

APM Terminal Phase IV Expansion

Mobile, AL

Lighting System

Pole / Fixture Summary							
Pole ID	Pole Height	Mtg Height	Fixture Qty	Luminaire Type	Avg Load	Max Load	Circuit
HM-1, HM-3-HM-6, HM-8-HM-12, HM-15-HM-18, HM-20, HM-22	120'	120'	10	CLED210CGXX70A5W.ies	0.00 kW	0.00 kW	D
HM-7, HM-13-HM-14	100'	100'	10	CLED210CGXX70A5W.ies	0.00 kW	0.00 kW	D
HM-19, HM-21, HM-34, HM-36-HM-37, HM-40-HM-41, HM-43	120'	120'	8	TLC-LED-1200	8.42 kW	9.36 kW	E
HM-23	90'	90'	16	TLC-LED-600	9.07 kW	10.08 kW	A
HM-24, HM-26, HM-28	90'	90'	12	TLC-LED-600	6.80 kW	7.56 kW	A
HM-25, HM-27	90'	90'	20	TLC-LED-600	11.34 kW	12.60 kW	A
HM-29-HM-30	90'	90'	12	TLC-LED-1150	12.42 kW	13.80 kW	B
HM-31	90'	90'	6	TLC-LED-1150	6.21 kW	6.90 kW	B
HM-33, HM-35	120'	120'	7	TLC-LED-1200	7.37 kW	8.19 kW	E
HM-33A	60'	60'	3	TLC-LED-600	1.57 kW	1.74 kW	C
HM-34A	60'	60'	2	TLC-LED-600	1.04 kW	1.16 kW	C
HM-38	120'	120'	4	TLC-LED-1200	4.21 kW	4.68 kW	E
		120'	1	TLC-LED-900	0.80 kW	0.89 kW	E
LP-22, LP-24	68'	68'	3	TLC-LED-550	1.46 kW	1.62 kW	F
LP-23	68'	68'	2	TLC-LED-550	0.97 kW	1.08 kW	F
LP-25-LP-40	60'	60'	3	TLC-LED-550	1.46 kW	1.62 kW	F
60			456		200.19 kW	222.43 kW	

Circuit Summary				
Circuit	Description	Avg Load	Max Load	Fixture Qty
A	Phase 2	52.16 kW	57.96 kW	92
B	Phase 3	31.05 kW	34.5 kW	30
C	Berth Expansion	2.61 kW	2.9 kW	5
D	Existing LED	95.57 kW	95.57 kW	190
E	Phase 4	87.15 kW	96.83 kW	83
F	Perimeter	27.22 kW	30.24 kW	56

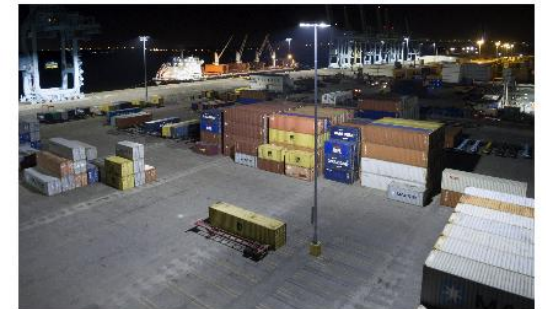
Fixture Type Summary							
Type	Source	Wattage	Lumens	L90	L80	L70	Quantity
CLED210CGXX70A5W.ies IES IES	IES	503W	7,175	--	--	--	190

Type	Source	Avg Wattage	Max Wattage	Constant Lumens	Application	Quantity
TLC-LED-900	LED 5700K - 75 CRI	801W	890W	76,160	100K	1
TLC-LED-1200	LED 5700K - 75 CRI	1053W	1170W	115,600	100K	82
TLC-LED-600	LED 5700K - 75 CRI	567W	630W	54,060	100K	92
TLC-LED-600	LED 5700K - 75 CRI	522W	580W	55,760	100K	5
TLC-LED-1150	LED 5700K - 75 CRI	1035W	1150W	102,850	100K	30
TLC-LED-550	LED 5700K - 75 CRI	486W	540W	56,950	100K	56

