

ILLUMINANCE CRITERIA (ODOT TEM TABLE 1197-4)

AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)
0.9	0.3	3.0:1

SUMMARY OF ROADWAY PHOTOMETRICS
I-90 MAINLINE AND B RAMP

SEGMENT	AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)	UNIFORMITY (MAX/MIN)
PR. I-90 E. 9TH TO E. 14TH	1.1	0.4	2.8:1	8.8:1
PR. I-90 E. 14TH TO E. 22ND	0.9	0.3	3.0:1	6.7:1
PR. I-90 UNDER E. 22ND	1.0	0.3	3.3:1	10.3:1
PR. I-90 E. 22ND TO CARNEGIE	1.2	0.5	2.4:1	4.0:1
PR. I-90 UNDER CARNEGIE	1.0	0.3	3.3:1	16.3:1
PR. I-90 CARNEGIE TO PROSPECT	0.9	0.4	2.3:1	5.3:1
PR. RAMP IB5 I-90 EB TO E. 9TH	1.0	0.5	2.0:1	2.8:1
PR. RAMP B6 I-90 EB TO E. 14TH	1.0	0.3	3.3:1	4.7:1
PR. RAMP B6 E. 14TH TO E. 22ND	1.0	0.4	2.5:1	4.0:1
PR. RAMP A1 I-90 GORE TO CARNEGIE	1.0	0.6	1.7:1	2.7:1
PR. RAMP 4	0.9	0.3	3.0:1	5.3:1

LEGEND

- PROPOSED HIGH MAST TOWERS W/ 2, 3 OR 4 LED LUMINAIRES (NO SHIELDS)
- PROPOSED HIGH MAST TOWERS W/ 2 LED LUMINAIRES (180-DEGREE SHIELDS)
- LOW MAST POLE W/ 1 LED LUMINAIRE (NO SHIELDS)
- LOW MAST POLE W/ 1 LED LUMINAIRE (180-DEGREE SHIELDS)
- PROPOSED UNDERPASS LED LUMINAIRE
- EXISTING HIGH MAST TOWERS TO REMAIN

LED LIGHT FIXTURES:

HOLOPHANE HMLE4 (FOR FREEWAY/RAMPS)
 PERFORMANCE PACKAGE 3 - 3000K CCT
 IES DISTRIBUTION: AREA WIDE
 SYSTEM WATTAGE: 429 Watts
 LUMENS PER FIXTURE: 63,221
 INPUT OPERATING CURRENT: 0.90 Amps (480V)
 LIGHT LOSS FACTOR: 0.85
 LOW MAST MOUNTING HEIGHT: 50 FT
 HIGH MAST MOUNTING HEIGHT: VARIES

HOLOPHANE WALLPACK LED (FOR BRIDGE UNDERPASSES)
 PERFORMANCE PACKAGE 10C1000 - 3000 SERIES CCT
 IES DISTRIBUTION: TYPE 3 SHORT
 SYSTEM WATTAGE: 28 Watts
 LUMENS PER FIXTURE: 3,206
 INPUT OPERATING CURRENT: 0.06 Amps (480V)
 LIGHT LOSS FACTOR: 0.86
 WALL PACK MOUNTING HEIGHT: VARIES

