

INVITATION TO BID (Re-bid)

Energy Efficiency Lighting Project Bid Package #1

POSTED: AUGUST 19, 2016

Bid #: 16-0499 REBID

BIDS DUE: SEPTEMBER 1, 2016 @ 2:00 PM CST



PROPERTY & FACILITIES MANAGEMENT
1532 W. MICHIGAN ST.
DULUTH, MN 55802

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Duluth, MN 55802-1189
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INVITATION TO BID (Re-bid)

Energy Efficiency Lighting Project – Bid Package #1

BID NUMBER: 16-0499

BID OPENING: THURSDAY, SEPTEMBER 1, 2016 AT 2:00 PM

PROJECT DESCRIPTION: Install new City-purchased LED lighting and wireless controls to achieve energy savings, lower maintenance costs and provide the City with the ability to control lighting functions remotely. Locations include the Medical District Ramp, Tech Center Ramp, City of Duluth Parking area within the Michigan Street and 5th Avenue Parking Ramp and Lake Place Park trails/pathways and area lighting.

Please note that approved equals will be considered for all instances where a manufacturer is stated.

PRE-BID/WALK-THROUGH: A **MANDATORY** pre-bid meeting will be conducted on WEDNESDAY, AUGUST 24, 2016 AT 2:00 PM at the Property & Facilities Management Offices located at 1532 West Michigan Street, Duluth, MN 55806. **ALL INTERESTED BIDDERS ARE REQUIRED TO ATTEND.**

QUESTIONS: Please submit any questions regarding this project via e-mail to purchasing@duluthmn.gov. Questions should be submitted prior to or during the pre-bid meeting. Responses will be provided to all interested bidders as an addendum to this solicitation.

Proposal forms, contract documents, plans and specifications are on file at the following offices: Duluth Builder's Exchange, Minnesota Builder's Exchange, BXWI-Fox Valley Plan Room, and Blue Book Building and Construction Network.

It is anticipated that the selected contractor will be issued a construction contract (draft attached). Notice to Proceed will be issued once the agreement is fully executed.

INSTRUCTIONS TO BIDDERS

All bids must be complete, signed, and transmitted in a sealed envelope plainly marked with the bid number, subject matter, and opening date.

Bids may be mailed to the Purchasing Office, City Hall, 411 West 1st Street, Room 100, Duluth, MN 55802 or dropped off in person at the same address.

Bids must be received in Purchasing before 2:00 PM local time on the bid opening date specified on the Invitation for Bids. The City Purchasing Agent or her designee will conduct a public bid opening in Room 100 immediately following receipt of the bids. Bid results will be posted online at <http://www.duluthmn.gov/purchasing/bids-request-for-proposals/> once all bids have been reviewed.

No alternatives to the specification will be considered unless specifically requested. Erasures or other changes to the bid must be initialed and dated, however no special conditions shall be made or included in the bid form by the bidder.

The City of Duluth reserves the right to split the award where there is a substantial savings to the City, to waive informalities and to reject any and all bids. Do not include sales tax in the unit price. Price may not be the only consideration for bid award. Bids must be firm for a minimum of 30 days.

The following documents must be submitted with your bid:

1. **Bid Bond** - A certified check or bank draft, payable to the order of the City of Duluth, negotiable U.S. Government Bonds (at par value), or a satisfactory bid bond executed by the bidder and acceptable surety, in an amount equal to five per cent (5%) of the total bid. Bids may be withdrawn without forfeiture of surety if the request is submitted by the Bidder and received at the Purchasing Office in writing or by e-

mail prior to the scheduled bid opening.

2. **Acknowledgment of Addendum** – any changes to this solicitation will be announced via Addendum. Bidders must indicate that they have reviewed any addendum(s) by initialing and dating on the bid form where indicated. Failure to acknowledge addendum(s) may result in your bid being deemed non-responsive.

3. **Responsible Contractor** - No construction contract in excess of \$50,000 will be awarded unless the Bidder is a "responsible contractor" as defined in Minnesota Statute §16C.285, subdivision 3. All Bidders submitting a proposal for this project must verify that they meet the minimum criteria specified in the statute by submitting a Responsible Contractor Verification and Certification of Compliance form (attached) with their bid. The owner or officer of the company must sign the form under oath verifying compliance with each of the minimum criteria. Making a false statement under oath will render the Bidder or subcontractor that makes the false statement ineligible to be awarded a construction project and may result in termination of a contract awarded to a Bidder or subcontractor that submits a false statement. Bidders must obtain verification of compliance from all subcontractors. Bidders must submit signed copies of verifications and certifications of compliance from subcontractors at the City's request.

Please note that the following requirements also apply to this project, and any additional required documents must be submitted prior to award/contract execution. Submitting these documents with your bid will assist in expediting the process.

1. **Insurance** – Contractor must provide proof of Public Liability and Automobile Liability Insurance with limits not less than \$1,500,000 Single Limit prior to the commencement of work. The City of Duluth must be named as an additional insured. Please refer to the draft Contract, Section 7.

2. **Affidavit of Non-Collusion** – The successful bidder shall be required to execute the attached affidavit stating that he/she has not entered into a collusive agreement with any other person, firm, or corporation in regard to any bid submitted.

3. **Performance & Payment Bonds** – The awarded contractor will be required to submit performance and payments bonds in the full amount of the project cost prior to award.

4. **Affirmative Action/EEO** - The contractor must take affirmative action to ensure that the employees and applicants for employment are not discriminated against because of their race, color, creed, sex or national origin, and must meet the affirmative action goals. Contractors are encouraged to subcontract with Disadvantaged Business Enterprises (DBEs) when possible. A current list of certified DBEs is available on the Minnesota Unified Certification website at <http://mnucp.metc.state.mn.us> . Contractor will comply with all applicable Equal Employment Opportunity laws and regulations. Awarded contractor will submit the attached Equal Employment Opportunity (EEO) Affirmative Action Policy Statement & Compliance Certificate.

5. **Project Labor Agreement (PLA)** - A PLA will be required for any bid that is over or could virtually go over \$150,000. A copy of the City standard PLA is included in this package.

6. **Out of State Contractor** - Unless a State of Minnesota Certificate of Exemption is provided, any out-of-state bidder receiving a bid award will have 8% retained from invoice payments on any contracts over \$50,000. Submit a signed copy of the signed exemption form when submitting Payment and Performance Bonds. This form may be found at the following web address: http://www.revenue.state.mn.us/Forms_and_Instructions/sde.pdf

7. **Prevailing Wage** - Not less than the minimum salaries and prevailing wages as set forth in the contract documents must be paid on this project.

The City of Duluth is an Equal Opportunity Employer. Contractor shall comply with all applicable Equal Employment Opportunity laws and regulations.

CITY OF DULUTH

Amanda Ashbach
Purchasing Agent

BID FORM
BID # 16-0499 (Re-bid)
Energy Efficiency Lighting Project

ITEM	PRICE
Lump sum to complete all work per the attached drawings and specifications.	\$

TOTAL PRICE IN WRITING

ACKNOWLEDGMENT OF ADDENDA

ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE
ADDENDUM #	INITIAL/DATE

Signature _____ Date _____

Name/Title _____

Company Name _____

Address _____

City, State, Zip _____

Tel. _____ E-Mail _____

If your organization is certified as a Disadvantaged Business Enterprise, please check here: ☐

EXHIBIT A

Location	Cost for Demo and Install of New Fixtures	Cost for Install of Lighting Control System	Total Per Location
East 1st St Medical Parking Ramp			
Tech Village Parking Ramp (excluding the US Bank Parking Lot/Drive Thru Area)			
Tech Village - US Bank Parking Lot/Drive Thru Area			
5th Ave & Michigan St Parking Ramp			
Lake Place Parking Ramp			
		TOTAL	

AFFIDAVIT AND INFORMATION REQUIRED OF BIDDERS

Affidavit of Non-Collusion:

I hereby swear (or affirm) under penalty of perjury:

- 1) That I am the bidder (if the bidder is an individual), a partner in the bidder (if the bidder is a partnership), or an officer or employee of the bidding corporation having authority to sign on its behalf (if the bidder is a corporation);
- 2) That the attached bid or bids have been arrived at by the bidder independently and have been submitted without collusion with and without agreement, understanding, or planned common course of action with any other vendor of materials, supplies, equipment or services described in the invitation to bid, designed to limit independent bidding or competition;
- 3) That the contents of the bid or bids have not been communicated by the bidder or its employees or agents to any person not an employee or agent of the bidder or its surety on any bond furnished with the bid or bids and will not be communicated to any such person prior to the official opening of the bid or bids;
- 4) That a family relationship between a City of Duluth employee and bidder/proposer are in non-collusion; and
- 5) That I have fully informed myself regarding the accuracy of the statements made in this affidavit.

Signed: _____

Firm Name: _____

Subscribed and sworn to me before this _____ day of _____, _____

NOTARY PUBLIC _____

My commission expires: _____

Bidder's Federal Identification Number _____

**EQUAL EMPLOYMENT OPPORTUNITY EEO AFFIRMATIVE ACTION
POLICY STATEMENT & COMPLIANCE CERTIFICATE**

TO: City of Duluth, MN PROJECT NUMBER & DESCRIPTION _____

FROM: _____

(Vendor's name, address, telephone number)

A) Employment: It is the policy of the above named FIRM to afford equal opportunity for employment to all individuals regardless of race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance and/or disability. The FIRM will take affirmative action to ensure that we will: (1) recruit, hire, and promote all job classifications without regard to race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance, and/or disability, except where sex is a bona fide occupational qualification; (2) base decisions on employment so as to further the principle of equal employment opportunity; (3) ensure that promotion decisions are in accord with the principles of equal employment opportunity by imposing only valid requirements for promotional opportunities; (4) ensure that all personnel actions such as compensation, benefits, transfers, layoffs, return from layoff, FIRM sponsored training, education tuition assistance, social and recreational programs will be administered without regard to race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance, and/or disability. The FIRM also intends full compliance with Veteran affirmative action requirements. Additionally, minority and female employees shall be encouraged to participate in all FIRM activities and refer applicants.

I have designated (name) _____ to direct the establishment of and to monitor the implementation of personnel procedures to guide the FIRM's affirmative action program. Where PROJECTS exceed \$500,000, this official shall also serve as the liaison officer that administers the FIRM's "Minority Business Enterprise Program." This official is charged with designing and implementing audit and reporting systems that will keep management informed on a monthly basis of the status of the equal opportunity area.

Supervisors have been made to understand that their work performance is being evaluated on the basis of their equal opportunity efforts and results, as well as other criteria. It shall be the responsibility of the FIRM and its supervisors to take actions to prevent harassment of employees placed through affirmative action efforts.

B) Reports: Unless exempted by law and regulation, the FIRM shall make available and file those reports related to equal opportunity as may be required by the City of Duluth and State and Federal compliance agencies. Requirements and Reports are defined in 41CFR60 "Compliance Responsibility for Equal Opportunity" published by the U. S. Department of Labor which is incorporated herein by reference. Additional requirements are defined in various State and Federal Civil Rights Legislation and Rules promulgated thereunder.

C) Nonsegregated Facilities: The FIRM certifies that it does not maintain or provide for its employees any segregated facilities at any of its establishments and that it does not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The FIRM certifies that it will not maintain or provide for its employees any segregated facilities at any of its establishments and that it will not permit its employees to perform their services at any location, under its control, where segregated facilities are maintained. The FIRM agrees that a breach of this certification is a violation of the Equal Opportunity Clause in this certificate. As used in this Certification, the term "segregated

facilities" means any waiting rooms, work area, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation for entertainment area, transportation, and housing facilities provided for employees which are segregated by explicit directive or are, in fact, segregated on the basis of race, color, religion, or national origin, because of habit, local custom, or otherwise.

- D) Affirmative Action Compliance Program:** Unless exempted by regulation and law, the FIRM—if the FIRM has 50 or more employees and if the value of current contracts with the City of Duluth exceeds \$50,000—shall prepare and maintain a written affirmative action compliance program that meets the requirement as set forth in 41CFR60.
- E) Non-Compliance:** The FIRM certifies that it is not currently in receipt of any outstanding letters of deficiencies, show cause, probable cause, or other such notification of non-compliance with EEO Laws and Regulations.
- F) Employment Goals - "Construction" Projects:** It shall be the goal of the FIRM if the PROJECT is of a construction nature that in all on-site employment generated that no less than 3% of the on-site workforce will be minority employees and that no less than 7% of the on-site workforce will be female employees. Further, it is the goal of the FIRM if the PROJECT is of a construction nature that in all on-site employment generated that no less than 3% of the work hours generated shall be worked by minority employees and that no less than 7% of the work hours generated shall be worked by female employees.
- G) Subcontractors:** The FIRM will for all its PROJECT subcontractors regardless of tier (unless exempted by law and regulation) that received in excess of \$2,500 require that: (1) the subcontractor shall execute an "EEO Statement and Certification" similar in nature to this "Statement and Certification", (2) said documentation to be maintained on file with the FIRM or subcontractor as may be appropriate.

Executed this _____ day of _____, 20__ by:

Printed name and title

Signature

NOTE: In addition to the various remedies prescribed for violation of Equal Opportunity Laws, the penalty for false statements is prescribed in 18 U.S.C. 1001.

**ATTACHMENT A
PRIME CONTRACTOR RESPONSE**

RESPONSIBLE CONTRACTOR VERIFICATION AND CERTIFICATION OF COMPLIANCE

STATE PROJECT NUMBER: _____

This form includes changes by statutory references from the Laws of Minnesota 2015, chapter 64, sections 1-9. This form must be submitted with the response to this solicitation. A response received without this form, will be rejected.

<p>Minn. Stat. § 16C.285, Subd. 7. IMPLEMENTATION. ... any prime contractor or subcontractor or motor carrier that does not meet the minimum criteria in subdivision 3 or fails to verify that it meets those criteria is not a responsible contractor and is not eligible to be awarded a construction contract for the project or to perform work on the project...</p>	
<p>Minn. Stat. § 16C.285, Subd. 3. RESPONSIBLE CONTRACTOR, MINIMUM CRITERIA. "Responsible contractor" means a contractor that conforms to the responsibility requirements in the solicitation document for its portion of the work on the project and verifies that it meets the following minimum criteria:</p>	
(1)	<p>The Contractor:</p> <ul style="list-style-type: none">(i) is in compliance with workers' compensation and unemployment insurance requirements;(ii) is in compliance with Department of Revenue and Department of Employment and Economic Development registration requirements if it has employees;(iii) has a valid federal tax identification number or a valid Social Security number if an individual; and(iv) has filed a certificate of authority to transact business in Minnesota with the Secretary of State if a foreign corporation or cooperative.
(2)	<p>The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 177.24, 177.25, 177.41 to 177.44, 181.13, 181.14, or 181.722, and has not violated United States Code, title 29, sections 201 to 219, or United States Code, title 40, sections 3141 to 3148. For purposes of this clause, a violation occurs when a contractor or related entity:</p> <ul style="list-style-type: none">(i) repeatedly fails to pay statutorily required wages or penalties on one or more separate projects for a total underpayment of \$25,000 or more within the three-year period, provided that a failure to pay is "repeated" only if it involves two or more separate and distinct occurrences of underpayment during the three-year period;(ii) has been issued an order to comply by the commissioner of Labor and Industry that has become final;(iii) has been issued at least two determination letters within the three-year period by the Department of Transportation finding an underpayment by the contractor or related entity to its own employees;(iv) has been found by the commissioner of Labor and Industry to have repeatedly or willfully violated any of the sections referenced in this clause pursuant to section 177.27;(v) has been issued a ruling or findings of underpayment by the administrator of the Wage and Hour Division of the United States Department of Labor that have become final or have been upheld by an administrative law judge or the Administrative Review Board; or(vi) has been found liable for underpayment of wages or penalties or misrepresenting a construction worker as an independent contractor in an action brought in a court having jurisdiction. Provided that, if the contractor or related entity contests a determination of underpayment by the Department of Transportation in a contested case proceeding, a violation does not occur until the contested case proceeding has concluded with a determination that the contractor or related entity underpaid wages or penalties;*

(3)	The contractor or related entity is in compliance with and, during the three-year period before submitting the verification, has not violated section 181.723 or chapter 326B. For purposes of this clause, a violation occurs when a contractor or related entity has been issued a final administrative or licensing order;*
(4)	The contractor or related entity has not, more than twice during the three-year period before submitting the verification, had a certificate of compliance under section 363A.36 revoked or suspended based on the provisions of section 363A.36, with the revocation or suspension becoming final because it was upheld by the Office of Administrative Hearings or was not appealed to the office;*
(5)	The contractor or related entity has not received a final determination assessing a monetary sanction from the Department of Administration or Transportation for failure to meet targeted group business, disadvantaged business enterprise, or veteran-owned business goals, due to a lack of good faith effort, more than once during the three-year period before submitting the verification;*
	* Any violations, suspensions, revocations, or sanctions, as defined in clauses (2) to (5), occurring prior to July 1, 2014, shall not be considered in determining whether a contractor or related entity meets the minimum criteria.
(6)	The contractor or related entity is not currently suspended or debarred by the federal government or the state of Minnesota or any of its departments, commissions, agencies, or political subdivisions that have authority to debar a contractor; and
(7)	All subcontractors and motor carriers that the contractor intends to use to perform project work have verified to the contractor through a signed statement under oath by an owner or officer that they meet the minimum criteria listed in clauses (1) to (6).

Minn. Stat. § 16C.285, Subd. 5. **SUBCONTRACTOR VERIFICATION.**

A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project. Prior to execution of a construction contract, and as a condition precedent to the execution of a construction contract, the apparent successful prime contractor shall submit to the contracting authority a supplemental verification under oath confirming compliance with subdivision 3, clause (7). Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors.

A prime contractor shall submit to the contracting authority upon request copies of the signed verifications of compliance from all subcontractors of any tier pursuant to subdivision 3, clause (7). A prime contractor and subcontractors shall not be responsible for the false statements of any subcontractor with which they do not have a direct contractual relationship. A prime contractor and subcontractors shall be responsible for false statements by their first-tier subcontractors with which they have a direct contractual relationship only if they accept the verification of compliance with actual knowledge that it contains a false statement.

Subd. 5a. Motor carrier verification. A prime contractor or subcontractor shall obtain annually from all motor carriers with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each motor carrier. A prime contractor or subcontractor shall require each such motor carrier to provide it with immediate written notification in the event that the motor carrier no longer meets one or more of the minimum criteria in subdivision 3 after submitting its annual verification. A motor carrier shall be ineligible to perform work on a project covered by this section if it does not meet all the minimum criteria in subdivision 3. Upon request, a prime contractor or subcontractor shall submit to the contracting authority the signed verifications of compliance from all motor carriers providing for-hire transportation of materials, equipment, or supplies for a project.

Minn. Stat. § 16C.285, Subd. 4. **VERIFICATION OF COMPLIANCE.**

A contractor responding to a solicitation document of a contracting authority shall submit to the contracting authority a signed statement under oath by an owner or officer verifying compliance with each of the minimum criteria in subdivision 3, with the exception of clause (7), at the time that it responds to the solicitation document.

A contracting authority may accept a signed statement under oath as sufficient to demonstrate that a contractor is a responsible contractor and shall not be held liable for awarding a contract in reasonable reliance on that statement. A prime contractor, subcontractor, or motor carrier that fails to verify compliance with any one of the required minimum criteria or makes a false statement under oath in a verification of compliance shall be ineligible to be awarded a construction contract on the project for which the verification was submitted.

A false statement under oath verifying compliance with any of the minimum criteria may result in termination of a construction contract that has already been awarded to a prime contractor or subcontractor or motor carrier that submits a false statement. A contracting authority shall not be liable for declining to award a contract or terminating a contract based on a reasonable determination that the contractor failed to verify compliance with the minimum criteria or falsely stated that it meets the minimum criteria. A verification of compliance need not be notarized. An electronic verification of compliance made and submitted as part of an electronic bid shall be an acceptable verification of compliance under this section provided that it contains an electronic signature as defined in section 325L.02, paragraph (h).

CERTIFICATION

By signing this document I certify that I am an owner or officer of the company, and I swear under oath that:

- 1) My company meets each of the Minimum Criteria to be a responsible contractor as defined herein and is in compliance with Minn. Stat. § 16C.285, and**
- 2) if my company is awarded a contract, I will submit Attachment A-1 prior to contract execution, and**
- 3) if my company is awarded a contract, I will also submit Attachment A-2 as required.**

Authorized Signature of Owner or Officer:

Printed Name:

Title:

Date:

Company Name:

NOTE: Minn. Stat. § 16C.285, Subd. 2, (c) If only one prime contractor responds to a solicitation document, a contracting authority may award a construction contract to the responding prime contractor even if the minimum criteria in subdivision 3 are not met.

ATTACHMENT A-1

FIRST-TIER SUBCONTRACTORS LIST

SUBMIT PRIOR TO EXECUTION OF A CONSTRUCTION CONTRACT

STATE PROJECT NUMBER: _____

Minn. Stat. § 16C.285, Subd. 5. A prime contractor or subcontractor shall include in its verification of compliance under subdivision 4 a list of all of its first-tier subcontractors that it intends to retain for work on the project. Prior to execution of a construction contract, and as a condition precedent to the execution of a construction contract, the apparent successful prime contractor shall submit to the contracting authority a supplemental verification under oath confirming compliance with subdivision 3, clause (7). Each contractor or subcontractor shall obtain from all subcontractors with which it will have a direct contractual relationship a signed statement under oath by an owner or officer verifying that they meet all of the minimum criteria in subdivision 3 prior to execution of a construction contract with each subcontractor.

FIRST TIER SUBCONTRACTOR NAMES* (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

*Attach additional sheets as needed for submission of all first-tier subcontractors.

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-1	
By signing this document I certify that I am an owner or officer of the company, and I swear under oath that: All first-tier subcontractors listed on attachment A-1 have verified through a signed statement under oath by an owner or officer that they meet the minimum criteria to be a responsible contractor as defined in Minn. Stat. § 16C.285.	
Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

ATTACHMENT A-2

ADDITIONAL SUBCONTRACTORS LIST

PRIME CONTRACTOR TO SUBMIT AS SUBCONTRACTORS ARE ADDED TO THE PROJECT

STATE PROJECT NUMBER: _____

This form must be submitted to the Project Manager or individual as identified in the solicitation document.

Minn. Stat. § 16C.285, Subd. 5. ... If a prime contractor or any subcontractor retains additional subcontractors on the project after submitting its verification of compliance, the prime contractor or subcontractor shall obtain verifications of compliance from each additional subcontractor with which it has a direct contractual relationship and shall submit a supplemental verification confirming compliance with subdivision 3, clause (7), within 14 days of retaining the additional subcontractors. ...

ADDITIONAL SUBCONTRACTOR NAMES* (Legal name of company as registered with the Secretary of State)	Name of city where company home office is located

*Attach additional sheets as needed for submission of all additional subcontractors.

SUPPLEMENTAL CERTIFICATION FOR ATTACHMENT A-2	
By signing this document I certify that I am an owner or officer of the company, and I swear under oath that: All additional subcontractors listed on Attachment A-2 have verified through a signed statement under oath by an owner or officer that they meet the minimum criteria to be a responsible contractor as defined in Minn. Stat. § 16C.285.	
Authorized Signature of Owner or Officer:	Printed Name:
Title:	Date:
Company Name:	

CONTRACTOR & CITY OF DULUTH

THIS AGREEMENT, effective as of the date of attestation by the City Clerk, is made by and between the **CITY OF DULUTH**, a municipal corporation, hereinafter referred to as the "CITY," party of the first part, and **Contractor, address**, hereinafter referred to as the "Contractor," party of the second part;

WITNESSETH: That the Contractor and the City agree as follows:

1. The following shall be deemed to be part of this contract:
 - a. The annexed resolution and legal advertisement of the City Council.
 - b. The bid request and specifications, as modified by irreconcilable language in this written contract.
 - c. The bid by Contractor, as modified by irreconcilable language in this written contract.
 - d. The performance bond and payment bond certification.
 - e. All provisions of law applicable to a contract of this nature.
2. The Contractor agrees to furnish and deliver to the **Department** all labor, supervision, material, equipment, supplies, insurance, performance bond, payment bond and everything else necessary for general construction of **Project** at **location**, all in strict accordance with plans and specifications prepared by **design co. or city architect**, your bid of \$ and **resolution no. passed on date**. Contractor shall not commence performance of any work under this contract until Contractor receives authorization from the City's Purchasing Agent in writing and dated.
3. The City agrees to pay progress payments and make final payments to the Contractor as stated in the contract specifications. The total amount payable under this contract shall not exceed **dollar amount spelled out (\$)** unless the contract is modified by formal amendment or change order. Payments under this Agreement shall be made from the following **funding** and **RQ no**. Due to the dollar amount of this contract, a Project Labor Agreement **is or is not** included as part of this contract (City Code Section 2-29).
4. The Contractor shall furnish and maintain in full force and effect until this contract is completely performed by the Contractor, a performance bond and payment bond if and when required by law, or if and when required by the City.
5. Inasmuch as this contract concerns work, materials and equipment needed for the public benefit, the provisions of this contract relating to the time of performance and completion of work and delivery of materials or equipment are of the essence of this contract.
6. The Contractor will defend, indemnify and save the City harmless from all costs, charges, damages, and loss of any kind that may grow out of the matters covered by this contract.

Said obligation does not include indemnification of the City for claims of liability arising out of the sole negligent or intentional acts or omissions of City but shall include but not be limited to the obligation to defend, indemnify and save harmless the City in all cases where claims of liability against the City arise out of acts or omissions of City which are derivative of the negligence or intentional acts or omissions of Contractor such as, and including but not limited to, the failure to supervise, the failure to warn, the failure to prevent such act or omission by Contractor and any other such source of liability. In addition Contractor will comply with all local, state and federal laws, rules and regulations applicable to this contract and to the work to be done and things to be supplied hereunder.

7. Insurance

a. Contractor shall provide the following minimum amounts of insurance from insurance companies authorized to do business in the state of Minnesota, which insurance shall indemnify Contractor and City from all liability described in Paragraph 6 above, subject to provisions below.

- (1) Workers' compensation insurance in accordance with the laws of the State of Minnesota.
- (2) Public Liability and Automobile Liability Insurance with limits not less than **\$1,500,000** Single Limit, and twice the limits provided when a claim arises out of the release or threatened release of a hazardous substance; shall be in a company approved by the city of Duluth; and shall provide for the following: Liability for Premises, Operations, Completed Operations, Independent Contractors, and Contractual Liability.
- (3) City of Duluth shall be named as **Additional Insured** under the Public Liability, Excess/Umbrella Liability* and Automobile Liability, or as an alternate, Contractor may provide Owners-Contractors Protective policy, naming itself and the City of Duluth. Contractor shall also provide evidence of Statutory Minnesota Workers Compensation Insurance. Contractor to provide Certificate of Insurance evidencing such coverage with 30-days' notice of cancellation, non-renewal or material change provisions included. The City of Duluth does not represent or guarantee that these types or limits of coverage are adequate to protect the Contractor's interests and liabilities.

**An umbrella policy with a "following form" provision is acceptable if written verification is provided that the underlying policy names the City of Duluth as an additional insured.*

- (4) If a certificate of insurance is provided, the form of the certificate shall contain an unconditional requirement that the insurer notify the City without fail not less than 30 days' prior to any cancellation, non-renewal or modification of the policy or coverages evidenced by said certificate and shall further provide that failure to give such notice to City will render any such change or changes in said policy or coverages ineffective as against the City.

- (5) The use of an “ACORD” form as a certificate of insurance shall be accompanied by two forms – 1) ISO Additional Insured Endorsement (CG-2010 pre-2004) and 2) Notice of Cancellation Endorsement (IL 7002) or equivalent, as approved by the Duluth City Attorney’s Office.
 - b. The insurance required herein shall be maintained in full force and effect during the life of this Agreement and shall protect Contractor, its employees, agents and representatives from claims and damages including but not limited to personal injury and death and any act or failure to act by Contractor, its employees, agents and representatives in the negligent performance of work covered by this Agreement.
 - c. Certificates showing that Contractor is carrying the above described insurance in the specified amounts shall be furnished to the City prior to the execution of this Contract and a certificate showing continued maintenance of such insurance shall be on file with the City during the term of this Contract.
 - d. Contractor shall be required to provide insurance meeting the requirements of this Paragraph 7 unless Contractor successfully demonstrates to the satisfaction of the City Attorney, in the exercise of his or her discretion, that such insurance is not reasonably available in the market. If Contractor demonstrates to the satisfaction of the City Attorney that such insurance is not reasonably available, the City Attorney may approve an alternative form of insurance which is reasonably available in the market which he or she deems to provide the highest level of insurance protection to the City which is reasonably available.
8. No claim whatsoever shall be made by the Contractor against any officer, agent or employee of the City for, or on account of, anything done, or omitted to be done, in connection with this contract. If this contract is not made in conformity with mandatory provisions of any statute or of the ordinances and charter of the City of Duluth, the Contractor agrees to raise no defense and make no claim against the City on the basis of ratification, laches, estoppel, or implied contract.
9. The Contractor shall not assign, transfer, convey or otherwise dispose of this contract, or his right to execute it, or his right, title or interest in or to it, or any part thereof, without the consent of the City, evidenced by a resolution duly adopted by the City Council. The prohibition contained in this paragraph shall not be deemed to prevent the contractor from subcontracting. Contractor shall remain primarily responsible for all work performed by any subcontractor.
10. The Contractor agrees that in the hiring of common or skilled labor for the performance of any work under this contract, Contractor will not discriminate by reason of race, creed or color, religion, national origin, sex, marital status, status with regard to public assistance, disability or age.
11. The Contractor agrees that Contractor shall not in any manner discriminate against or intimidate or prevent the employment of any person or persons, or on being hired, prevent or conspire to prevent any person or persons from the performance or work under this contract on account of race, creed or color, religion, national origin, sex, marital status, status with regard to public assistance, disability or age.

