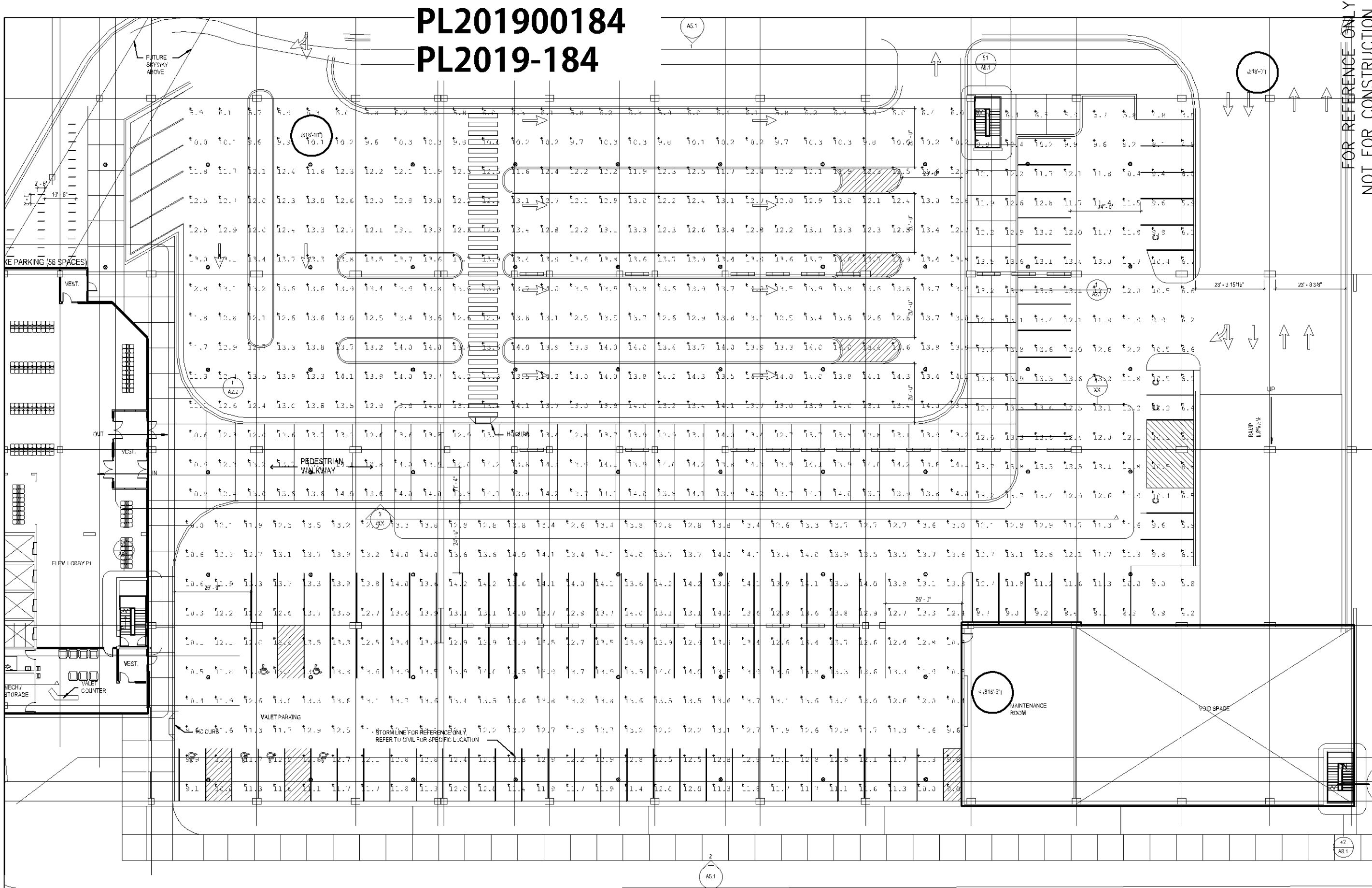
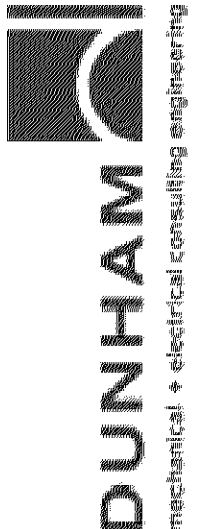