Single Luminaire Amperage Draw Chart								
Driver (.90 min power factor)	Max Line Amperage Per Luminaire							
	208 (60)	220 (60)	240 (60)	277 (60)	347 (60)	380 (60)	480 (60)	
TLC-LED-900	5.3	5.0	4.6	4.0	3.2	2.9	2.3	
Other	-	-	-	-	-	-	-	
TLC-LED-1200	7.0	6.6	6.1	5.2	4.2	4.0	3.0	
TLC-LED-600	3.9	3.7	3.4	3.0	2.4	2.2	1.7	
TLC-LED-1150	6.8	6.5	5.9	5.1	4.1	3.7	3.0	

ENGINEERED DESIGN By: Monty Zortman File # 200300-S1 - 20-Jun-23

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PROJECT SUMMARY

GRID SUMMARY	
Name:	Phase 4 Blanket Grid
Size:	0' x 0'
Spacing:	50.0' x 50.0'
Height:	0.0' above grade

ILLUMINATION SUMMARY	
Maintained Horizontal Footcandle:	Entire Grid
Scan Average:	4.46
Maximum:	16.86
Minimum:	0.33
Min / Avg:	0.07
Min / Max:	0.02
UG (adjacent pts):	5.97
CU:	1.00
No. of Points:	2959

LUMINAIRE INFORMATION	
Applied Circuits:	A, B, C, D, E, F
Design Usage Hours:	100,000
No. of Luminaires:	456
Avg Load:	295.76 kW
Max Load:	222.43 kW

Guaranteed Performance: The ILLUMINATION described above is guaranteed per your Musco Warranty document and includes a 0.95 dirt depreciation factor.

Field Measurements: Individual field measurements may vary from computer-calculated predictions and should be taken in accordance with IESNA RP-6-15.

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN									
QTY	LOCATION	POLE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	FOOT CANDLE	CU	WATTAGE	OTHER
14	HM-1, HM-10, HM-11, HM-12, HM-15, HM-16, HM-17, HM-18, HM-20, HM-22, HM-3, HM-4, HM-8	120'	8'	128'	TLC-LED-1200	4/4*	8	0	
3	HM-9, HM-19, HM-21, HM-43	120'	8'	128'	TLC-LED-1200	4/4*	8	0	
2	HM-13, HM-24	100'	8'	108'	CLED210CGXX70ASWies	HS 85*	10	0	
1	HM-30	90'	7.94'	97.94'	TLC-LED-1150	7/5*	12	0	
1	HM-31	90'	7.94'	97.94'	TLC-LED-1150	6	6	0	
1	HM-29	90'	7.94'	97.94'	TLC-LED-1150	6/6*	12	0	
1	HM-25	90'	8'	98'	TLC-LED-600	10/10*	20	0	
5	HM-34, HM-35, HM-36, HM-37, HM-40, HM-41	120'	6'	126'	TLC-LED-1200	4/4*	8	0	
1	HM-38	120'	6'	126'	TLC-LED-900	1*	1	0	
2	HM-33, HM-35	120'	6'	126'	TLC-LED-1200	3/3*	7	0	
2	HM-5, HM-6	120'	8'	128'	CLED210CGXX70ASWies	HS 85*	10	0	
1	HM-23	90'	8'	98'	TLC-LED-600	6/10*	16	0	
3	HM-24, HM-26, HM-28	90'	8'	98'	TLC-LED-600	12	12	0	
1	HM-34A	60'	8'	68'	TLC-LED-600	2	2	0	
1	HM-27	90'	8'	98'	TLC-LED-600	11/9*	20	0	
1	HM-35A	60'	8'	68'	TLC-LED-600	3	3	0	
16	LP-25, LP-26, LP-27, LP-28, LP-29, LP-30, LP-31, LP-32, LP-33, LP-34, LP-35, LP-36, LP-37, LP-38, LP-39, LP-40	68'	0'	68'	TLC-LED-550	3	3	0	
1	LP-23	68'	0'	68'	TLC-LED-550	1	1	0	
60	TOTALS					456	456	0	

* This structure utilizes a back-to-back mounting configuration.