12. The contractor agrees that, as provided in Minnesota Statutes 16C.05, Subd. 5, contractor's books, records, documents, and accounting procedures and practices are subject to examination by the City or the state auditor for six years from the date of final payment under this contract.
13. This contract may be cancelled or terminated by the City and all moneys due or to become due hereunder may be forfeited for any failure to perform any terms or conditions of this contract including but not limited to any violation of the terms or conditions of Section 10 or 11 of this contract.
14. Any waiver by any party of any provision of this contract shall not imply a subsequent waiver of that or any other provision.
15. This contract is made in the state of Minnesota and shall be construed and interpreted in accordance with the laws of the State of Minnesota. The appropriate venue and jurisdiction for any litigation hereunder shall be in a court located in St. Louis, County, Minnesota, and the parties to this Agreement waive objection to the jurisdiction of this court, whether based on convenience or otherwise.
16. This Agreement constitutes the entire agreement between the City and the Contractor on the subject matter hereof. It may not be changed, modified, discharged or extended except by written instrument duly executed on behalf of the City and the Contractor. The Contractor agrees that no representations or warranties made by the City shall be binding upon the City unless expressed in writing herein.
17. This Agreement shall not be in force and effect, or in any way binding upon the City until the same shall have been approved by the Department Head, signed by the Mayor, attested by the Clerk, and countersigned by the City Auditor.
18. The Contractor unconditionally guarantees to perform all work pursuant to this contract in a good and workmanlike manner, in strict compliance with the specifications and instructions hereto attached, and to the satisfaction of the City of Duluth.
19. This Agreement may be executed in counterparts, each of which shall be deemed to be original and all of which together shall constitute the binding and enforceable agreement of the parties hereto. This Agreement may be executed and delivered by a party by facsimile or PDF transmission, which transmission copy shall be considered an original and shall be binding and enforceable against such party.

Countersigned:

CITY OF DULUTH-Client

By

City Auditor
Approved this _____ day of _____

Mayor

Attest:

Department Director
Approved this _____ day of _____

City Clerk
Attested this _____ day of _____

Purchasing Agent
Approved this _____ day of _____

CONTRACTOR/COMPANY
Contractor

By

Assistant City Attorney
Approved this _____ day of _____

Company Representative

Its

Title of Representative
Approved this _____ day of _____

CITY OF DULUTH - PART II -
SUPPLEMENTARY GENERAL CONDITIONS FOR FEDERALLY, STATE OF MINNESOTA, AND/OR CITY ASSISTED ACTIVITIES
(revised 4/15/11)

The following conditions take precedence over any conflicting conditions in this Contract.

<u>Section</u>	<u>Title</u>
1	Restrictions on Disbursements, Subcontractors Federal Agency Requirements, Separability, Property
2	Miscellaneous Provisions
3	Definitions
4	Environmental Provisions
5	Contract Compliance
6	Records, Reports and Information, Audits and Inspections
7	Conflict of Interest and Lobbying
8	Labor Standards - Physical Improvement Projects
9	Minnesota Department of Transportation Specification 1960 Partial Payments
10	Housing and Urban Development (HUD) Section 4010
11	Equal Opportunity and Affirmative Action
12	Employment Opportunities - "HUD Section 3"
13	Federal Requirements for Minority/Women Business Enterprises Contract Guidance - MPFA
14	Forms

E-Mail Addresses

For ease in communication, the e-mail address of the person(s) responsible for preparing certified payroll reports (CPRs) is required from the prime contractor and all subcontractors (regardless of tier). This information will be provided to the project engineer prior to the pre-construction meeting OR with materials required in the Letter of Intent.

Section I

Restrictions on Disbursements

No money under this Contract shall be disbursed by the City to any Contractor except pursuant to a written contract which incorporates the applicable PART II, Supplementary General Conditions for Federally, State of Minnesota, and/or City Assisted Activities, and unless the Contractor is in compliance with the Federal Agency requirements with regard to accounting and fiscal matters to the extent they are applicable.

Subcontractors

(A) The Contractor shall include in any subcontract the clauses set forth in the PART II, Supplementary General Conditions for Federally, State of Minnesota and/or City Assisted Activities in their entirety and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

(B) The Contractor shall not subcontract any part of the work covered by this Contract or permit subcontracted work to be further subcontracted without the City's prior written approval of the subcontractors. The City will not approve any subcontractor for work covered by this Contract who is at the time ineligible under the provisions of any applicable regulations issued by a Federal Agency or the Secretary of Labor, United States Department of Labor, to receive an award of such subcontract.

Federal Agency Requirements

Unearned payments under this Contract may be suspended or terminated upon refusal to accept any additional conditions that may be imposed by the Federal Agency at any time; or if the grant, if applicable, to the City under which this Contract is made is suspended or terminated.

Separability

If any provisions of this Contract is held invalid, the remainder of this Contract shall not be affected thereby if such remainder would then continue to conform to the terms and requirements of applicable law.

Property

Acquisition, use, and disposal of all property, materials and goods acquired as a result of activities made possible by this Contract shall be accomplished in accordance with the applicable provisions of Federal Management Circular (FMC)-74-7, as amended.

Section 2

Miscellaneous Provisions

(A) **Copyrights.** In the event this Contract results in a book or other copyrightable material, the author is free to copyright the work, but Federal Agency and the City reserve a royalty-free, nonexclusive, and irrevocable license to reproduce, publish or otherwise use, all copyrighted material and all material which can be copyrighted.

(B) **Patents.** Any discovery or invention arising out of or developed in the course of work aided by this Contract shall be promptly and fully reported to the Federal Agency and the City for determination by the Federal Agency as to whether patent protection on such invention or discovery shall be sought and how the rights in the invention or discovery, including rights under any patent issued thereon, shall be disposed of and administered in order to protect the public interests.

(C) **Political Activity Prohibited.** None of the funds, materials, property or services provided directly or indirectly under this Contract shall be used in the performance of this Contract on any partisan political activity, or to further the election or defeat of any candidate for public office.

(D) **Lobbying Prohibited.** None of the funds under this Contract shall be used for publicity or propaganda purposes designed to support or defeat legislation pending before the Congress or the City.

(E) **Prohibition of and Elimination of Lead-Based Paint Hazard.** Notwithstanding any other provision, the Agency and Contractor agree to comply with the regulation issued by the Secretary of Housing and Urban Development set forth in 37 F. R. 22732-3 and all applicable rules and orders issued thereunder which prohibit the use of lead-based paint in residential structures undergoing Federally assisted construction or rehabilitation and require the elimination of lead-based paint hazards. Every contract or subcontract, including paint, pursuant to which such Federally assisted construction or rehabilitation is performed shall include appropriate provisions prohibiting the use of lead-based paint.

(F) **Architectural Barriers Act.** The design for and construction of any facility funded in whole or in part by this Contract shall be in conformance with the American Standard Specification for Making Buildings and Facilities Accessible and Usable by the Physically Handicapped, Number A-117.1-1971, as modified.

(G) **Relocation and Acquisition.** Any relocation or acquisition resulting from activities funded in whole or in part by this Contract shall be in conformance with the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (40 U.S.C. 4601) and the implementing regulations 24CFR Part 42.

(H) **Prohibition Against Payments of Bonus or Commission.** The assistance provided under this Contract shall not be used in the payment of any bonus or commission for the purpose of obtaining Federal Agency approval for such assistance, or Federal Agency approval of applications for additional assistance, or any other approval or concurrence of a Federal Agency required under this Contract, Federal Law or Federal Regulations thereto; provided, however, that reasonable fees or bonafide technical, consultant, managerial or other such services, other than actual solicitation, are not hereby prohibited if otherwise eligible as project costs.

(I) **Hatch Act.** Where applicable, the Contractor will comply with the provisions of the Hatch Act which limits the political activity of the Contractor's employees.

Section 3

Definitions

(A) City means the City of Duluth, Contracting Officer, or other persons authorized to act on behalf of the City of Duluth.

(B) Contracting Officer is the delegated representative of the City who has the responsibility for administering the Project.

(C) Contractor means an entity, whether public or private, which furnishes (other than standard commercial supplies, office space or printing services) to the City, products, services or supplies as described in this project Contract.

(D) Federal Agency means the United States, the District of Columbia, and any executive department, independent establishment, administrative agency, or instrumentality of the United States or of the District of Columbia, including any corporation, all or substantially all of the stock of which is beneficially owned by the United States, by the District of Columbia, or by any of the foregoing departments, establishments, agencies, and instrumentalities. The term Federal Agency shall also include the person or persons authorized to act on behalf of said Federal Agency.

(E) Project means the activities to be undertaken by the Contractor as described in this Contract, which from time to time may be amended by mutual consent of the City and Contractor.

(F) Subcontractor means an entity, regardless of tier, which has entered into an agreement with the Contractor or another Subcontractor, to undertake certain Project activities as described in that agreement.

(G) The term labor standards, as used in the Contract, means the requirements of the Davis-Bacon Act, the Contract Work Hours and Safety Standards Act (other than those relating to safety and health), the Copeland Act, and the prevailing wage provisions of the other statutes listed in 20 CFR 5.1.

(H) Work means all labor necessary to produce the construction required by the Contract Documents, all materials and equipment incorporated or to be incorporated in such construction, products, services, or supplies required by the Contract Documents, or any other requirements set forth in the Contract.

(I) Additional Definitions, that are applicable to the Labor Standards provisions - Section 8 - of this Contract can be found in 29CFR5.2 as published by the U.S. Department of Labor and said definitions are hereby incorporated by reference into the provisions of this Contract.

Section 4

Environmental Provisions

(A) The Contractor agrees to follow the regulations, requirements, policies, goals and procedures set forth by the Council on Environmental Quality (CEQ) under provisions of the National Environmental Policy Act (NEPA) (Pub. L 91-190, 42 U.S.C. 4321 et seq.), Executive Order 11514, and 40 CFR Part 1500.

(B) **Historic Properties.** The Contractor agrees to follow the regulations, requirements, policies, goals, and procedures set forth under provisions of the National Historic Preservation Act of 1966 (Pub. L. 89-665); Preservation of Historic and Archeological Data Act of 1974 (Pub. L. 93-291); Executive Order 11593; 36 CFR , Part 800 and applicable State legislation or regulations.

(C) **Coastal Zones and Wetlands.** The Contractor agrees to follow the regulations, requirements, policies, goals and procedures set forth under provisions of the Coastal Zone Management Act of 1972 (Pub. L. 92-583) and applicable State legislation or regulations.

(D) **Noise.** The Contractor agrees to comply with provisions set forth in the U.S. Department of Housing and Urban Development Handbook 1390.2, Noise Abatement and Control, Department Policy, Responsibility and Standards, 1971.

(E) **Flood Plain.** The Contractor agrees to comply with the provisions set forth in the Flood Disaster Protection Act of 1973 (Pub. L. 93-234) and implementing regulations; Title 24, Chapter X, Subchapter B, National Flood Insurance Program, Executive Order 11296, and Executive Order 11988 relating to the evaluation of flood hazards.

(F) **Air Quality.** The Contractor agrees to comply with provisions set forth in the Clean Air Act (Pub. L. 90-148) and Clean Air Act Amendments of 1970 (Pub. L. 91-604); and applicable U.S. Environmental Protection Agency implementing regulations.

(G) **Water Quality.** The Contractor agrees to comply with the provisions set forth in the Federal Water Pollution Control Act (Pub. L. 92-500) and applicable U.S. Environmental Protection Agency implementing regulations, and Executive Order 11288 relating to the prevention, control, and abatement of water pollution.

(H) **Wildlife.** The Contractor agrees to comply with the provisions of the Fish and Wildlife Coordination Act (Pub. L. 85-264).

Section 5

Contract Compliance

(A) In the event of the Contractor's noncompliance with the provisions of this Contract or with any of the said regulations, the City may withhold payment(s) until evidence of compliance by the Contractor has been demonstrated, or the Contract may be canceled, terminated or suspended in whole or in part and the Contractor may be declared ineligible for further City contracts.

(B) In the event the Contract is terminated or canceled as a result of noncompliance with any of the provisions of this Contract, the City may subject to bids the remainder of the Project for which this Contract was made. The City shall have the right upon termination or suspension to withhold all further payments under this

Contract to the Contractor. Upon the award of a new contract for the remainder of the Project, the City shall pay to the Contractor an amount no more than the balance remaining due to the Contractor less the sum of the costs incurred by the City which are necessary in preparing the new bid specifications. In the event the amount paid the Contractor prior to the date of termination or cancellation exceeds the full amount of this Contract less the cost of the new contract and the additional costs mentioned above, the Contractor agrees to reimburse the City for such excess amount within ninety days after the new contract is awarded by the above procedures.

(C) Provisions contained in subparagraph (A) and (B) above shall not be interpreted as precluding any authorized Federal, State, or County governmental unit from exercising their legal administrative or other responsibilities in respect to the enforcement by said governmental units of laws or regulations concerning activities of the Contractor.

Section 6

Records

(A) **Establishment and Maintenance of Records.** Records shall be maintained in accordance with requirements prescribed by the Federal Agency or the City with respect to all matters covered by this Contract. Except as otherwise authorized by the Federal Agency, such records shall be maintained for a period of three years after receipt of final payment under this Contract.

(B) **Documentation of Costs.** All costs shall be supported by properly executed payrolls, time records, invoices, contracts, or vouchers, or other official documentation evidencing in proper detail the nature and propriety of the charges. All checks, payrolls, invoices, contracts, vouchers, orders, or other accounting documents pertaining in whole or in part to this Contract shall be clearly identified and readily accessible.

Reports and Information

At such times and in such forms as the Federal Agency or the City may require, there shall be furnished to the Federal Agency or the City such statements, records, data and information as the Federal Agency or the City may request pertaining to matters covered by this Contract.

Audits and Inspection

At any time during normal business hours and as often as the City, the Federal Agency and/or the Comptroller General of the United States may deem necessary, there shall be made available to the City, the Federal Agency and/or representatives of the Comptroller General for examination of all its records with respect to all matters covered by this Contract and will permit the City, the Federal Agency and/or representative of the Comptroller General to audit, examine and make excerpts or transcripts from such records, and to make audits of all contracts, invoices, materials, payrolls, records of personnel, conditions of employment, and other data relating to all matters covered by this Contract.

Section 7

Conflict of Interest and Lobbying

(A) **Interest of Members, Officers, or Employees of the City, Members of Local Governing Body, or Other Public Officials.** No member, officer, or employee of the City, or its designees or agents, or member of the governing body of the City, during his/her tenure of for one year thereafter, shall have any interest, direct or indirect in any contract or subcontract, or the proceeds thereof, for work to be performed in connection with the Project assisted under this Contract. Any contract in which any of the above indicated individuals becomes directly or indirectly, interested, personally or as a member of a firm, or as an officer, director, or stockholder of a corporation, shall be and become absolutely void; and any money which shall have been paid on such contract by the City may be recovered back from any or all persons interested therein, by a joint action or several actions.

(B) The Contractor agrees that he will incorporate into every contract required to be in writing the following provisions: **Interest of Contractors and Employees** - The Contractor covenants that he presently has no interest and shall not acquire any interest, direct or indirect, in the Project which would conflict in any manner or degree with the performance of this Contract, and no person having any conflicting interest shall be employed. Any interest on the part of the Contractor or his employees must be disclosed to the Federal Agency and the City. Provided, however, that this paragraph shall be interpreted in such a manner so as not to unreasonably impede any statutory requirements that opportunity be provided for employment of and participation by certain residents of a designated geographical area, if applicable.

(C) **Interest of Member or of Delegate to Congress.** No member of or Delegate to Congress, or Resident Commissioner, shall be admitted to any share or part of this Contract or to any benefit that may arise therefrom, but this provision shall not be construed to extend to this Contract if made with a corporation for its general benefit.

(D) The Contractor by signing this document certifies, to the best of his or her knowledge and belief, that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the Contractor, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the Contractor shall complete and submit Standard Form -LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

The above certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1332, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

(E) The parties to this Contract certify and agree that they are under no contractual or other disability which would prevent them from complying with the terms of this Contract.

Section 8

Labor Standards - Physical Improvement Projects

Where applicable, there shall be included in all construction, rehabilitation, alteration or repair contracts with private entities made possible by or resulting from this Contract, the following Labor Standards provisions;

(A) **General Requirements.**

(1) **Subcontracts.** The Contractor shall include in any subcontract the clauses set forth in Section 8, **Labor Standards**, in their entirety and also a clause requiring the subcontractors to include these clauses in any Tower tier subcontract which they may enter into, together with a clause requiring this insertion in any further subcontracts that may in turn be made.

(2) The transporting of materials and supplies to or from the site of the Project or Program to which this Contract pertains by the Employees of the Contractor or of any subcontractor, and the manufacturing or furnishing of materials, articles, supplies, or equipment on the site of the Project or Program to which this Contract pertains by persons employed by the Contractor or by any subcontractor, shall for the purpose of this Contract, and without limiting the generality of the foregoing provisions of this Contract, be deemed to be work to which these **Labor Standards** provisions are applicable.

(3) No person under the age of eighteen years shall be employed on work covered by this Contract.

(4) In connection with the performance of work under this Contract, the Contractor agrees not to employ any person undergoing sentence of imprisonment except as provided by Public Law 89-176, September 10, 1955 (18 U.S.C. 4082 (c) (2)) and Executive Order 11755, December 29, 1973.

(5) The Contractor will permit authorized representatives of the Federal Agency and the City to interview employees during working hours on the job.

(6) No employee to whom the wage, salary, or other **Labor Standards** provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the Labor Standards applicable under this Contract to his employer.

(B) **Safety Standards.** No Contractor or subcontractor contracting for any part of a construction contract shall require any laborer or mechanic, including apprentices and trainees, employed in the performance of the Contract to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous to his health or safety, as determined under construction safety and health standards promulgated by the Secretary of Labor. The Contractor or subcontractor comply with all the rules, regulations, and relevant orders, promulgated by the Secretary of Labor pursuant to Public Law 91-54.

(C) **Davis-Bacon Act - 29 CFR 5.5**

web site: http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&tpl=/ecfrbrowse/Title29/29cfr5_main_02.tpl

Refer to Section 10, Page 10 Housing and Urban Development (HUD) form-4010 (06/2009) Ref Handbook 1344.1

City of Duluth "Mini Davis-Bacon"

(D) **City of Duluth - Minimum Wage Ordinance 8940, as Amended.**

(1) On a project (as defined below) funded in whole or in part by federal and/or state funds and/or city of Duluth funds, these local provisions shall prevail in those instances where the requirements of the local provisions are equal to or greater than similar minimum labor standards provisions as set forth in applicable federal and/or state laws and regulations.

(2) In all contracts in excess of \$2,000 for projects (as defined below), the Contractor's particular attention is called to Ordinance 8940, effective June 8, 1989, respectively coded as Article IV of Chapter 2 of the Duluth City Code, and entitled "An Ordinance Pertaining to Wages and Working Hours of Persons on Public Works in the City of Duluth", as set forth below:

(3) **Definitions.**

For the purposes of this section the following words and phrases shall have the meanings respectively ascribed to them in this section:

(a) **Basic hourly rate** - The hourly wage paid to any employee.

(b) **Prevailing wage rate** - The basic hourly rate plus fringe benefits prevailing in the city of Duluth as determined by the United States secretary of labor pursuant to the Davis-Bacon act, as amended; provided that whenever employer and employee organizations employing and representing a majority of a class of workers in a particular industry within the city jointly certify that the prevailing basic hourly rate plus fringe benefits of such workers differs from the amount determined by the secretary of labor, the certified rate shall be considered to be the prevailing wage rate for such class of workers in that industry.

(c) **Fringe benefits** - Employer contribution for health and welfare benefits, vacation benefits, pension benefits, and all other economic benefits other than the basic hourly rate.

(d) **Apprentice** - An employee who is working under a training program which is approved either by the U.S. Department of Labor Bureau of Apprenticeship & Training or the Minnesota Director of Voluntary Apprenticeship; see apprentice ratios on pages 6-7 and HUD 4010 in Section 10.

(e) **Trainee** - An employee registered with the U. S. Department of Labor Employment & Training Administration; see HUD 4010 in Section 10.

(e) **Project** - Erection, construction, demolition, painting, remodeling or repairing of any public building, highway, sidewalk, bridge, water or gas line, sewer and sewage treatment facility or other public work performed under contract with the city.

(f) **Labor, mechanic** - All persons utilized, employed or working on a project who are doing work usually done by mechanics and laborers, including proprietors, partners, and members of cooperatives.

(4) **Wage Rates and Hours for City of Duluth Projects.**

(a) Any contract which provides for a project of estimated total cost of over \$2,000.00 shall contain a stipulation that no laborer, mechanic or apprentice-trainee employed directly upon the project work site by the contractor or any subcontractor shall be permitted or required to work at a rate of pay less than the prevailing wage rate; nor shall any such employee be permitted or required to work more than 8 hours in any work day **OR** 40 hours in any work week unless he is paid at a rate of at least 1½ times the basic hourly rate for all hours in excess of 8 per day **OR** 40 per week [in other words: all hours in excess of eight per day and all hours after 40 per week] and unless he receives fringe benefits that are at least equal to those in the prevailing wage rate; provided that whenever employer and employee organizations employing and representing a majority of a class of workers in a particular industry within the city jointly certify that the maximum number of hours that such persons may work under existing labor agreements before overtime wages must be paid differs from the hours specified in this paragraph, the maximum number of hours specified in such labor agreements shall be substituted for those specified above in applying the provisions of this paragraph to such workers.

(b) The word "or" in the state statute and the city of Duluth Code refers to the number of hours worked in any one week or, in the alternative, the number of hours worked in any one day in the week (the days in one week being totaled for reporting purposes); the law requires use of the alternative which results in the higher number of overtime hours for each employee whose time is being reported.

EXCEPTIONS: Federal government funding only and HUD (Housing and Urban Development) funding - see point "e"

In summary, if a project is solely funded with city of Duluth monies, city ordinance 8940 as amended allows the employees to work four ten-hour days and be paid at the regular hourly rate for those ten hours; exceeding hours must be paid at the overtime rate. An employer may not withhold overtime payment exclusively until 40 hours per week have been worked. Daily overtime must be paid as it is earned.

- **The base workweek hours must be clearly indicated on each payroll. Employees may be assigned a different workweek; however, that must be clearly marked beside the employees' names.**

The following are examples of how these rules apply to different situations.

- TT refers to the total time worked on the day or in the week
- RT refers to the hours worked at the regular rate of pay (straight time)
- OT refers to the hours worked for which overtime must be paid

State Funded with or without federal funding Projects								City-only Funded Projects (4 ten-hour days)							
	Mon	Tues	Wed	Thurs	Fri	Sat	Total		Mon	Tues	Wed	Thurs	Fri	Sat	Total
TT	10	10	10	10	0	6	46		10	10	10	10	0	6	46
RT	8	8	8	8	0	6	38		10	10	10	10	0	0	40
OT	2	2	2	2	0	0	8		0	0	0	0	0	6	6

State Funded with or without federal funding Projects								City-only Funded Projects (4 ten-hour days)							
	Mon	Tues	Wed	Thurs	Fri	Sat	Total		Mon	Tues	Wed	Thurs	Fri	Sat	Total
TT	0	10	10	0	7	0	27		10	0	12	0	0	0	32
RT	0	8	8	0	7	0	23		10	0	10	10	0	0	30
OT	0	2	2	0	0	0	4		0	0	2	0	0	0	2

c) **Overtime Calculations**

Minnesota Statutes Chapter 177.42, subd 4 specifies that the prevailing hours of labor may not be more than eight hours per day or more than 40 hours per week (as stated above in (b)), the City of Duluth does allow for ten hours per day/40 hours per week with City funding *only*. **Example: hours exceeding eight per day are paid at 1.5 times the rate in the contract's wage decision OR the base rate the employee is being paid if it is higher than the required base rate; once 40-hours in any one week are attained, all hours exceeding that 40 are paid at 1.5 times the rate in the project contract's wage decision.** See example (1) and (2) below.

Minnesota Statutes Chapter 177.42, subd 5 defines the hourly basic rate as the hourly wage paid to any employee. (subd 6): The prevailing wage rate means the hourly basic rate of pay plus the contribution for health and welfare benefits, vacation benefits, pension benefits, and any other economic benefit paid to the largest number of workers engaged in the same class of labor within the area...

Minnesota Statutes Chapter 177.43, subd 1 (1) ...employees are permitted to work more hours than the prevailing hours of labor [being] paid for all hours in excess of the prevailing hours at a rate of at least 1-½ times the hourly basic rate of pay. (2) A laborer or mechanic may not be paid a lesser rate of wages than the prevailing wage rate in the same or most similar trade or occupation in the area.

An employer may pay a lower **regular time/straight time** hourly rate and higher fringe benefit rate--to a bona fide plan--than stated in the contract's wage decision providing the total of the two rates is equal to or greater than the total in the wage decision; however, the **OVERTIME rate** must be paid on the higher rate in the contract's wage decision.

(1) Overtime Calculation with Fringe Benefits Paid to Bona Fide Plans

For overtime purposes, an employer paying higher fringe benefits to a bona fide plan and paying a lower hourly rate **MUST** calculate the overtime on the higher hourly rate as stated in the project contract's wage decision. The fringe benefit amount may be reduced to reflect any increase in the total prevailing wage package IF the plan administrator permits such a reduction. This acceptance must be verified in writing by the plan administrator and attached to the appropriate certified payroll report.

(2) Overtime Calculation with Cash Payment of Fringe Benefits

When the fringe benefit is paid directly to an employee, the prevailing base rate and the fringe benefit rate as established in the project contract's wage decision for a specific classification are totaled to arrive at the hourly rate. *Overtime is calculated at 1.5 x the base rate of the wage decision with the fringe benefit amount added to that rate: base rate of the wage decision x 1.5 + fringe benefit rate = overtime rate.*

Contract Work Hours and Safety Standards Act

[Refer to page two of this document.] All projects valued at \$100,000 or greater are subject to this Act. As with Minnesota Statutes Chapter 177.43, the overtime rate is calculated as in items one and two above OR (e) below.

- (d) A contractor shall not reduce a worker's private, regular rate of pay when the wage rate certified by the U. S. Department of Labor or the Minnesota Department of Labor & Industry is less than the worker's normal hourly wage [Minnesota Statute 181.03 subdivision 1(2)].

(e) **Regular Time & Overtime Definitions**

- **State of Minnesota** funded projects with or without federal funding *only allow for five eight-hour days per week at regular time*. Overtime is calculated at a rate not less than time and one-half (1.5) of the prevailing base rate as stated in the wage decision OR the base rate the employee is being paid if it is higher than the required base rate--plus the straight time fringe benefit amount. (see (1) above for example when a lower base rate and higher fringe are paid)
- **City of Duluth** funded projects do permit four ten-hour work days at regular time--see point 4-a, b for stipulations. Overtime is calculated at a rate not less than time and one-half (1.5) of the prevailing base rate as stated in the wage decision--OR the base rate the employee is being paid if it is higher than the required base rate--plus the straight time fringe benefit amount. (see (1) above for example when a lower base rate and higher fringe are paid)
- **Federal** funded only projects allow overtime pay for hours worked in excess of 40 in a workweek at a rate not less than time and one-half (1.5) of the prevailing base rate as stated in the wage decision OR the base rate the employee is being paid if it is higher than the required base rate--plus the straight time fringe benefit amount.
- **HUD** funded projects allow overtime pay for hours worked in excess of 40 in a workweek at a rate not less than time and one-half (1.5) of the prevailing base rate as stated in the wage decision OR the base rate the employee is being paid if it is higher than the required base rate--plus the straight time fringe benefit amount.