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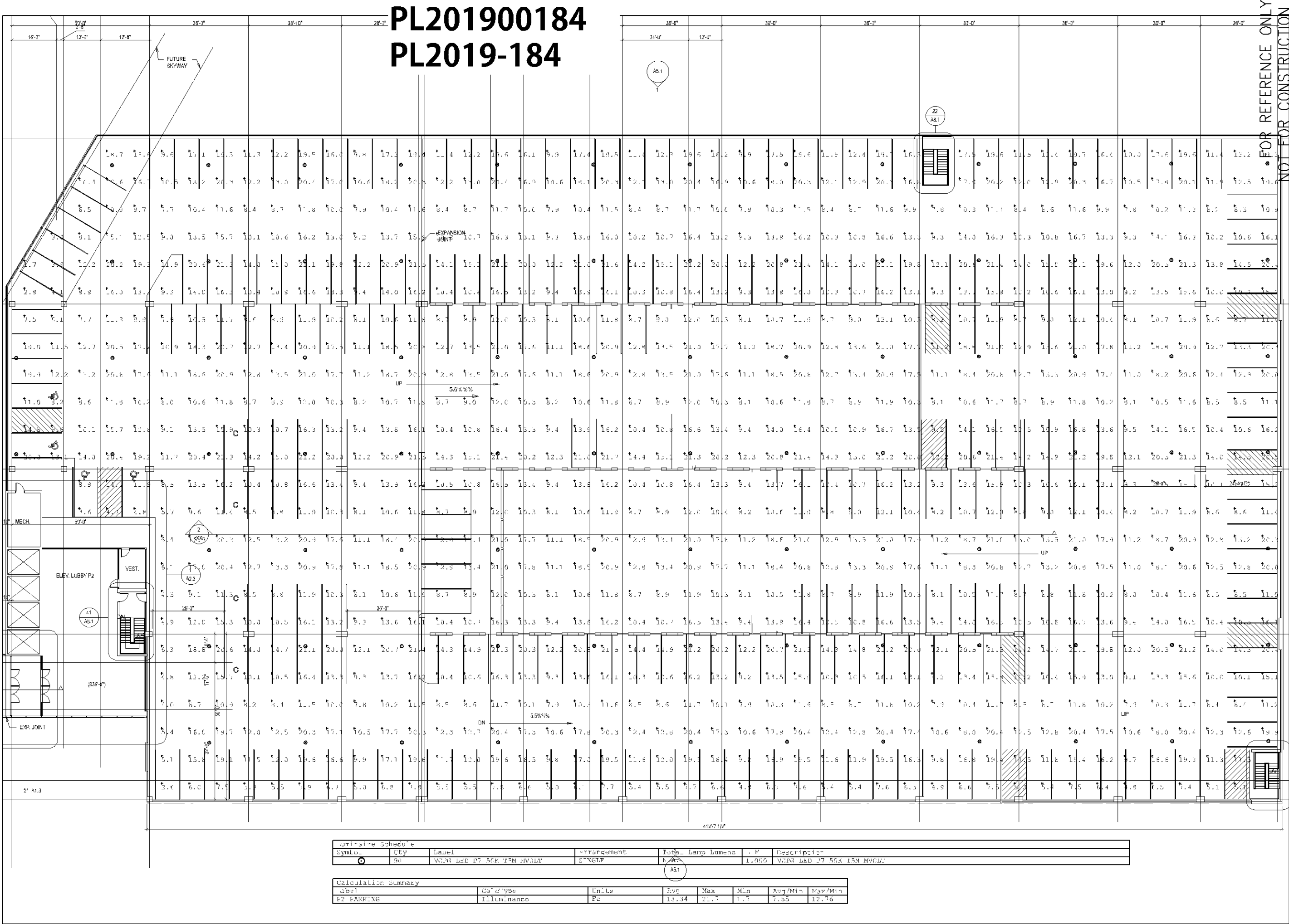


Project: SOUTH LOOP WATERPARK PARKING GARAGE
Sheet Title: P1 LIGHTING
Project Number: 0420052-000
Checked By: XXX
Drawn By: JYK

Sheet Number: EL1.1
Date: 10/02/2019

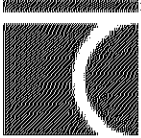
Luminaire Schedule						
Symbol	Qty	Label	Arrangement	Total Lamps	Watts	Description
○	68	VC-6 LED 15' 50K T8M (VOLT)	SINGLE	N.A.	1,000	VC-6 LED 15' 50K T8M (VOLT)
Calculation Summary						
Label	Calc Type	Units	Avg	Max	Min	Avg/Min Max/Min
P1 PARKING	Illuminance	Ft	2.20	14.2	3.0	2.20 2.20
P1 TRANSIT	Illuminance	Ft	2.52	14.3	5.7	2.20 2.51

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Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	F.P.	Description	
	90	VOLVO LED P7 50K T5M MVOLT	2"X2"	1,000	1.000	VOLVO LED P7 50K T5M MVOLT	

Calculation Summary							
Label	Calc Type	Units	Avg	Max	Min	Avg/Min	Max/Min
P2 PARKING	Illuminance	Ft	13.34	21.7	1.7	7.85	12.76