SCALE IN FEET 1:200
0 200 400

Pole location(s) + dimensions are relative to 0,0 reference point(s)



EQUIPMENT LAYOUT
INCLUDES:
 APM Terminal Perimeter
 Berth Expansion (190843)
 Existing Lighting
 Phase 2 (179262)
 Phase 3 (191278)
 Phase 4 (220030)

Electrical System Requirements: Refer to Amperage Draw Chart and/or the "Musco Control System Summary" for electrical sizing.

Installation Requirements: Results assume ± 3% nominal voltage at line side of the driver and structures located within 3 feet (1m) of design locations.

EQUIPMENT LIST FOR AREAS SHOWN

QTY	LOCATION	SIZE	GRADE ELEVATION	MOUNTING HEIGHT	LUMINAIRE TYPE	SPIT POLE
14	HM-1	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-10	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-11	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-12	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-15	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-16	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-17	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-18	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-20	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-22	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-4	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-8	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-9	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-19	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-21	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-23	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-24	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-33	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-35	120' 8"	118.1	120'	TLC-LED-1200	47/4"
	HM-5	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-6	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-25	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-27	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-31	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-34	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-36	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-37	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-40	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-41	90' 8"	118.1	98'	TLC-LED-600	6/10"
	HM-38	60' 8"	118.1	68'	TLC-LED-550	3
	HM-28	60' 8"	118.1	68'	TLC-LED-550	3
	LP-25	60' 8"	118.1	68'	TLC-LED-550	3
	LP-26	60' 8"	118.1	68'	TLC-LED-550	3
	LP-27	60' 8"	118.1	68'	TLC-LED-550	3