TYPICAL CONTOUR VALUES

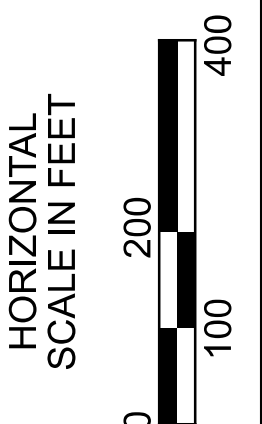
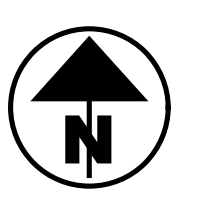
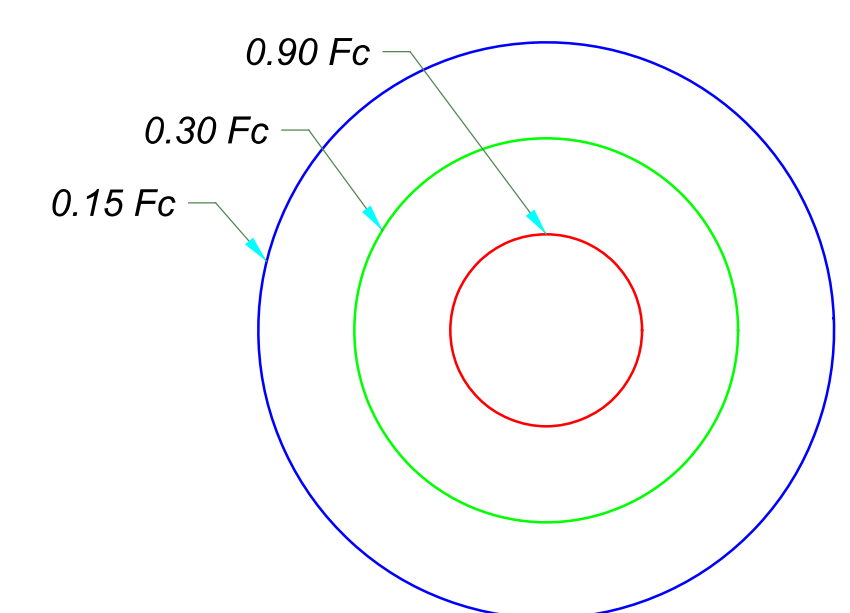


