	ıul			243				320					15 lu 37 lu					7:1				1.3								-	-	-	
					lux		;		lux	·		18		X			1.						(1								-		
Electric Overha			:	243	lux lux			320	lux lux			18	37 Iu	IX 			1.	7:1				1.3	:1										
Electric Overha	ອຍໄ			243 292	lux lux lux		3	320 357	lux lux lux			18 25 23	37 lu 54 lu	IX IX			1. 1.	7:1 4:1				1.3	:1										
Electric Overha Mecanic Overh Toilets	aul a		:	243 292 307	lux lux lux			320 357 411	lux lux lux			18 25 23 2	37 lu 54 lu 31 lu	IX IX IX			1. 1. 38	7:1 4:1 8:1			-	1.1	:1										
Electric Overha Mecanic Overh Toilets Inspeccion Are	aul a a 2		:	243 292 307 172	lux lux lux lux		3	320 357 411 809 793	lux lux lux			18 25 23 2	37 lu 54 lu 31 lu	IX IX			1. 1. 38	7:1 4:1 B:1				1.3 1.1 1.3 8.2	:1 :1 :1 :1										
Electric Overha Mecanic Overh Toilets Inspeccion Are	aul a a 2		;	243 292 307 172	lux lux lux lux		3	320 357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 lu 54 lu 1 lu	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1		1		1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux		3	3320 3357 411 809 793	lux lux lux lux lux			18 25 25 2 2	37 fu 54 fu 1 fu 1 fux	IX IX X			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	::1 ::1 ::1										
Electric Overha Mecanic Overh Toilets Inspeccion Are Inspeccion Are	aul a a 2		;	243 292 307 172 176	lux lux lux lux			320 357 411 809 793 183 621	lux lux lux lux lux			18 25 23 2 2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	37 ft 54 ft 1 lu 1 lu 1 lu 1 lu 1 lu 1 lu 1 lu 1 l	IX IX IX IX IX IX IX IX IX IX IX IX IX I			1. 1. 38 37	7:1 4:1 8:1 8:1				1.3 1.1 1.3 8.2 8.4 30.	:1 ::1 ::1 ::1										



			635 3	(•			Symbol	LUMII
l r	. ω	П	m	ם	n	æ	>	Label	VAIRE
N	თ	4	7	ø	0	4	±3 ∞	Qty	SCI
DSA 3001	TWH 400M	VDC 2 32	LB 3 32 A 1/3 TUBI	HMST400MH00L7	BA175PMH00XA	TLA 2 32 TUBI	THP 400M A17 (1.8 PREMIUM OPEN S/MH) OPTICAL	Catalog Number	LUMINAIRE SCHEDULE
INTERIOR OF TRACTOR TRAILERS DURING INITIAL INSPECTION, LOADING OR UNLOADING.	GLASS REFRACTOR WALL-PAK ILUMINATING THE	HIGH ABUSE LIGHTING DROP DISH CORNER MOUNT 4' 2 LAMP T8 PYCB LENS 0	LOW PROFILE WRAPAROUND 15 3/8" X 4" 3 LAMP T8 PRISMATIC LENS ELEC	HIGH MAST	BANTAM 2000	TANDEM INDUSTRIAL APERTURED 12" X 8' 4 LAMP T8 ELEC	OPTICAL	Description	
300 WATTS IN CAND	400W METAL HALIDE CRAM LAMP PS	2900 LUMENS	2900 LM LAMP	400W CLEAR MH PS	175W CLEAR MH PS	32WT8 4100	ONE 400-WATT CLEAR METAL HALIDE, VERTICAL BASE-UP POS.	Lamp	
89080302.IES		L5682.IES	L5638.IES	36803.jes	45918.IES	L6411.IES	11607.IES	File	
CALCULATION	——————————————————————————————————————	2900	2900	41000	17500	2900	41000	Lumens	
Detailed Design on Port Reactivations in La Union Previ	n O	0.88	0.88	0.85	0.80	0.88	0.85	s LLF	
CALC FILE No.: CALC INDEX No.: INITIAL	PAGE 54	69	85	455	200	123	455	Watts	
PREPARED BY MMG	Fe514/02 - July 24, de	-				**		•	<u></u>