DUNHAM
mechanical & electrical consulting engineering

Project: SOUTH LOOP WATERPARK PARKING GARAGE

Sheet Title: P2 LIGHTING

Project Number: 0420052-000

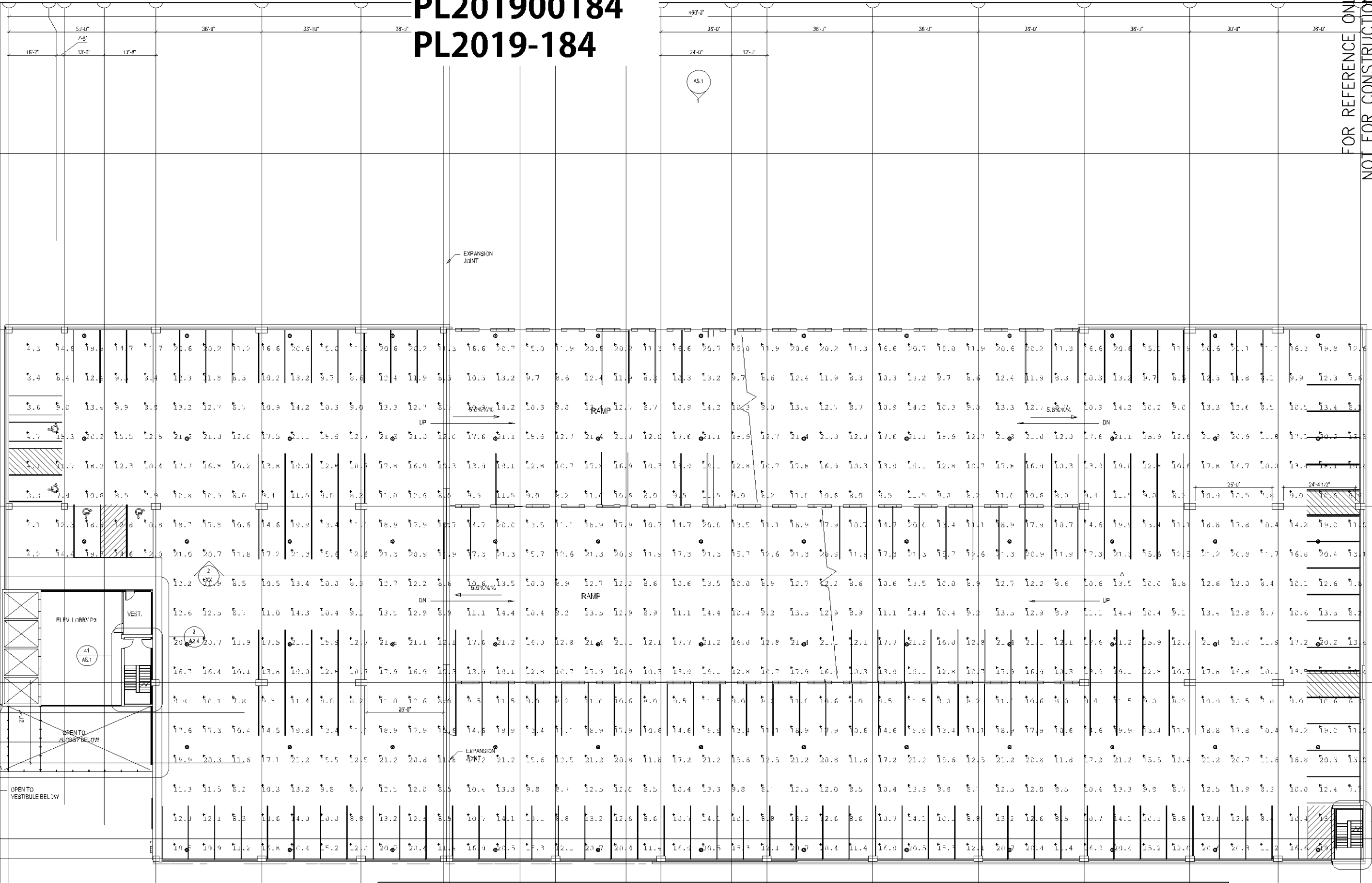
Sheet Number: EL1.2

Date: 10/02/2019

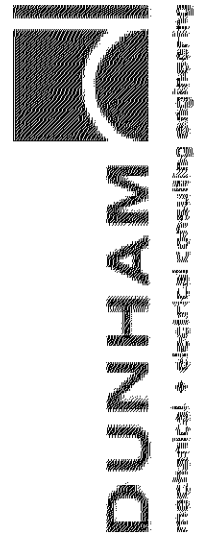
Checked By: XXX

Drawn By: JYK

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Project: SOUTH LOOP WATERPARK PARKING GARAGE

Sheet Title: P3-4 LIGHTING

Project Number: 0420052-000
Drawn By: JYK
Checked By: XXX

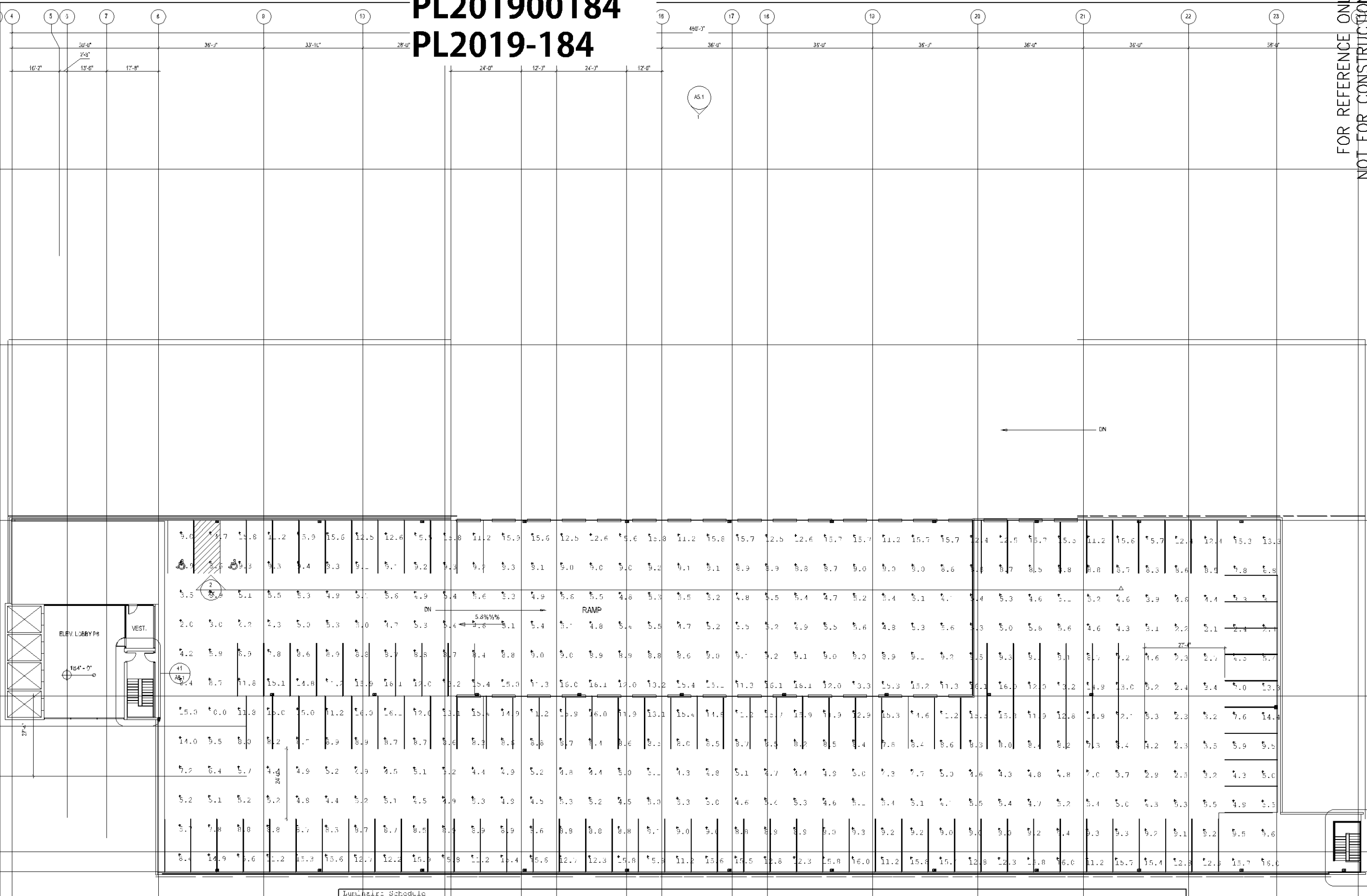
Sheet Number: EL1.3

Date: 10/02/2019

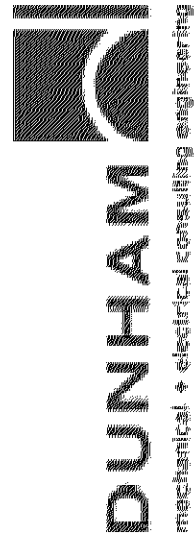
Footcandle Schedule					
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	Notes
○	75	VC2-G LED P3 50K T5M INCH	5"X6"	N.A.	1.000 VC2-G LED P3 50K T5M INCH