EXHIBIT D: CCG3A PHOTOMETRIC ANALYSIS
I-90 MAINLINE AND B RAMP

DESIGN AGENCY

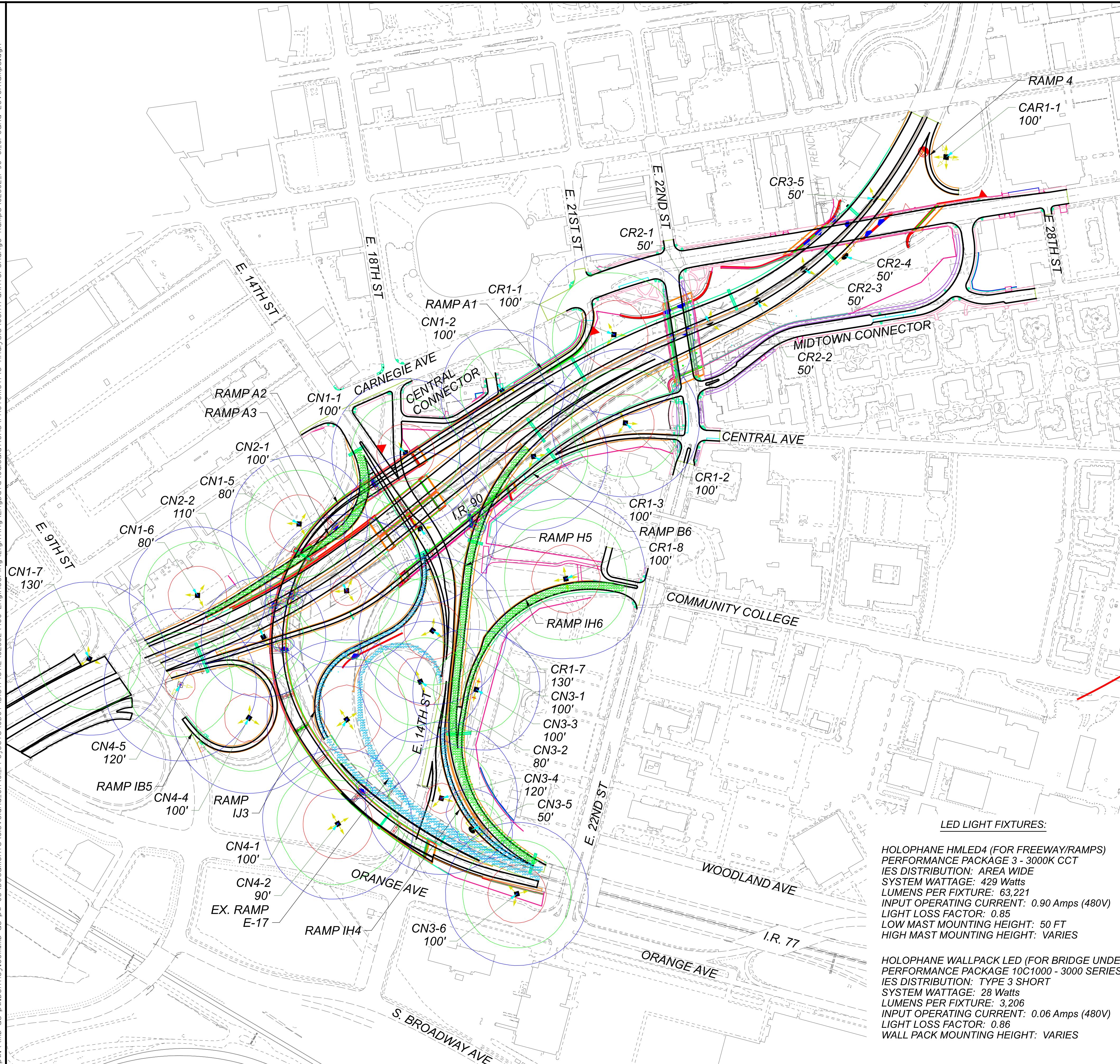
Michael Baker INTERNATIONAL

DESIGNER
JLD

REVIEWER
SM

PROJECT ID
82382

SHEET TOTAL



ILLUMINANCE CRITERIA (ODOT TEM TABLE 1197-4)

AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)
0.9	0.3	3.0:1

SUMMARY OF ROADWAY PHOTOMETRICS
CENTRAL INTERCHANGE GROUND LEVEL RAMPS

SEGMENT	AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)	UNIFORMITY (MAX/MIN)
EX. RAMP E-17 I-77 NB TO E. 14TH SB	1.1	0.6	1.8:1	3.5:1
PR. HYBRID RAMP H5 I-77 NB TO I-90 EB	0.9	0.3	3.0:1	6.7:1
PR. RAMP IH4 I-77 NB TO E. 14TH NB	1.1	0.5	2.2:1	4.6:1
PR. RAMP IH6 I-77 NB TO COMMUNITY COLLEGE	1.0	0.4	2.5:1	4.8:1
PR. RAMP IJ3 E. 14TH SB TO I-77 SB	0.9	0.4	2.3:1	4.3:1
PR. RAMP A3 E. 14TH SB TO I-90 WB	0.9	0.3	3.0:1	8.0:1

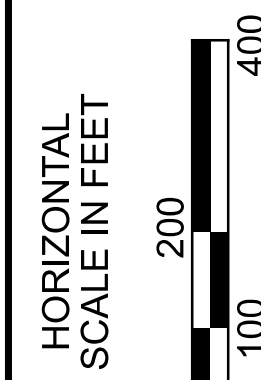


EXHIBIT D: CCG3A PHOTOMETRIC ANALYSIS
I-90 / I-77 INTERCHANGE - GROUND LEVEL RAMPS

LEGEND

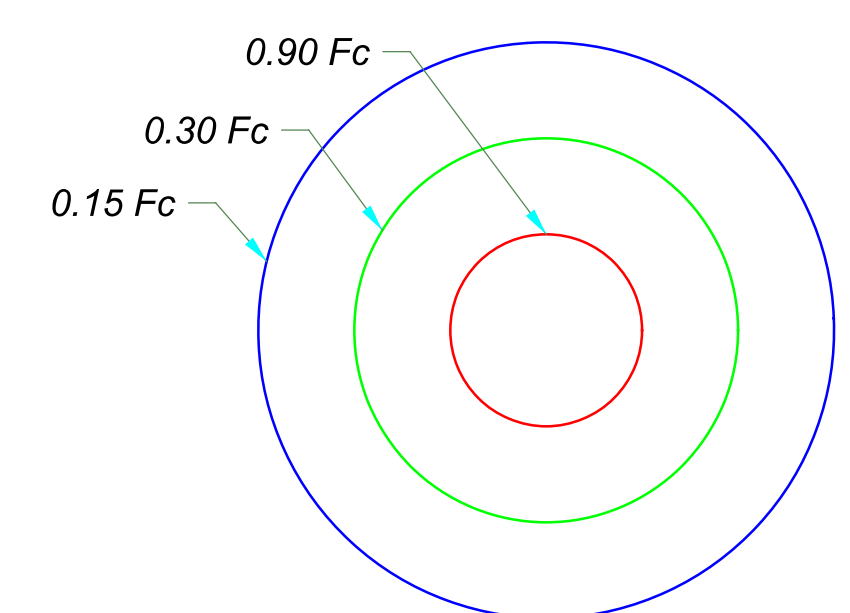
- PROPOSED HIGH MAST TOWERS W/ 2, 3 OR 4 LED LUMINAIRES (NO SHIELDS)
- PROPOSED HIGH MAST TOWERS W/ 2 LED LUMINAIRES (180-DEGREE SHIELDS)
- LOW MAST POLE W/ 1 LED LUMINAIRE (NO SHIELDS)
- LOW MAST POLE W/ 1 LED LUMINAIRE (180-DEGREE SHIELDS)
- PROPOSED UNDERPASS LED LUMINAIRE
- EXISTING HIGH MAST TOWERS TO REMAIN