** When a combination of funding sources are included in any one project, the most strict requirements will apply.

- (f) The minimum hourly prevailing wages are contained in each project specification. When both federal (general decision rates from the U. S. Department of Labor) and State of Minnesota prevailing wages for state funded construction projects from the Minnesota Department of Labor and Industry are used, the prime contractor and all subcontractors including trucking operations, are required to pay the higher of the two wages for all laborers and mechanics [MnDOT Contract Administration Manual, Section 5-591.320].
- (g) The prime contractor and any lower-tier subcontractor shall review all wage decisions and compensate a worker according to the type of work performed and at the rate that is the greatest.
- (h) State of Minnesota prevailing wages typically list two rates for each classification with two effective dates. Should any City of Duluth contract continue to and past the second effective date, that rate and fringe benefit will be in effect through the remainder of the project.
- (i) **Mn/DOT Statement of Compliance is required on all city of Duluth construction projects (regardless of the project funding source) with each weekly certified payroll report.** web site: <http://dot.state.mn.us/const/labor/forms.html>
- (j) All contracts for city projects shall have applicable schedules of prevailing wage rates set forth in the contract. Schedules of applicable prevailing wage rates shall be posted on all project job sites for public review and shall be protected from the weather.
- (k) Employees on projects shall be paid at least **weekly**. Fringe benefits shall be paid either in cash or to an employee benefit plan that has been approved by the U.S. Department of Labor. ■ **The fringe benefit package is an integral portion of the prevailing wage. Should the prime contractor or any subcontractor (regardless of tier) become delinquent with any fringe benefit plan administrator's requirements for monthly payment, the monthly estimate(s) may be withheld until the plan payments are made current.** (city ordinance 8940 6-18-89 plus amendments)
See MnDOT Specification 1906 on page nine and Section 5 of this document: Contract Compliance.
See Statement of Compliance and Certified Payroll Report requirements in Section 10, HUD 4010 and web sites in Section 14, Forms.
- (l) Any contractor or subcontractor working on a project shall furnish the City with **original** certified payroll reports with **original signatures** relating to the project. Such certified payroll reports shall be **submitted weekly** on U.S. Department of Labor standard forms (WH-347) or their equivalent--using the same format--to the City of Duluth Labor Standards representative. All City of Duluth funded projects must have the base workweek hours indicated on the certified payroll form and/or beside each employee's name (should some employees be working different base workweeks).
- (m) No contractor or subcontractor working on a project shall evade or attempt to evade the provisions of this section through the use of non-recognized training programs. The only employees involved in training programs that shall be allowed to work on projects covered by this section shall be apprentice-trainees as defined by this article.
- (n) Any person violating the provisions of this section shall be guilty of a misdemeanor with each day of violation constituting a separate offense. In addition, if the prevailing wage rate and accompanying fringe benefit rate is not paid to employees working on a project, the City of Duluth may withhold contract payments to the prime contractor until such deficiencies are corrected. Should fringe benefits be paid to authorized Plans, the payments must be made within the demands of those Plans. Delinquencies may result in withholding of project funds to the prime contractor.
- (o) This section shall not apply to contracts for projects where the total cost of the project is less than \$2,000.00; nor to materialmen who do no more than deliver materials to the work site, except that this section shall apply to employees who deliver asphalt, concrete or mineral aggregate such as sand, gravel or stone where such material is incorporated into the project by depositing the material substantially in place, either directly or through spreaders, from the transporting vehicle.

(5) **Helpers**

A helper may perform work *only* if the helper classification is specified and defined in the federal wage decision and/or State of Minnesota wage decision incorporated into the project contract. Without such a helper classification, the contractor must assign a job classification that is the "same or most similar" [Minnesota Statute 177.44, subdivision 1] and compensate the helper for the actual work performed regardless of the helper's skill level.

(6) **Apprentice Ratios**

Journeyworkers must be on site with the apprentices and their hours must match.

FUNDING SOURCE:

City of Duluth and State of Minnesota with or without Federal funding

- Apprentices are not permitted to work alone under any circumstances.
- Working foremen are acceptable as a journeyworker PROVIDING he/she is in the same classification.
 - » Example: carpenter foreman and carpenter apprentice
- Ratios are determined by the trade's labor agreement.
- In the absence of ratio language, the following State of Minnesota apprenticeship ratios will be applied:
(apprentice : journeyworker) 1:1 2:4 3:7 4:10, etc.

- Employees working in excess of the allowable ratio must be paid the full journeyworker compensation.
- Out-of-ratio apprentices will be calculated beginning with the **apprentice at the highest level of training** and, then, to less senior apprentices in their rank order.
- Should two or more out-of-ratio apprentices have the same level of training, whomever was on the work site first will receive journeyworker pay; if the apprentices at the same level of training began work on the project site at the same time, hours worked out-of-ratio for which restitution is due will be divided among those apprentices.

Examples:

Four apprentices working unsupervised are on site. [4:0]
Ratio calls for four apprentices and ten journeyworkers [4:10]

Correction: all apprentices will receive the full journeyworker compensation as apprentices are not permitted to work alone.

Three apprentices and two journeyworkers are on site. [3:2]
Ratio calls for three apprentices and seven journeyworkers [3:7]

Two journeyworkers may accompany only one apprentice; therefore, the two highest level apprentices are paid the full journeyworker compensation.

Even though this particular job has three apprentices—the second journeyworker is a mute point; a third journeyworker would also be a mute point in this example.

Correction: the two highest level apprentices are paid the full journeyworker compensation and the third lower level apprentice is considered in ratio.

H U D (CDBG) and Federal funding only

- Apprentices are not permitted to work alone unless the U. S. Department of Labor-approved agreement allows that practice.
- Working foremen are acceptable as a journeyworker PROVIDING he/she is in the same classification.
 - » Example: electrician foreman and electrician apprentice
- Ratios are determined by the trade's U. S. Department of Labor-approved agreement.
- In the event of the absence of ratio language in the applicable agreement, the Minnesota Department of Labor ratio of one apprentice for the first journeyworker and one apprentice for each three journeyworkers thereafter will be applied, (i.e., 1:1, 2:4, 3:7, 4:10, etc.).
- The **legal apprentices are those who first came to work on the job site**; in the event that all apprentices begin work on the project site at the same time, hours worked out-of-ratio for which restitution is due will be divided among the apprentices.
- Time cards will be required to substantiate the start times.
- Employees working in excess of the allowable ratio—or for which U. S. Department of Labor-apprentice agreement/certificate is not provided—must be paid the full journeyworker compensation.

Examples:

Four apprentices and one journeyworker are on site. [4:1]
Ratio calls for four apprentices and ten journeyworkers. [4:10]

The first apprentice on site is considered in ratio as one journeyworker may only accompany one apprentice [1:1]; this particular job has four apprentices.

Correction: the second through the fourth apprentices coming on site are paid the full journeyworker compensation.

Six apprentices and two journeyworkers are on site [6:2]
Ratio calls for six apprentices and sixteen journeyworkers [6:16]

The first apprentice on site is considered in ratio as two journeyworkers may only accompany one apprentice; this particular job has six apprentices—the second journeyworker is a mute point.

Correction: the second through sixth apprentices coming on site are paid the full journeyworker compensation.

(7) Poster Boards

The prime contractor must construct and display a poster board, which contains all required posters, is legible and is accessible to all workers from the first day of work until the project is 100% complete. Posters must be protected from the weather. Prime contractors are not allowed to place a poster board at an off-site facility location.

(8) Trucking Issues

a) For the purpose of sections seven and eight, the term “owner” includes all persons having an ownership interest in the trucking entity or a partnership interest in the trucking entity and has a legal and rightful title to the vehicle(s) or has an approved lease on the vehicle(s). “Operate” means the owner either physically drives the vehicle or hires another to physically drive the vehicle; yet, maintains the right to direct the day-to-day operations of the vehicle.

b) Trucking Operations Definitions: See MN Rule 5200.1106 web site: <https://www.revisor.mn.gov/rules/?id=5200.1106>

Independent Trucking Operator: an individual or partnership who owns or holds a vehicle under lease and who contracts that vehicle and the owner's services to an entity which provides construction services to a public works project. The individual owns or leases and drives the equipment, is responsible for the maintenance of the equipment, bears all operating costs, determines the details and means of performing the services, and enters into a legally binding agreement that specifies the relationship to be that of an independent contractor and not that of an employee.

Multiple Truck Operations: any legal business entity that owns more than one vehicle and hires the vehicles out for services to brokers or contractors on public works projects. The owners of a trucking firm may either drive the vehicles or hire employees to drive the vehicles. Employee drivers are subject to the appropriate prevailing wage rate. The owner driving a vehicle is obligated to account for the value of his/her services as a driver at the appropriate prevailing wage.

Partnerships: a legal business entity where two or more individuals hold vehicles under lease and contract those vehicles and their services to an entity which provides construction services to a public works project. The partners own or lease the equipment, are responsible for maintenance and all operating costs, drive the equipment, determine the details and means of performing the services, and enter a legally binding agreement that specifies the

relationship to be that of a partner and not that of an employee. All partners are subject to the appropriate prevailing wage per city of Duluth ordinance 8940 as amended.

Corporation: any legal business entity that owns or leases vehicles to provide construction services to public works projects. All individuals are employees of the corporation and subject to the appropriate prevailing wage regardless of title or position.

Broker: an individual or firm who (activities include, but are not limited to):

- contracts to provide trucking services [equipment and driver] in the construction industry to users of such services, such as prime contractors and various subcontractors of the prime;
- contracts to obtain services from other trucking operations and dispatches them to various assignments;
- receives payment from the users (such as prime contractors and various subcontractors) in consideration for the trucking services provided; and
- makes payment to the providers (trucking operations so contracted with) for their services.

(9) **Specific documentation from trucking operations.**

Independent Trucking Operators

The owner/operator of a truck must submit a copy of his/her commercial driver's license (CDL), cab card, and insurance certificate for each truck the owner/operator drives on each construction project *before commencing work on that project*. These documents must be sent to the prime contractor who will then forward the material to Labor Standards, Engineering Division at the City of Duluth.

Multiple Truck Operators

Weekly certified payrolls and payment of corresponding prevailing wages plus the fringe benefit package will be required for each project where trucks are operating. This covers the owner plus all employees performing work on the project.

Partnerships

Weekly certified payrolls and payment of corresponding prevailing wages plus fringe benefit packages will be required for each project where trucks are operating. This covers all partners of the organization who perform work on the project.

Each partner performing work on a project must submit a copy of his/her commercial driver's license (CDL), cab card, and insurance certificate for the truck being operated with that weekly certified payroll. It is not necessary to repeat such supporting documentation until a different truck is used and/or certificates or licenses have expired.

Employees of the partnership are always reported on a weekly certified payroll and paid the appropriate prevailing wage plus fringe benefit package for the work being performed.

Corporations

All persons employed by the corporation are subject to receive payment of the prevailing wage plus the fringe benefit package for the work performed on a project regardless of title or position. Weekly certified payrolls must be submitted for all work performed on the project.

Brokers

Truck ownership and a **bonafide contract** between the broker and another trucking operation, a prime contractor, or a subcontractor must be identified. Paperwork must be submitted with the month end trucking report to the city of Duluth Labor Standards representative - Engineering. Certified payrolls are not required when the above documentation is provided and approved.

(10) **Month End Trucking Report - ONLY REQUIRED WITH STATE OF MINNESOTA FUNDING**

The Minnesota Department of Transportation Month End Trucking Report Form A and Form B plus Minnesota Department of Transportation Month End Trucking Report Statement of Compliance are *only required on state funded projects*.

A guide for completing the forms including definitions and the reports, themselves, may be downloaded from:

www.dot.state.mn.us/const/labor/forms.html

Payment to the prime contractor may be withheld until documentation is received and approved.

(11) **Truck Rental Rates - ONLY REQUIRED WITH STATE OF MINNESOTA FUNDING**

Truck rental rates are listed in the prevailing wage section of the project specifications.

(12) **Minnesota Rules 5200.1105 and 5200.1106**

These rules are incorporated into this supplementary general conditions part II by reference and are found on these web sites:

www.revisor.mn.gov/rules/?id=5200

(13) **Truck Axles** web site: <https://www.revisor.mn.gov/rules/?id=5200.1100>

Per Minnesota Rules 5200.1100 Master Job Classifications, a truck "unit" refers to all axles including the steering axle. A tag axle is also counted as one of the axles. Examples: four rear axles plus one steering axle = five axles total one rear axle plus one steering axle = two axles total

(14) **Non-Compliance and Enforcement**

- a) The prime contractor shall be liable for any unpaid wages to its workers or those of its lower-tier subcontractors, trucking companies/Multiple Truck Owners (MTO's) and/or Independent Truck Owner/Operator (ITOs) [MnDOT Standard Specifications for Construction, Section 1801].
- b) See Section 9, MnDOT Specification 1906 Partial Payments and Section 5, page two of this document.
- c) City of Duluth ordinance 8940 as amended.

(15) **IC-134 form - Withholding Affidavit for Contractors**

The IC-134 form will be required from all Multiple Truck Operators, Partnerships, and Corporations performing trucking services on a project before the retainage or all remaining funds can be released. Web site for completing form online: www.mndor.state.mn.us

The form, itself, is found at: www.taxes.state.mn.us/Forms_and_Instructions/ic134.pdf

(16) **Owners, Supervisors, Foremen listed on certified payrolls.**

All persons working on a City of Duluth project including owners, partners, supervisors, salaried persons, and working foremen who perform laborer and/or mechanic work shall be reported on the weekly certified payroll reports including all data required of any laborer or mechanic. (ordinance 8731, 6/24/85 and 8940 as amended).

(17) **Supporting documentation.**

At his/her discretion, the City of Duluth employee responsible for prevailing wage labor standards may demand proof of payment of the prevailing wage which may include copies of a payroll register, itemized time sheet and matching cancelled check, or any other supporting documents as stipulated. Payment to the prime contractor may be withheld until documentation is received and approved.

(18) **Kickbacks from Public Works employees prohibited.**

No contractor working on a project or other person shall, by force intimidation, or threat of termination of employment, cause any employee working on a project to give up any part of the compensation to which he is entitled under his contract of employment.

Section 9

**Minnesota Department of Transportation Specification 1906 Partial Payments
Process For "Withholding Contract Monies" and "Default and Termination of a Contract" 11/5/04**

Mn/DOT Specification 1906 Partial Payments describes the Commissioner's authority to withhold funds to protect the Department's interests. In addition, Specification 1808 Default and Termination of a Contract describes the Commissioner's authority to take the prosecution of the work out of the hands of the Contractor.

Additionally, on projects funded in whole or part with federal funds and in accordance with the Required Contract Provisions Federal-Aid Construction Contracts Form – 1273, Section IV, Subpart 6, "Withholding", incorporated into federal aid contracts, the Contracting Officer may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance or guarantee of funds until such violations have ceased.

However, the Department must give the Contractor, and its Sureties due notice prior to exercising these authorities. The withholding of contract funds, in accordance with Specification 1906 or the Required Contract Provisions Federal-Aid Construction Contracts Form – 1273, Section IV, Subpart 6, "Withholding", should be implemented as soon as a possible prevailing wage violation is recognized. However, Default and Termination of a Contract, in accordance with Specification 1808, should only be exercised as a "last resort" if the Contractor is not willing to comply.

Definitions

(Mn/DOT Standard Specifications for Construction 2000 Edition, Section 1103)

Commissioner: The Commissioner of the Minnesota Department of Transportation, or the chief executive of the department or agency constituted for administration of Contract work with its jurisdiction.

Contractor: The individual, firm or corporation Contracting for and undertaking prosecution of the prescribed work; the party of the second part to the Contract, acting directly or through a duly authorized representative.

Department: The Department of Transportation or the State of Minnesota, or the political subdivision, governmental body, board, commission, office, department, division, or agency constituted for administration of the Contract work within its jurisdiction.

(Form 1273 - 29 CFR, Part 5.1, Definitions)

Contracting Officer: The individual, a duly appointed successor or authorized representative who is designated and authorized to enter into Contracts on behalf of the Federal Agency and/or the City of Duluth.

Important Considerations

1. Upon completion of the work under a contract, the department should consider issuing the final voucher as soon as possible. Failure to finalize a contract expeditiously could result in subsequent claims that would prevent the department from finalizing the contract. However, before the issuance of the final voucher, the department must be able to ensure that the terms of the contract have been satisfied. Failure on the part of the department to ensure compliance could result in the Mn/DOT state aid division retaining funds from the department in accordance with *Minnesota Rules 8820.3000, subpart 5*.
2. On every contract, the department should withhold the final retainage in accordance with the following guidelines: (1) if the total amount of the contract is \$1,000,000 or more, the department should retain funds not more than \$50,000, (2) if the total amount of the contract is less than \$1,000,000, the department should retain 5% of the total contract, (3) retainage should be withheld until the department can ensure that the contractor has met the terms of the contract or until the finalization of the contract.
3. This guide specifies that the department verbally notify the bonding company early in the process. Generally, as a "rule of thumb", notifying the bonding company is usually the "last resort". However, the justification for the early notification is related to the language found in *Minnesota statute 574.31, subdivision 2*, which summarizes that if an individual or the department does not submit a claim on the payment bond within 120 days after the completion of work under the contract, the claim can be denied.

The following are general guidelines that should be followed prior to placing a Contractor in default:

- Step 1: Upon verbal or written notification that a possible prevailing wage violation exists, the Department should give written notice to the Contractor regarding the nature of the claim, along with the Department's intent to withhold monies until the claim is investigated and determined to be in compliance. Additionally, the Department should inform the Contractor that the bonding company has been verbally notified of the claim. Please be aware, the Department should ensure employee confidentiality at all times.
- Step 2: Upon a preliminary determination surrounding the financial extent of the claim, the Department should consider retaining a "reasonable" portion of one or more partial estimates in accordance with Mn/DOT's 2000 Standard Specifications for Construction, Section 1906; or on federal aid contracts, in accordance with the Required Contract Provisions Federal-Aid Construction Contracts Form – 1273, Section IV, Subpart 6, "Withholding".
- Step 3: If it is determined that the claim is valid, the Department should schedule a meeting with the Contractor and attempt to resolve the matter. If the claim is determined to be invalid, the Department should release any partial estimates that may have been held as a result of the claim. However, the Department should continue to withhold the final retainage in accordance with the above-mentioned: *Important Considerations, 2*.
- Step 4: If resolution cannot be obtained through a meeting, the Department should order the Contractor, in writing, to complete their obligations under the contract. The letter should clearly state the circumstances under which the Department has deemed that the Contractor has not met the terms of the contract. Additionally, the Department should include a reasonable deadline for this obligation to be completed. A copy of this letter should be forwarded to the Surety, District State Aid Engineer (DSAE), Labor Compliance Unit and the Department's Attorney.
- Step 5: In the event that the Contractor does not respond to the Department's written order, the Department should send a similar letter, requesting that the Contractor respond immediately, in writing, regarding the Contractor's intention to comply or not comply with the order. A copy of this letter should be forwarded to the Surety, District State Aid Engineer (DSAE), Labor Compliance Unit and the Department's Attorney.
- Step 6: If the Department still does not get a proper response from the Contractor, the Department should write another letter, addressed to both the Contractor and the Surety, specifying all the facts of the alleged breach, demanding that the Contractor, or its Surety, respond satisfactorily within 10 days or the Department may exercise its authority to Default and Terminate the Contract in accordance within/DOT's 2000 Specifications for Construction, Section

1808. It's important to provide sufficient detail so that the Surety understands the situation. This notification should be sent by certified mail. A copy of this letter should be forwarded to the Surety, District State Aid Engineer (DSAE), Labor Compliance Unit and the Department's Attorney.

Step 7: If the Contractor or Surety is unresponsive after 10 days, the Department should consult with their attorney to consider proceeding with Default and Termination of the Contract.

Step 8: Upon termination of the contract, the Department provides a written order to the Surety, requiring the Surety to bring resolution to the prevailing wage violation.

Step 9: The Department places the Contractor on a Non-Responsible Bidder's List and rejects any future awards.

Section 10

Federal Labor Standards Provisions U.S. Department of Housing and Urban Development Office of Labor Relations

Previous editions are obsolete Page 1 of 5 form HUD-4010 (06/2009) ref. Handbook 1344.1

Applicability

The Project or Program to which the construction work covered by this contract pertains is being assisted by the United States of America and the following Federal Labor Standards Provisions are included in this Contract pursuant to the provisions applicable to such Federal assistance.

A. 1. (i) Minimum Wages. All laborers and mechanics employed or working upon the site of the work, will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics.

Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs, which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period.

Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: Provided, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible, place where it can be easily seen by the workers.

(ii) (a) Any class of laborers or mechanics which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(2) The classification is utilized in the area by the construction industry; and

(3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(b) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, D.C. 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB control number 1215-0140.)

(c) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

(d) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (1)(ii)(b) or (c) of this paragraph, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

(iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.

(iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part Previous editions are obsolete Page 2 of 5 form HUD-4010 (06/2009) ref. Handbook 1344.1 of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program. (Approved by the Office of Management and Budget under OMB Control Number 1215-0140.)

2. Withholding. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee or helper, employed or working on the site of the work, all or part of the wages required by the contract, HUD or its designee may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the contractor, disburse such amounts withheld for and on account of the contractor or subcontractor to the respective employees to whom they are due. The Comptroller General shall make such disbursements in the case of direct Davis-Bacon Act contracts.

3. (i) Payrolls and basic records. Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in Section I(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5 (a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in Section I(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs. (Approved by the Office of Management and Budget under OMB Control Numbers 1215-0140 and 1215-0017.)

(ii) (a) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i) except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at <http://www.dol.gov/whd/wh347.pdf> or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to HUD or its designee if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant sponsor, or owner, as the case may be, for transmission to HUD or its designee, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this subparagraph for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to HUD or its designee. (Approved by the Office of Management and Budget under OMB Control Number 1215-0149.)

(b) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:

(1) That the payroll for the payroll period contains the information required to be provided under 29 CFR 5.5 (a)(3)(ii), the appropriate information is being maintained under 29 CFR 5.5(a)(3)(i), and that such information is correct and complete;

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(2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3;

(3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.

(c) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by subparagraph A.3.(ii)(b).

(d) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.

(iii) The contractor or subcontractor shall make the records required under subparagraph A.3.(i) available for inspection, copying, or transcription by authorized representatives of HUD or its designee or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the contractor, sponsor, applicant or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

4. Apprentices and Trainees.

(i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding

journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by Previous editions are obsolete; Page 4 of 5 form **HUD-4010** (06/2009) ref. Handbook 1344.1

the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under 29 CFR Part 5 shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR Part 3 which are incorporated by reference in this contract

6. Subcontracts. The contractor or subcontractor will insert in any subcontracts the clauses contained in subparagraphs 1 through 11 in this paragraph A and such other clauses as HUD or its designee may by appropriate instructions require, and a copy of the applicable prevailing wage decision, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this paragraph.

7. Contract termination; debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act Requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract

9. Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and HUD or its designee, the U.S. Department of Labor, or the employees or their representatives.

10. (i) Certification of Eligibility. By entering into this contract the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of Section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1) or to be awarded HUD contracts or participate in HUD programs pursuant to 24 CFR Part 24.

(iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C. 1001. Additionally, U.S. Criminal Code, Section 1 01 0, Title 18, U.S.C., "Federal Housing Administration transactions", provides in part: "Whoever, for the purpose of . . . influencing in any way the action of such Administration..... makes, utters or publishes any statement knowing the same to be false..... shall be fined not more than \$5,000 or imprisoned not more than two years, or both."

11. Complaints, Proceedings, or Testimony by Employees. No laborer or mechanic to whom the wage, salary, or other labor standards provisions of this Contract are applicable shall be discharged or in any other manner discriminated against by the Contractor or any subcontractor because such employee has filed any complaint or instituted or caused to be instituted any proceeding or has testified or is about to testify in any proceeding under or relating to the labor standards applicable under this Contract to his employer.

B. Contract Work Hours and Safety Standards Act. The provisions of this paragraph B are applicable where the amount of the prime contract exceeds \$100,000. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.

(1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.

(2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in subparagraph (1) of this paragraph, the contractor and any subcontractor responsible therefore shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in subparagraph (1) of this paragraph, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by the clause set forth in sub paragraph (1) of this paragraph.

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(3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contract, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act which is held by the same prime contractor such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in subparagraph (2) of this paragraph.

(4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in subparagraph (1) through (4) of this paragraph and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in subparagraphs (1) through (4) of this paragraph.

C. Health and Safety. The provisions of this paragraph C are applicable where the amount of the prime contract exceeds \$100,000.

(1) No laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his health and safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation.

(2) The Contractor shall comply with all regulations issued by the Secretary of Labor pursuant to Title 29 Part 1926 and failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act, (Public Law 91-54, 83 Stat 96). 40 USC 3701 et seq.

(3) The contractor shall include the provisions of this paragraph in every subcontract so that such provisions will be binding on each subcontractor. The contractor shall take such action with respect to any subcontractor as the Secretary of Housing and Urban Development or the Secretary of Labor shall direct as a means of enforcing such provisions.

Section 11

Equal Opportunity Laws and Regulations

(A) In addition to Contract specifications set forth below, the Contractor shall conduct and administer this Contract in compliance with:

- (1) Title VI of the Civil Rights Act of 1964 (Pub. L. 88-352) and implementing regulations issued at 24 CFR Part 1;
- (2) Title VIII of the Civil Rights Act of 1968 (Pub. L. 90-284), as amended, and implementing regulations;
- (3) Section 109 of the Housing and Community Development Act of 1974, as amended; and the regulations issued pursuant thereto (24 CFR Section 570.601);
- (4) Section 3 of the Housing and Urban Development Act of 1968, as amended, and implementing regulations of 24 CFR Part 135;
- (5) Executive Order 11246, as amended by Executive Order 11375 and 12086 and implementing regulations at 41 CFR Chapter 60;
- (6) Executive Order 11063, as amended by Executive Order 12259 and implementing regulations at 24 CFR Part 107;
- (7) Section 504 of the Rehabilitation Act of 1973 (Pub. L. 93-112), as amended, and implementing regulations when published for effect;
- (8) The Age Discrimination Act of 1975, as amended, (Pub. L. 94-135) and implementing regulations when published for effect;
- (9) The Minnesota Human Rights Act of 1974, as amended (Chapter 363).

Equal Opportunity and Affirmative Action

(A) Contractors and Subcontractors that have a work force in excess of fifty (50) employees and a contract in excess of \$50,000.00 shall prepare and maintain an appropriate affirmative action plan in accordance with the provisions of 41 CFR 60 "Compliance Responsibility for Equal Opportunity".

(B) Non-segregated Facilities. The Contractor shall certify that he does not maintain or provide for his employees any segregated facilities at any of his establishments, and that he does not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. The Contractor covenants that he will not maintain or provide for his employees any segregated facilities at any of his establishments, and he will not permit his employees to perform their services at any location, under his control, where segregated facilities are maintained. As used in this paragraph the term "segregated facilities" means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or facilities provided for employees which are segregated by explicit directive or are in fact segregated on the basis of race, color, creed, religion, national origin, ancestry, age, marital status, status with respect to public assistance, and/or disability because of habit, local custom, or otherwise.

General Provisions Against Discrimination

(A) In all hiring or employment made possible by or resulting from this Contract, there:

- (1) will not be any discrimination against any employee or applicant for employment because of race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance, and/or disability.
- (2) affirmative action will be taken to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance, and/or disability. This requirement shall apply to, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; lay-off or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. There shall be posted in conspicuous places available to employees and applicants for employment, notices setting forth the provisions of this clause. All solicitations or advertisements for employees shall state that all qualified applicants will receive consideration for employment without regard to race, color, creed, religion, national origin, ancestry, age, sex, marital status, status with respect to public assistance, and/or disability.

(B) No person in the United States shall, on the grounds of race, color, creed, religion, national origin, age, sex, marital status, status with respect to public assistance, and/or disability, be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity made possible by or resulting from this Contract. The Contractor and each employer will comply with all requirements imposed by or pursuant to the regulations of the Federal Agency effectuating Title VI of the Civil Rights Act of 1966. The Contractor will note this requirement in all solicitations or advertisements for employees. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this nondiscrimination clause.

(C) The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or workers' representative of the Contractor's commitments under these provisions, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(D) The Contractor hereby agrees that he will incorporate into any contract for construction work, or modification thereof, as defined in the regulations of the Secretary of Labor at 41 CFR Chapter 60, which is paid for in whole or in part with funds obtained pursuant to this Contract, the equal opportunity clause which is a part of these Contract Documents.

(E) The Contractor further agrees that he will be bound by the equal opportunity clause and other provisions of 41 CFR Chapter 60, with respect to his own employment practices when he participates in federally assisted construction work: **Provided:** That of the Contractor so participating is a State or Local Government, the above equal opportunity clause is not applicable to any agency, instrumentality, or subdivision of such government which does not participate in work on or under the Contract. Also, the Contractor will make his files available to inspection by appropriate government agencies and shall furnish those reports as may be required by said agencies.

(F) The Contractor agrees that he will assist and cooperate actively with the Federal Agency and the Secretary of Labor in obtaining the compliance of subcontractors with the equal opportunity clause and the rules, regulations, and relevant orders of the Secretary of Labor, that he will furnish the Federal Agency and the Secretary of Labor such information as they may require for the supervision of such compliance, and that he will otherwise assist the Federal Agency in the discharge of its primary responsibility for securing compliance.

(G) The Contractor further agrees that he will refrain from entering into any contract or any contract modification subject to Executive Order 11246 of September 24, 1965, with a subcontractor debarred from, or who has not demonstrated eligibility for, Government contracts and federally assisted construction contracts pursuant to the Executive Order. In addition, the Contractor agrees that if he fails or refuses to comply with these undertakings, the City or the Federal Agency may take any or all of the following actions: Terminate or suspend in whole or in part this Contract; refrain from extending any further assistance to the Contractor under the Project with respect to which the failure or refusal occurred until satisfactory assurance of future compliance has been received from such Contractor and refer the case to the Department of Justice for appropriate legal proceedings.

Affirmative Action - "Construction Contracts" over \$10,000

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity
(Executive Order 11246)

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Opportunity Construction Contract Specifications" set forth herein.

2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

<u>Timetables</u>	<u>Goals for minority participation (percent)</u>	<u>Goals for female participation (percent)</u>
From April 1, 1980 until revised	3.0	6.9

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area.

The Contractor's compliance with the Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals established for the geographical area where the contract resulting from this solicitation is to be performed. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the City and to the Director of the Office of Federal Contract Compliance Programs; U.S. Department of Labor, ESA/OFCPP, 16th Floor, 230 South Dearborn Street, Chicago, Illinois, 60604, within 10 working days of award of any construction subcontract and/or subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the name, address and telephone number of the contractor and/or subcontractor; employer identification number; estimated dollar amount of the prime contract; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the contract is to be performed.