PUERTO LA UNION
LIGHTING DESIGN CALCULATION
MAINTENANCE & REPAIR SHOP



	Reflect	ances		Normal			VISUAL
Name	Front	Back	X	Y	Z	Area (sq. m)	
Floor	10%	10%	0.0	0.0	1.0	1296.0	
Wall 1	30%	30%	0.0	1.0	0.0	351.0 L	
Wall 3	30%	30%	0.0	-1.0	0.0	351.0	
	10%	10%	0.0	-0.095	0.995	25.239	
	10%	10%	0.0	-0.095	0.995	12.62	
	10%	10%	0.0	-0.095	0.995	12.62	
	10%	10%	0.0	-0.095	0.995	11.979	
	10%	10%	0.0	0.094	0.996	12.713	. [
	10%	10%	0.0	-0.345	0.939	759.55	
	10%	10%	0.0	-1.0	0.0	54.0	
	10%	10%	0.0	0.344	0.939	759.55	
	10%	10%	0.0	1.0	0.0	54.0	실심
	30%	30%	1.0	0.0	0.0	256.523	A UNION I CALCULATION REPAIR SHOP
	30%	30%	1.0	0.0	0.0	256.523	
	30%	30%	0.0	0.347	0.938	184.296	
	30%	30%	0.0	-0.347	0.938	184.296	⊃ 減品
Room							A UNION N CALCULA' & REPAIR SH
Floor	10%	10%	0.0	0.0	1.0	22,812	, , , , , , , , , , , , , , , , , , ,
Wall 1	50%	50%	0.0	1.0	0.0	3.2	PUERTO TING DESI
Wall 2	50%	50%	-1.0	0.0	0.0	18,25	
Wall 3	50%	50%	0.0	-1.0	0.0	3.2	PUERTO IGHTING DESIG
Wall 4	50%	50%	1.0	0.0	0.0	18.25	
Ceiling	0%	0%	0.0	0.0	-1.0	22.812	ˈ ७₹
Room							52
Floor	10%	10%	0.0	0.0	1.0	22.812	
Wall 1	50%	50%	0.0	1.0	0.0	3.2	
Wall 2	50%	50%	-1.0	0.0	0.0	18.25	
Wall 3	50%	50%	0.0	-1.0	0.0	3.2	
Wall 4	50%	50%	1.0	0.0	0.0	18.25	
Ceiling	0%	0%	0.0	0.0	-1.0	22.812	
Room							
Floor	10%	10%	0.0	0.0	1.0	144.0	
Wall 1	50%	50%	0.0	1.0	0.0	31.2	L_
Wall 2	50%	50%	-1.0	0.0	0.0	124.8	Designer
Wall 3	50%	50%	0.0	-1.0	0.0	31.2	M.GARCIA
Wall 4	50%	50%	1.0	0.0	0.0	124.8	Date
CelEXICULATION	0%	0%	0.0	0.0	-1.0	144.0	Jul 27 2002
Detailed Design	30%	30%	0.0	-1.0	0.0	27.991	Scale
on Port Reactivation Pro	jeci ^{30%}	30%	0.0	-1.0	0.0	31.2	
in La Union Province							Drawing No.
ALC FILE No.:							
	GE 5						
INITIAL	DATE						4 of 4
	Feb 14 cz						
	Taly 24: 04					Ì	

	DESIGN CALCULATION CO	OVER SHEET	
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	Utilities	Calc. File No.	
Sub-Section	4M04- Container Gate	Calc. Index No.	

Subject: Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA)

Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of ceiling, walls and floor.

Length, width and height of each room.

Work plane and luminaire plane.

Light Loss Factor (LLF) of each luminaire type

Rev	Ргер	ared	No. of	Che	cked	Rev	viewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	M. Garcia	July/15/2002	3	7.Klui	July 24'02	in FT	14Aug or	
Α	Monte				,		0	
В	1.16				-			
С								