Calculation Summary					
Label	Calculation	Units	Avg	Max	Min
P3-4 PARKING	Footcandle	Ft	15.58	21.7	5.5

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Project:
SOUTH LOOP WATERPARK PARKING GARAGE

Sheet Title:
P8 LIGHTING

Project Number:
0420052-000

Drawn By:
JYK

Checked By:
XXX

Sheet Number:

EL1.8

Date:
10/02/2019

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	
□	34	DSX LED P7 53K T5X MVCLT	SINGLE	N.A.	1.000	DSX LED P7 53K T5X MVCLT	
Calculation Summary							
Label	Unit Type		Units	Avg	Max	Min	Avg/Min
P8 PARKING	Illuminance		Ft	8.8	16.1	2.0	4.4

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UP

DN

RAMP

ELEV. LOBBY PS

VEST.

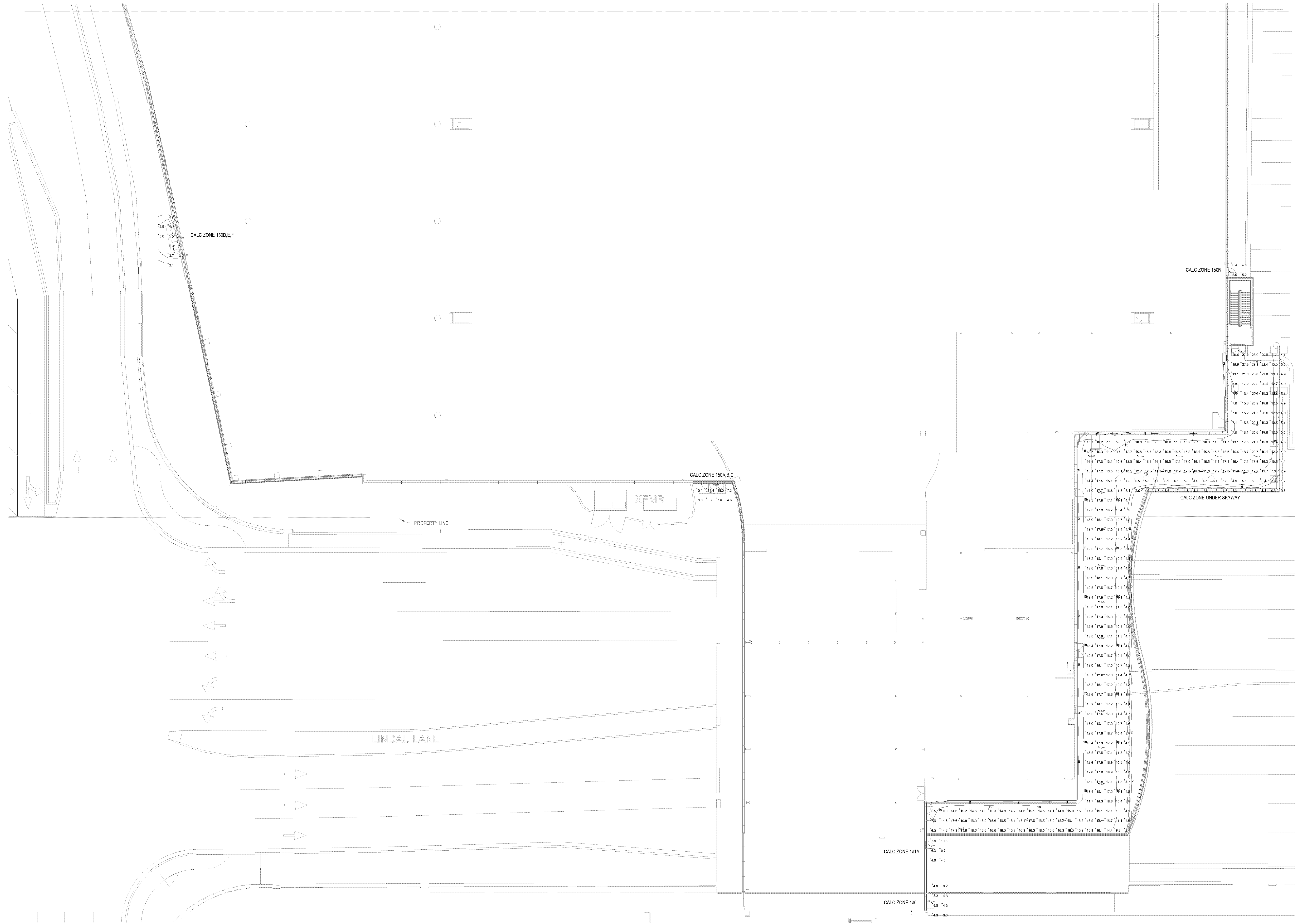
Luminaire Schedule	Symbol	Qty	Label	Arrangement	Total Lamp Lumens	UF	Description
	(Footcandle symbol)	±0	VCPG LED F/ 50K T=5M MVOLT	S 1x1x1	N/A	1.000	VCPG LED F/ 50K T=5M MVOLT

Calculation Summary							
Label	Value	Units	Avg	Max	Min	Avg/ft²	Max/ft²
Area	10,000	sq ft					
Volume	100,000	cu ft					
Surface Area	20,000	sq ft					
Room Volume	100,000	cu ft					
Room Surface Area	20,000	sq ft					
Room Volume	100,000	cu ft					
Room Surface Area	20,000	sq ft					

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Date:
10/02/2019

PL201900184
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1 PHOTOMETRICS SITE PLAN - INITIAL AT-GRADE - AREA A
1/16" = 1'-0"