LED LIGHT FIXTURES:

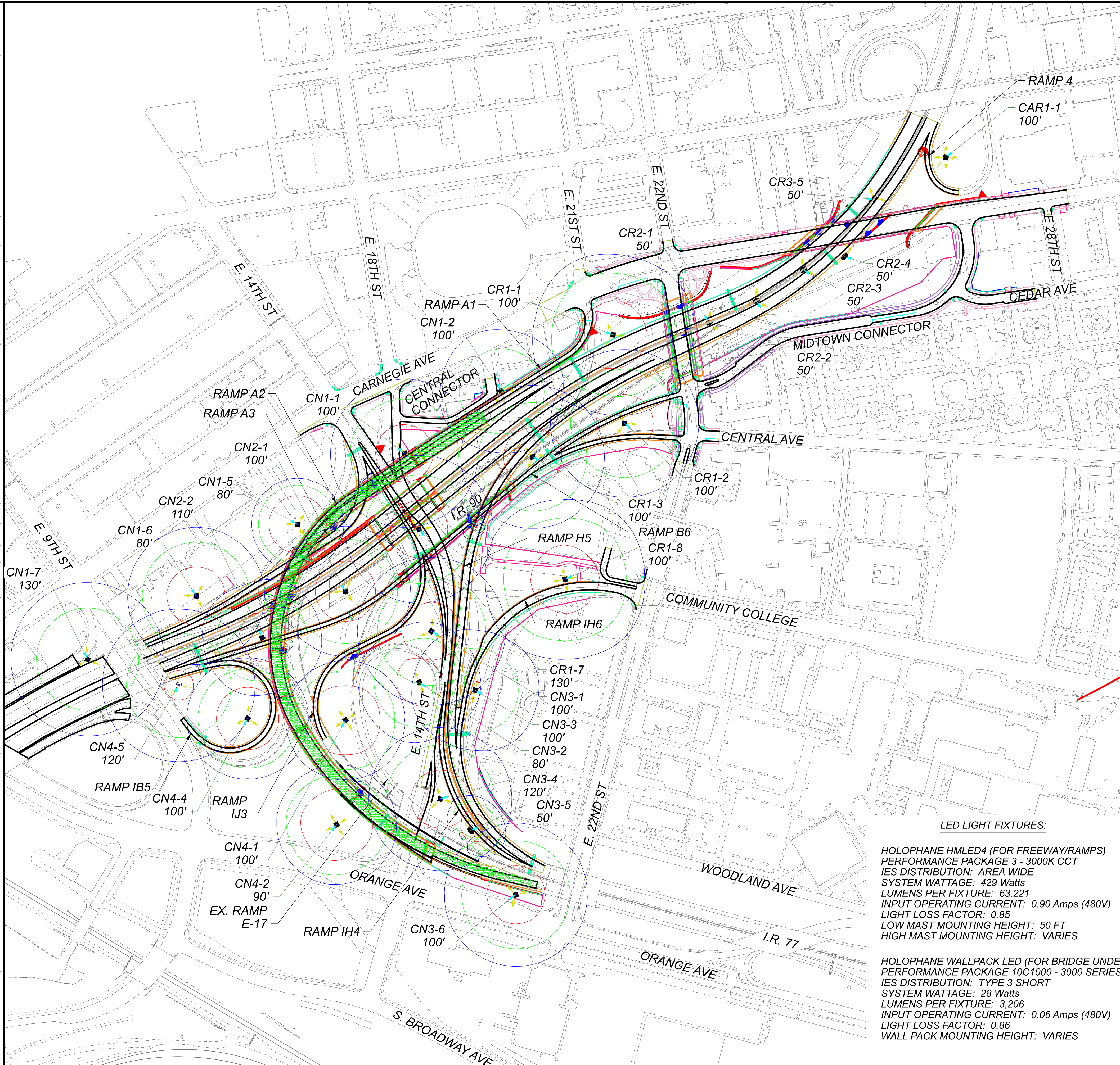
HOLOPHANE HMLE4 (FOR FREEWAY/RAMPS)
 PERFORMANCE PACKAGE 3 - 3000K CCT
 IES DISTRIBUTION: AREA WIDE
 SYSTEM WATTAGE: 429 Watts
 LUMENS PER FIXTURE: 63,221
 INPUT OPERATING CURRENT: 0.90 Amps (480V)
 LIGHT LOSS FACTOR: 0.85
 LOW MAST MOUNTING HEIGHT: 50 FT
 HIGH MAST MOUNTING HEIGHT: VARIES