Proj∈	ect	_	Det	aile	ed	De	sig	n c	on	Po	rt	Re	ac	tiv	atio	on	Pro	ojec	et i	1 L	aι	Ini	on			_	Ca	lc.	Fil	e N	10.						
Secti		_	UTI																				<u>-</u>			_	Ca	lc.	In	dex	N	0.	<u> </u>				
Subj	ect		LIG	HT	IN	G I	DE	SIC	GN	I C.	AL.	CL	JL	ΑT	Ю	N-(CO	NT.	Αll	ΙΕΙ	₹ 0	iΑ	TE				Pa	ge	N	ο.	01			Re	ev.		rasan
ESIC				T			-						L	_	-	-			-												i	efe ote		ce	s/		
JESIC	3 N S	A	217	宁	<u></u>	+				-		-	+	+	+	-	+	+	-	+	+	1		7	-			_	-				Ī	Π	1	-	Ī
Recon	nme	nd	ed	Lic	hti	no ind	ı L	ev	els	} (/	/C	oro	nit	g	IE:	SN	Α	Sp	eci	fic	atio	on)														
	1		Ţ	Ť		Ĭ	Ī			Ľ,		Γ	I		T																		<u> </u>			ļ_	_
										_			1	1	_ -	_	_	_	-	-	_ -									_				┼	ļ		-
					E/										UΧ	1			-+	+	+		-						├	<u> </u>	ļ	-		+		-	H
					eig				ge	of	fic	e			00	0.0	+		-				-						-	1	┞	 - -	\vdash	\vdash	-		
+					te										00		7	Ť	+			_			_					İ			İ	1-7		<u> </u>	Ţ
++-			-11	W	eig	th	br	idę	ge				. .		00	1													<u> </u>	<u> </u>							L
				Pa	ve	m	en	t						1	00			\downarrow	1	_	_				_		ļ	ļ	ļ	L	ļ	_	L	-	ļ	ļ	-
	_			_			_			-	_	-	- -	4	_	_ -				+	\dashv	_					-	-	 			<u> </u> -	-	-	-	-	H
	-1.0			_	~ U				<u> </u>				+	+	-	\dashv		-									 -	-	\vdash		-	-	+	-	-		H
Гуріса	ai Si	urta	ace	K	ene	C	an	ce	5	\vdash	L		+	+	+	-+		-	-		十							\vdash	-	-	-	+	+	†	-		-
	+	\vdash	\dashv		+	-			-	-	-	\dagger	+	\dagger		+	7	7		\dagger	_								<u> </u>	T							T
	 	 		Cr Cr	IIIC MC	וחו	 T 0	Ot-	ا ۔۔۔	. l	l	-¦ -	Ī		~;	Ť																	L				I
			1 1-		eilir				<u> </u>				\dagger		0%	6	<u> </u> _		_	- [4					_		ļ	-	-	-	-	1_	1	-	-	1-
		<u> </u>	t i		all	.8		-					1		0%		4		-	-	-		_				H	-	+-		┞	-	-	+	\vdash	-	ł
		-	l ì		001	-						•	1		0%			-	ᅥ	-	\dashv						┢	+	-	╁		╁╴	+	╁	+	-	+
++		-	-					<u> </u>	1	Ī	[T	宀	Ť		Ĭ			+	\dashv					\vdash	-		-	1		Г	╁	\dagger	1	†		Ì
11	-	†				-				1	1	T			Ì			_											ļ_			$oxed{\Box}$	Ţ.				1
									Ľ			I.						_		-			_			_	<u> </u>	ļ	-	<u> </u>	<u> </u> _	4	1	1	ļ.,	. _	+
Lumir	naire	<u>, T</u>	ype	s (fro	m	Lit	tho	ni	a l	.ig	hti	ng	<u>,</u> C	aţ	alç	<u>(g</u>	_	_	_					ļ	ļ	_	-	╄	-	. _	1	-	+	-	+	+
1+		<u> </u>		_			_	<u> </u>	<u> </u>	-	$oldsymbol{\perp}$	+	-						\dashv		-		-	H	<u> </u>		ļ	╀	╀	╁╾	┨─	╁	+	-	-	-	+
11		1_	L VRE	- A				_	<u>l</u>		1_	1 1	18	<u>i</u> Alfs	 	IRI					<u>}</u>	t	UI»	1 1=	<u>!</u> . N.	1	1	Ŀ	<u>-</u>		-	+-	+	+	-	+-	t
+						· ·		+	o t					_									29			┪			85					Ĺ	L		
1	eigt			ge	OI	пс	е			ap ap													23 24				* •		85	B		-	\perp	1	_	1_	-
	ate d									h l													41 11(85	. 15	1			+	1	+	1
100	eigt			ge						h I											- 1-1		11(85	4	┢	+		-	+	+	+
125	aver	ne	nt 1 1			Γ	1	T	11 <u>9</u>	101	γlc	151	<u> </u>	-	3 -	100	784		-		_	_	T	1	Ī	1	T	T	1	4	╁	t	$^{+}$	-		+-	1
		+-	 	~		<u> </u>		\vdash	╁	╁	+	+					-			<u>;</u>			 		İ			1			1	1	1			1	Ť
++	+	Ť			1		i	T	\perp	\perp	Ť	İ]		ļ				T	Ţ		I	Ţ				1
					\Box				L	Ţ	I	1	\perp						_				 	_	-	_		. ļ	1	+	- -	-	-	-	+	-	4
\Box	ļ	1		ļ	1	<u> </u>		ļ		+	-	-	-	-		<u> </u>	<u> </u>						<u> </u>			+	+	-		-	╀	1	+	+	+	<u> </u>	-
	-	-	-		-	-	-	1		+	1		+	_		<u> </u>	-					<u> </u>	\vdash	-	1-	-	+-	+	+	+	- -	+	+	+	+-	-	1
		+	<u> </u>		-		 -	+	+		+	+	+			<u> </u>	 - -					-	+	1			T	十	<u> </u>			_	1	Ť	İ	İ	1
++	İ	-	1		-	1	\vdash	†-	1	Ì	+	\dagger	1										1	I					I					1	1	I	1
	<u>_</u> i	1	Ī				İ		T		Ī	Ï										Ĺ	_	<u> </u>		Ļ	-		1	1	1	1	1		+-	-	
		I	ļ_	_	1	-	\perp	_		1	1	1	4			<u> </u>		_				_	_	-	-		_	- -	-	+	-}-	+	+	-	+	+	1
	_	+	-	-		-	-	-	-	+	+		-			<u> </u>	-	<u> </u>	<u> </u>			<u> </u>	-	-	-	+	+	+	+-		╂	+	- -	+	+	+	-
		+-	<u> </u>	 	\vdash	-	+-	+			+		-		-	-	-		ļ	-	-	-	t	╁╴	+	†-	-	-	+	\dashv	- -		+	+	+	\dagger	j
		+	1	-	+	+	+	+-	+	-	+	+	-			 	\vdash			-		-	1		İ	Ì	Ť	Ť	_	_ -	1				1	Ì	1
		+				╁	+	+	-	- -	\dagger		-				İ		L.								I	T	Ī				Ţ			Ţ	
<u> </u>					T	İ			1	l			ĺ				Ϊ.	(<u> </u>							1				1			-			
											T	Pre	pa	are	d k	οу		11	λJ						c	he	cke	∌d	bу	7	<u>:</u> /	Ŷ	<u>~</u>	2			
<i></i>				_			-			-	+	М.			:-		_	Mζ		eb/	10	m	200		\neg		iku				Ţ.,	77 1	•	12/	LI	20	ο.