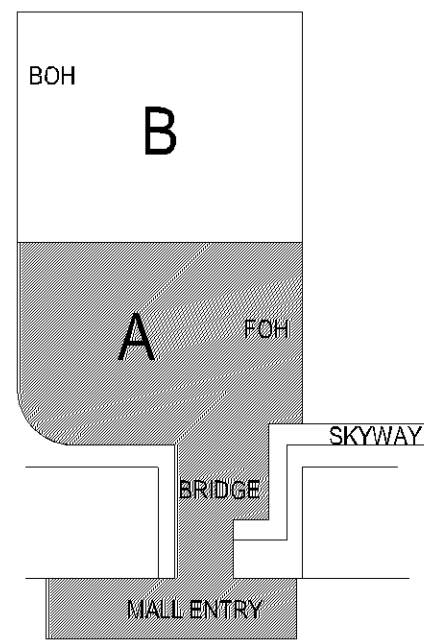
Statistics - Area A						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone 100	+	4.4 fc	5.5 fc	3.6 fc	1.5:1	1.2:1
Calc Zone 101A	+	6.7 fc	10.3 fc	4.6 fc	2.2:1	1.5:1
Calc Zone 150A,B,C	+	7.5 fc	13.3 fc	3.6 fc	3.7:1	2.1:1
Calc Zone 150D,E,F	+	3.9 fc	5.8 fc	2.1 fc	2.8:1	1.9:1
Calc Zone 150N	+	5.4 fc	6.5 fc	4.6 fc	1.4:1	1.2:1
Calc Zone Under Skyway	+	12.8 fc	28.1 fc	0.3 fc	93.7:1	42.7:1

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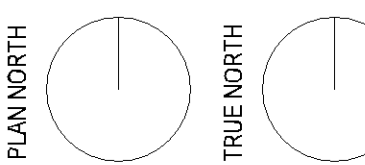
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SOUTH LOOP WATERPARK
BLOOMINGTON, MN 55425

KEY PLAN



NORTH ARROW



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Daniel Paul Biggar
DANIEL PAUL BIGGAR
REG NO 26752 DATE Issue Date

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REVISION SCHEDULE

NO	REVISION	DATE
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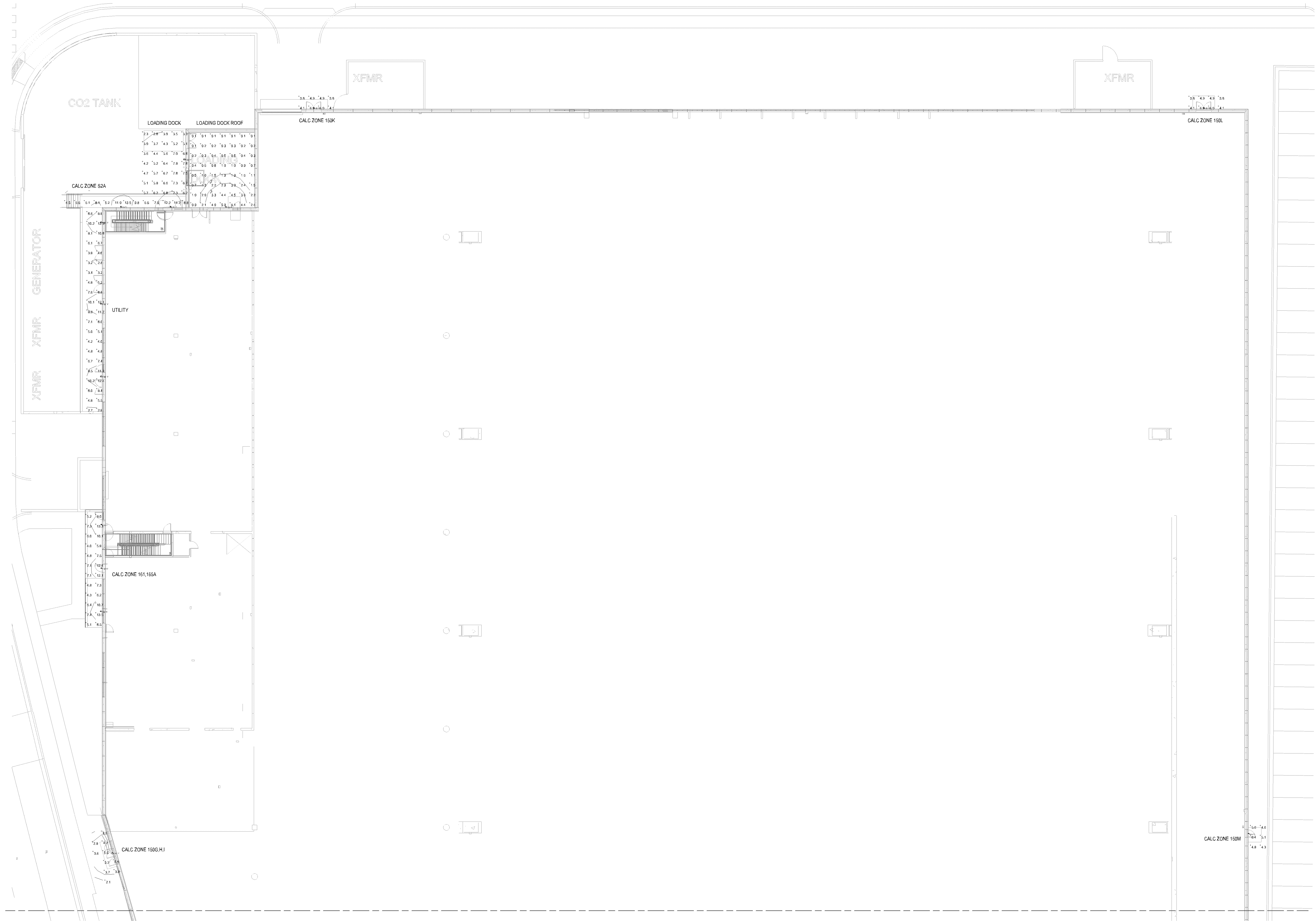
SHEET NAME

PHOTOMETRIC SITE PLAN -
INITIAL AT-GRADE - AREA A

PROJECT NUMBER: 81799
DATE: 10/2/19
DRAWN: GS
CHECKED: DPB
SCALE: As indicated
SHEET NUMBER:

ES1.1A

PL201900184
PL2019-184



1 PHOTOMETRICS SITE PLAN - INITIAL AT-GRADE - AREA B
1/16" = 1'-0"

Statistics - Area B						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone 150G, H, I	+	3.9 fc	5.8 fc	2.1 fc	2.8:1	1.9:1
Calc Zone 150K	+	4.7 fc	6.0 fc	3.8 fc	1.6:1	1.2:1
Calc Zone 150L	+	4.7 fc	6.0 fc	3.8 fc	1.6:1	1.2:1
Calc Zone 150M	+	5.2 fc	6.4 fc	4.3 fc	1.5:1	1.2:1
Calc Zone 161, 165A	+	7.8 fc	13.5 fc	4.0 fc	3.4:1	2.0:1
Calc Zone S2A	+	8.8 fc	14.2 fc	4.5 fc	3.2:1	2.0:1
Loading Dock	+	5.5 fc	7.9 fc	2.3 fc	3.4:1	2.4:1
Loading Dock Roof	+	1.4 fc	6.1 fc	0.1 fc	61.0:1	14.0:1
Utility	+	7.1 fc	12.4 fc	2.7 fc	4.6:1	2.6:1

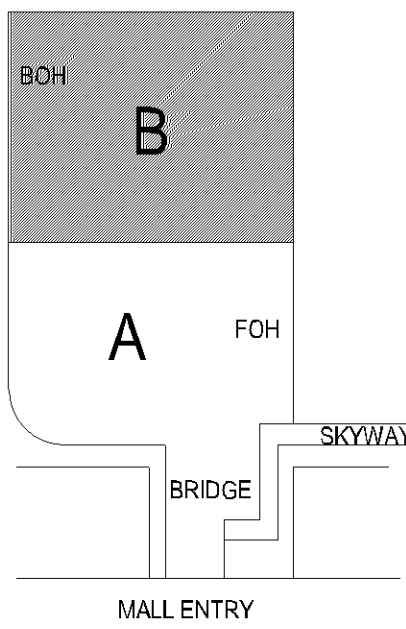
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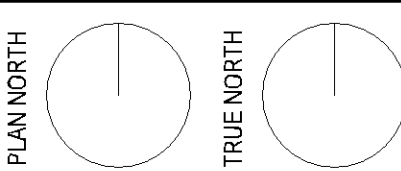
SOUTH LOOP WATERPARK

BLOOMINGTON, MN 55425

KEY PLAN



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DANIEL PAUL BIGGAR
REG. NO. 26752 DATE: Issue Date

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NO.	REVISION	DATE
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SHEET NAME