HOLOPHANE WALLPACK LED (FOR BRIDGE UNDERPASSES)
 PERFORMANCE PACKAGE 10C1000 - 3000 SERIES CCT
 IES DISTRIBUTION: TYPE 3 SHORT
 SYSTEM WATTAGE: 28 Watts
 LUMENS PER FIXTURE: 3,206
 INPUT OPERATING CURRENT: 0.06 Amps (480V)
 LIGHT LOSS FACTOR: 0.86
 WALL PACK MOUNTING HEIGHT: VARIES

TYPICAL CONTOUR VALUES



DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	JLD
REVIEWER	SM
PROJECT ID	82382
SHEET TOTAL	- -

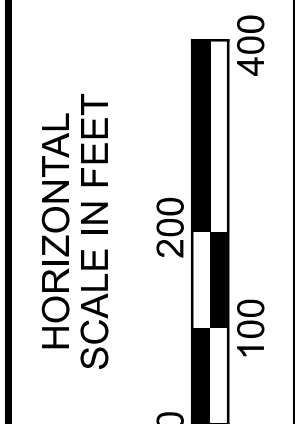
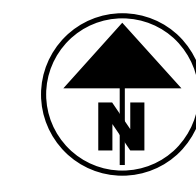


ILLUMINANCE CRITERIA (ODOT TEM TABLE 1197-4)

AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)
0.9	0.3	3.0:1

SUMMARY OF ROADWAY PHOTOMETRICS
 CENTRAL INTERCHANGE OVERPASS RAMP A2

SEGMENT	AVERAGE	MINIMUM	UNIFORMITY (AVG/MIN)	UNIFORMITY (MAX/MIN)
PR. RAMP A2 I-90 WB TO I-77 SB	0.9	0.3	3.0:1	13.0:1



- LEGEND**
- PROPOSED HIGH MAST TOWERS W/ 2, 3 OR 4 LED LUMINAIRES (NO SHIELDS)
 - PROPOSED HIGH MAST TOWERS W/ 2 LED LUMINAIRES (180-DEGREE SHIELDS)
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 - LOW MAST POLE W/ 1 LED LUMINAIRE (180-DEGREE SHIELDS)
 - PROPOSED UNDERPASS LED LUMINAIRE
 - EXISTING HIGH MAST TOWERS TO REMAIN

LED LIGHT FIXTURES:

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 LUMENS PER FIXTURE: 63,221
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 SYSTEM WATTAGE: 28 Watts
 LUMENS PER FIXTURE: 3,206
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 LIGHT LOSS FACTOR: 0.86
 WALL PACK MOUNTING HEIGHT: VARIES