Calculated values include direct and interreflected components,

				 *** ***********		***************************************			
				$\langle \rangle$			Symbol	LUMI	
				0	σ	> _	Label	NAIRE	
•			····	0	0	18	ş	SC	
	Calc Zone #7	Description	STATISTICS	TWH 250M	LB 4 32 TUBI	HMST400MH00L7	Catalog Number	LUMINAIRE SCHEDULE	
	152.1 lux	Avg		GLASS REFRACTOR WALL-PAK	LOW PROFILE WRAPAROUND 15 3/8" X 4' 4 LAMP T8 PRISMATIC LENS	HIGH MAST	Description		
	368.6 lux	Max		250 watt Clear metal halide lamp	2900 LM LAMP	400W CLEAR MH PS	Lamp		
	0.0 lux	Min		<u> </u>		PS			
	N/A	Max/Min		95011902.ies	L5614.IES	36803.ies	File		
		, ,	!	20500	2900	41000	Lumens		
CALCULATION Detailed Design	- Z	ArgiMin		0.85	0.85	0.85	Ę		
on Port Reactivation Proj in La Union Provinca ALC FILE No.:				300	116	455	Watts		
LICINDEV No. 1840	E 5/	I f				1			

2 of 3	Drawing No.	Scale	Date Jul 15, 2002	Designer M. Garcia

PAGE

DATE

10/15/02

INITIAL

CALC FILE No.:

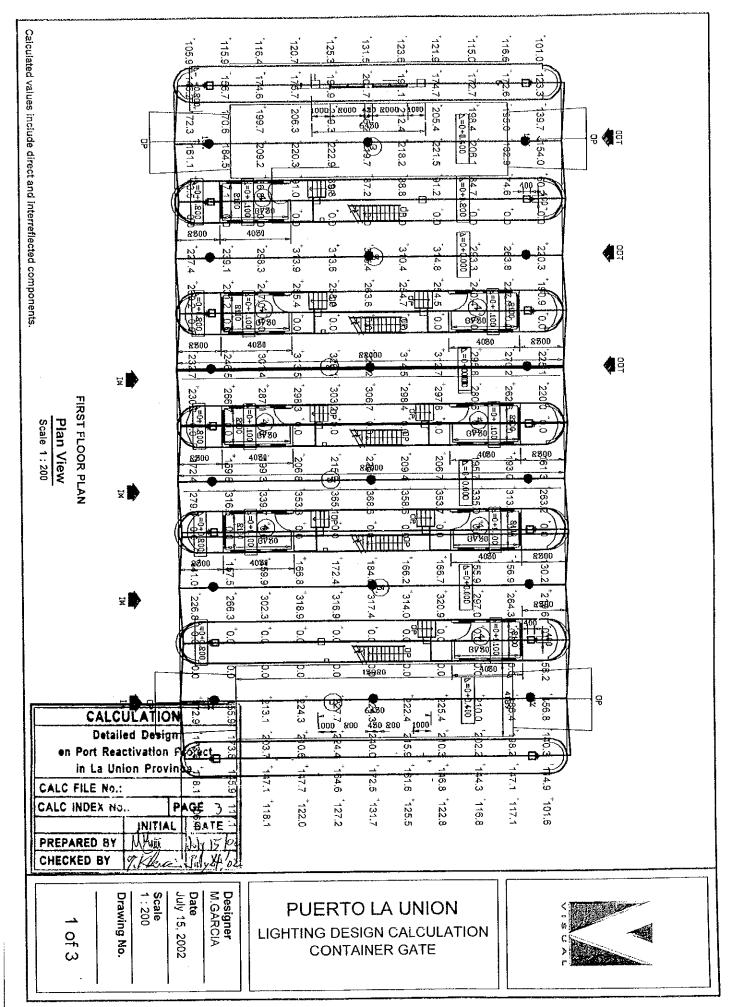
CALC INDEX No.:

PREPARED BY

CHECKED BY

PUERTO LA UNION LIGHTING DESIGN CALCULATION **CONTAINER GATE**





·	DESIGN CALCULATION CO		
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	Utilities	Calc. File No.	
Sub-Section	4M05- Cargo Gate	Calc. Index No.	