PHOTOMETRIC SITE PLAN -
INITIAL AT-GRADE - AREA B

PROJECT NUMBER: 81799

DATE: 10/2/19

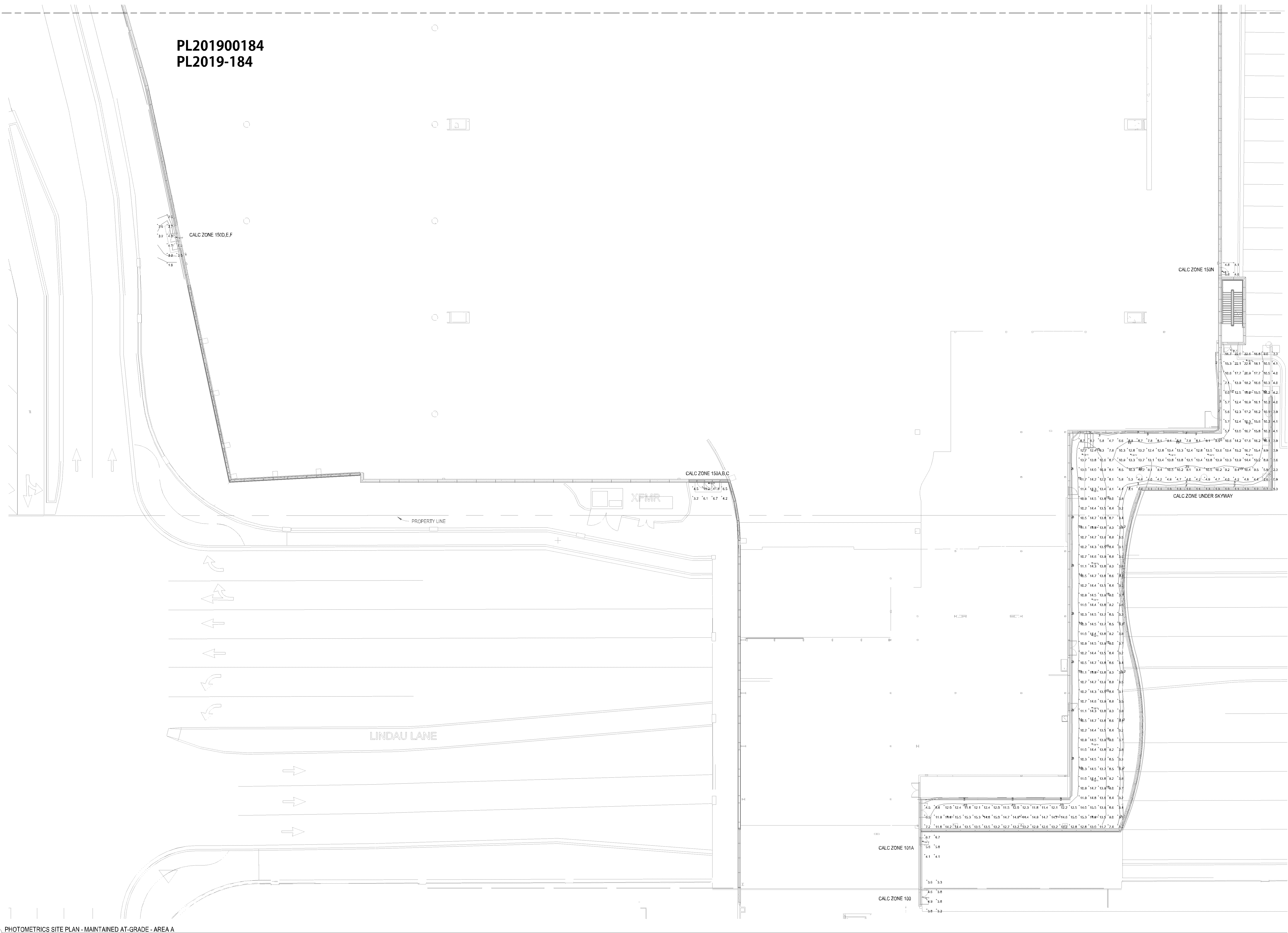
DRAWN: GS

CHECKED: DPB

SCALE: As indicated

SHEET NUMBER

ES1.1B



1 PHOTOMETRICS SITE PLAN - MAINTAINED AT-GRADE - AREA A
1/16" = 1'-0"

Statistics - Area A						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone 100	+	3.9 fc	4.9 fc	3.2 fc	1.5:1	1.2:1
Calc Zone 101A	+	5.8 fc	8.7 fc	4.1 fc	2.1:1	1.4:1
Calc Zone 150A,B,C	+	6.6 fc	11.8 fc	3.2 fc	3.7:1	2.1:1
Calc Zone 150D,E,F	+	3.5 fc	5.2 fc	1.9 fc	2.7:1	1.8:1
Calc Zone 150N	+	4.8 fc	5.8 fc	4.1 fc	1.4:1	1.2:1
Calc Zone Under Skyway	+	10.4 fc	22.8 fc	0.3 fc	76.0:1	34.7:1

HUNT

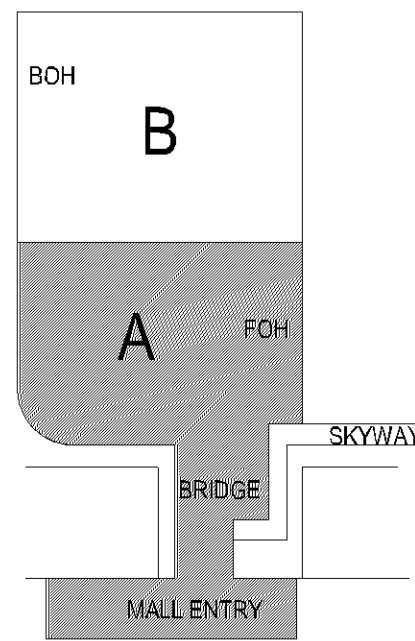
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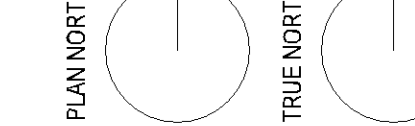
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BLOOMINGTON, MN 55425

KEY PLAN



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REVISION SCHEDULE

NO.	REVISION	DATE
-----	----------	------

SHEET NAME

PHOTOMETRIC SITE PLAN -
MAINTAINED AT-GRADE -
AREA A

PROJECT NUMBER: 81799

DATE: 10/2/19

DRAWN: GS

CHECKED: DPB

SCALE: As indicated

SHEET NUMBER:

ES1.2A

PL201900184
PL2019-184



1 PHOTOMETRICS SITE PLAN - MAINTAINED AT-GRADE - AREA B
1/16" = 1'-0"

Statistics - Area B						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Calc Zone 150G,H,I	+	3.5 fc	5.1 fc	1.9 fc	2.7:1	1.8:1
Calc Zone 150K	+	4.2 fc	5.4 fc	3.3 fc	1.6:1	1.3:1
Calc Zone 150L	+	4.2 fc	5.4 fc	3.3 fc	1.6:1	1.3:1
Calc Zone 150M	+	4.6 fc	5.7 fc	3.8 fc	1.5:1	1.2:1
Calc Zone 161,165A	+	6.9 fc	12.0 fc	3.6 fc	3.3:1	1.9:1
Calc Zone S2A	+	7.8 fc	12.6 fc	4.0 fc	3.2:1	2.0:1
Loading Dock	+	4.9 fc	7.0 fc	2.0 fc	3.5:1	2.5:1
Loading Dock Roof	+	1.3 fc	5.4 fc	0.1 fc	54.0:1	13.0:1
Utility	+	6.3 fc	11.0 fc	2.4 fc	4.6:1	2.6:1

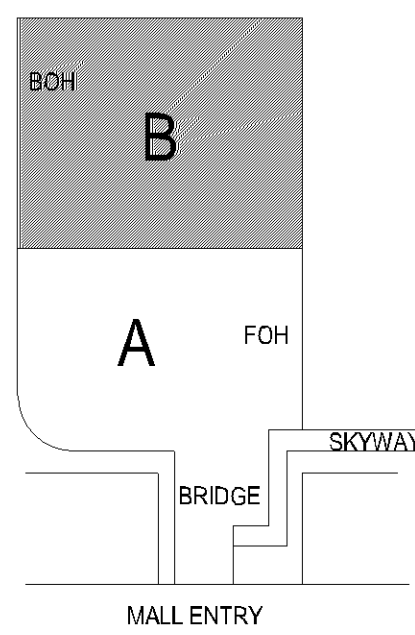
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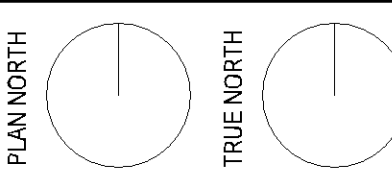
SOUTH LOOP WATERPARK

BLOOMINGTON, MN 55425

KEY PLAN



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DANIEL PAUL BIGGAR
REG. NO. 26752 DATE: Issue Date

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REVISION SCHEDULE

NO. REVISION DATE

SHEET NAME

PHOTOMETRIC SITE PLAN -
MAINTAINED AT-GRADE -
AREA B

PROJECT NUMBER: 81799

DATE: 10/02/19

DRAWN: GS

CHECKED: DPB

SCALE: As indicated

SHEET NUMBER

ES1.2B

PL201900184
PL2019-184



COMcheck Software Version 4.1.1.0
Exterior Lighting Compliance Certificate

Project Information

Energy Code: 90.1 (2010) Standard
Project Title: South Loop Waterpark
Project Type: New Construction
Exterior Lighting Code: 4 (High activity metropolitan commercial district)
Construction Site: Linden Lane, Bloomington, MN 55425
Designer/Contractor: Greg Gershen, Hunt Electric, Bloomington, MN 55425

Allowed Exterior Lighting Power

A Area/Surface Category	B Quantity	C Allowed Watts / Unit	D Totalable Wattage	E Allowed Watts (B x C)
Other door (not main entry)	132 ft ²	30	Yes	3960
Walkway - 10 feet wide	6046 ft ²	0.5	Yes	3023
Landscaping	273.32	0.5	Yes	136.66
Total: Totalable Watts (d) =				3646
Total Allowed Supplemental Watts (e) =				1200

(d) Wattage totalable are only allowed between facade and surfaces.
(e) A supplemental allowance equal to 1200 watts may be applied towards compliance of both non facade and facade areas/surfaces.