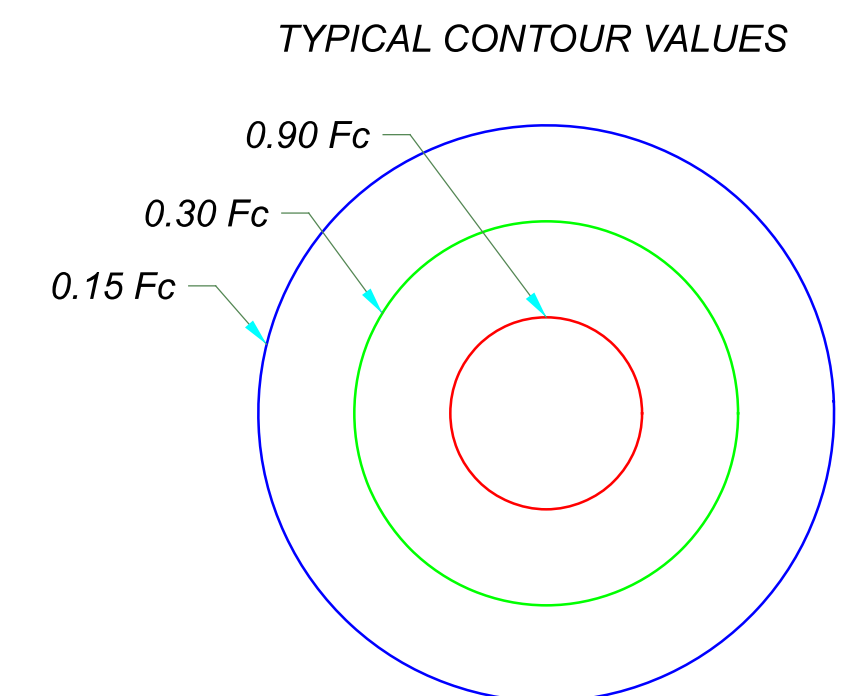
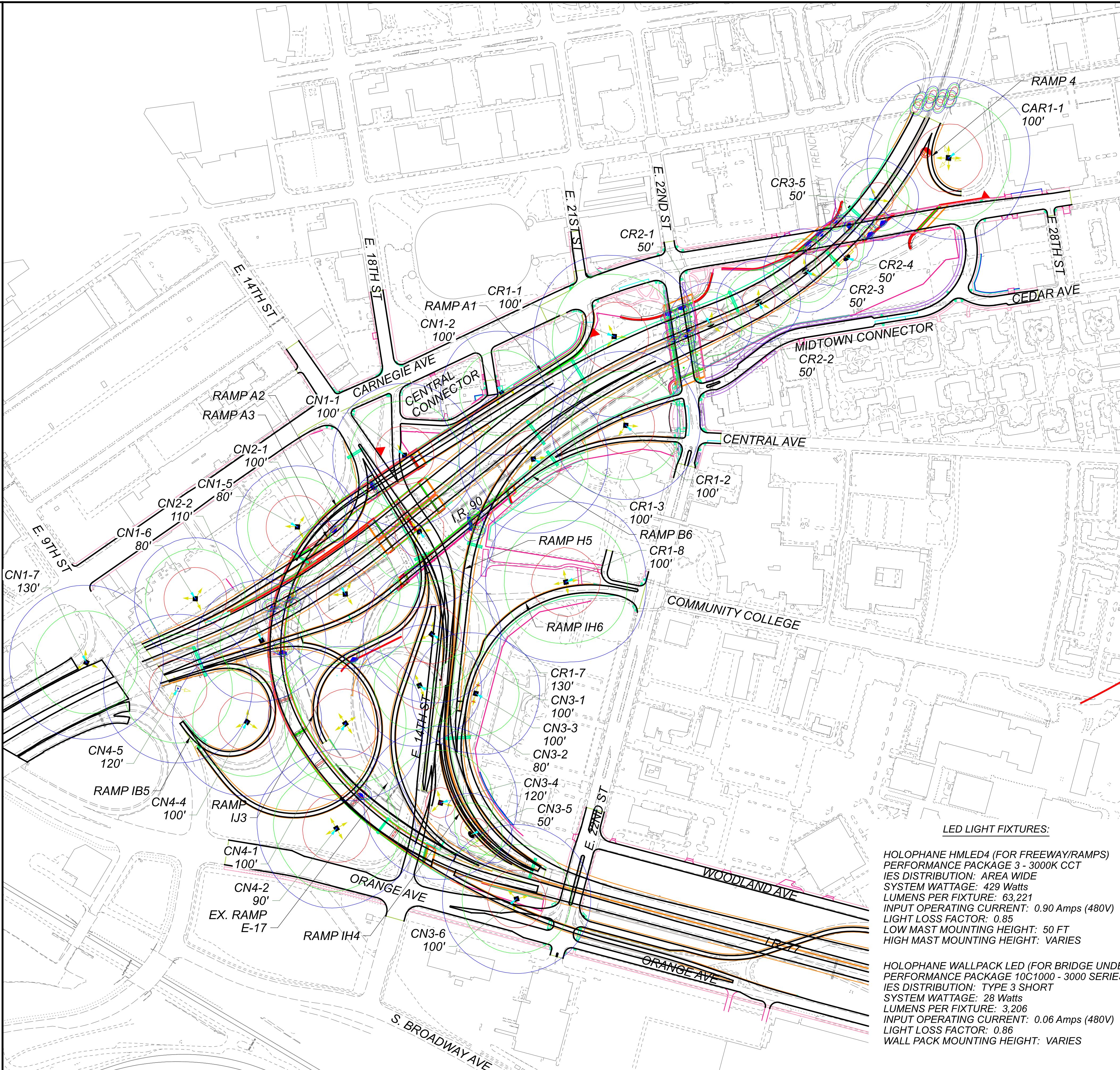