Subject:

Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA)

Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of ceiling, walls and floor.

Length, width and height of each room.

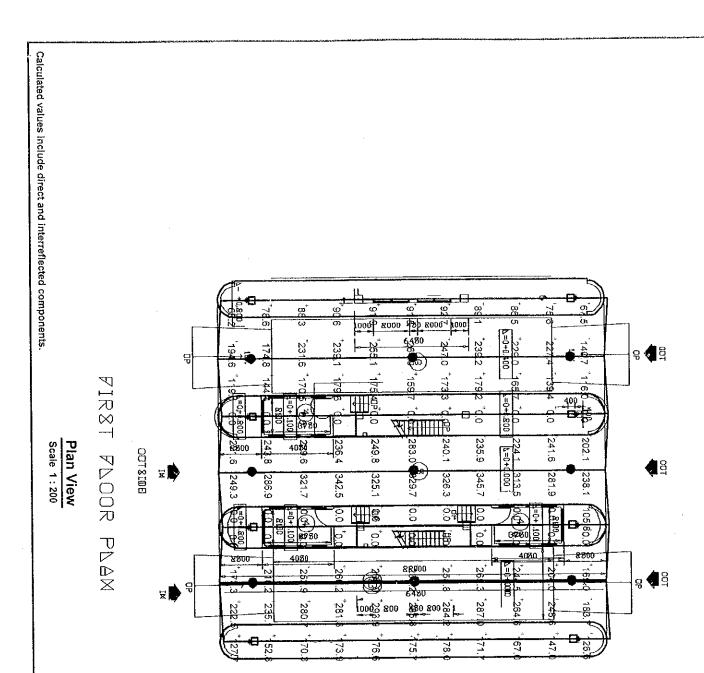
Work plane and luminaire plane.

Light Loss Factor (LLF) of each luminaire type

Rev	Prep	pared	No. of	Che	cked	Rev	iewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	Mı Çarcia	July/15/2002	3	T.Kilowin	July 24 OL	B FT	14 Aux 02	
Α	Medic				7.27	77_71. V	11.9	
В	1420							
С								