Proposed Exterior Lighting Power

A Fixture ID / Description / Lamp / Wattage Per Lamp / Ballast	B Lamps	C # of Fixture	D Fixture Watt.	E (C x D)
Other door (not main entry) 1115 ft ² of door width: Totalable Wattage	1	3	45	135
LED 2 x 4 FT CMV Max Pack Other	1	15	15	225
LED 1 x 4 FT CMV Max Pack Other	1	23	42	966
Walkway - 10 feet wide 3046 ft ² : Totalable Wattage	1	23	42	966
LED 2 x 4 FT CMV Max Pack Other	1	1	55	55
Total: Totalable Proposed Watts =				1487

Exterior Lighting Assessment: Design 72% better than code

Exterior Lighting Compliance Statement
Compliance Statement: The proposed exterior lighting design represented in this document is consistent with the building plans, specifications, and other code details submitted with this permit application. The proposed exterior lighting systems have been designed to meet the 90.1 (2010) Standard requirements in COMcheck Version 4.1.1.0 and to comply with any applicable mandatory requirements listed in the Inspection Checklist.

Project Title: South Loop Waterpark
Data Filename: Untitled.ccx
Report date: 10/02/19
Page: 1 of 6

Greg Gershen - Electrical Designer
Name - Title

Signature

10/2/19
Date



COMcheck Software Version 4.1.1.0
Inspection Checklist
Energy Code: 90.1 (2010) Standard

Requirements: 60.0% were addressed directly in the COMcheck software
Test in the "Comments/Assumptions" column is provided by the user in the COMcheck Requirements screen. For each requirement, the user certifies that a code requirement will be met and how that is documented, or that an exception is being claimed. Where compliance is itemized in a separate table, a reference to that table is provided.

Section & Req. ID	Plan Review	Complies?	Comments/Assumptions
4.2.2.4 4.2.2.4.1 2.0.7 FR07	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the electrical systems and equipment and documents where exceptions are claimed. Field corrections noted in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
9.7 FR07	Plans, specifications, and/or calculations provide all information with which compliance can be determined for the exterior lighting and electrical systems and equipment and documents where exceptions are claimed and correct information provided in the field. Field corrections noted in accordance with approved plans and branch circuits sized for maximum drop of 3%.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	

Additional Comments/Assumptions:

1 High Impact (For 1) 2 Medium Impact (For 2) 3 Low Impact (For 3)

Project Title: South Loop Waterpark
Data Filename: Untitled.ccx
Report date: 10/02/19
Page: 2 of 6

Section & Req. ID	Rough-In Electrical Inspection	Complies?	Comments/Assumptions
9.4.2 9.4.2.1 9.4.2.2	At least 50% of all 120 volt 15 and 20 amp receptacles are controlled by an automatic control device.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	
9.4.2.3 9.4.2.4	Automatic lighting controls for exterior lighting installed.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met.
9.4.3 9.4.3.1 9.4.3.2	Exterior grounds lighting over 100 W provides 100 ft W within 100 ft radius of fixture or fixture is exempt from code of 100 ft or more radius of 100 ft.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	Requirement will be met.

Additional Comments/Assumptions:

1 High Impact (For 1) 2 Medium Impact (For 2) 3 Low Impact (For 3)

Project Title: South Loop Waterpark
Data Filename: Untitled.ccx
Report date: 10/02/19
Page: 3 of 6

Section & Req. ID	Final Inspection	Complies?	Comments/Assumptions
9.4.2 9.4.2.1 9.4.2.2	Exterior lighting power is consistent with what is shown on the approved lighting plans, documents and proposed watts are not less or equal to allowed watts.	☒ Complies ☐ Does Not ☐ Not Observable ☐ Not Applicable	See the Exterior Lighting fixture schedule for values.

Additional Comments/Assumptions:

1 High Impact (For 1) 2 Medium Impact (For 2) 3 Low Impact (For 3)

Project Title: South Loop Waterpark
Data Filename: Untitled.ccx
Report date: 10/02/19
Page: 4 of 6

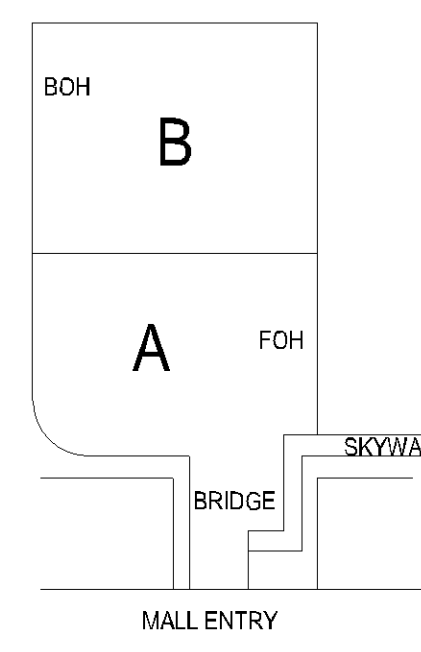
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(651) 646 2911
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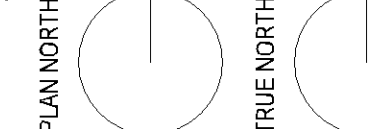
SOUTH LOOP WATERPARK

BLOOMINGTON, MN 55425

KEY PLAN



NORTH ARROW



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DANIEL PAUL BIGGAR
REG. NO. 26752
DATE: Issue Date

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REVISION SCHEDULE

NO REVISION DATE

SHEET NAME

ENERGY CODE COMPLIANCE
SHEETS

PROJECT NUMBER: 81799
DATE: 10/02/19
DRAWN: GS
CHECKED: DPB
SCALE: 1/2" = 1'-0"
SHEET NUMBER:

ES1.4