4. As used in this Notice, and in the Contract, the "covered area" is all work under a contract currently held with the City of Duluth, Minnesota.

Standard Federal Equal Employment Opportunity
Construction Contract Specifications (Executive Order 11246)

1. As used in these specifications:

- a) "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor; or any person to whom the Director delegates authority;
- b) "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.
- c) "Minority" includes:
 - (i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);
 - (ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);
 - (iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and
 - (iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative action to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:
- a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.
 - c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefore, along with whatever additional actions the Contractor may have taken.
 - d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
 - e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notices of these programs to the sources compiled under 7b above.
 - f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.
 - g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
 - h. Disseminate the Contractor's EEO policy externally by including it any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and Subcontractors with whom the Contractor does or anticipates doing business.
 - i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitments and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.
 - j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of officers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisor's adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be violation of the Executive Order if a specific minority group of women is underutilized).
10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, creed, religion, national origin, sex, ancestry, age, marital status, status with respect to public assistance and/or disability.
11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails

to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

Affirmative Action for Handicapped Workers

(applies to contracts in excess of \$2,500)

(A) The Contractor will not discriminate against any employee or applicant for employment because of physical or mental handicap in regard to any position for which the employee or applicant is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified handicapped individuals without discrimination based upon their physical or mental handicap in all employment practices such as the following: Employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(B) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(C) In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(D) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified handicapped employees and applicants for employment, and the rights of applicants and employees.

(E) The Contractor will notify each labor union or representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of Section 503 of the Rehabilitation Act of 1973, and is committed to take affirmative action to employ and advance in employment physically and mentally handicapped individuals.

(F) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$2,500 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to Section 503 of the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

Affirmative Action for Disabled Veterans and Veterans of the Vietnam Era

(applies to contracts in excess of \$10,000)

(A) The Contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era in regard to any position for which the employee or applicant for employment is qualified. The Contractor agrees to take affirmative action to employ, advance in employment and otherwise treat qualified disabled veterans and veterans of the Vietnam era without discrimination based upon their disability or veterans status in all employment practices such as the following: Employment, upgrading, demotion or transfer, recruitment, advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship.

(B) The Contractor agrees that all suitable employment openings of the Contractor which exist at the time of the execution of this contract and those which occur during the performance of this contract, including those not generated by this contract and including those occurring at an establishment of the Contractor other than the one wherein the contract is being performed but excluding those of independently operated corporate affiliates, shall be listed at an appropriate local office of the State employment service system wherein the opening occurs. The Contractor further agrees to provide such reports to such local office regarding employment openings and hires as may be required.

State and local government agencies holding Federal contracts of \$10,000 or more shall also list all their suitable openings with the appropriate office of the State employment service, but are not required to provide those reports set forth in paragraphs (D) and (E).

(C) Listing of employment openings with the employment service system pursuant to this clause shall be made at least concurrently with the use of any other recruitment source or effort and shall involve the normal obligations which attach to the placing of a bona fide job order, including the acceptance of referrals of veterans and non-veterans. The listing of employment openings does not require the hiring of any particular job applicant or from any particular group of job applicants, and nothing herein is intended to relieve the Contractor from any requirements in Executive Orders or regulations regarding nondiscrimination in employment.

(D) The reports required by paragraph (B) of this clause shall include, but not be limited to, periodic reports which shall be filed at least quarterly with the appropriate local office or, where the Contractor has more than hiring location in a State, with the central office of that State employment service. Such reports shall indicate for each hiring location (1) the number of individuals hired during the reporting period, (2) the number of non-disabled veterans of the Vietnam era hired, (3) the number of disabled veterans of the Vietnam era hired, and (4) the total number of disabled veterans hired. The reports should include covered veterans hired for on-the-job training under 38 U.S.C. 1787. The Contractor shall maintain at each hiring location copies of the reports submitted until the expiration of one year after final payment under the contract, during which time these reports and related documentation shall be made available, upon request, for examination by any authorized representatives of the contracting officer of the Secretary of Labor. Documentation would include personnel records respecting job openings, recruitment and placement.

(E) Whenever the Contractor becomes contractually bound to the listing provisions of this clause, it shall advise the employment service system in each State where it has establishments of the name and location of each hiring location in the State. As long as the Contractor is contractually bound to these provisions, and has so

advised the State system, there is no need to advise the State system of subsequent contracts. The Contractor may advise the State system when it is no longer bound by this contract clause.

(F) This clause does not apply to the listing of employment openings which occur and are filled outside of the 50 States, the District of Columbia, Puerto Rico, Guam, and the Virgin Islands.

(G) The provisions of paragraphs (B), (C), (D), and (E) of this clause do not apply to openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement for that opening.

(H) As used in this clause:

(1) "All suitable employment openings" includes, but is not limited to, openings which occur in the following job categories: Production and non-production; plant and office; laborers and mechanics; supervisory and non-supervisory; technical; and executive, administrative, and professional openings as are compensated on a salary basis of less than \$25,000 per year. This term includes full-time employment, temporary employment of more than 3 days' duration, and part-time employment. It does not include openings which the Contractor proposes to fill from within his own organization or to fill pursuant to a customary and traditional employer-union hiring arrangement nor openings in an educational institution which are restricted to students of that institution. Under the most compelling circumstances an employment opening may not be suitable for listing, including such situations where the needs of the Government cannot reasonably be otherwise supplied, where listing would be contrary to national security, or where the requirement of listing would otherwise not be for the best interest of the Government.

(2) "Appropriate office of the State employment service system" means the local office of the Federal-State national system of public employment offices with assigned responsibility for serving the area where the employment opening is to be filled, including the District of Columbia, Guam, Puerto Rico, and the Virgin Islands.

(3) "Openings which the Contractor proposes to fill from within his own organization" means employment openings for which no consideration will be given to persons outside the Contractor's organization (including any affiliates, subsidiaries, and the parent companies) and includes any openings which the Contractor proposes to fill from regularly established "recall" lists.

(4) "Openings which the Contractor proposes to fill pursuant to a customary and traditional employer-union hiring arrangement" means employment openings which the Contractor proposes to fill from union halls, which is part of the customary and traditional hiring relationship which exists between the Contractor and representatives of his employees.

(I) The Contractor agrees to comply with the rules, regulations, and relevant orders of the Secretary of Labor issued pursuant to the Act.

(J) In the event of the Contractor's noncompliance with the requirements of this clause, actions for noncompliance may be taken in accordance with the rules, regulations and relevant orders of the Secretary of Labor issued pursuant to the Act.

(K) The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices in a form to be prescribed by the Director, provided by or through the contracting officer. Such notices shall state the Contractor's obligation under the law to take affirmative action to employ and advance in employment qualified disabled veterans and veterans of the Vietnam era for employment, and the rights of applicants and employees.

(L) The Contractor will notify each labor union representative of workers with which it has a collective bargaining agreement or other contract understanding, that the Contractor is bound by the terms of the Vietnam Era Veterans Readjustment Assistance Act, and is committed to take affirmative action to employ and advance qualified disabled veterans and veterans of the Vietnam era..

(M) The Contractor will include the provisions of this clause in every subcontract or purchase order of \$10,000 or more unless exempted by rules, regulations, or orders of the Secretary issued pursuant to the Act, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the Director of the Office of Federal Contract Compliance Programs may direct to enforce such provisions, including action for noncompliance.

Section 12

Employment Opportunities - "HUD Section 3"

General

These requirements apply to the City of Duluth contracts receiving assistance under the U.S. Department of Housing and Urban Development (HUD) Community Development Block Grant (CDBG) Program.

Type of Covered Projects

24CFR570.607 (b) of the HUD CDBG Program Regulations state in part "... that employment and other economic opportunities arising in connection with housing rehabilitation, housing construction, or other public construction projects shall to the greatest extent feasible, and consistent with existing Federal, State, and local laws and regulations be given to low- and very low-income persons.

Thresholds

In accordance with the provisions of 24CFR135.3(a) (3) (ii) (A), the requirements of this Section apply to those recipients as defined at 24CFR135.5 when the amount of this contract exceeds \$200,000.

In addition, in accordance with the provisions of 24CFR135.3 (a) (3) (ii) (B), the requirements of this Section apply to any contractor or subcontractor whose contract exceeds \$100,000 as a result of assistance provided under this contract.

Requirements (Section 3 Clause)

(A) The work to be performed under this contract is subject to the requirements of Section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of Section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(B) The parties to this contract agree to comply with HUD's regulations in 24 CFR part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the part 135 regulations.

(C) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement, or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The

notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(D) The Contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR part 135.

(E) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligation under 24 CFR part 135.

(F) Noncompliance with HUD's regulations in 24 CFR part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD-assisted contracts.

Section 13

Federal Requirements for Minority/Women Business Enterprises Contract Guidance - MPFA

General

Municipalities that receive loan funding must comply with Federal requirements concerning utilization of Minority Business Enterprises (MBE) and Women's Business Enterprises (WBE). These requirements are designed to encourage the prime contractors to utilize MBEs and WBEs whenever procurement opportunities occur.

Regulation

40 C.F.R. Section 35.3145(d) Application of other Federal Authorities, M/WBE Requirements

Executive Orders No. 11625, 12138 and 12432 - Promoting the use of M/WBEs

Section 129 of Public Law 100-590 - Small Business Administration Reauthorization and Amendment Act of 1988

Regulations detailed in the EPA's *Cross-Cutting Federal Authorities - Clean Water Act State Revolving Fund Program and Safe Drinking Water Act State Revolving Fund Program*

Implementation

The "fair share" target percentage participation proposed for this project is 3.5 percent (3.5%) for MBE and 11.5 percent (11.5%) for WBE.

If the Contractor intends to let any subcontractors for a portion of the work, the Contractor shall take affirmative steps to assure that minority and women businesses are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

- a) Include qualified minority businesses on solicitation lists.
- b) Assure that minority businesses are solicited whenever they are potential sources.
- c) When economically feasible, divide total requirements into smaller tasks or quantities so as to permit maximum small and minority business participation.
- d) Where the requirement permits, establish delivery schedules, which will encourage participation by minority businesses.
- e) Use the services and assistance of the Office of Minority Business Enterprise of the Department of Commerce.

The low bidder will be required to submit to the City of Duluth documentation of his good faith efforts to meet the targeted goals of utilizing MBEs and WBEs.

Section 14 - Forms

Minnesota Department of Transportation and City of Duluth, Minnesota funded certified payroll forms

- MnDOT Prime Contractor's-Subcontractor's Statement of Compliance form (12/2010)
www.dot.state.mn.us/const/labor/forms.html
- Certified Payroll Forms
<http://www.dol.gov/forms/whd/wh347.pdf>
use front side only

U. S. Department of Housing and Urban Development and federal government funded certified payroll forms

- Statement of Compliance Form & Certified Payroll Forms
<http://www.dol.gov/forms/whd/wh347.pdf>
(use reverse side for Statement of Compliance form)
- MnDOT Prime Contractor's-Subcontractor's Statement of Compliance form (12/2010)
www.dot.state.mn.us/const/labor/forms.html

Minnesota Department of Transportation Trucking Requirements

- Month End Trucking Report Form A and Form B
- Month End Trucking Report Statement of Compliance
- Definitions, instructions, forms:
www.dot.state.mn.us/const/labor/forms.html

General Decision Number: MN160041 07/29/2016 MN41

Superseded General Decision Number: MN20150041

State: Minnesota

Construction Type: Building

County: St Louis County in Minnesota.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Under Executive Order (EO) 13658, an hourly minimum wage of \$10.15 for calendar year 2016 applies to all contracts subject to the Davis-Bacon Act for which the solicitation was issued on or after January 1, 2015. If this contract is covered by the EO, the contractor must pay all workers in any classification listed on this wage determination at least \$10.15 (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in calendar year 2016. The EO minimum wage rate will be adjusted annually. Additional information on contractor requirements and worker protections under the EO is available at www.dol.gov/whd/govcontracts.

Modification Number	Publication Date
0	01/08/2016
1	03/04/2016
2	04/15/2016
3	05/20/2016
4	06/17/2016
5	06/24/2016
6	07/01/2016
7	07/22/2016
8	07/29/2016

ASBE0049-007 06/01/2014

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR (Includes the application of all insulating materials, protective coverings, coatings & finishes to all types of mechanical systems).....	\$ 26.82	23.80

BOIL0647-007 01/01/2013		

	Rates	Fringes
BOILERMAKER.....	\$ 32.40	25.37

BRMN0001-050 05/01/2015		

ST LOUIS (Remaining Northern part)

	Rates	Fringes
TILE SETTER.....	\$ 24.59	20.98

BRMN0003-008 05/01/2016		

ST. LOUIS COUNTY (City of Duluth and South of a line between Townships #54 & #55, 2 miles north of Cotton)

	Rates	Fringes
BRICKLAYER.....	\$ 32.91	22.82

BRMN0003-011 05/01/2008		

ST. LOUIS (City of Duluth and south of Township Line 55)

	Rates	Fringes
TILE SETTER.....	\$ 24.13	17.38

BRMN0016-002 05/01/2016		

ST. LOUIS COUNTY (North of a line between Townships #54 & #55, 2 miles north of Cotton)

	Rates	Fringes
BRICKLAYER.....	\$ 32.47	23.26

CARP0068-005 07/01/2012		

	Rates	Fringes
SOFT FLOOR LAYER.....	\$ 30.94	11.75

CARP0361-012 05/01/2015		

DULUTH AREA including Alborn, Arnold, Bartlett, Birch, Brookstone, Canyon, Clinton, Culver, Floodwood, Gowan, Island, Kelsey, Lakewood, Meadowlands, Munger, Palmers, Payne, Prasit, Shaw, Taft)

	Rates	Fringes
CARPENTER (Including Acoustical Installation, Drywall Hanging, Form Work & Overhead Door Installation).....	\$ 29.55	16.08

CARP0606-001 05/01/2015		

EXCLUDING DULUTH AREA

	Rates	Fringes
CARPENTER (Including Acoustical Installation, Drywall Hanging, Form Work & Overhead Door Installation).....	\$ 29.45	14.37

* ELEC0242-012 05/29/2016		

ST. LOUIS (South part bounded on the north by the north line of
Kelsey Township extended east & west)

	Rates	Fringes
ELECTRICIAN.....	\$ 34.92	25.05

ELEC0294-006 05/29/2016		

ST. LOUIS (North part bounded on the south by the south line of
Ellsburg Township, extended east & west)

	Rates	Fringes
ELECTRICIAN.....	\$ 35.60	71.72%

ENGI0049-045 05/01/2016		

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 39.14	18.40
GROUP 2.....	\$ 38.80	18.40
GROUP 3.....	\$ 37.39	18.40
GROUP 4.....	\$ 37.05	18.40
GROUP 5.....	\$ 36.13	18.40
GROUP 6.....	\$ 34.62	18.40
GROUP 7.....	\$ 33.50	18.40
GROUP 8.....	\$ 31.49	18.40

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Truck & Crawler Crane with 200' of Boom & Over,
including Jib (\$.50 premium with 300' of Boom & over,
including jib); & Tower Crane 250' & Over.

GROUP 2: Truck & Crawler Crane with 150' of Boom, up to but
not including 200' of Boom, including Jib; & Tower Crane
200' & Over.

GROUP 3: Traveling Tower Crane; Truck & Crawler Crane, up to
but not including 150' of Boom, including Jib; Tower Crane
(Stationary) up to 200'; All-Terrain Vehicle Crane, Boom

Truck over 100 ft.

GROUP 4: Backhoe/Track/Trackhoe, Hoist (3 drums or more);
Overhead Crane (inside building perimeter), Excavator.

GROUP 5: Asphalt Spreader, Bulldozer, Curb Machine, Drill,
Forklift, Compressor 450 CFM or over (2 or more machines);
Boom Truck up to 100 ft, Loader over 1 cu yd, Hoist (1 or
2 drums); Mechanic; Milling Machine, Roller, Scraper,
Tractor over D2.

GROUP 6: Bobcat/Skid Loader, Loader up to 1 cu. yd., Tractor
D2 or similar size.

GROUP 7: Compressor 600 CFM or over, Crane Oiler.

GROUP 8: Oiler.

IRON0512-018 05/01/2015

	Rates	Fringes
IRONWORKER, ORNAMENTAL, REINFORCING, AND STRUCTURAL.....	\$ 31.04	23.45

LABO1091-011 01/01/2016

	Rates	Fringes
LABORER (ASBESTOS ABATEMENT) Removal from Floors, Walls & Ceilings.....	\$ 29.20	17.43

LABO1091-013 05/01/2012

ST. LOUIS (South of T 55 N)

	Rates	Fringes
Laborers:		
GROUP 1.....	\$ 21.95	14.93
GROUP 2.....	\$ 22.10	14.93
GROUP 3.....	\$ 22.35	14.93
GROUP 4.....	\$ 22.65	14.93

LABORER CLASSIFICATIONS

GROUP 1: Common or General, Asphalt Shoveler, Carpenter
Tender, Form Stripping

GROUP 2: Vibrating Plate

GROUP 3: Pipelayer

GROUP 4: Mason Tender (Brick, Cement/Concrete)

LABO1097-008 05/01/2012

ST.LOUIS (North of T 55N)

	Rates	Fringes
LABORER		
GROUP 1.....	\$ 20.62	16.25
GROUP 2.....	\$ 21.02	16.25

LABORERS CLASSIFICATIONS

GROUP 1 - Common or General, Asphalt Shoveler, Carpenter
Tender, Form Stripping, Mason Tender (Brick,
Cement/Concrete)

GROUP 2 - Pipelayer, Vibrating Plate

PAIN0106-001 05/01/2013

	Rates	Fringes
GLAZIER.....	\$ 26.28	15.47

FOOTNOTE:

1 to 4 years service - 1 week paid vacation; 5 to 11 years -
2 weeks paid vacation; 11 years or more - 3 weeks paid
vacation

PAIN0106-013 05/01/2014

	Rates	Fringes
Painters:		
New:		
Brush, Roller.....	\$ 28.81	15.27
Spray, Drywall		
Finisher/Taper.....	\$ 29.41	15.27
Repaint:		
Brush, Roller.....	\$ 27.31	15.27
Spray, Drywall		
Finisher/Taper.....	\$ 27.91	15.27

PLAS0633-024 05/01/2016

ST. LOUIS (North of White Face River) COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 29.46	15.77

PLAS0633-059 05/01/2016

CARLTON & ST. LOUIS (South of T 55N) COUNTIES

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 30.86	17.13

PLUM0011-019 05/02/2016		
ST. LOUIS (South of an east-west line drawn through Cotton)		
	Rates	Fringes
PLUMBER/PIPEFITTER.....	\$ 39.07	18.73

PLUM0589-007 05/01/2016		
ST. LOUIS (North of an East- West line drawn through Cotton)		
	Rates	Fringes
PLUMBER/PIPEFITTER		
Contracts \$90,000.00 and		
under.....	\$ 39.25	18.66
Contracts over \$90,000.00...	\$ 39.25	18.66

ROOF0096-024 07/01/2015		
ST. LOUIS (South of Hwy 16, excluding City of Forbes)		
	Rates	Fringes
ROOFER.....	\$ 32.15	14.67

ROOF0096-025 05/01/2016		
ST. LOUIS (Remaining Northern two-thirds)		
	Rates	Fringes
ROOFER.....	\$ 29.00	11.82

SHEE0010-045 05/01/2009		
ST. LOUIS (Southern one-third)		
	Rates	Fringes
SHEET METAL WORKER (Including		
HVAC Duct Installation).....	\$ 31.61	16.52

SHEE0010-056 05/01/2008		
ST. LOUIS (Northern two-thirds)		
	Rates	Fringes
SHEET METAL WORKER (Including		
HVAC Duct Installation).....	\$ 29.99	16.08

SUMN2009-050 07/27/2009

	Rates	Fringes
LABORER: Landscape.....	\$ 12.88	4.61
TRUCK DRIVER: Dump Truck.....	\$ 19.15	5.70

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of "identifiers" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than "SU" or "UAVG" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the "SU" identifier indicate that

no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISION

PROJECT LABOR AGREEMENT

NO STRIKE, NO LOCKOUT

PUBLIC SECTOR

CITY OF DULUTH

&

Vendor

Project name

Project No.

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AGREEMENT

This Project Labor Agreement (hereinafter, the “Agreement”), effective as of the date of attestation by the City Clerk, by and between the various contractors engaged in the construction of facilities to be known as the (Project). The parties to this Agreement are the Building and Construction Trades Council, on behalf of its affiliated Local Unions (hereinafter “Union” or “Unions”), the City of Duluth (hereinafter “Owner”) and Contractor (hereinafter “Construction Manager/General Manager,” “Contractor,” and “Contractors”).

It is understood by the parties to this Agreement that it is the policy of the Owner that the construction work covered by this Agreement shall be contracted to Contractors who agree to be bound by the terms of this Agreement. Therefore, the Union agrees that other Contractors may execute the Agreement for the purpose of covering that work. The Construction Manager/General Contractor shall monitor compliance with this Agreement by all Contractors who through their execution of this Agreement, together with their subcontractors, have become bound hereto.

The term “Contractor” shall include all Contractors and subcontractors of whatever tier engaged in on-site construction work within the scope of this Agreement.

The Union and all signatory Contractors agree to abide by the terms and conditions contained in this Agreement with respect to the administration of the Agreement by the Owner and the performance of the construction by the Contractor of the Project. This Agreement represents the complete understanding of the parties, and it is further understood that no Contractor party is required to sign any other agreement as a condition of performing work within the scope of this Agreement. No practice, understanding or agreement between a Contractor and a Union party which is not explicitly set forth in this Agreement shall be binding on any other party unless endorsed in writing by the Project Contractor.

ARTICLE I - PURPOSE

The (Project), an undertaking of the Owner, is a public project which will employ numbers of skilled and unskilled workers. Construction of the Project will entail utilization of the construction industry in an area having multiple labor contracts and employer associations. Consequently, conflicts within labor-management relations could cause delay or disruption of the efficient completion of the .project unless maximum cooperation of all segments of the construction industry is obtained. This Agreement is to establish as the minimum standards on the Project the hours and working conditions as those prevailing for the largest number of workers engaged in the same classes of work within the area.

It is in the public interest that the Project progress and be completed in an expeditious and efficient manner, free of disruption or delay of any kind. Therefore, it is essential to secure optimum productivity and to eliminate any delays in the work. In recognition of the special needs of this Project and to maintain a spirit of harmony, labor-management peace and stability during the term of this Project Labor Agreement, the parties agree to establish effective and binding methods for the settlement of all misunderstandings, disputes or grievances which may arise. Therefore, the Unions agree not to engage in any strike, slowdown or interruption of work and the Contractor agrees not to engage in any lockout.

ARTICLE II - SCOPE OF THE AGREEMENT

Section 1. This Agreement, hereinafter designated as the “Project Labor Agreement” or “Agreement,” shall apply and is limited to all construction work included in all Bid Categories for the (Project), under the direction of the signatory Contractors and performed by those Contractor(s) of whatever tier which have contracts awarded for such work on and after the effective date of this Agreement with regard to the Project.

Such Project is generally described as the construction of: **Project**

Section 2. It is agreed that all direct subcontractors of a Contractor, of whatever tier, who have been awarded contracts for work covered by this Agreement on or after the effective date of this Agreement shall be required to accept and be bound by the terms and conditions of the Project Labor Agreement.

Section 3. The provisions of this Project Labor Agreement shall apply to all craft employees represented by any Union listed in Schedule A hereto attached and shall not apply to other field personnel or managerial or supervisory employees as defined by the National Labor Relations Act.

Section 4. All employees covered by this Agreement shall be classified in accordance with work performed and paid the base hourly wage rates for those classifications as specified in the attached Schedule A.

Section 5. The Contractors agree to pay contributions to the established employee benefit funds in the amounts designated in the appropriate Schedule A.

Contractors that are not signatory to a collective bargaining agreement beyond the scope of this Agreement ("PLA contractor") may select to participate in the legally established industry health reimbursement arrangement ("HRA") plan, in lieu of contributing to the respective bona fide benefit funds as designated in Schedule A. The amount of the contribution is based on the difference between the contribution amount of the bona fide Schedule A benefit funds and the cost of the PLA contractor's bona fide non-discretionary plans. Contributions must be made on behalf of named employees. Participating contractors will submit to the Trustees of the HRA trust and plan a copy of their plan, summary plan description, and the premium structure for workers covered under the PLA contractor's bona fide, non-discretionary plans. The value of the PLA contractor's benefit plans are subject to confirmation by the Trustees of the HRA trust and plan. This may include an independent audit according to a policy as established by the Trustees. Contractors are required to submit certified payroll reports to the Trustees or authorized administrator in order to confirm compliance with the terms of the HRA trust and plan.

The Contractors adopt and agree to be bound by the written terms of the legally-established Trust Agreements (or in lieu thereof, the aforementioned HRA plan and trust including any policies) specifying the detailed basis on which payments are to be made into, and benefits paid out of, such Trust Funds. The Contractors authorize the parties to such Trust Agreements to appoint trustees and successor trustees to administer the Trust funds and hereby ratify and accept the Trustees so appointed as if made by the Contractors.

Section 6. In the event of any conflict between any provisions of this Agreement and in the Local Area Agreements, the terms of this Agreement will be applied. In other words, where a subject covered by the provisions of this Project Labor Agreement is also covered by the Local Area Agreement the provisions of this Project Labor Agreement shall prevail. Where a subject is covered by the Local Area Agreement and not covered by this Project Labor Agreement, the Local Area Agreement provisions shall prevail.

Section 7. This Agreement shall only be binding on the signatory parties hereto and shall not apply to the parents, affiliates, subsidiaries, or other ventures of any such party.

Section 8. This Agreement shall be limited to work historically recognized as construction work. Nothing contained herein shall be construed to prohibit, restrict, or interfere with the performance of any other operation, work or function which may occur in or around the Project site or be associated with the development of the Project, or with the ongoing operations of the Owner.

Section 9. It is understood that the liability of any Contractor and the liability of the separate Unions under this Agreement shall be several and not joint. The Union agrees that this Agreement does not have the effect of creating any joint employment status between or among Owner and any Contractor.

Section 10. All workers delivering fill, sand, gravel, crushed rock, transit/concrete mix, asphalt or other similar materials and all workers removing any materials from the construction site as required by the specifications are subject to the provisions of the Minnesota state

prevailing wage law and are entitled to the appropriate area standard wage. For purposes of this contract, such materials are for specified future use and per Minnesota state prevailing wage law delivery and pickup of the above-listed materials constitutes incorporation.

ARTICLE III - UNION RECOGNITION AND REPRESENTATION

Section 1. The Contractor recognizes the Union as the sole and exclusive bargaining representative of all craft employees working on facilities within the scope of this Agreement.

Section 2. Authorized representatives of the Union shall have access to the Project, provided they do not interfere with the work of employees and further provided that such representatives fully comply with the posted visitor and security and safety rules of the Project.

ARTICLE IV - LABOR HARMONY CLAUSE

The contractor shall furnish labor that can work in harmony with all other elements of labor employed on that (Project) and shall submit a labor harmony plan to demonstrate how this will be done. "Harmony" shall include the provision of labor that will not, either directly or indirectly, cause or give rise to any work disruptions, slow downs, picketing, stoppages, or any violence or harm to any person or property while performing any work, or activities incidental thereto at the (project). The labor harmony plan should include the company's labor management policies, collective bargaining agreements if any and their expiration dates, past labor relations history, a listing of activities anticipated under this contract that may potentially cause friction with on-site workers, and procedures the company will undertake to eliminate this friction.

The contractor agrees that it shall require every lower-tier subcontractor to provide labor that will work in harmony with all other elements of labor employed in the work, and will include the provisions contained in the paragraph above, in every lower-tier subcontract let for work under this contract.

The requirement to provide labor that can work in harmony with all other elements of labor employed in the work throughout the contract performance is a material element of this contract. Failure by the contractor or any of its lower tier subcontractors to comply with this requirement shall be deemed a material breach of the contract which will subject the contractor to all rights and remedies the city of Duluth may have, including without limitation the right to terminate the contract.

ARTICLE V - WORK STOPPAGES AND LOCKOUTS

Section 1. There shall be no strike, picketing, work stoppages, slowdowns or other disruptive, activity for any reason by the Union or employees against any Contractor covered under this Agreement, and there shall be no lockout by the Contractor. Failure of any Union or employee to cross any picket line established by any union, signatory or non-signatory, or any other organization, at or in proximity to the Project site is a violation of this Article.

Section 2. Any party alleging a breach of Section 1, of Article IV shall have the right to petition a court for temporary and permanent injunctive relief. The moving party need not show the existence of irreparable harm, and shall be required to post bond only to secure payment of court costs and attorney fees as may be awarded by the court.

ARTICLE VI - DISPUTES AND GRIEVANCES

Section 1. This Agreement is intended to provide close cooperation between management and labor. The Construction Manager/General Contractor and the Building and Construction Trades Council shall each assign a representative to this Project for the purpose of assisting the Local Unions, together with the Contractor, to complete the construction of the Project economically, efficiently, continuously and without interruption, delays or work stoppages.

Each Contractor shall hold a pre-job conference with the Union and Construction Manager/General Contractor to clear up any project question and work assignments in which there is thought to be a difference in opinion. Every effort will be made to hold such conference well in advance of actual work performance.