roject	Detailed Desig	n on Port	Reacti	ivation	Proj	ect ir	ı La	Uni	on			Ca	lc.	File	N	э.	\perp			
Section	UTILITY WOR	К					<u>-</u>					Ca	lc.	Ind	ex	No.				
Subject	LIGHTING DE	SIGN CA	LCULA	TION-	CAR	GO (GAT	E.				Ра	ge	No				Re	_	
											-						erer	ice	s/	
DESIGN FA	CTORS				_	<u> </u>	_			- -	<u> </u>	-			-[Vote	es			
				I I COL	<u> </u>	Щ,				-	 -		-	+		- -		Ì		
Recommend	ded Lighting Le	evels (Ad	cording	JESN	A S	peci	tica	ition	<u> </u>	-	╁		-		- -	+		H		
- - - -	 - - - - - - - - - - - - - - - - - - -	-			+		- -	+-1					1	\dashv	-		-	†-		7
+++	REA		LUX			††					1	\Box			1					
	/eigth bridge	office	500																	
	ate office	- 11 12 1	500		_	- -	_ _	.∔-				-		_	_	-				-
	Veigth bridge		100			++		-		+		+	_		-ŀ	-	- -	<u> </u>		
1 1 1 2	avernent		100		-	╁╌┼		+	-+		╬	-						+		\dashv
┤┤┤ ╪			T	1	- -			-	一	\top	\top	†			1		1	1		
Typical Surf	ace Reflectan	ces			1						-	1						T		
												_								
			TT		_	1 1		-	_		_	╁		_	_	-	-	1		
	NOITION		%	_	-		+	+	- -			+					+	+	-	\dashv
1 1 1 1	Ceiling		10%		+	+-+		+		+	+	-		-	-		+	+-		
1 1 1	Vall		50%			11	+	_			_	Ť			T	T		\top		寸
<u> </u>	loor		10%	_ -	Ĭ															
										_		\perp			4	_		-	-	
uminaire T	ypes (from Lit	honia Li	ghting	Catalo	<u>(g)</u>		_	∔-			-	 				_	_	-		
	<u> </u>							+		-	-	+	-			+	1	-		
	IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	<u> </u>	1 1 35 516	NAIRE		11	十	11	JIME	<u>_</u>	¦-Τ		LF	1	-	-+	+	$^{+}$	-	
		3.0 (+		290		+		5.8	5				T		
	,	Wrapar Wrapar							240				0.8 0.8		_		_ _	_	<u> </u>	
Gate office	and a second of the second of the second	High Ma							100		۱ ا	4.0	0.8	1 1	-	+	\perp	- -	┼-	
Weigth b		Hìgh Ma							100				0.8 0.8	~ 1 I		\dashv	-	+	+	
Paveme	nt	High in	1St ric	1 1	VV	1	十		100	7	 -	Τ.	1	۷ <u>۲</u>		-			┼┈	
	++++		7	1		1	-	1					1							
											\prod	1				1		_	↓_	Ш
			_ .	11				\perp		- -	_		<u> </u> _			1	_	-	-	
1111				1-1-		-	- [- -	-		+	+	-]		\vdash	-	+	 	
++++					\vdash		+	+	\vdash	-	+	+	-			+		+	\dagger	ļ.,,
+ + +	++++							+	i	2	Ť	Ť	†				_			
 			11	11				ĪĹ.				_ _	į					Τ		
											-	<u> </u>	1	ļ.			_		-	
					-		1	 -	\perp	-	<u>i</u> -	-	<u> </u>	-	\vdash	$\vdash \vdash$	-	- -	-	
	+ + + + + + + + + + + + + + + + + + + +				1		i			$\vdash \vdash$	+	+	+	\vdash			-		+	\vdash
	++++			+-	++			-+		\vdash	+	+	+-			H	Ť	+-	†	
	- - - 					-		+	П		_	_		Ĺ				1		
++++												Ţ	I							
									<u> </u>		_ _	\perp	-	<u> </u>	_		_		-	-
				<u> </u>					\perp		\dotplus	-		-	<u> </u>	-			+	-
		-			- .	-		+		$\vdash \vdash$	+	+	+		 -	┞┤		+	+-	┼
		1 1 1	<u> </u>		' !!	d.	<u> </u>	1	1	+	<u> </u>	<u> </u>	1	<u> </u>	<u>.</u> محن	- 6	3/	91	<u> </u>	1
			Prepai		_ \	10	W					ecke			1					
			M.	Garcia	'	Ju	ıly/1	5/20	002	Į.	T. K	(iku	chi			1 Tu	ly .	124	L 12	200

Calculated values include direct and interreflected components. Symbol $\langle \rangle$ **LUMINAIRE SCHEDULE** Label O W ⋗ 3 0 0 2 Calc Zone #4 Description Calc Zone #3 Calc Zone #2 STATISTICS TWH 250M HMST400MH00L7 HIGH MAST Catalog Number LB 4 32 TUB LOW PROFILE
WRAPAROUND 15 3/8" X
4" 4 LAMP T8 PRISMATIC
LENS GLASS REFRACTOR WALL-PAK Description 163.0 lux 115.6 lux 184.1 lux Αvg 345.7 lux 293.9 lux Lamp 264.9 lux 2900 LM LAME 250 watt Clear metal halide lamp 400W CLEAR MH PS 0.0 lux 0.0 lux 0.0 lux Min 95011902.ies L5614.IES 36803.ies File Max/Min N/A Z/A Z/A Lumens 41000 20500 2900 Avg/Min 0.85 0.85 CALCULATION Detailed Design on Port Reactivation Project Watts 300 116 455 in La Union Province CALC FILE No.: CALC INDEX No.: PAGE INITIAL DATE W tree PREPARED BY CHECKED BY Scale Date Jul 15, Designer M. Garcia Drawing No. **PUERTO LA UNION** N , 2002 으 LIGHTING DESIGN CALCULATION **CARGO GATE**



CALCULATION Detailed Design on Port Reactivation Project in La Union Province CALC FILE No.: CALC INDEX No.: PAGE INITIAL DATE PREPARED BY CHECKED BY THE TOTAL STATE PROPERTY OF TH

Designer
M.GARCIA

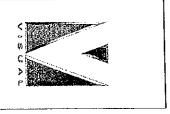
Date
July 15, 2002

Scale
1:200

Drawing No.

1 of 3

PUERTO LA UNION LIGHTING DESIGN CALCULATION CARGO GATE



	DESIGN CALCULATION CO		
Project	Detailed Design on Port Reactivation Project in La Union Province	Project Code	JC1N004/2N001
Section	Utility Work	Calc. File No.	
Sub-Section	4M06- Power Supply Station	Calc. Index No.	

Subject: Lighting Design Calculation

Calculation Objective:

To determine the number and location of lighting fixtures in each area, depending of fixture type and the required illuminance level.

References, Calculation Notes and Comments

Illuminance levels are from Illuminating Engineering Society of North America (IESNA)

Lighting Handbook 9th Edition, 2000.