	LP-28	60' 8"	118.1	68'	TLC-LED-550	3
	LP-29	60' 8"	118.1	68'	TLC-LED-550	3
	LP-30	60' 8"	118.1	68'	TLC-LED-550	3
	LP-31	60' 8"	118.1	68'	TLC-LED-550	3
	LP-32	60' 8"	118.1	68'	TLC-LED-550	3
	LP-33	60' 8"	118.1	68'	TLC-LED-550	3
	LP-34	60' 8"	118.1	68'	TLC-LED-550	3
	LP-35	60' 8"	118.1	68'	TLC-LED-550	3
	LP-36	60' 8"	118.1	68'	TLC-LED-550	3
	LP-37	60' 8"	118.1	68'	TLC-LED-550	3
	LP-38	60' 8"	118.1	68'	TLC-LED-550	3
	LP-39	60' 8"	118.1	68'	TLC-LED-550	3
	LP-40	60' 8"	118.1	68'	TLC-LED-550	3
	LP-22	68'	118.1	68'	TLC-LED-550	3
	LP-24	68'	118.1	68'	TLC-LED-550	3
	LP-23	68'	118.1	68'	TLC-LED-550	2
	LP-21	68'	118.1	68'	TLC-LED-550	2
	LP-20	68'	118.1	68'	TLC-LED-550	2
	LP-19	68'	118.1	68'	TLC-LED-550	2
	LP-18	68'	118.1	68'	TLC-LED-550	2
	LP-17	68'	118.1	68'	TLC-LED-550	2
	LP-16	68'	118.1	68'	TLC-LED-550	2
	LP-15	68'	118.1	68'	TLC-LED-550	2
	LP-14	68'	118.1	68'	TLC-LED-550	2
	LP-13	68'	118.1	68'	TLC-LED-550	2
	LP-12	68'	118.1	68'	TLC-LED-550	2
	LP-11	68'	118.1	68'	TLC-LED-550	2
	LP-10	68'	118.1	68'	TLC-LED-550	2
	LP-9	68'	118.1	68'	TLC-LED-550	2
	LP-8	68'	118.1	68'	TLC-LED-550	2
	LP-7	68'	118.1	68'	TLC-LED-550	2
	LP-6	68'	118.1	68'	TLC-LED-550	2
	LP-5	68'	118.1	68'	TLC-LED-550	2
	LP-4	68'	118.1	68'	TLC-LED-550	2
	LP-3	68'	118.1	68'	TLC-LED-550	2
	LP-2	68'	118.1	68'	TLC-LED-550	2
	LP-1	68'	118.1	68'	TLC-LED-550	2
	LP-0	68'	118.1	68'	TLC-LED-550	2
	LP-39A	60' 8"	118.1	68'	TLC-LED-550	3
	LP-40A	60' 8"	118.1	68'	TLC-LED-550	3
	LP-41	60' 8"	118.1	68'	TLC-LED-550	3
	LP-42	60' 8"	118.1	68'	TLC-LED-550	3
	LP-43	60' 8"	118.1	68'	TLC-LED-550	3
	LP-44	60' 8"	118.1	68'	TLC-LED-550	3
	LP-45	60' 8"	118.1	68'	TLC-LED-550	3
	LP-46	60' 8"	118.1	68'	TLC-LED-550	3
	LP-47	60' 8"	118.1	68'	TLC-LED-550	3
	LP-48	60' 8"	118.1	68'	TLC-LED-550	3
	LP-49	60' 8"	118.1	68'	TLC-LED-550	3
	LP-50	60' 8"	118.1	68'	TLC-LED-550	3
	LP-51	60' 8"	118.1	68'	TLC-LED-550	3
	LP-52	60' 8"	118.1	68'	TLC-LED-550	3
	LP-53	60' 8"	118.1	68'	TLC-LED-550	3
	LP-54	60' 8"	118.1	68'	TLC-LED-550	3
	LP-55	60' 8"	118.1	68'	TLC-LED-550	3
	LP-56	60' 8"	118.1	68'	TLC-LED-550	3
	LP-57	60' 8"	118.1	68'	TLC-LED-550	3
	LP-58	60' 8"	118.1	68'	TLC-LED-550	3
	LP-59	60' 8"	118.1	68'	TLC-LED-550	3
	LP-60	60' 8"	118.1	68'	TLC-LED-550	3
	LP-61	60' 8"	118.1	68'	TLC-LED-550	3
	LP-62	60' 8"	118.1	68'	TLC-LED-550	3
	LP-63	60' 8"	118.1	68'	TLC-LED-550	3
	LP-64	60' 8"	118.1	68'	TLC-LED-550	3
	LP-65	60' 8"	118.1	68'	TLC-LED-550	3
	LP-66	60' 8"	118.1	68'	TLC-LED-550	3
	LP-67	60' 8"	118.1	68'	TLC-LED-550	3