Section 2. The Contractor, Union, and employees collectively and individually, realize the importance to all parties to maintain continuous and uninterrupted performance of the work of the Project, and agree to resolve disputes over grievances in accordance with the arbitration provisions set forth in the Local Area Agreements in effect with the Unions listed in Schedule A attached hereto.

ARTICLE VII - JURISDICTIONAL DISPUTES

Section 1. There will be no strikes, work stoppages, slowdowns, or other disruptive activity arising out of any jurisdictional dispute. Pending the resolution of the dispute, the work shall continue uninterrupted as assigned by the Contractor.

Section 2. Building construction work shall be assigned by the Contractor in accordance with the procedural rules of the Plan for the Settlement of Jurisdictional Disputes in the Construction Industry (hereinafter the "Plan"). Any jurisdictional dispute over the Contractor's assignment of work shall be settled in accordance with the provisions of the Plan.

Section 3. Where a jurisdictional dispute involves the International Brotherhood of Teamsters, it shall be referred for resolution to that International Union and the disputing International Union. The resolution of the dispute shall be reduced to writing, signed by the authorized representative of the International Unions and the Contractor. The assignments made by the Contractor shall be followed until such time as the dispute is resolved in accordance with this Section.

ARTICLE VIII - NO DISCRIMINATION

Section 1. The Contractor and Union agree that they will not discriminate against any employee or applicant for employment because of his or her membership or nonmembership in a Union or based upon race, color, religion, sex, national origin or age in any manner prohibited by law or regulation.

Section 2. Any complaints regarding application of the provisions of Section 1 should be brought to the immediate attention of the involved Contractor for consideration and resolution.

Section 3. The use of the masculine or feminine gender in this Agreement shall be construed as including both genders.

ARTICLE IX - SAVINGS AND SEPARABILITY

It is not the intention of the parties to violate any laws governing the subject matter of this Agreement. The parties hereto agree that in the event any provisions of the Agreement are finally held determined to be illegal or void as being in contravention of any applicable law, the remainder of the Agreement shall remain in full force and effect unless the part or parts so found to be void are wholly inseparable from the remaining portions of this Agreement. Further, the contractor and Union agree that if and when any and all provisions of this Agreement are finally held or determined to be illegal or void by Court of competent jurisdiction, the parties will promptly enter into negotiations concerning the substance affected by such decision for the purpose of achieving conformity with the requirements of an applicable law and the intent of the parties hereto.

ARTICLE X DURATION OF THE AGREEMENT

The Project Labor Agreement shall be effective as of the date of attestation by the City Clerk, and shall continue in effect for the duration of the Project construction work described in Article II hereof Construction of any phase, portion, section or segment of the project shall be deemed complete when such phase, portion, section or segment has been turned over to the Owner and has received the final acceptance from the Owner's representative.

Since there are provisions herein for no strikes or lockouts in the event any changes are negotiated and implemented under a Local Area Agreement during the term of this Agreement, the Contractor agrees that, except as specified herein, such changes shall be recognized and shall apply retroactively to the termination date in the particular Local Agreement involved. Each Contractor which has a Local Agreement with a Union at the time that its contract at the project

commences shall continue it in effect with each said Union so long as the Contractor remains on the project. In the event any such Local Area Agreement expires, the Contractor shall abide by all of the terms of the expired Local Agreement until agreement is reached on a new Local Agreement, with any changes being subject to the provisions of this Agreement.

The Union agrees that there will be no strikes, work stoppages, sympathy actions, picketing, slowdowns or other disruptive activity affecting the Project by any Union involved in the negotiation of a Local Area Agreement nor shall there be any lockout on this Project affecting the Union during the course of such negotiations.

IN WITNESS WHEREOF, the parties have hereunto set their hands on the date of attestation shown below.

DULUTH BUILDING AND
CONSTRUCTION TRADES COUNCIL

VENDOR

By: _____

By: _____

Its _____
(Printed Name/Title)

Its _____
(Printed Name/Title)

Date: _____

Date: _____

CITY OF DULUTH

By: _____
Mayor

Attest:

City Clerk

Date: _____

City Auditor

Date: _____

Assistant City Attorney

Date: _____

SCHEDULE “A”

- A1 Asbestos Workers Local 49
- A-2 Boilermakers Local 647
- A-3 BAC Local 1 Chapter 3 Duluth & Iron Range
- A-4 Carpenters Local 361
- A-5 Cements Masons/Plasterers Local 633
- A-6 Elevator Constructors Local 9
- A-7 IBEW Local 242
- A-8 Iron Workers Local 512
- A-9 Laborers Local 1091
- A-10 Millwrights & Machinery Erectors Local 1348
- A-11 Operating Engineers Local 49
- A-12 Painters & Allied Trades Local 106
- A-13 Plumbers & Fitters Local 11
- A-14 Roofers Local 96
- A-15 Sheet Metal Workers Local 10
- A-16 Sprinkler Fitters Local 669
- A-17 Teamsters Local 346

**City of Duluth
Energy Efficiency Lighting Project
Bid Package #1
Duluth, Minnesota**

**Electrical
Systems Description
and Outline Specification**

Prepared by:

**Gausman & Moore Associates, Inc.
501 South Lake Avenue, Suite 310
Duluth, MN 55802
Phone: (218) 722-2555
Fax: (218) 722-9306**

Gausman & Moore Project No.: 84493

I hereby certify that these construction documents or reports were prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


Dave T. Blume _____ Reg. No. 24671

July 22, 2016

DIVISIONS 26 – ELECTRICAL

260500 – BASIC ELECTRICAL MATERIALS AND METHODS

A. Purpose

1. The purpose of this Outline Specification is to define the scope of work; to serve as a vehicle for Owner bidding.

B. Scope of Work

1. Provide all labor, materials, equipment and services necessary for the installation and completion of the Electrical Work. In general, this includes but is not limited to the following:
 - a. Luminaire removal.
 - b. Install Owner furnished luminaires.
 - c. Wireless and/or hardwired Network Lighting control system.
2. Do the work in a workmanlike manner by persons experienced and skilled in the trade.

C. Current Characteristics

1. East First Street- Secondary service at 800 amp, 480Y/277 volts, 3 phase, 4 wire from existing panelboards.
2. Tech Village- Secondary service at 400 amp, 480Y/277 volts, 3 phase, 4 wire from existing panelboards.
3. Fifth Avenue and Michigan Street Ramp- Light fixture replacement associated with city owned/operated parking spaces.
4. Lake Place Plaza- Lighting in this area is served by multiple services/meters.

D. Codes, Permits and Fees

1. All work shall be done in accordance with the 2014 National Electrical Code, the Minnesota State Building Code, and local codes.
2. The Contractor shall pay for required permits and fees.

E. Identification

1. Identify lighting control panels/ Gateways.
2. Provide each light fixture with specified ID number/tag indicated in plans.

F. Wiring methods

1. All wiring (including boxes and conduit) in finished spaces shall be concealed. Wiring in exposed structure parking area may be exposed. Install conduit parallel and perpendicular to structure. Conduit installed in damp and wet locations shall be rigid steel conduit. Conduit installed concealed shall be electric metallic tubing (MC cable will be prohibited). Conduit shall be rigid in damp or wet locations

260519 – LOW VOLTAGE POWER CONDUCTORS AND CABLES

- A. Conductors for branch circuits shall be copper. Insulation for #8 and smaller shall be type THHN. Minimum size wire for branch circuits #12.

260526 – GROUNDING AND BONDING

- A. Install insulated equipment grounding conductor with circuit conductors for the following items, in addition to those required by NEC:
 - 1. Branch circuits.
 - 2. Lighting control.
 - 3. Flexible raceway runs.

260533 – RACEWAYS AND BOXES

- A. Wiring shall be in 3/4" minimum conduit.
- B. Outlet boxes shall be of size and type suitable for their use according to code. They shall be of steel.
- C. Outlet boxes in fire rated walls shall be steel and offset horizontally 24". Outlets shown back-to-back shall be offset 6" minimum.
- D. Securely fasten conduit and raceways with steel straps, clamps, and hangers with suitable fasteners. Tie wires shall not be used.
- E. Raceways shall be concealed in the building construction, except in unfinished space. Exposed raceway when required shall be approved by Owner and painted to match adjacent surface.

260943 – NETWORK LIGHTING CONTROLS

Part I- General

- A. System Description
 - 1. Install a networked lighting control and monitoring system consisting of wireless control modules fixture or pole mounted, communication gateways and software for operating the system. For reduced interference, longer ranges and more reliable communication, devices communicate via 802.15.4, 902-928Mhz radio.

The general operation of lighting and controlled loads shall include:
Through the use of a photocell input or astronomical time off sets outdoor lighting comes on at dark. At some predetermined, suitable time lighting can be step switched or dimmed to lower levels until motion detector inputs, call button inputs or other adaptive controls return lighting to higher levels. Lighting will operate at lower levels for longer times. Lighting returns to higher levels just before dawn, and fully extinguishes when the photocell threshold is met. Motion detectors can be used to bring lighting from low levels to higher ones upon detection. In parking lot, pathway and area lighting, peer to peer module communication allows for Direction of Travel and Geo-Proximity functions to bring up lighting ahead of pedestrians and vehicles in the area.

Software allows the user to assign device ID's, groups and networks at customer sites. Programming of scheduled events, photocell thresholds, control profiles, motion detector enabling and overrides are set by the user. At least one Gateway is required at each site. It will send commands to and receive reports from all devices at the site.

Power metering to revenue grade levels and fixture performance monitoring with automatic fault reporting for improved maintenance are sent to the owner as required.

B. Quality Assurance

1. Manufacturers: Firms regularly engaged in the manufacture of wireless lighting control equipment and ancillary equipment of types used with LED, Induction, LEP and eHID Lighting and other.
2. NEC Compliance: Comply with NEC as applicable to electrical wiring work.
3. NEMA Compliance: Comply with applicable portions of NEMA standards pertaining to types of electrical equipment and enclosures.
4. UL Approvals: Products must be listed under UL773 and UL916

C. Submittals

1. Shop Drawings: Submit dimensional drawings of all lighting control system components and accessories.
2. One Line Diagram: Submit a one-line diagram of the proposed system configuration if it differs from that illustrated in the diagrams included in the contract drawings.
3. Typical Wiring Diagrams: Submit typical wiring diagrams for all components including, but not limited to, lighting fixtures, relays, contactors, emergency call buttons, motion detectors, network gateway system and other controls. Diagrams shall include zone schedule and fixture ID as indicated on plans.
4. Product cut and data sheets shall indicate complete and unique catalog numbers for products submitted. All components of catalog number shall be identifiable and options explained. Cut sheets shall include complete specifications for any integral controls, including make/model number.

D. Warranty

1. Control, Monitoring and Communications Hardware.
 - a. Provide a written five year replacement material and workmanship warranty on all hardware.
 - b. Warranty period shall begin on date of commissioning.

Part 2- Product and System Performance and Requirements

A. Monitoring and Control System Requirements

1. Base Requirements
 - a. System shall have the capability of real-time monitoring and reporting in order to identify and report any occurrence other than the normal operation of the network and monitoring devices.

- b. System shall have the ability to control and schedule parking lot, pathway, street and other types of lighting to save energy by changing light output and/or by turning off lighting completely.
- c. System shall offer nine (8) time based scheduled events for nighttime savings profiles and one for a diagnostic event.
- d. Nodes shall be a one piece, self contained device, externally mounted and providing 0-10Vdc dimming, and bi-level control as well as on and off to luminaires.
- e. System shall provide 0-10Vdc dimming in 1/10th of a volt increments based on LED driver high and low operating range.
- f. System shall not require additional control modules be installed inside fixture to achieve dimming and stepped switching.
- g. System shall ensure nighttime operation of luminaires in the event of a malfunction or loss of communication by defaulting to the next scheduled operation and photocell operation.
- h. System shall include all required equipment to be fully functional and completely operational, with the exception of Owner provided Central Management Server, Ethernet facilities or other owner provided backhaul system.
- i. Nodes and gateway enclosures shall be rated IP66
- j. Peak power use by nodes should be less than two (2) watts
- k. Gateway power use must be twenty (100) watts or less.
- l. The rated life of all devices shall be ten (10) years or more at ambient temperature of 25 C.
- m. Software and Firmware necessary for operation and management of the system shall be provided and if hosted by the owner, the software shall be loaded and configured on their Central Management Server.
- n. System shall be capable of uploading and displaying the Owner's ArcGIS existing street light inventory which may or may not be remotely monitored, and to automatically update the information from the Owner's ArcGIS inventory on a real time or periodic basis.
- o. System shall have the capability to store and retrieve luminaire information such as pole identifier, GPS location, mode of operation, grouping, and product information (make, model, input voltage, wattage and version of components).
- p. All data and logs related to monitoring and control, reporting, and asset inventories shall be maintained and permanently stored on the Central Management Server.
- q. System shall include a graphical user interface that displays network infrastructure, configure monitoring and control devices, upload/download schedules, etc.
- r. The System shall be capable of real-time notification to assigned users and/or groups of luminaire failures or imminent luminaire failure, and/or degradation based upon threshold settings and number of occurrences, including but not limited to active power, power factor, voltage.
- s. System shall be capable of logging data once a day for a period of forty-nine (49) days when communication between the luminaire and CMS is interrupted. System shall automatically transfer data to CMS when communication is restored.
- t. System shall offer the Owner an unlimited number of sites with up to 255 networks per site and up to 255 groups per network. The number of devices per network shall be unlimited.

- u. Trimming or fine tuning of the luminaire to more accurately match the lighting requirements for sunrise and sunset shall be a standard function. Lighting goes to 50% 30 minutes after sunset and to 100% at full dark. One hour before sunrise, lighting is 100%. Thirty (30) minutes before sunrise lighting turns off.
- v. For enhanced safety, system shall be capable of powering and utilizing direct motion detector inputs and implementing a Predictive Occupancy function illuminating a pathway ahead of travelers or a Geo-Proximity function in parking lots bringing up lighting on nearest poles to initial motion detection.
- w. Nodes or controllers shall include a revenue grade smart metering chipset that measures and logs energy consumption at accuracy levels better than $\pm 2\%$
- x. System shall provide asset information, current status and malfunctions.
- y. System shall be accessed by user name and password. The system shall be capable of establishing several user access privileges.
- z. Administrator-full access and capability to manage users and groups.
- aa. Operations and Maintenance-monitoring, control configuration and report generation.
- bb. Monitoring and report generation.
- cc. Read-Only monitoring and report generation.
- dd. System shall have user adjustable photocell set points for operation of lighting during low light daytime hours such as in storms and etc.
- ee. System shall utilize a High End 0-10 Level Trim feature allowing the user to limit the maximum light output during normal operation.

B. Communication Network Requirements

1. Base Requirements

- a. Communication network must be designed in accordance with the specifications of the monitoring and control hardware (e.g., controller, gateway etc.) and the backhaul network to ensure optimal performance.
- b. Communication network shall have the capability to be scaled to communicate with an entire street light system should the customer be a municipality, government facility, university or business campus.
- c. For robustness in signal strength, increased range and reduced interference system shall use IEEE 802.15.4 standard, 902-928MHz radio frequency radio adjustable to +24dbm with ranges of 1 mile LOS between nodes and 2 miles LOS between nodes and gateways. Base stations are available that double the RF range stated
- d. If necessary to extend communication range at edges of normal gateway distances, System shall be able to designate any node to become a repeater, re-broadcasting and receiving messages another 1 mile.
- e. Communications network shall be capable of sampling and logging electrical parameters under normal operation including luminaire voltage, current, wattage, power factor and energy consumption.
- f. System shall offer AES 128 encryption or better.
- g. To reduce RF interference, system shall provide up to ten (10) channel and use direct sequence, spread spectrum operation.
- h. System shall be capable of controlling the Owner's irrigation system with simple interface.

C. System Hosting

1. The system shall be capable of being hosted on the Owner's Central Management Server and be independently owned, operated and managed by the Owner or Owner's representative. Data storage and retrieval shall utilize a common database such as SQL. Owner may select to separately contract with others for cellular services and/or set up and hosting of system.

D. Manufacturers

1. The basis of the specified system is the TOP900, manufactured by Echelon Corp.. Any other system to be considered must submit descriptive information 10 days prior to bid. Prior approval does not guarantee final approval by the electrical engineer. The contractor is responsible for providing a system meeting this specification in its entirety. All deviations from this specification must be listed and individually signed off by the engineer.
2. Lumewave system component product numbers:
 - a. TOP900TL(twist lock) and TOP900TN(threaded nipple)
 - b. Gateway
 - c. LumeStar software
 - d. CPD-3000- Power line outdoor lighting controller.
 - e. Base station
 - f. EMB900 wireless indoor lighting module
 - g. EW-205-12-LU outdoor motion sensor (parking ramp)
 - h. FS-305-LU indoor/outdoor motion sensor (parking ramp)

E. TOP900 WIRELESS CONTROL MODULE

1. Description
 - a. Replaces existing photocell and receptacle
 - b. All wiring routed through ½" threaded nipple for universal mounting or through 3 blade twist lock with low voltage pass-through for control wiring.
 - c. Operation and control 100-277Vac, 1000watt
 - d. Motion detector and call button inputs
 - e. Up to 9 time based scheduled actions per day
 - f. Stepped switching and 0-10Vdc dimming in 1/10th volt increments
 - g. IP66, UL listed
 - h. Adjustable photocell thresholds
 - i. Data logging
 - j. Revenue Grade power metering with accuracy of better than +-2%
 - k. Failure and performance reporting
 - l. Demand responsive to real time inputs from customer systems and utilities
 - m. DOT (Direction of Travel) capable for use with motion detectors for illuminating pathways ahead of foot/biking traffic
 - n. Peer to peer communication to provide group activation by single motion detector inputs
 - o. 900 MHz radio with 1 mile range between devices, 2 miles between Gateways and devices.
 - p. Over the air flashing for program updates.
 - q. No additional components for control are to be installed inside the fixture housing.

2. Gateways (one required per site):
 - a. USB
 - b. Ethernet
 - c. Wi-Fi
 - d. Cellular
 - e. 2 mile LOS range from Gateways to TOP900 modules. Base station configuration will double RF Range
 - f. Requires 120-240 volts and an Ethernet Connection
 - g. Install Antenna in Free Air
 - h. Requires customer provided Static IP address for access to LAN
3. Wireless Specifications
 - a. 902-928mHz, IEEE 802.15.4 standard
 - b. Spread Spectrum: Direct Sequence
 - c. 10 Channels
 - d. RF Adjustable to +24dbm
 - e. Any TOP module can operate as a repeater for extending range
 - f. AES128 Encryption
4. Unit Costs
 - a. TOP900TLX \$190/ Unit
 - b. CPD-3000-\$135/ Unit
 - c. Lumewave Gateway- \$2850/ Unit
 - d. Lumewave Base Station- \$2850/ unit
 - e. EW-205-12-LU-\$90/ Unit
 - f. FS-305-LU- \$90/ Unit
 - g. System start-up- \$4600.00
5. CPD-3000
 - a. Replaces existing photocell and receptacle
 - b. All wiring routed through ½" threaded nipple for universal mounting or through 3 blade twist lock with low voltage pass-through for control wiring.
 - c. Operation and control 100-277Vac, 1000watt
 - d. Motion detector and call button inputs
 - e. Up to 9 time based scheduled actions per day
 - f. Stepped switching and 0-10Vdc dimming in 1/10th volt increments
 - g. IP66, UL listed
 - h. Adjustable photocell thresholds
 - i. Data logging
 - j. Revenue Grade power metering with accuracy of better than +-2%
 - k. Failure and performance reporting
 - l. Demand responsive to real time inputs from customer systems and utilities
 - m. DOT (Direction of Travel) capable for use with motion detectors for illuminating pathways ahead of foot/biking traffic
 - n. Peer to peer communication to provide group activation by single motion detector inputs
 - o. 900 MHz radio with 1 mile range between devices, 2 miles between Gateways and devices.
 - p. Over the air flashing for program updates.
 - q. No additional components for control are to be installed inside the fixture housing.

6. Base Station
 - a. USB
 - b. Ethernet
 - c. Wi-Fi
 - d. Cellular
 - e. 2 mile LOS range from Gateways to TOP900 modules. Base station configuration will double RF Range
 - f. Requires 120-240 volts and an Ethernet Connection
 - g. Install Antenna in Free Air
 - h. Requires customer provided Static IP address for access to LAN

7. EW-205-12-LU and FS-305-LU (Parking Garages)
 - a. Replaces existing photocell, wireless controller and/or receptacle
 - b. All wiring routed through ½" threaded nipple for universal mounting or through 3 blade twist lock with low voltage pass-through for control wiring.
 - c. Operation and control 100-277Vac, 1000watt
 - d. Motion detector and call button inputs
 - e. Up to 9 time based scheduled actions per day
 - f. Stepped switching and 0-10Vdc dimming in 1/10th volt increments
 - g. IP66, UL listed
 - h. Adjustable photocell thresholds
 - i. Data logging
 - j. Revenue Grade power metering with accuracy of better than +-2%
 - k. Failure and performance reporting
 - l. Demand responsive to real time inputs from customer systems and utilities
 - m. DOT (Direction of Travel) capable for use with motion detectors for illuminating pathways ahead of foot/biking traffic
 - n. Peer to peer communication to provide group activation by single motion detector inputs
 - o. 900 MHz radio with 1 mile range between devices, 2 miles between Gateways and devices.
 - p. Over the air flashing for program updates.
 - q. No additional components for control are to be installed inside the fixture housing.

Part 3-Execution and support services

A. Installation

1. Lumewave TOP 900 wireless control modules require installation on fixture and commissioning of TOP900's for the customers wireless lighting control network. All equipment and wiring shall be installed as per manufacturer's instructions, configured and operationally field tested.

2. There are 3 ways to commission the TOP900 series products on the customers' wireless lighting control network:
 - A. Contractor captures the peel-off label on the box then installs the TOP900 and connects control wiring on/in fixture:

VERY IMPORTANT!

 - 1) Contractor removes peel-off label on TOP900 box and stick on plan next to pole the TOP900 was installed on.
 - 2) Contractor returns the plan with the stickers to customer
 - 3) Customer scans label into system
 - 4) Commissioning is done over the air

- B. Contractor delivers the TOP900 control modules to customer for commissioning:
 - 1) Customer commissions the TOP900 module and returns to contractor with identification of the pole to mount the TOP900 on.
 - 2) Contractor installs the TOP900 and connects control wiring as required based on/in fixture and unit immediately begins to control the fixture based on its control schedule
- C. Contractor delivers the TOP900 units "in its box" to the customer
 - 1) Customer scans the ID on the box into the system and writes the ID of the pole the contractor is to install the unit on
 - 2) Contractor simply installs the unit. When unit is installed and powered-up, commissioning takes place over the air.
- 3. All pertinent installation and startup instructions shall be provided.

B. Final Testing

- 1. Final testing of installation of the monitor and control system, wireless communications system, and luminaires shall begin upon completion of all software and hardware installations and successful demonstration of all system functions.
- 2. Testing period will be comprised of thirty (30) day calendar days of live continuous operation of the system. Commencement of final acceptance testing shall be scheduled by the owner.
- 3. All components of the monitoring and control system and communications network must be available and operational for at least 99% of the time during this period to constitute a valid test.

C. Factory Commissioning

- 1. Upon completion of the installation, the system shall be completely commissioned by the manufacturer's factory authorized technician who will commission communication nodes, program schedules and system operation to ensure a trouble-free wireless outdoor monitoring and control system.
- 2. The electrical contractor and owner shall provide both the manufacturer and the electrical engineer with ten working days written notice of the scheduled commissioning date.

D. Manufacturer Services

- 1. Provide installation and troubleshooting support via telephone and internet.
- 2. Software/firmware maintenance may be acquired at the option of the Owner, and include all publicly available additions and improvements to the functionality, as well as new upgraded functions of the software.

3. Maintenance shall include the detection and correction of any error in the software/firmware and the implementation of all updates, upgrades, and installation of additional programs to the software/firmware to remedy such errors. Software and firmware upgrades shall be installed onto the target hardware.
4. Provide maintenance and support for the current release and the two immediately subsequent releases of the software at no extra cost to the Owner above and beyond the maintenance or license fee. The Maintenance Term will initially be one year and may be renewed at the Owner's discretion. Maintenance terms begin after the Acceptance Period.

262726 – WIRING DEVICES

- A. Devices shall be specification grade. All exterior receptacles and receptacles located near sinks shall be GFCI type. All exterior devices shall be gray with cast aluminum, spring-loaded lift cover and listed for “wet locations” cover.
- B. All internal receptacles shall be gray with stainless steel coverplates.

265100 – INTERIOR LIGHTING

- A. Install wireless lighting control system (WLCS) component on and/or within the housing of the light fixtures.
- B. Light fixtures damaged during the WLCS component installation shall be repaired or replaced at the contractor's expense.
- C. To limit light pollution (dark sky compliance), enhance or maintain public safety and ensure appropriate aesthetic lighting qualities in public spaces as most appropriate in each individual lighting application.

265600 - EXTERIOR LIGHTING

A. Related documents

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions apply to this Section.

B. Summary

1. Section Includes:
 - a. Owner furnished.

C. Manufacturers

1. Manufacturers: Exterior luminaires will be furnished by the Owner. Compliance with requirements, provide products by one of the manufacturers.
2. To limit light pollution (dark sky compliance), enhance or maintain public safety and ensure appropriate aesthetic lighting qualities in public spaces as most appropriate in each individual lighting application.

D. Light emitting diode luminaires and drivers

1. LED Light Engine: The LED light engine shall as a minimum meet the following characteristics:
 - a. Cast aluminum heat sink integrated with the housing to provide superior thermal management.
 - b. Incorporate a replaceable PC board with quick connector mounts to heat sink.
 - c. Use latest generation of high lumen output LEDs binned to Energy Star standards and be of color temperatures of 3000K, 3500K, or 4100K.
2. LED Driver:
 - a. LED light fixture shall be designed and tested by an accredited independent laboratory in accordance with IESNA LM-79-2008 and IESNA LM-80-2008, have an L70 rated life (operating time from inception the luminaire delivers 70% of initial rated lumens) of 50,000 hours.
 - b. Thermal losses shall be less than 10% when operated at a steady state ambient operating temperature of 77 degrees F (25 degrees C) and optical losses shall be less than 15%.
 - c. Lumens per watts shall be a minimum of 90.

E. Poles and support components, general requirements

1. Provide 6" aluminum-nipple welded to fixture arm, painted to match fixture, as manufactured by Duluth Steel Fabricators, Inc. Contact Mark Youngren, 218-624-5793. This applies to pole mounted light fixtures. Verify exact quantity with city prior to order. Aluminum arm welding scope with Duluth Steel Fabricators will include a minimum of 10 arms per each work order package.
2. Structural Characteristics: Comply with AASHTO LTS-4.
3. Luminaire Attachment Provisions: Comply with luminaire manufacturers' mounting requirements. Use stainless-steel fasteners and mounting bolts, unless otherwise indicated.
3. Mountings, Fasteners, and Appurtenances: Corrosion-resistant items compatible with support components.
 - a. Materials: Shall not cause galvanic action at contact points.
 - b. Anchor Bolts, Leveling Nuts, Bolt Caps, and Washers: Hot-dip galvanized after fabrication, unless stainless-steel items are indicated.
 - c. Anchor-Bolt Template: Plywood or steel.

4. Concrete Pole Foundations: Cast in place, with anchor bolts to match pole-base flange. Concrete, reinforcement, and formwork are specified in Division 03 Section "Cast-in-Place Concrete." Use 3000 psig (20.7 MPa) strength, 28-day concrete.
5. Power-Installed Screw Foundations: Factory fabricated by pole manufacturer, with structural steel complying with ASTM A 36/A 36M and hot-dip galvanized according to ASTM A 123/A 123M; and with top-plate and mounting bolts to match pole base flange and strength required to support pole, luminaire, and accessories.
6. Breakaway Supports: Frangible breakaway supports, tested by an independent testing agency acceptable to authorities having jurisdiction, according to AASHTO LTS-4.

F. Luminaire installation

1. Install Owner furnished LED light fixtures in existing location unless noted otherwise. Contractor to coordinate delivery to site as directed by Owner. Protect fixtures from damage as required by means recommended by manufacturer and approved by the city. Connect to existing branch circuit made available by demolition of existing light fixture.
2. Fasten luminaire to indicated structural supports.
3. Adjust luminaires that require field adjustment or aiming. Include adjustment of photoelectric device to prevent false operation of relay by artificial light sources.
4. Install lock-tight substance furnished with light fixtures per manufacturers requirements and/or recommendations.
5. Replace light fixture branch circuit wiring within pole, no splices allowed.

G. Corrosion prevention

1. Aluminum: Do not use in contact with earth or concrete. When in direct contact with a dissimilar metal, protect aluminum by insulating fittings or treatment.
2. Steel Conduits: Comply with Division 26 Section "Raceway and Boxes for Electrical Systems." In concrete foundations, wrap conduit with 0.010-inch- (0.254-mm-) thick, pipe-wrapping plastic tape applied with a 50 percent overlap.

H. Grounding

1. Ground metal poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - a. Install 10-foot (3-m) grounding electrode for each pole.
 - b. Install grounding conductor pigtail in the base for connecting luminaire to grounding system.

2. Ground nonmetallic poles and support structures according to Division 26 Section "Grounding and Bonding for Electrical Systems."
 - a. Install 10-foot (3-m) grounding electrode for each pole.
 - b. Install #6 AWG grounding conductor and conductor protector.
 - c. Ground metallic components of pole accessories and foundations.