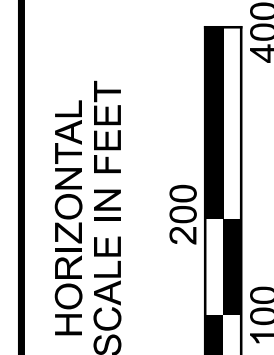
EXHIBIT D: CCG3A PHOTOMETRIC ANALYSIS
 I-90 / I-77 INTERCHANGE - OVERPASS RAMP A2

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	JLD
REVIEWER	SM
PROJECT ID	82382
SHEET TOTAL	- -



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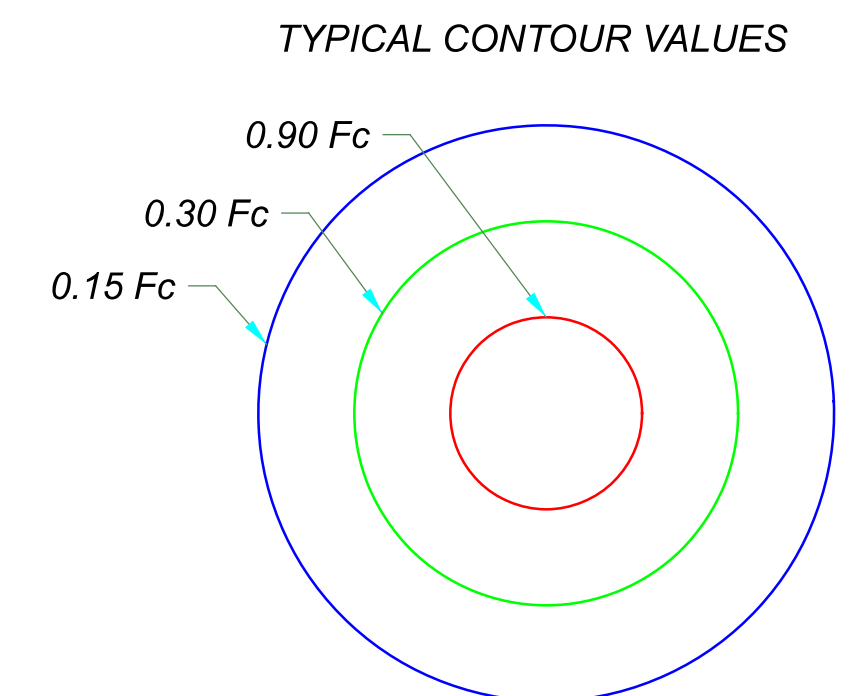


EXHIBIT D: CCG3A PHOTOMETRIC ANALYSIS
 CCG3B CONFLICT CHECK

DESIGN AGENCY	Michael Baker INTERNATIONAL
DESIGNER	JLD
REVIEWER	SM
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SHEET TOTAL	- -