	LP-68	60' 8"	118.1	68'	TLC-LED-550	3
	LP-69	60' 8"	118.1	68'	TLC-LED-550	3
	LP-70	60' 8"	118.1	68'	TLC-LED-550	3
	LP-71	60' 8"	118.1	68'	TLC-LED-550	3
	LP-72	60' 8"	118.1	68'	TLC-LED-550	3
	LP-73	60' 8"	118.1	68'	TLC-LED-550	3
	LP-74	60' 8"	118.1	68'	TLC-LED-550	3
	LP-75	60' 8"	118.1	68'	TLC-LED-550	3
	LP-76	60' 8"	118.1	68'	TLC-LED-550	3
	LP-77	60' 8"	118.1	68'	TLC-LED-550	3
	LP-78	60' 8"	118.1	68'	TLC-LED-550	3
	LP-79	60' 8"	118.1	68'	TLC-LED-550	3
	LP-80	60' 8"	118.1	68'	TLC-LED-550	3
	LP-81	60' 8"	118.1	68'	TLC-LED-550	3
	LP-82	60' 8"	118.1	68'	TLC-LED-550	3
	LP-83	60' 8"	118.1	68'	TLC-LED-550	3
	LP-84	60' 8"	118.1	68'	TLC-LED-550	3
	LP-85	60' 8"	118.1	68'	TLC-LED-550	3
	LP-86	60' 8"	118.1	68'	TLC-LED-550	3
	LP-87	60' 8"	118.1	68'	TLC-LED-550	3
	LP-88	60' 8"	118.1	68'	TLC-LED-550	3
	LP-89	60' 8"	118.1	68'	TLC-LED-550	3
	LP-90	60' 8"	118.1	68'	TLC-LED-550	3
	LP-91	60' 8"	118.1	68'	TLC-LED-550	3
	LP-92	60' 8"	118.1	68'	TLC-LED-550	3
	LP-93	60' 8"	118.1	68'	TLC-LED-550	3
	LP-94	60' 8"	118.1	68'	TLC-LED-550	3
	LP-95	60' 8"	118.1	68'	TLC-LED-550	3
	LP-96	60' 8"	118.1	68'	TLC-LED-550	3
	LP-97	60' 8"	118.1	68'	TLC-LED-550	3
	LP-98	60' 8"	118.1	68'	TLC-LED-550	3
	LP-99	60' 8"	118.1	68'	TLC-LED-550	3
	LP-100	60' 8"	118.1	68'	TLC-LED-550	3
	LP-101	60' 8"	118.1	68'	TLC-LED-550	3
	LP-102	60' 8"	118.1	68'	TLC-LED-550	3
	LP-103	60' 8"	118.1	68'	TLC-LED-550	3
	LP-104	60' 8"	118.1	68'	TLC-LED-550	3
	LP-105	60' 8"	118.1	68'	TLC-LED-550	3
	LP-106	60' 8"	118.1	68'	TLC-LED-550	3
	LP-107	60' 8"	118.1	68'	TLC-LED-550	3
	LP-108	60' 8"	118.1	68'	TLC-LED-550	3
	LP-109	60' 8"	118.1	68'	TLC-LED-550	3
	LP-110	60' 8"	118.1	68'	TLC-LED-550	3
	LP-111	60' 8"	118.1	68'	TLC-LED-550	3
	LP-112	60' 8"	118.1	68'	TLC-LED-550	3
	LP-113	60' 8"	118.1	68'	TLC-LED-550	3
	LP-114	60' 8"	118.1	68'	TLC-LED-550	3
	LP-115	60' 8"	118.1	68'	TLC-LED-550	3
	LP-116	60' 8"	118.1	68'	TLC-LED-550	3
	LP-117	60' 8"	118.1	68'	TLC-LED-550	3
	LP-118	60' 8"	118.1	68'	TLC-LED-550	3
	LP-119	60' 8"	118.1	68'	TLC-LED-550	3
	LP-120	60' 8"	118.1	68'	TLC-LED-550	3
	LP-121	60' 8"	118.1	68'	TLC-LED-550	3
	LP-122	60' 8"	118.1	68'	TLC-LED-550	3
	LP-123	60' 8"	118.1	68'	TLC-LED-550	3
	LP-124	60' 8"	118.1	68'	TLC-LED-550	3
	LP-125	60' 8"	118.1	68'	TLC-LED-550	3
	LP-126	60' 8"	118.1	68'	TLC-LED-550	3
	LP-127	60' 8"	118.1	68'	TLC-LED-550	3
	LP-128	60' 8"	118.1	68'	TLC-LED-550	3
	LP-129	60' 8"	118.1	68'	TLC-LED-550	3
	LP-130	60' 8"	118.1	68'	TLC-LED-550	3
	LP-131	60' 8"	118.1	68'	TLC-LED-550	3
	LP-132	60' 8"</				