G. Field quality control

1. Inspect each installed fixture for damage. Replace damaged fixtures and components.
2. Illumination Observations: Verify normal operation of lighting units after installing luminaires and energizing circuits with normal power source.
 - a. Verify operation of photoelectric controls.
3. Tests and Observations: Verify normal operation of lighting units after installing fixtures and energizing circuits with normal power source. Include the following:
 - a. Photometric Tests: Measure light intensities at night at locations where specific illumination performance is indicated. Use photometers with calibration referenced to National Institute of Standards and Technology (NIST) standards.
 - b. Check for intensity of illumination.
 - c. Check for uniformity of illumination.
 - d. Check for excessively noisy ballasts.
4. Prepare a written report of tests, inspections, observations, and verifications indicating and interpreting results. If adjustments are made to lighting system, retest to demonstrate compliance with standards.

H. Demonstration

1. Engage a factory-authorized service representative to train Owner's maintenance personnel to adjust, operate, and maintain luminaire lowering devices.

END OF DIVISION 26

END OF ELECTRICAL
OUTLINE SPECIFICATION

CITY OF DULUTH ENERGY EFFICIENCY LIGHTING PROJECT - BID PACKAGE #1

ELECTRICAL GENERAL NOTES:

- A. PROVIDE CABLE OR CONDUIT AND WIRE AS REQUIRED TO ACHIEVE CIRCUITING SHOWN. SIZE CONDUCTORS PER NEC AMPACITY AND WIRE FILL CRITERIA. PROVIDE DEDICATED NEUTRAL AND GROUND CONDUCTORS FOR ALL CIRCUITING CU (UNO). INCREASE BRANCH CIRCUIT CONDUCTORS INCLUDING EQUIPMENT GROUNDING CONDUCTORS PROPORTIONALLY FOR NO MORE THAN 3% VOLTAGE DROP PER NEC 210.
- B. PROVIDE CUTTING, PATCHING AND RESTORATION OF FINISHES NECESSARY FOR THIS WORK. SURFACES DAMAGED BY THIS WORK AND SPACES AROUND CONDUITS PASSING THROUGH FLOORS AND WALLS SHALL BE NEATLY PATCHED AND FINISHED TO MATCH EXISTING. STRUCTURAL MEMBERS SHALL NOT BE CUT OR PENETRATED IN ANY MANNER. THE SPACES AROUND THE CONDUITS SHALL BE SEALED TO PREVENT ENTRANCE OF MOISTURE. PROVIDE FIRE STOPPING PER UL APPROVED METHODS.
- C. PROVIDE TEMPORARY LIGHTING AS REQUIRED TO FACILITATE LIGHT FIXTURE REPLACEMENT.
- D. PROVIDE POWER WIRING AND CONNECT TO EACH ITEM OF EQUIPMENT FURNISHED BY OWNER AND OTHER TRADES AS SHOWN ON THE DRAWINGS. VERIFY ROUGH-IN REQUIREMENTS FOR EACH ITEM. FINISH AND INSTALL MINOR ITEMS WHICH ARE OBVIOUSLY AND REASONABLY NECESSARY FOR COMPLETION.
- E. LEAVE THE SITE CLEAN AND READY FOR OCCUPANCY. REMOVE DIRT, DEBRIS, EMPTY CARTONS, TOOLS, CONDUIT AND WIRE SCRAPS AND MISCELLANEOUS SPARE EQUIPMENT AND MATERIALS USED IN THIS DIVISION OF THE WORK DURING CONSTRUCTION. COMPONENTS SHALL BE FREE OF DUST, GRIT AND FOREIGN MATERIALS AND LEFT AS NEW BEFORE FINAL ACCEPTANCE OF WORK.
- F. PROVIDE NECESSARY DEMOLITION TO FACILITATE NEW CONSTRUCTION WORK ASSOCIATED WITH THIS PROJECT. COORDINATE ALL OUTAGES WITH OWNER MINIMUM 72 HOURS IN ADVANCE. OWNER RETAINS RIGHT TO FIRST SALVAGE. PROVIDE DISPOSAL OF ALL REMOVED MATERIAL. MAINTAIN CIRCUIT CONTINUITY AS REQUIRED.
- G. OWNER RETAINS FIRST RIGHT TO SALVAGE LIGHT FIXTURES, CONTROLS, AND/OR OTHER EQUIPMENT/DEVICES.
- H. IT IS THE INTENT OF THESE DIAGRAMATIC DESIGN BUILD/ASSIST DRAWINGS TO PROVIDE THE PROJECT SCOPE INCLUDING BUT NOT LIMITED TO PHASED DEMOLITION AND NEW CONSTRUCTION. EXISTING INFORMATION INDICATED ON THESE PLANS DOES NOT CONSTITUTE A WARRANTY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL INFORMATION WITH THE FIELD CONDITIONS. SCOPE OF PHASING AND PROJECT INTENT PRIOR TO BID SUBMISSION. NO EXTRA WILL BE ALLOWED DUE TO THE LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- I. PROVIDE COMPLETE O&M MANUAL INCLUDING APPROVED SUBMITTAL DRAWINGS, WARRANTY INFORMATION FOR ALL PRODUCT SUPPLIED, AND MANUFACTURES OPERATION AND MAINTENANCE INSTRUCTIONS.
- J. PROVIDE ELECTRONIC MANUFACTURES SUBMITTAL DRAWINGS FOR APPROVAL PRIOR TO RELEASE. ASSOCIATED WITH THE FOLLOWING: POWER DISTRIBUTION EQUIPMENT; LIGHTING FIXTURES; VOICE AND DATA SYSTEM EQUIPMENT.
- K. ELECTRICAL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF A LICENSED MASTER ELECTRICIAN. PROCURE PERMITS AND LICENSES AND PAY FEES ASSOCIATED WITH THIS WORK.
- L. REMOVE ALL ELECTRICAL RELATED EQUIPMENT (I.E. JUNCTION BOXES, RECEPTACLES, SWITCHES DEVICES, ETC.) AFFECTED/ABANDONED AS A RESULT OF DEMOLITION AND NEW CONSTRUCTION.
- M. MATERIALS FURNISHED FOR THIS PROJECT SHALL BE NEW, COMMERCIAL GRADE, FREE OF DEFECTS, AND LISTED BY A NATIONALLY RECOGNIZED TESTING LABORATORY (UL).
- N. PERFORM WORK TO COMPLY WITH THE STANDARD PRACTICES FOR GOOD WORKMANSHIP PUBLISHED BY NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION (NECA), COMPLY WITH THE LATEST ENFORCED EDITION OF THE NATIONAL ELECTRICAL CODE (NEC), LOCAL CODES, AMENDMENTS, AND ORDINANCES.
- O. COORDINATE WORK IN PHASES WITH GENERAL CONTRACTOR(S) AND OWNER TO FACILITATE DEMOLITION AND NEW CONSTRUCTION.
- P. REMOVE ALL ABANDONED WIRING AT CONTRACTORS OPTION UTILIZE EXISTING ABANDONED RACEWAY TO EXTENT AVAILABLE. ALL ABANDONED EXPOSED RACEWAY SHALL BE REMOVED.
- Q. PROVIDE ALL DEVICES AND EQUIPMENT ASSOCIATED WITH THE ECHOLON LUMINAWE LIGHTING CONTROL SYSTEM AT EACH SITE FOR A COMPLETE AND OPERATIONAL SYSTEM. COORDINATE EXACT LIGHTING CONTROL PROGRAMMING WITH THE CITY OF DULUTH.
- R. REFER TO PROJECT MANUAL FOR SITE SPECIFIC LIGHT FIXTURE SCHEDULE.
- S. COORDINATE FINAL LIGHTING CONTROL DEVICE/EQUIPMENT LAYOUT WITH ECHOLON SHOP DRAWINGS.

DULUTH, MN

LIGHT FIXTURE

IDENTIFICATION ID SYSTEM

TV-S1A1
① ②③④⑤

① SITE LOCATION:

TV = TECH VILLAGE PARKING RAMP
MP = EAST FIRST STREET MEDICAL PARKING RAMP
SM = 5TH AVENUE WEST & MICHIGAN STREET
LP = LAKE PLACE PARK

② MOUNTING:

P = POLE MOUNTED
S = SURFACE MOUNTED

③ POLE/LOCATION NUMBER:

1 = POLE/LOCATION #1
2 = POLE/LOCATION #2
3 = POLE/LOCATION #3
ETC.

④ LIGHT FIXTURE:

A = LIGHT FIXTURE A
B = LIGHT FIXTURE B
C = LIGHT FIXTURE C
ETC.

⑤ PARKING RAMP LEVEL

G = GROUND LEVEL
1 = LEVEL 1
2 = LEVEL 2
3 = LEVEL 3
4 = LEVEL 4
ETC.

LIGHTING



○ RECESSED OUTLET
○-H BRACKET FIXTURE



LED FIXTURE



BRACKET LED FIXTURE

PROJECT TEAM

PROJECT OWNER/MANAGER

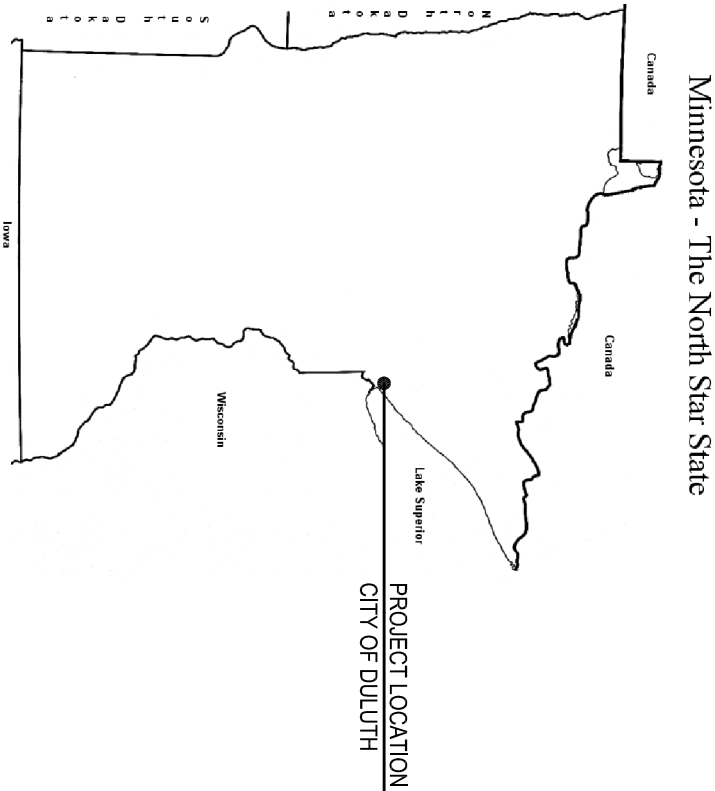
CONTACT: ALEX JACKSON
CITY OF DULUTH
1532 WEST MICHIGAN STREET
DULUTH, MN 55802
PH: 218-730-4433
E-MAIL: AJACKSON@DULUTHMN.GOV

ELECTRICAL ENGINEER

CONTACT: LYSSA HATTENBERGER
GAUSMAN & MOORE
501 SOUTH LAKE AVENUE, SUITE 310
DULUTH, MN 55802
PH: 218-302-6566
FAX: 218-722-9306
E-MAIL: LHATTENBERGER@GAUSMAN.COM

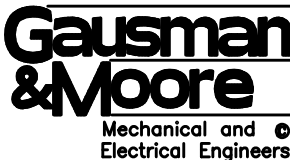
SHEET INDEX

SHEET NO.	DESCRIPTION
E000	TITLE SHEET
E100	EAST FIRST STREET MEDICAL PARKING RAMP GROUND LEVEL LIGHTING PLAN
E101	EAST FIRST STREET MEDICAL PARKING RAMP 1ST LEVEL LIGHTING PLAN
E102	EAST FIRST STREET MEDICAL PARKING RAMP 2ND LEVEL LIGHTING PLAN
E103	EAST FIRST STREET MEDICAL PARKING RAMP 3RD LEVEL LIGHTING PLAN
E104	EAST FIRST STREET MEDICAL PARKING RAMP 4TH LEVEL LIGHTING PLAN
E105	TECH VILLAGE PARKING RAMP ALLEY LEVEL LIGHTING PLAN
E106	TECH VILLAGE PARKING RAMP LEVEL 1 LIGHTING PLAN
E107	TECH VILLAGE PARKING RAMP LEVEL 2 LIGHTING PLAN
E108	TECH VILLAGE PARKING RAMP LEVEL 3 LIGHTING PLAN
E109	TECH VILLAGE PARKING RAMP LEVEL 4 LIGHTING PLAN
E110	TECH VILLAGE PARKING RAMP LEVEL 5 LIGHTING PLAN
E111	5TH AVENUE & MICHIGAN STREET PARKING RAMP LIGHTING PLAN
E112	LAKE PLACE PARK LIGHTING PLAN



Date:	07/22/16
Drawn:	LAH
Checked:	SLH
Proj No:	84493

E000



TITLE SHEET

City of Duluth Energy
Efficiency Lighting Project -
Bid Package #1

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly licensed Professional Engineer under the laws of the State of Minnesota

Dave T. Blume

Date 07/22/2016 Reg No 24671

LIGHTING CONTROL MATRIX

		SYSTEM OUTPUTS										
		CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR										
		CONTROLLED BY LOCAL PHOTOCELL DEVICE										
		CONTROLLED BY A SET TIME ON/OFF										
		CONTROLLED BY WIRELESS INTEGRAL COMBINATION OCCUPANCY SENSOR										
SYSTEM INPUTS												
ZONE 1-MP (Z1)												
ZONE 2-MP (Z2)												

GENERAL NOTES:

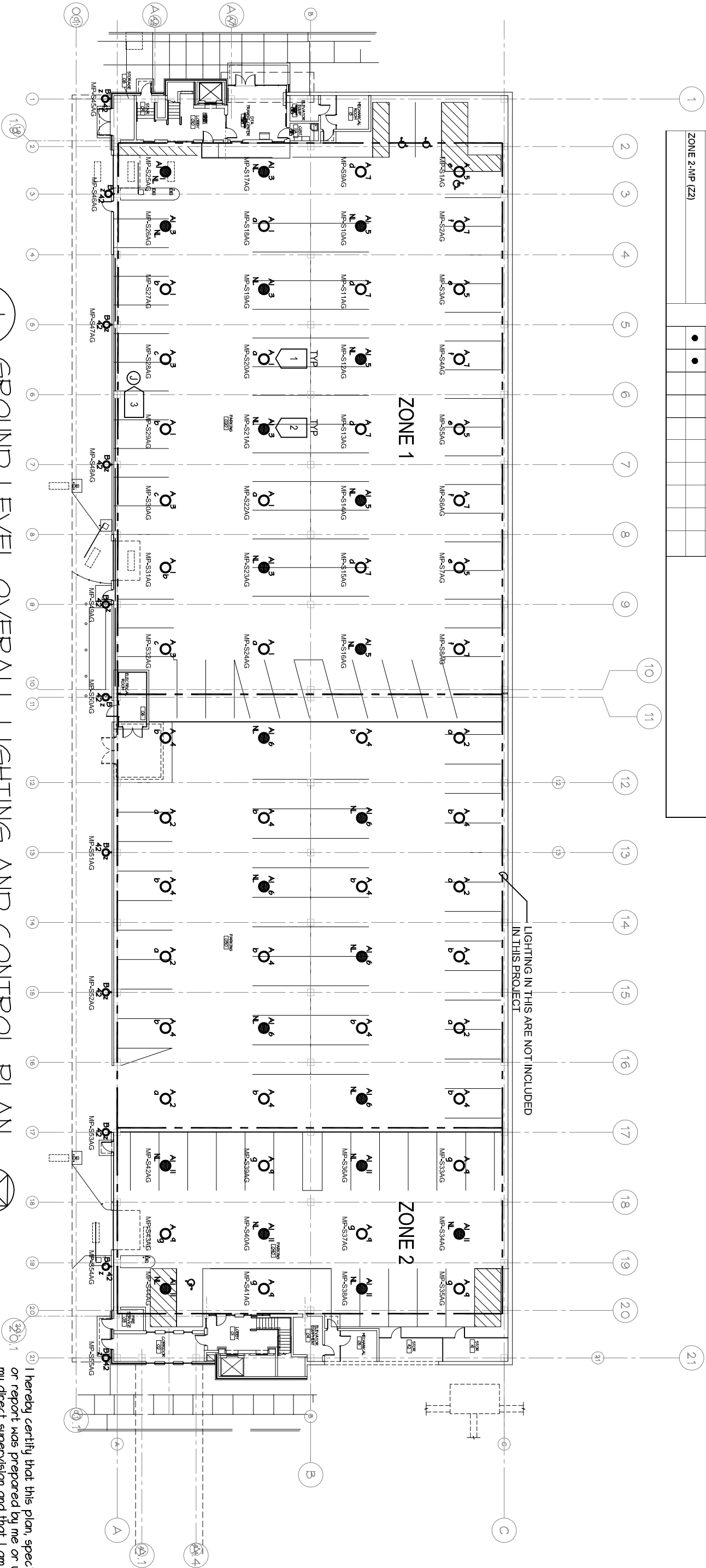
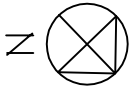
- A. TYPICAL, DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'A1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B. TYPICAL, REPLACE LIGHT FIXTURE TYPES 'A', 'A1' AND 'B' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C. EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D. THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

NUMBERED NOTES:

1. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMENWAVE SERIES OR APPROVED EQUIVALENT.
2. TYPICAL, RECORD DRAWINGS INDICATE 'NL' FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.
3. PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ACUTY BRANDS CONTROLS OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.

GROUND LEVEL OVERALL LIGHTING AND CONTROL PLAN

SCALE: 0' 32'



I hereby certify that this plan, specification,
or report was prepared by me or under
my direct supervision and that I am a duly
Licensed Professional Engineer
under the laws of the State of Minnesota

Dave T. Blume

Date: 07/22/2016 Reg No. 246711

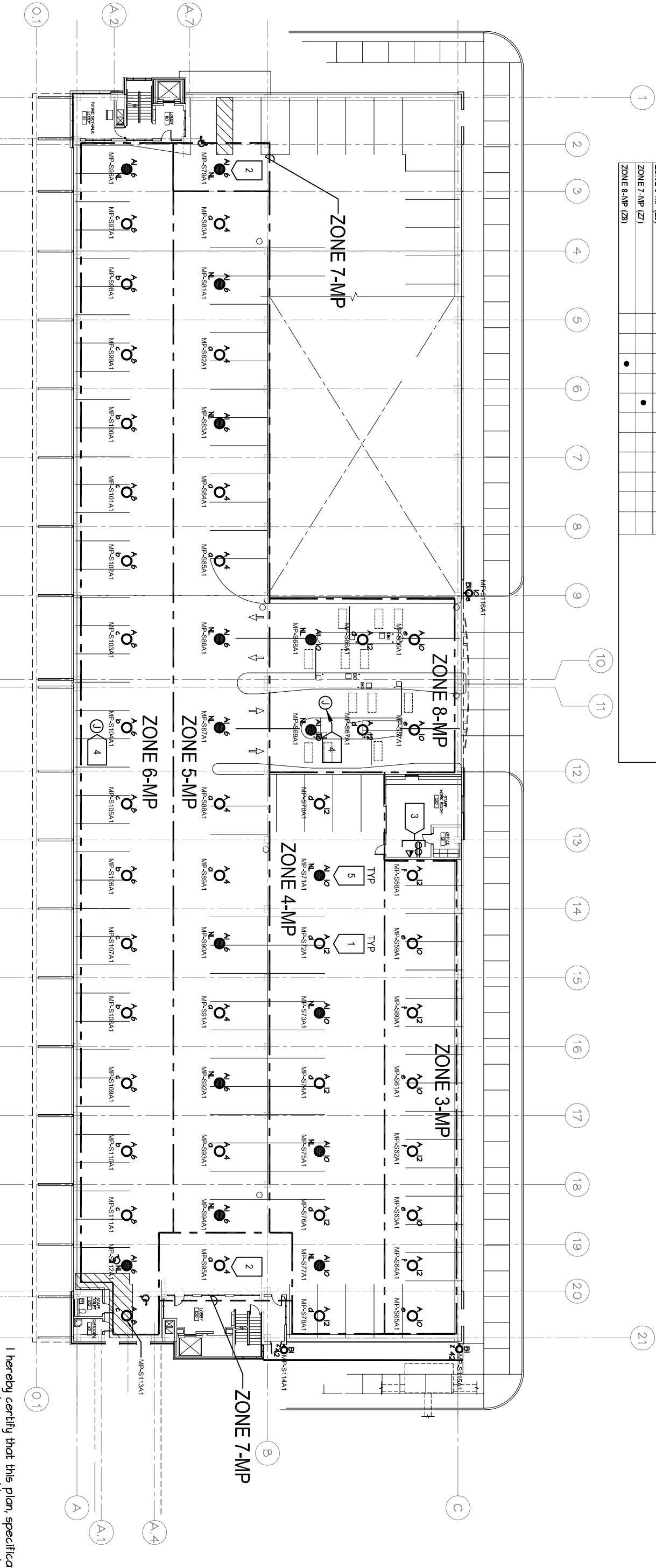
LIGHTING CONTROL MATRIX	
SYSTEM INPUTS	SYSTEM OUTPUTS
	CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR CONTROLLED BY LOCAL PHOTOCELL CONTROLLED BY A SET TIME ON/OFF NIGHT LIGHT
ZONE 3-MP (Z3)	• • • • •
ZONE 4-MP (Z4)	• • • • •
ZONE 5-MP (Z5)	• • • • •
ZONE 6-MP (Z6)	• • • • •
ZONE 7-MP (Z7)	• • • • •
ZONE 8-MP (Z8)	• • • • •

GENERAL NOTES:

- A. TYPICAL, DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'A1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B. TYPICAL, REPLACE LIGHT FIXTURE TYPES 'A', 'A1' AND 'B1' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
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NUMBERED NOTES:

1. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMIEWAVE SERIES OR APPROVED EQUIVALENT.
2. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMIEWAVE SERIES OR APPROVED EQUIVALENT.
3. PROVIDE DEDICATED 120V, 20A QUAD RECEPTACLE (CONNECTED TO NEAREST 120/208V PANEL WITH 20A SPARE BREAKER) AND VOICEDATA OUTLET FOR WIRELESS LIGHTING CONTROL SYSTEM GATEWAY (ECHELON LUMIEWAVE SYSTEM). VERIFY EXACT LOCATION OF GATEWAYS WITH OWNER PRIOR TO ROUGH-IN.
4. PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMIEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
5. TYPICAL, RECORD DRAWINGS INDICATE 'NL' FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.

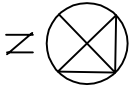


FIRST LEVEL OVERALL LIGHTING AND CONTROL PLAN

E101

SCALE:

0' 32'



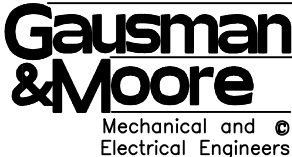
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Dave T. Blume

Date: 07/22/2016 Reg No: 24671

City of Duluth Energy
Efficiency Lighting Project -
Bid Package #1

East First Street Medical
Parking Ramp 1st Level
Lighting Plan



Date: 07/22/16
Drawn: LAH
Checked: SLH
Proj.No: 844493

E101

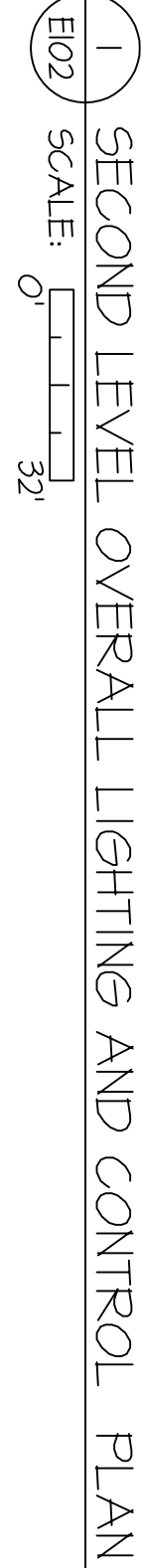
LIGHTING CONTROL MATRIX										
SYSTEM INPUTS				SYSTEM OUTPUTS						
				CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR						
				CONTROLLED BY LOCAL PHOTOCELL DEVICE						
				CONTROLLED BY A SET TIME ON/OFF						
				NIGHT LIGHT, ON 24/7						
ZONE 9-AMP (Z9)				●	●	●				
ZONE 10-AMP (Z10)				●		●				
ZONE 11-AMP (Z11)				●		●				
ZONE 12-AMP (Z12)				●	●	●				
ZONE 13-AMP (Z13)						●				

A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'A1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.

- THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

1. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES MODEL EMB900 OR APPROVED EQUIVALENT.

- 4 TYPICAL, ALL FIXTURES INDICATED WITH 'NL' WILL NOT BE NIGHT LIGHTS UNLESS NOTED OTHERWISE.



Dave T. Blume
Dave T. Blume

LIGHTING CONTROL MATRIX

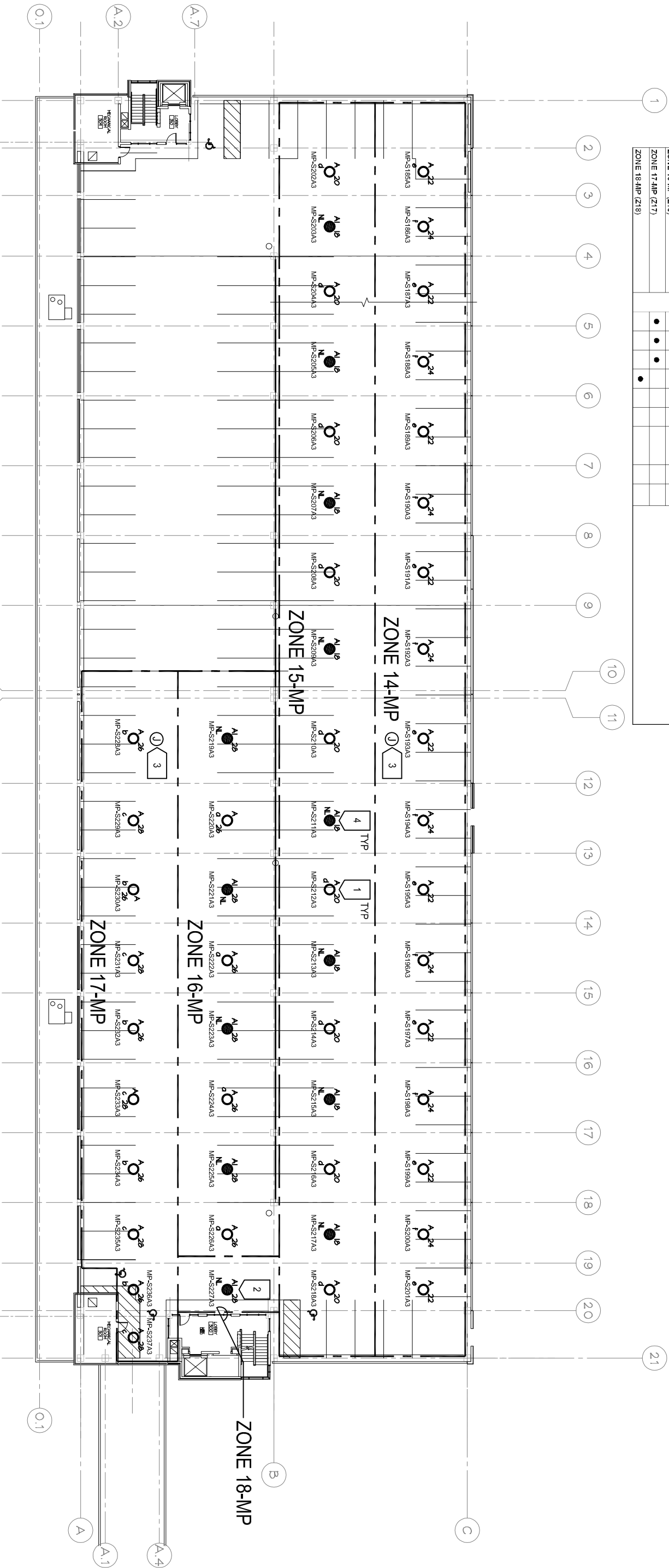
		SYSTEM OUTPUTS											
		CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR											
		CONTROLLED BY LOCAL PHOTOCELL DEVICE											
		CONTROLLED BY A SET TIME ON/OFF											
SYSTEM INPUTS													
ZONE 14-MP (Z14)													
ZONE 15-MP (Z15)													
ZONE 16-MP (Z16)													
ZONE 17-MP (Z17)													
ZONE 18-MP (Z18)													

GENERAL NOTES:

- A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'A1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B REPLACE LIGHT FIXTURE TYPES 'A' AND 'A1' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

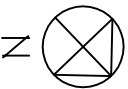
NUMBERED NOTES:

- 1 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES MODEL EMB900 OR APPROVED EQUIVALENT.
- 2 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES MODEL EMB900 OR APPROVED EQUIVALENT.
- 3 PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- 4 TYPICAL. RECORD DRAWINGS INDICATE 'NL' FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.