Illuminance unit is LUX

Reflactances for ceiling, wall and floor (Indoor)

To design the interior luminarie distribution it was used VISUAL lighting design software of Lithonia Lighting.

The following parameters are requested:

Type of fixture and lamps to be used.

Illuminance level and units.

Reflectances of ceiling, walls and floor.

Length, width and height of each room.

Work plane and luminaire plane.

Light Loss Factor (LLF) of each luminaire type

Rev	Prep	ared	No. of	Chec	cked	Rev	iewed	Superseded
	by	Date	Pages	by	Date	by	Date	by Calc No.
0	M, Garcia	April/2/2002	4	7. Klasic	July 24/02	BH	14Ayor	
A	Mai			,	7		7	
В	10 (C.							
С								

Project	Detailed Desig	n on Po	rt Re	activ	ation	Pr	oje	ct i	L	a U	nio	n		Ca	alc.	Fi	le l	No.		L		<u> </u>	
Section	UTILITY WOR	≀K					,							Ca	alc	. In	de	x N	о.	L			
Subject	LIGHTING DE	SIGN C	ALCU	LAT	ION-	PC	W	ER	su	PΡ	LY	S.		Pa	ge	N s	o.	01			Re		
																					ces	1	
ESIGN FA	CTORS														ļ		L	No	ote	3		_r	 -
				1		Ш			\perp	Ţ	1				-	_							
Recommen	ded Lighting L	evels (A	cord	ling l	<u>ESI</u>	NA	Sp	eci	fica	atic	<u>) (n</u>	_			ļ	<u> </u>							
				 -			-		4	4.	+	1			-	-	-	 	-	-		\dashv	
	 			\vdash					+	+						-	-	-	ļ				
		L	LÜ.	늣├											-	-	H	┞	\vdash			-	
	REA		50.				i		+	Ť		1		-i	 	†	1		i —				
	ontrol room							_	7	T	<u> </u>				<u> </u>								
1 1 1 1 2 2 2	enerator roor		15									<u> </u>				<u> </u>		_	<u></u>				
1 1 1	ransformer ro	er weren	20				\perp			\perp	4	1		_	_	<u> </u> _	<u> </u>	1_	<u> </u>				
	witchgear roc		15		_ <u> </u>		_				- -			-	_	ļ	-	 	-			4	
<u> </u>	ransformer ya	ard	20	<u> </u>	+		-		+	- -					-	-	+	-	-	-			
	 				+-	$\vdash \vdash$	\dashv		+		+	-	+		-	\vdash	-	1-	-			\dashv	_
Vinigal Sud	face Reflectan	LCOS .	\vdash	++				+	-	+	+-	+-		\dashv	╁	-	+	1-	\vdash	H			
ypical Sulf	lace Reliectal							一十	+	+	-	+-		+-	1	-	T			\vdash	H		
1 1 1	++++			ΤŤ	\top	\sqcap		\dashv		\dagger	+	\top		+	<u> </u>	T						\exists	
																	I	L					
	CONDITION		9	6												_	_	<u> </u>	_	igspace			
	Ceiling		09	%			_	_	_	ļ	1	1_		_ _	-	<u> </u>	-	.	ļ	-			
	Vall	e management of the control	10	%		\vdash			<u>.</u>			-	-		-	-	-		-	-		\dashv	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	loor		10					\dashv		-			-	+-	-	+	+	1	\vdash	-			
+ + + =				$\overline{\Box}$				-+	+	+	+	+-	-			-	\vdash	1-	\vdash				
		 			\dashv			$\neg \dagger$	Ť	\top	十	+			T	T	<u> </u>	-		-	-		
uminaire T	ypes (from Lif	thonia L	ightir	ng C	atal	og)		i			Ì	ĺ			T								
			ľΤ	ŤΤ		ľ	ΠÌ			1	1				Ĺ								
				\prod						_	_ _	1_			_	Ļ	_	L	<u> </u>	Ļ			
		lll			1	ا با			1.		. <u>I</u> .	1		1	!	١.,	4	1_	<u> </u>	 		-	
ARE	A L	JMIMAIF							Ļ	~—	Æ			—	LF		-	- -	<u> </u>	┼		H	
- Control i	oom	Param									00			1	0.		\vdash	1-	 	-			
Generat	or room	Industr						32	Ŋ	29	00			1	0.			\vdash	\vdash	一			
Transfor	mer room	Wrap a	aroui	nd 3	хТ8	32	W			29	100				0.	88		1	†	<u> </u>			
Switchg	ear room	Bantar	n HF	S 1	75w	i^{-1}				17	500)			C	1.8	i	1	1			Πİ	
	mer yard	High B	ay In	idus	trial	M	14	00	Ŋ	411	000)			0.	85				_			
i				1[-			Ţ					Τ_	Į.	-	_	-	<u> </u>	ļ	_		
		<u> </u>		11	_			_	\perp	1	1	-	<u> </u>	<u>. </u>	ļ.	-	1	-	ـــــ	1			
1-1-1-1	 		++	+	-	-	\vdash	$\vdash \downarrow$			- -		-	-	+	-	+-	╂	<u> </u>	-	<u>i </u>	\vdash	<u></u>
1 -	1 1 1 -		-	++		-			i	+		1		+-		1	1	+	+-	+	-		
	-} - 		++		+			+	\dashv	+	+	÷		-	1	1	1	T	\vdash	-	H		
++++	++++			++	1	†			\dashv	+	+	i	\sqcap	\top	Ť	-	-	1	İ	1			_
	++++		$\Box \top$						İ			\perp				Ī	Ī		L				
									\prod						Ĺ		\perp		<u> </u>	L	igsqcut		
				1		<u> </u>			_	-	_ _			<u> </u>	-	+	-	-	<u> </u> _	-	<u> </u>		<u> </u>
		-		$\perp \perp$					4	\perp	-	4-		_ _	-	+-	+	1-	+	\vdash	<u> </u>		
				- -		<u> </u>			-		+	+	++	+-		+	+	- -	+-	<u> </u>	 		-
<u> </u>	1 1 1 1	<u> !</u>	<u></u>	<u> </u>	1 1	#	λ.	<u>ا</u> حجنا			. !	1		<u> </u>	 	٠	17	ـــــــــــــــــــــــــــــــــــــ	$\frac{1}{\sqrt{2}}$	/-	<u></u>	\	
			. 	oarec		1	Z)	W.						eck∈								_	_
-			M. G	arcia	а	•	~۱	A	ril/	212	002)	IT N	(iku	chi			17.	.f.,	. 1	ъU	/2	00