THIRD LEVEL OVERALL LIGHTING AND CONTROL PLAN

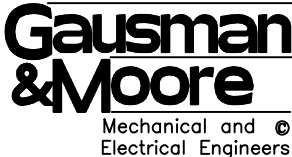
E103 SCALE: 0' 32'



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Dave T. Blume

Date: 07/22/2016 Reg No: 246711



[illegible]

A. DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPES 'J', AND 'J1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.

B. LIGHT FIXTURE TYPES 'J' AND 'J1' TO BE REPLACED WITH OWNER FURNISHED LED TYPE POLE MOUNTED FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.

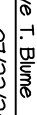
C. EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.

D. THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

1 PROVIDE COMBINATION WIRELESS OCCUPANCY SENSOR AND PHOTOCELL INTEGRAL OR EXTERNAL TO TYPE 'J', 'J1', AND 'J2' LIGHT FIXTURES AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.

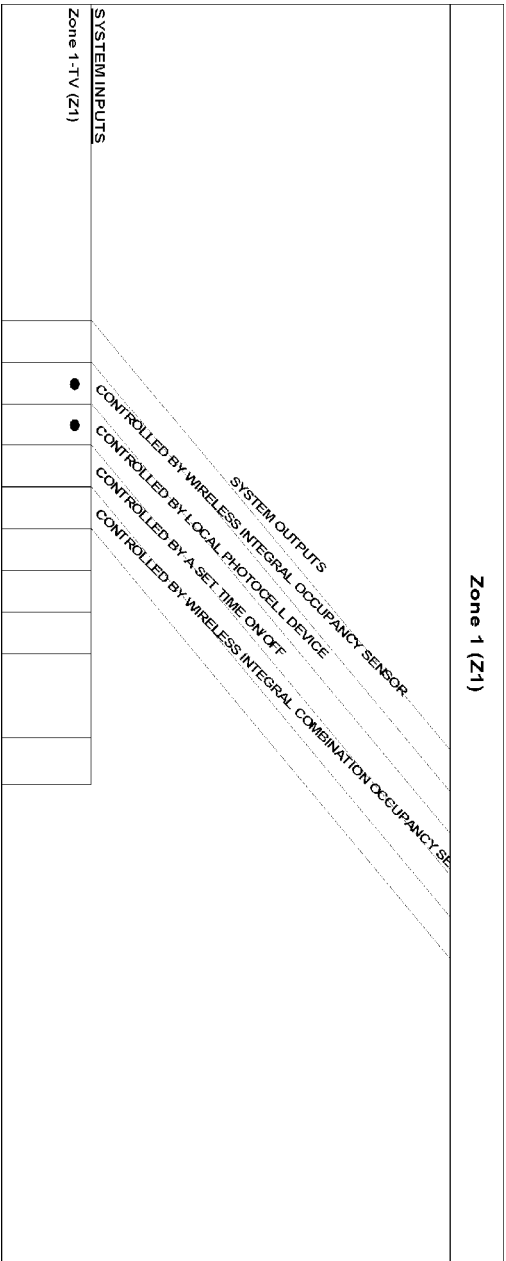


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Dave T. Blume

Date: 07/22/2016 Reg No: 24671

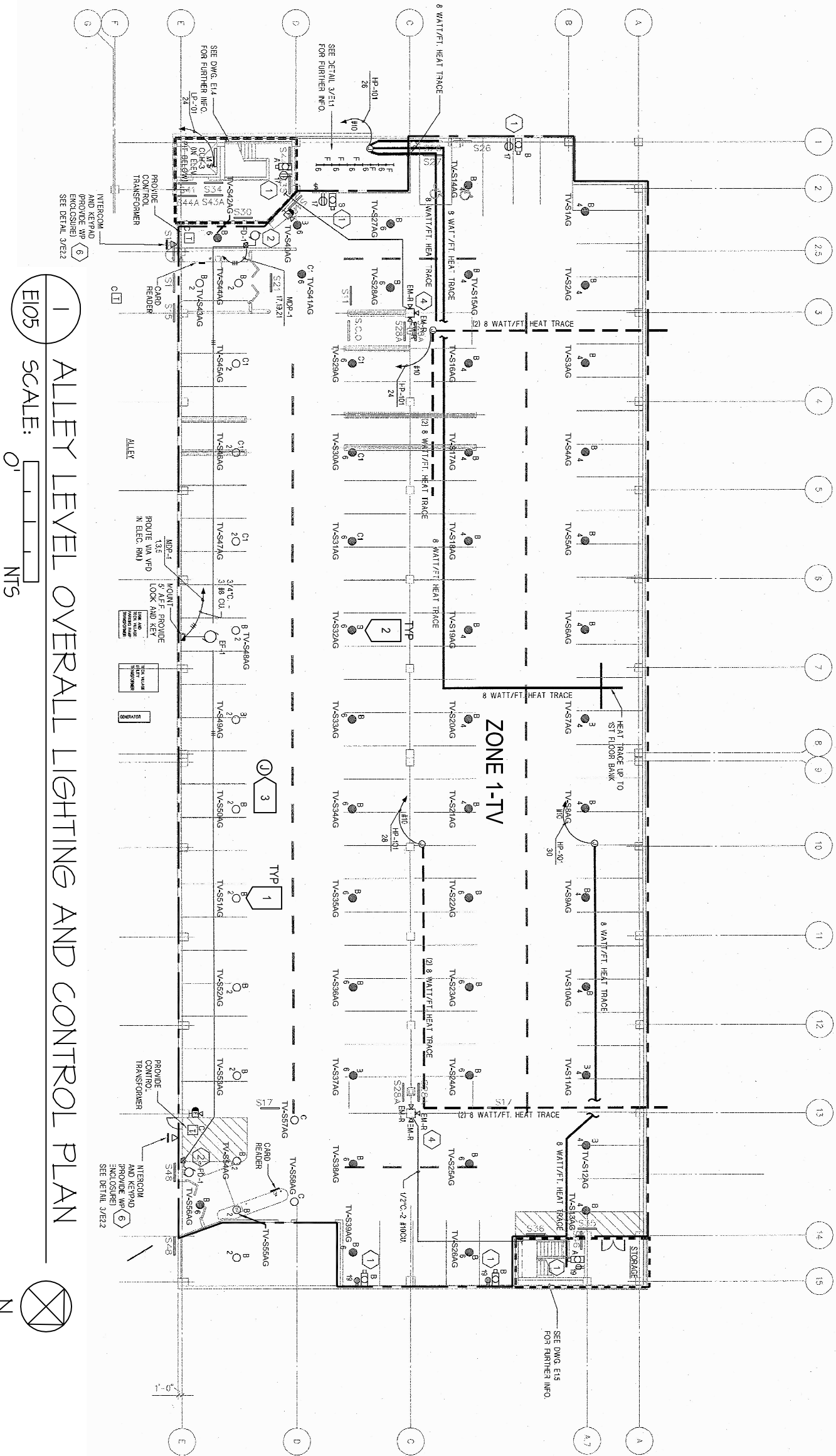


GENERAL NOTES:

- DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'B', 'C' AND 'C1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- REPLACE LIGHT FIXTURE TYPES 'B', 'C' AND 'C1' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

NUMBERED NOTES:

- PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'B', 'C' OR 'C1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- TYPICAL. RECORD DRAWINGS INDICATE SHADED FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.
- PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.



ALLEY LEVEL OVERALL LIGHTING AND CONTROL PLAN

SCALE: 0' NTS

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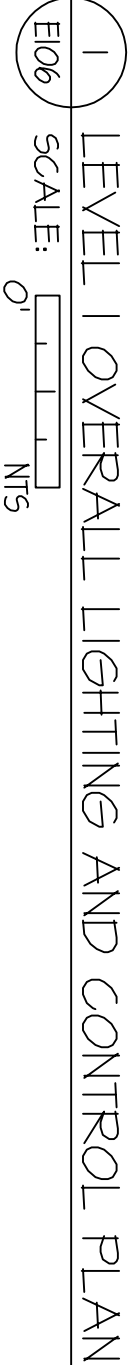
Dave T. Blume

Date: 07/22/2016 Reg No. 246711

LIGHTING CONTROL MATRIX												
SYSTEM INPUTS			SYSTEM OUTPUTS									
			CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR	CONTROLLED BY LOCAL PHOTOCELL DEVICE	CONTROLLED BY A SET TIME ON/OFF	NIGHT LIGHT						
ZONE 2-TV (Z2)			●	●								
ZONE 3-TV (Z3)				●								
ZONE 4-TV (Z4)			●	●								
ZONE 5-TV (Z5)				●								
ZONE 6-TV (Z6)					●							

- A. DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'B' AND 'C' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B. REPLACE LIGHT FIXTURE TYPES 'B' AND 'C' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C. EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D. THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

- 1 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'B' OR 'C' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 2 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'B' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 3 PROVIDE DEDICATED 120V, 20A QUAD RECEPTACLE (CONNECTED TO NEAREST 120/208V PANEL WITH 20A SPARE BREAKER) AND VOICE/DATA OUTLET FOR WIRELESS LIGHTING CONTROL SYSTEM GATEWAY (ECHELON LUMEWAVE SYSTEM). VERIFY EXACT LOCATION OF GATEWAYS WITH OWNER PRIOR TO ROUGH-IN.
- 4 PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- 5 TYPICAL. RECORD DRAWINGS INDICATE FIXTURES SHADING TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.
- 6 PROVIDE ADD ALTERNATE FOR FIXTURE REPLACEMENT IN THIS AREA. REFER TO BID TAB FOR ADDITIONAL INFORMATION.



Date: 07/22/2016 Reg No: 24671

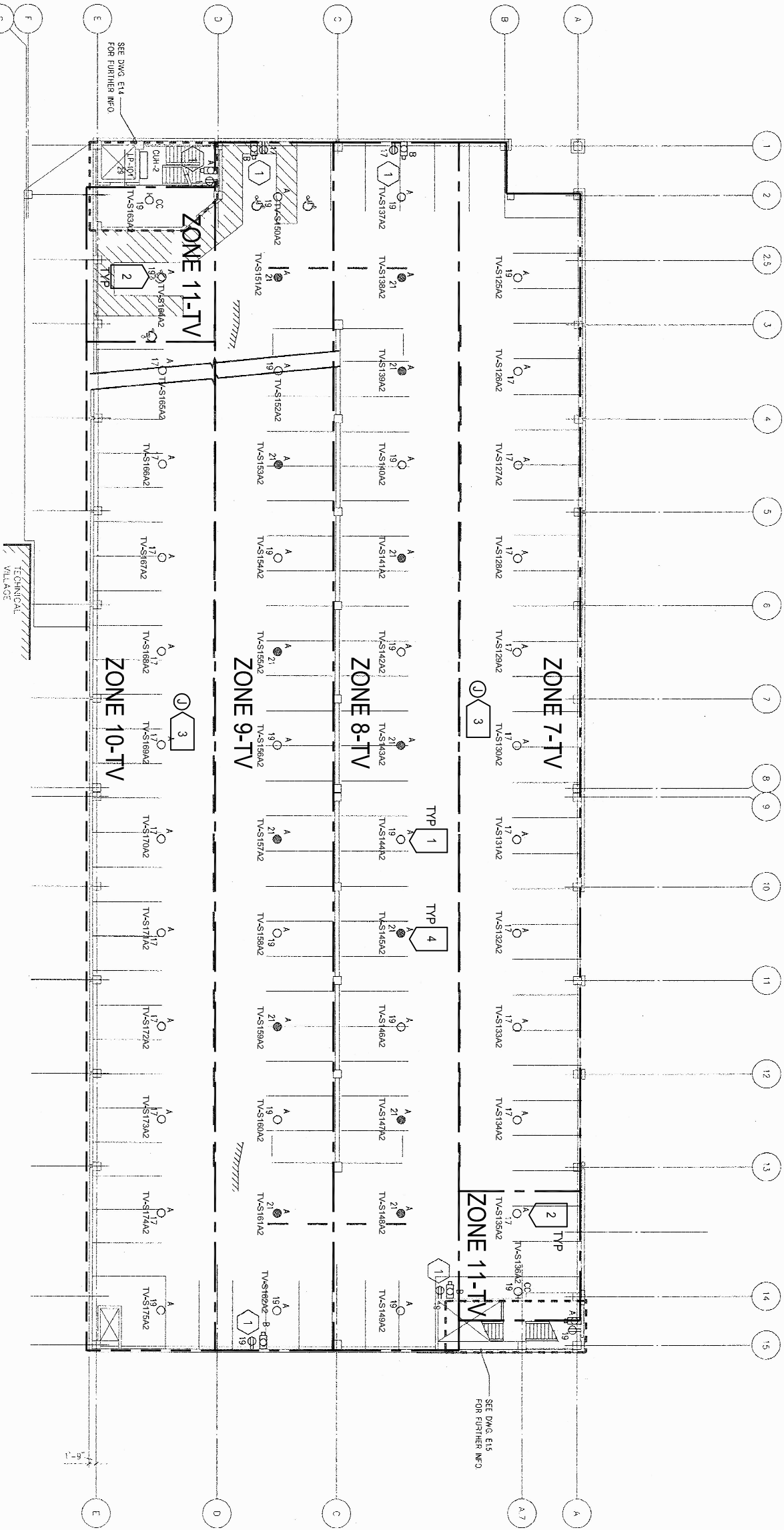
LIGHTING CONTROL MATRIX														
SYSTEM INPUTS					SYSTEM OUTPUTS									
					CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR									
					CONTROLLED BY LOCAL PHOTOCELL DEVICE									
					NIGHT LIGHT ON 24/7									
ZONE 7-TV (Z7)														
ZONE 8-TV (Z8)														
ZONE 9-TV (Z9)														
ZONE 10-TV (Z10)														
ZONE 11-TV (Z11)														

GENERAL NOTES:

- A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'CC' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B REPLACE LIGHT FIXTURE TYPES 'A' WITH OWNER FURNISHED LIGHT FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

NUMBERED NOTES:

- 1 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHOLON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 2 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHOLON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 3 PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHOLON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- 4 TYPICAL. RECORD DRAWINGS INDICATE SHADED FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.



1 LEVEL 2 OVERALL LIGHTING AND CONTROL PLAN
E107 SCALE: 0' NTS

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Dave T. Blume

Date: 07/22/2016 Reg No. 246711

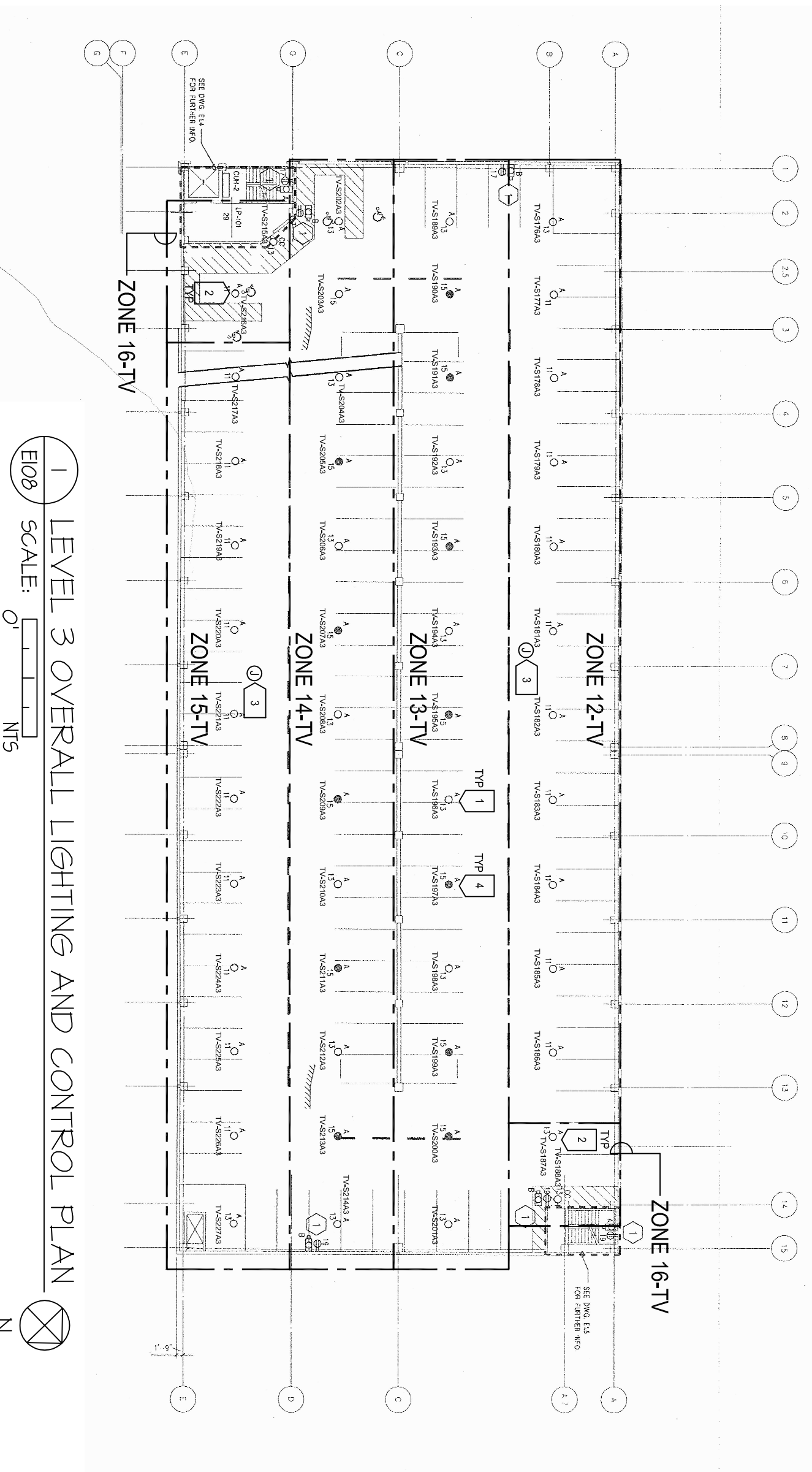
LIGHTING CONTROL MATRIX									
SYSTEM INPUTS					SYSTEM OUTPUTS				
ZONE 12-TV (Z12)					CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR				
ZONE 13-TV (Z13)					CONTROLLED BY LOCAL PHOTOCELL DEVICE				
ZONE 14-TV (Z14)					CONTROLLED BY A SET TIME ON/OFF				
ZONE 15-TV (Z15)									
ZONE 16-TV (Z16)									

GENERAL NOTES:

- A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'CC' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B REPLACE LIGHT FIXTURE TYPES 'A' AND 'CC' WITH OWNER FURNISHED LED TYPE LIGHT FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

NUMBERED NOTES:

- 1 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 2 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 3 PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
- 4 TYPICAL. RECORD DRAWINGS INDICATE SHADED LIGHT FIXTURES TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.



1 LEVEL 3 OVERALL LIGHTING AND CONTROL PLAN
E108 SCALE: 0' 15' NT5

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Dave T. Blume

Date: 07/22/2016 Reg No. 246711

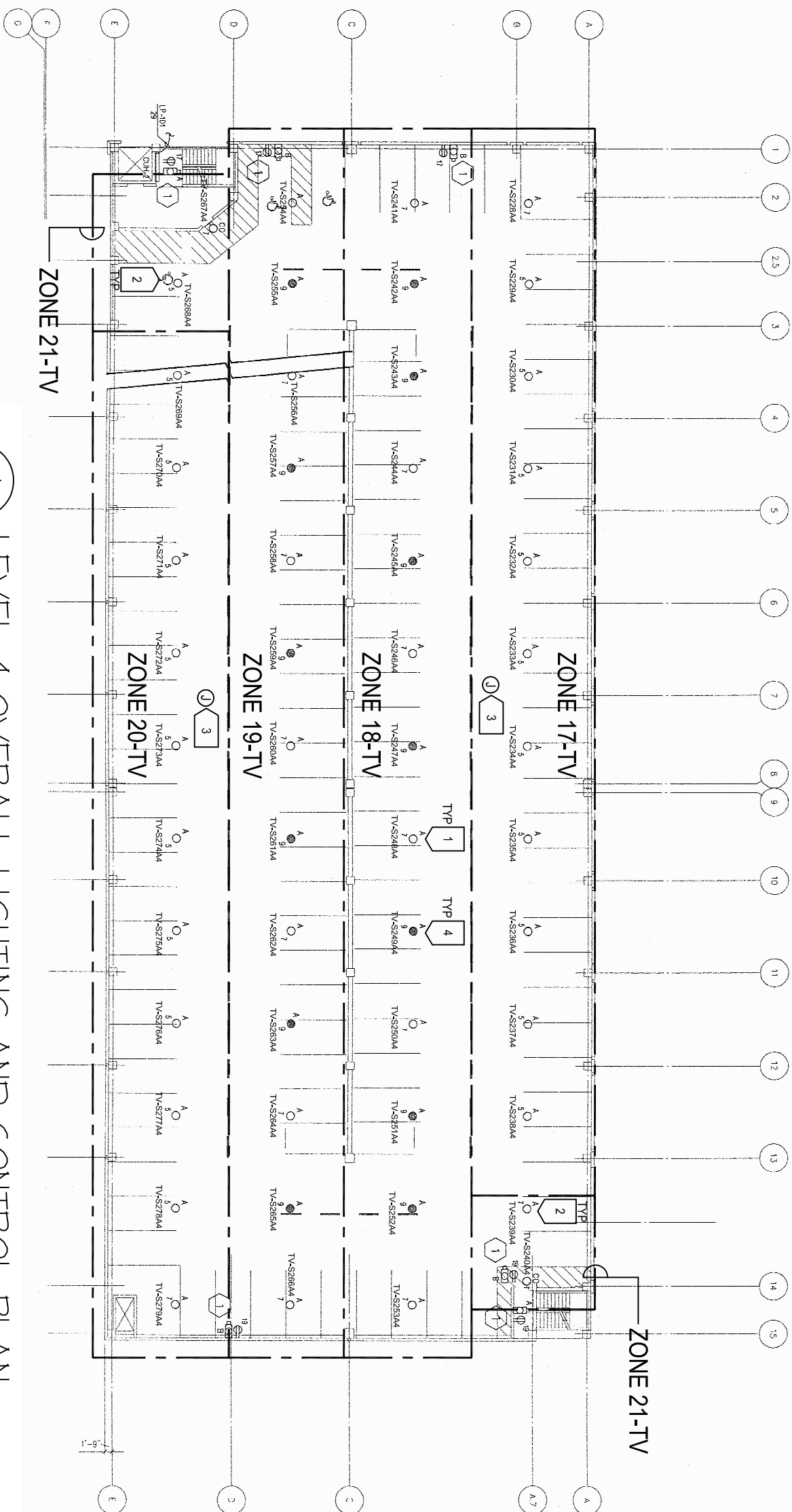
LIGHTING CONTROL MATRIX											
SYSTEM INPUTS		SYSTEM OUTPUTS									
ZONE 17-TV (Z17)		●	●	●							
ZONE 18-TV (Z18)		●	●	●							
ZONE 19-TV (Z19)		●	●	●							
ZONE 20-TV (Z20)		●	●	●							
ZONE 21-TV (Z21)					●						
		CONTROLLED BY WIRELESS INTEGRAL OCCUPANCY SENSOR									
		CONTROLLED BY LOCAL PHOTOCELL DEVICE									
		CONTROLLED BY A SET TIME ON/OFF									
		NIGHT LIGHT, ON 24/7									

GENERAL NOTES:

- A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'A' AND 'CC' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B REPLACE LIGHT FIXTURE TYPES 'A' AND 'CC' WITH OWNER FURNISHED LED TYPE LIGHT FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

NUMBERED NOTES:

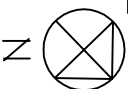
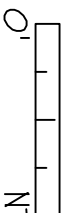
1. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
2. PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITHOUT RELAY INTEGRAL OR EXTERNAL TO EACH TYPE 'A' OR 'A1' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
3. PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.
4. TYPICAL. RECORD DRAWINGS INDICATE LIGHT FIXTURES SHADED TO BE ON A NIGHT LIGHT CIRCUIT. UNLESS NOTED OTHERWISE, CONTROL THESE LIGHTS WITH OTHER LIGHTS IN THE SAME ZONE.



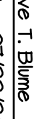
LEVEL 4 OVERALL LIGHTING AND CONTROL PLAN

ElOg

SCALE:



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under the laws of the State of Minnesota



Dave T. Blume

Date: 07/22/2016 Reg No: 24671

City of Duluth Energy Efficiency Lighting Project - Bid Package #1

Tech Village Parking Ramp Level 4 Lighting Plan



**Gausman
& Moore**
Mechanical and Electrical Engineers

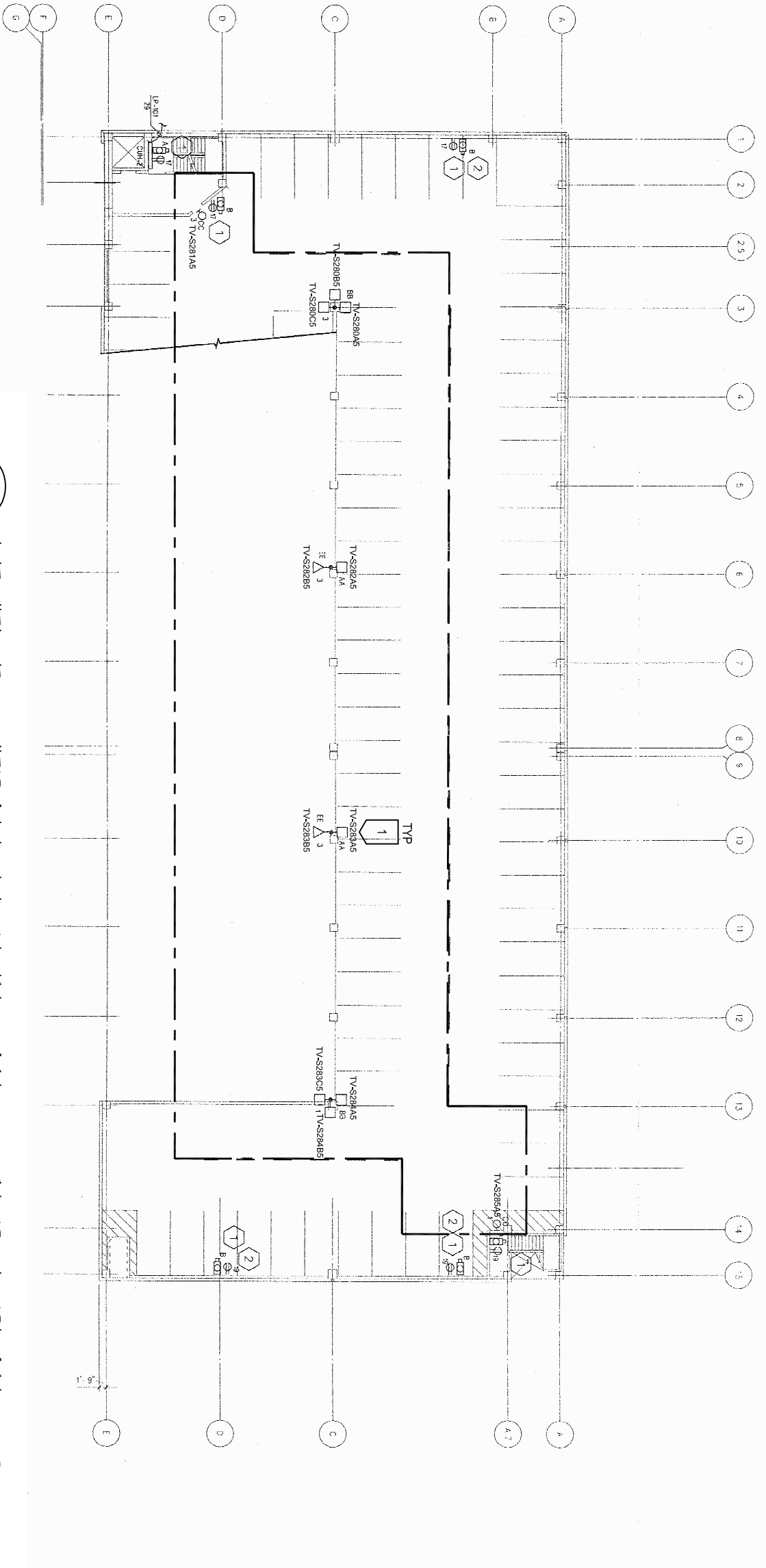
Date: 07/22/16
Drawn: LAH
Checked: SLH
Proj.No.: 84493

E109

[illegible]

- A. DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'AA', 'BB', 'CC', AND 'EE' LIGHT FIXTURES. LIGHTING CONTROL TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH PARKING RAMP BUILDING.
- B. REPLACE LIGHT FIXTURE TYPES 'AA', 'BB', 'CC', AND 'EE' WITH OWNER FURNISHED LED TYPE POLE MOUNTED FIXTURES, REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C. EXISTING CIRCUITS AND/OR SWITCHING SHOWN FOR REFERENCE ONLY. FIELD VERIFY EXISTING CONDITIONS PRIOR TO WORK.
- D. THIS PROJECT INCLUDES LIGHTING AND ASSOCIATED CONTROLS. MISCELLANEOUS ELECTRICAL ITEMS SHOWN ARE NOT PART OF THIS PROJECT SCOPE AND ARE SHOWN FOR REFERENCE ONLY UNLESS NOTED OTHERWISE.

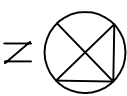
1 PROVIDE COMBINATION WIRELESS OCCUPANCY TYPE SENSOR AND PHOTOCELL INTEGRAL OR EXTERNAL TO EACH TYPE 'AA', 'BB', 'CC', AND 'EE' LIGHT FIXTURES AS MANUFACTURED BY ECHOLON CONTROLS LUMENAVE SERIES OR APPROVED EQUIVALENT.