Calculated values include direct and interreflected components.

STATISTICS					
Description	Avg	Max	Min	Max/Min	Avg/Min
Office Room	317 lux	423 lux	55 lux	7.7:1	5.8:1
Switchgear Room	366 lux	552 lux	182 lux	3.0:1	2.0:1
Transformer Room	425 lux	696 lux	166 lux	4.2:1	2.6:1
Generator Room	315 lux	546 lux	72 lux	7.6:1	4.4:1
Transformer Yard	73 lux	139 lux	30 lux	4.6:1	2.4:1
Vertical Generator	224 lux	273 lux	194 lux	1.4:1	1.2:1
Vertical Switchgear	176 lux	275 lux	126 lux	2.2:1	1.4:1
Vertical Transformer	279 lux	372 lux	202 lux	1.8:1	1,481

CALC FILE No.:					
CALC INDEX No	.:	PAG	E Y		
	INITIA	L	DATE		
PREPARED BY	MANT	J	p 2/02		
CHECKED BY	TELL		Lely 34		

CALCULATION Detailed Design on Port Reactivation Project

4 of 4	Drawing No.	Scale	Date Jul 27 2002	Designer M. GARCIA
--------	-------------	-------	----------------------------	-----------------------

PUERTO LA UNION LIGHTING DESIGN CALCULATION

POWER SUPPLY STATION



r			т				1		
						(1)	Symbol	MI	
		m	O .	0	œ	Þ	Label	NAIRE	
			ن ان	ω	<i>د</i> ـ 4	0	ρg	SCI	
		VR4 2/26DTT 7RW T73 120 GEB10	SU2A400MH00TL	LB 3 32 A 1/3 TUBI	CG250MP00XM1	BA175MH00XC	Catalog Number	LUMINAIRE SCHEDULE	
	LAMP 26-WATT TWIN TUBE FLUORESCENT, SPECULAR ALUM INTERNAL REFLECTOR, PRISMATIC POLY CARBONATE DROP LENS 7" DEEP	VANDAL RESIS DEEP CAST W MOUNT 1' X 1'	SUBSTATION	LOW PROFILE WRAPAROUND 15 3/8" X 4" 3 LAMP T8 PRISMATIC LENS ELEC	CENTAGLO	BANTAM 2000	Description		
		26W DTT 4 PINES 4100K	400W CLEAR MH	2900 LM LAMP	250W CLEAR MH	175W CLEAR MH	Lamp		
		00880128.IES	31140.IES	L5638.IES	49242.IES	45919.IES	File		
CALCULATI Detailed Des on Port Reactivation	ign	1800	34000	2900	23000	14000	Lumens		
in La Union Pro	vince	0.90	0 0.62	0.88	0 0.75	0.65	1S LLF		
INIT REPARED BY HECKED BY		50	920	85	250		Watts		

3 of 3	Drawing No.	Scale	Date Jul 27 2002	Designer M. GARCIA

PUERTO LA UNION

LIGHTING DESIGN CALCULATION POWER SUPPLY STATION