LEVEL 5 OVER

SCALE: Q' NTS

EIO



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Licensed Professional Engineer
under the laws of the State of Minnesota

Dave T. Blume

Dave T. Blume

Date: 07/22/2016 Reg No: 24671

[illegible]

A MAINTAIN EXISTING LIGHTING CONTROLS FOR EXISTING TYPE 'A' LIGHT FIXTURES. NEW CONTROL DEVICES WILL BE ADDED AS PART OF THIS PROJECT AS INDICATED IN NUMBERED NOTES BELOW FOR FUTURE CONNECTION TO AREA WIRELESS LIGHTING CONTROL SYSTEM. LIGHTING CONTROL MATRIX SHOWN FOR REFERENCE ONLY.

B REPLACE LIGHT FIXTURE TYPES 'A' WITH OWNER FURNISHED LED TYPE GARAGE STYLE FIXTURE. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.

C PROVIDE FIXTURE IDENTIFICATION ID NUMBER AS INDICATED ON PLAN.

- 1 PROVIDE WIRELESS OCCUPANCY TYPE SENSOR WITH RELAY INTEGRAL OR EXTERNAL TO EACH TYPE A LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 2 TYPICAL. TYPE A LIGHT FIXTURES ARE LOCATED ON UNDER SIDE OF TOP LEVEL OF THE PARKING RAMP INDICATED ON PLAN. THE CITY OF DULUTH PROJECT BOUNDARY IS INDICATED. THIS PROJECT ONLY INCLUDES THE CITY OWNED PARKING AREA.
- 3 PROVIDE WIRELESS PHOTOCELL AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT. VERIFY EXACT LOCATION PRIOR TO INSTALLATION.



David B. B.

5th Avenue & Michigan Street Parking Ramp Lighting Plan



E111



1

OVERALL LIGHTING AND CONTROL PLAN

1

SCALE: 0' 1" = 10'

E112

NTS

PROJECT BOUNDARY ZONE 1-LP (Z1)

N

GENERAL NOTES:

- A DISCONNECT AND REMOVE EXISTING LIGHTING CONTROLS ASSOCIATED WITH TYPE 'DD' AND 'DD1' LIGHT FIXTURES. LIGHTING CONTROLS TO REMAIN FOR ALL OTHER LIGHTING ASSOCIATED WITH LAKE PLACE PLAZA (NOT PART OF THIS PROJECT).
- B REPLACE LIGHT FIXTURE TYPES 'DD' AND 'DD1' WITH OWNER FURNISHED LED TYPE ARM MOUNTED STYLE FIXTURE, REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- C REPLACE LIGHT FIXTURE TYPE 'FF' SURFACE MOUNTED LIGHT FIXTURES MOUNTED ON UNDER SIDE OF LAKEWALK (MICHIGAN STREET, BETWEEN 1ST STREET AND LAKE AVE) WITH OWNER FURNISHED LED TYPE. CONTRACTOR TO VERIFY EXACT QUANTITY AND LOCATIONS. REFER TO LIGHT FIXTURE SCHEDULE INCLUDED IN SPECIFICATION.
- D PROVIDE FIXTURE IDENTIFICATION ID NUMBER AS INDICATED ON PLAN.

NUMBERED NOTES:

- 1 PROVIDE WIRELESS OUTDOOR LIGHTING CONTROLLER INTEGRAL OR MOUNTED TO EACH TYPE 'DD', 'DD1' AND 'FF' LIGHT FIXTURE AS MANUFACTURED BY ECHELON CONTROLS LUMEWAVE SERIES OR APPROVED EQUIVALENT.
- 2 TYPE 'FF' LIGHT FIXTURES LOCATED ON UNDERSIDE OF BOARDWALK IN THIS AREA.
- 3 PROVIDE DEDICATED 120V, 20A GFI, WEATHER PROOF, QUAD RECEPTACLE (CONNECTED TO NEAREST 120/208V PANEL, WITH 20A SPARE BREAKER) AND VOICEDATA OUTLET FOR WIRELESS LIGHTING CONTROL SYSTEM GATEWAY (ECHELON LUMEWAVE SYSTEM). VERIFY EXACT LOCATION OF GATEWAYS WITH OWNER PRIOR TO ROUGH-IN.

LIGHTING CONTROL MATRIX											
SYSTEM INPUTS				SYSTEM OUTPUTS							
Zone 1-LP (Z1)				CONTROLLED BY WIRELESS LIGHTING CONTROLLER (ON/OFF SCHEDULE BY CODE)							
				CONTROLLED BY LOCAL PHOTOCELL DEVICE							
				CONTROLLED BY A SET TIME ON/OFF							

APPENDIX– LIGHT FIXTURE CUT SHEETS

Petrolux® LED

Wet Location for Demanding Environments



DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

Catalog Number

Notes

Type

Description

For demanding environments where dust, dirt and moisture are a concern.

Optics

- Prismatic borosilicate glass directs light where needed and reduces harsh glare.
- Polycarbonate lens available for those applications requiring non-glass options.
- Three distributions (Type 5 low angle, Type 5 high angle, and Type 1 long and narrow) available to maximize versatility.
- Highly engineered LED system ensures superior uniformity and maximizes spacing.

Electrical

- 10kV/10kA surge protection is standard.
- 0-10V dimming driver is standard.
- CRI > 70 (nominal) is standard.
- 3000K, 4000K or 5000K CCT available.
- Fault-tolerant LED light engine continues to provide light even in the failure of one LED.

Mechanical

- Robust cast aluminum housing with low copper content (0.6% CU content) withstands harsh or hostile environments.
- Universal mount top cover (ceiling/pendant) is standard. Optional universal arm available for wall/stanchion. Other mountings include gasketed hook and yoke mount.
- Precise number of fins dissipate maximum amount of heat and achieve up to 131°F (55°C) ambient rating.

Listings

- UL 1598 Listed for use in wet locations
- IP66 rated

Warranty

5-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_Conditions.aspx

Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +/- 5% when operating between 120-277V +/- 10%.

Typical Applications

- Petroleum refineries
- Ethanol facilities
- Chemical plants
- Power plants
- Textile mills
- Water and wastewater treatment facilities
- Parking garages
- Tunnels

Dimensions: Inches (millimeters) unless otherwise noted.

Diameter: 14.76 (375)
Depth: 13.57 (345)
Weight (5,000 -10,000 lumens): 31-38 lbs. (14-17 kg)
Weight (12,000 -18,000 lumens): 38-45 lbs. (17-20 kg)

ORDERING INFORMATION

Example: PLED2 05L 5K AS UN NA G L5H

Series		Lumens ¹	Color temperature		Voltage		Mounting		Cord length			
PLED2	05L	5000 lumens	3K	3000K CCT	AS	Auto sensing (120-277)	AH	Auto sensing (347/480)	UN	Universal ²	NA	No cord
	08L	8000 lumens	4K	4000K CCT	12	120V	34	347V	GH	Gasketed hook	03	3 ft cord with watertight plug ⁴
	10L	10,000 lumens	5K	5000K CCT	20	208V	48	480V	YK-0	0° yoke mount bracket ³	06	6 ft cord with watertight plug ⁴
	12L	12,000 lumens			24	240V			YK-45	45° yoke mount bracket ³	10	10 ft cord with watertight plug ⁴
	15L	15,000 lumens			27	277V						
	18L	18,000 lumens										

Finish		Optics		Options							
W	White	L5	Type 5, low angle, glass	BP	Button style photocontrol ⁶			DE	ROAM® concierge dimming control ¹⁴		
G	Gray	L5FR	Type 5, low angle, glass frosted	EG	Ingress/egress marker decal			VE	ROAMVIEW™ dimming control ¹⁴		
CRW	Corrosion-resistant white	L5H	Type 5, high angle, glass	F1	Single fusing ⁷			AXA10	XPoint Wireless enabled ¹⁵		
CRG	Corrosion-resistant gray	L5HFR	Type 5, high angle, glass frosted	F2	Double fusing ⁸			OS	Occupancy sensor on/off wet listed ¹⁶		
		L1	Type 1, long and narrow, glass ⁵	GD	Optic guard			MSI6NWL	Occupancy sensor on/off ¹⁷		
		L1FR	Type 1, long and narrow, glass frosted ⁵	SH	Uplight shield			MSI62LOVWL	On/off/dimming - no photocell occupancy sensor ¹⁸		
		P5	Type 5, low angle, polycarbonate	SP	Sample pack for ground transport			MSI62LOVWL DSCNWL	On/off/dimming - with photocell occupancy sensor ¹⁹		
		P5H	Type 5, high angle, polycarbonate	PER45	NEMA twistlock receptacle 45° mounting ⁹			MSI62XAWL DSCXAWL	XPoint Wireless enabled with photocell and occupancy sensor ²⁰		
		P1	Type 1, long and narrow, polycarbonate ⁵	PCS	DTL solid state photo control. AS, 120-277V ¹⁰						
				P34	DTL solid state photo control, 347V ¹¹						
				P48	DTL solid state photo control, 480V ¹²						
				PSC	Shorting cap ¹³						

For footnotes, see page 2.

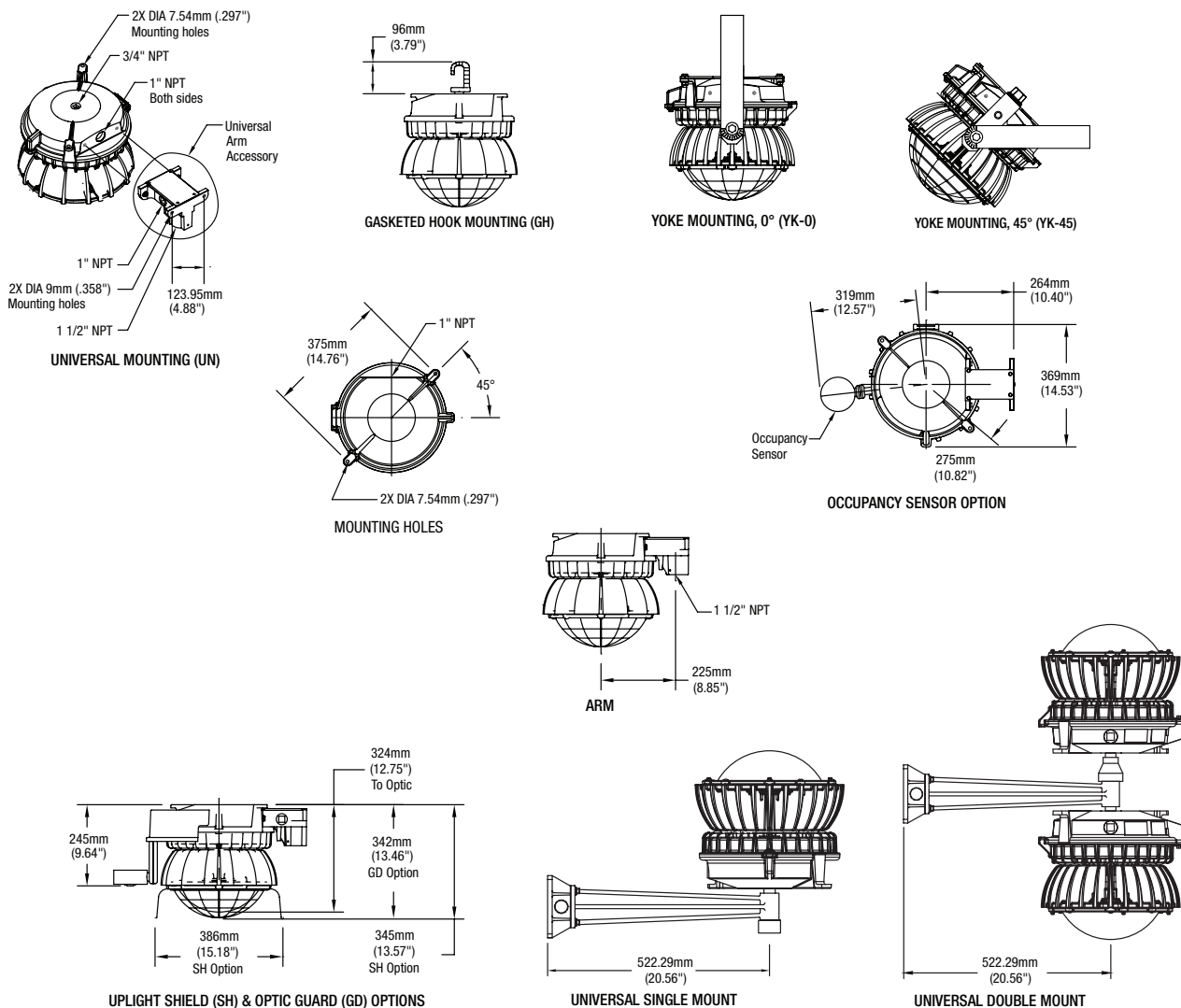
ORDERING INFORMATION (cont.)

Accessories: Order as separate catalog number.					
09189-* SUB	Safety chain kit (*= 2, 3 feet of chain)	P3US-WH	Universal mount arm, white	P3US-CRG	Universal mount arm, corrosion-resistant gray
PLEDMI3502	Thread sealant (order quantity 1 per luminaire)	P3US-GR	Universal mount arm, gray	07233-1	Single luminaire arm for one universal mount unit.
PLEDGD	Optic guard	P3US-CRW	Universal mount arm, corrosion-resistant white	07233-2	Double luminaire arm for two universal mount units.

Notes

- Nominal lumens.
- Ceiling/pendant, order P3US arm for wall/stanchion.
- Includes all necessary brackets and mounting accessories; does not include installation mounting hardware.
- Available with GH mounting only. Must specify 12, 20, 24 or 27 voltage.
- N/A with 18L.
- Specify voltage 12, 20, 24, 27 or 34.
- Specify voltage 12, 24, 27 or 34.
- Specify voltage 20, 24 or 48.
- N/A with BP, AXA10 or Occ sensors. Must specify YK-45. PER or PER45 can be ordered with or without ROAM DE or VE option. PER and PER45 ship unattached, wired in field.
- Available AS, 12, 20, 24, 27 voltages. Available with PER and PER45 options only. Shipped in carton with unit.
- Available 347 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
- Available 480 volt only. Available with PER and PER45 options only. Shipped in carton with unit.
- Available with PER and PER45 options only. Shipped in carton with unit.
- N/A with BP, AXA10 or Occ sensors. Specifies a ROAM® dimming enabled fixture with a dimming control module factory installed PER or PER45 option required. Additional hardware and services required for ROAM® deployment must be purchased separately. N/A with 15L and 18L. N/A with AH, 34 and 48 voltages. Available 40C maximum ambient only.
- Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MS16NWL, MS162LOVWL, MS162LOVWL DSCNWL, MS16XAWL DSCXAWL, OS options. Wet Location Listed, 35C maximum ambient. Xpoint Brand control.
- Available 12, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MS16NWL, MS162LOVWL, MS162LOVWL DSCNWL, AXA10, MS16XAWL DSCXAWL options. Wet Location Listed. (WattStopper)HB350W.
- Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MS16NWL, MS162LOVWL, MS162LOVWL DSCNWL, AXA10, MS16XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor.
- Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MS16NWL, MS162LOVWL DSCNWL, AXA10, MS16XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. SensorSwitch Brand sensor.
- Available AS, 12, 20, 24, 27 voltage codes. Not available with SH, BP, PER, PER45, DE, VE, MS16NWL, MS162LOVWL DSCNWL, AXA10, MS16XAWL DSCXAWL, OS options. Wet Location Listed, 40C maximum ambient. Xpoint Brand sensor.

DIMENSIONAL DATA



OPERATIONAL DATA
Operating Characteristics¹

Package	Ambient Rating (120V - 277V)	Ambient Rating (347V / 480V)	Distribution	Delivered Lumens 5000K CCT @25°C ²	Delivered Lumens 4000K CCT @25°C ²	Wattage	LPW @ 5000K
PLED2 05L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5	5,330	5,093	50	107
			L5H	4,546	4,344	50	91
			L1	4,397	4,202	50	88
			P5	4,115	3,933	50	82
			P5H	3,529	3,372	50	71
			P1	3,472	3,319	50	69
PLED2 08L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5	7,508	7,175	74	101
			L5H	6,404	6,120	74	87
			L1	6,196	5,921	74	84
			P5	5,798	5,540	74	78
			P5H	4,971	4,750	74	67
			P1	4,893	4,676	74	66
PLED2 10L	-40°F to 131°F (-40°C to 55°C)	-40°F to 104°F (-40°C to 40°C)	L5	9,942	9,500	98	101
			L5H	8,480	8,104	98	86
			L1	8,204	7,841	98	83
			P5	7,285	6,691	98	74
			P5H	6,246	5,969	98	64
			P1	6,147	5,875	98	63
PLED2 12L	-40°F to 122°F (-40°C to 50°C)	-40°F to 95°F (-40°C to 35°C)	L5	12,757	12,191	129	98
			L5H	10,542	10,074	129	81
			L1	10,381	9,920	129	80
			P5	9,216	8,807	129	69
			P5H	7,903	7,552	129	59
			P1	7,777	7,433	129	58
PLED2 15L	-40°F to 113°F (-40°C to 45°C)	-40°F to 95°F (-40°C to 35°C)	L5	15,977	15,268	165	96
			L5H	13,500	12,900	165	82
			L1	12,841	12,271	165	78
			P5	11,402	10,896	165	69
			P5H	9,776	9,342	165	59
			P1	9,621	9,195	165	58
PLED2 18L	-40°F to 104°F (-40°C to 40°C)	-40°F to 86°F (-40°C to 30°C)	L5	18,104	18,235	195	93
			L5H	16,103	15,388	195	78
			P5	14,290	13,655	195	73
			P5H	12,252	11,709	195	63

Projected Lumen Maintenance (TM-21)³

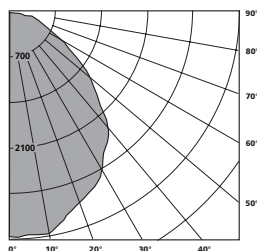
Package ⁴	0 Hours	15,000 Hours	30,000 Hours	45,000 Hours	60,000 Hours	100,000 Hours
PLED2 05L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 08L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 10L	1.0	0.96	0.94	0.93	0.91	0.88
PLED2 12L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 15L	1.0	0.95	0.93	0.91	0.90	0.85
PLED2 18L	1.0	0.95	0.93	0.91	0.90	0.85

Notes

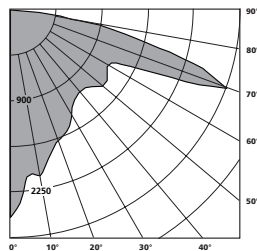
- 1 Adding BP, PER, PER45, DE and VE options results in a max. ambient of 40°C.
- 2 Absolute photometry calculated in accordance with IESNA LM-79-08.
- 3 Calculated using data collected according to LM-80 and represents lumen maintenance of the LED package.
- 4 Project lumen maintenance factors at max. ambient temperature per lumen package.

DISTRIBUTION DATA

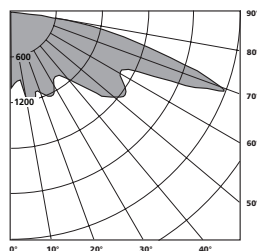
Petrolux LED Type 5 Low Angle



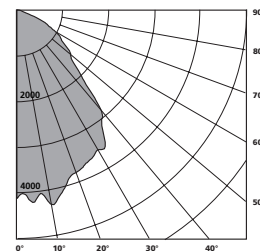
Petrolux LED Type 5 High Angle



Petrolux LED Type 1

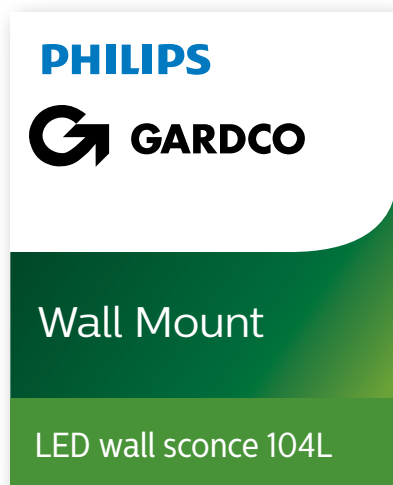


Petrolux LED Type 5-0% Uplight



CONTROLS

MSI6NDL, MSI62LOVDL, MSI62LOVDL DSCNDL. AXA10 X Point wireless enabled. "PRELIMINARY"



Project: _____

Location: _____

Cat.No: _____

Type: _____

Qty: _____

Notes: _____

Philips Gardco 104 LED wall sconces feature a low-profile design that provides wide flexibility in high performance exterior wall illumination. Full cutoff performance, usable illumination patterns, and powerful wattages combine into a compact and architecturally pleasing design. 104L sconces are available in Type 2, 3, and 4 distributions, and provide output of up to 9500 lumens. Energy saving control options increase energy savings and offer California Title 24 compliance. Emergency Battery Backup option available for path of egress.

Ordering guide

example: 104L-32L-700-NW-G1-3-120-IMRI2-BZ

Prefix	Number of LEDs	Drive Current		LED Color - Generation	Distribution	Emergency	Voltage	Options		Finish	
								Controls	Electrical		
104L											
104L 104L LED Wall Sconce	16L 16 LEDs (1 module)	530	530mA	CW-G1 Cool White 5700K, 70 CRI Generation 1	2 Type 2 3 Type 3 4 Type 4	EBPC Emergency Battery Pack Cold Weather ^{3,4,12} Leave blank to omitt an emergency option	UNV	120-277V	DD 0-10V Dimming Driver ^{5,6} DCC Dual Circuit Control ^{7,8} DynaDimmer: Automatic Profile Dimming CS50 Safety 50% Dimming (7 hours) ^{7,9,10} CM50 Median 50% Dimming (8 hours) ^{7,9,10} CE50 Economy 50% Dimming (9 hours) ^{7,9,10} DA50 All Night 50% Dimming ^{7,9,10} Photoelectric Systems PCB Photocontrol Button ^{5,10,11,12} Infrared Motion Response Systems IMRI2 Integral with #2 lens ^{4,12,13} IMRI3 Integral with #4 lens ^{4,12,13} Wireless Controls LLC2 Integral module with #2 lens ^{5,7,9,14} LLC3 Integral module with #3 lens ^{5,7,9,14}	Fusing F1 Single (120, 277, 347VAC) ¹² F2 Double (208, 240, 480VAC) ¹² F3 Canadian Double Pull (208, 240, 480VAC) ¹²	Textured BK Black WH White BZ Bronze DGY Dark Gray MGY Medium Gray Customer specified RAL Specify optional color or RAL (ex: OC-LGP or OC-RAL7024) CC Custom color (Must supply color chip for required factory quote)
		650	650mA ¹				HVU	347-480V			
		700	700mA				120	120V			
		1000	1000mA				208	208V			
	32L 32 LEDs (2 module)	1200	1200mA	240			240V				
		530	530mA	277			277V				
		650	650mA ¹	347			347V				
		700	700mA	480			480V				
		1000	1000mA ²								

- 650mA only available with Emergency Battery Pack Cold Rated (EBPC) option
- 32L rated for 30°C at 1000mA
- Available for use with 16L and 32L in 530mA or 650mA only. Rated for -20°C to 35°C.
- Available in 120 or 277V only.
- Not available with Dual Circuit Control (DCC) option.
- 16L not available with Dimming Driver (DD) in following configurations: 530, 700 and 1200mA in 347 and 480V.
- Not available with Dimming Driver (DD) option.
- Available in 32L with 530mA. Consult technical support center for use with photocell and CS/CM/CE/DA.
- Available in 120-277V (UNV) only.
- Not available with LLC and DCC.
- Not available with 480V.
- Must specify input voltage.
- Not available with DD, DCC or LLC.
- LLC2/3 Not available with PCB, IMRI, CS/CM/CE/DA. Ships with WS accessory attached to wireless module. Not for use with LLCR accessory.

104L Wall sconce LED

Wall Mount

Luminaire Accessories (order separately)

Mounting Accessories

Wall Mount

WS Wall Mounted Box for Surface Conduit

Controls Accessories

Wireless controls remote mount module

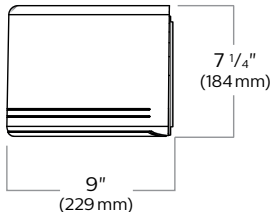
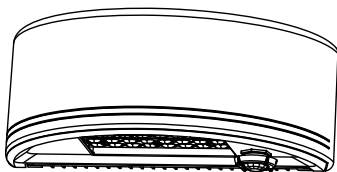
LLCR2-(F) #2 lens - specify finish in place of (F)

LLCR3-(F) #3 lens - specify finish in place of (F)

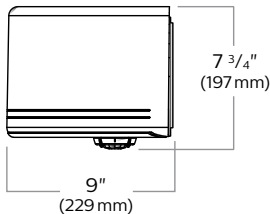
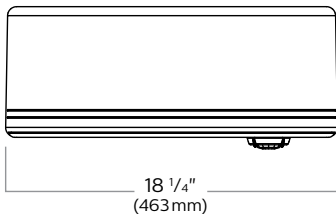
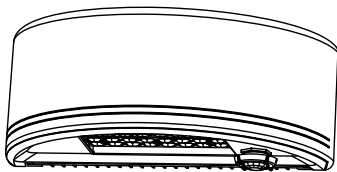
Wireless controls remote controller accessory

Wireless controls system offers a remote radio/sensor module that allows connectivity to Wireless system gateway. Remote module can be mounted to wall or pole with j-box supplied. May be specified by choosing one of two different lenses to accommodate a variety of mounting heights/sensor detection ranges. Must specify option DD on luminaires that are planned to be used with remote mount controllers. See page 4 for Wireless Controls details.

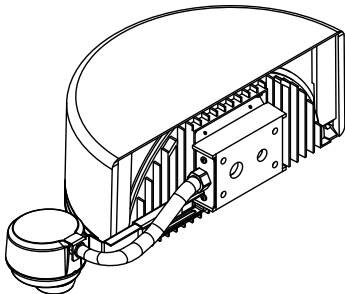
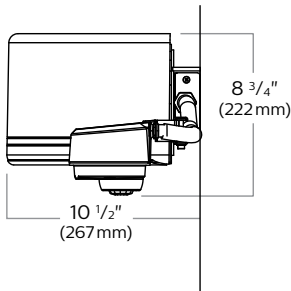
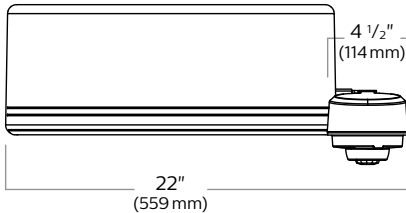
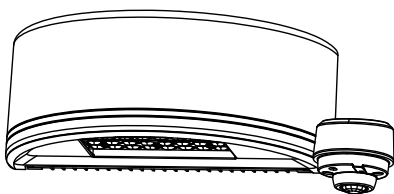
Dimensions



Motion Response



Wireless Controls



Luminaire Weights

LED Wall Sconce 104L	Weight
Luminaire	13.5 lbs
Luminaire - EBPC (EM battery pack)	17.0 lbs
Luminaire - Integrated Wireless Controls	16.3 lbs

104L Wall sconce LED

Wall Mount

LED Wattage and Lumen Values

Ordering Code	LED Qty	LED Current (mA)	Color Temp.	Average System Watts ¹	Type 2			Type 3			Type 4		
					Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)	Lumen Output ^{1,2}	BUG Rating	Efficacy (LPW)
104L-16L-530-NW-G1	16	530	4000K	28	2944	B1-U0-G0	106	2687	B1-U0-G1	97	2747	B1-U0-G1	99
104L-16L-700-NW-G1	16	700	4000K	37	3789	B1-U0-G1	103	3458	B1-U0-G1	94	3535	B1-U0-G1	96
104L-16L-1000-NW-G1	16	1000	4000K	55	5050	B1-U0-G1	92	4609	B1-U0-G1	84	4712	B1-U0-G1	86
104L-16L-1200-NW-G1	16	1200	4000K	65	5744	B2-U0-G1	89	5242	B1-U0-G2	81	5359	B1-U0-G2	83
104L-32L-530-NW-G1	32	530	4000K	52	5698	B2-U0-G1	110	5200	B1-U0-G2	100	5316	B1-U0-G2	102
104L-32L-700-NW-G1	32	700	4000K	70	7242	B2-U0-G1	103	6609	B1-U0-G2	94	6757	B1-U0-G2	96
104L-32L-1000-NW-G1	32	1000	4000K	107	9797	B2-U0-G1	92	8941	B2-U0-G2	84	9140	B2-U0-G2	86

LED Wattage and Lumen Values (Emergency Mode)³

Ordering Code	LED Qty	LED Current (mA)	Color Temp.	Ave. System Watts (charging mode)	Type 2	Type 3	Type 4
104L-16L-NW-EBPC	16	N/A	4000K	14	1345	1228	1255
104L-32L-NW-EBPC	32	N/A	4000K	14	1754	1600	1636

1. Wattage and lumen output may vary by +/- 8% due to LED manufacturer forward volt specification and ambient temperature. Wattage shown is average for 120V through 277V input. Actual wattage may vary by an additional +/- 10% due to actual input voltage.
2. Lumen values based on photometric tests performed in compliance with IESNA LM-79.
3. For emergency EBPC option, publish values are based on initial lumens.

Luminaire options

DD: 0-10V dimming driver with leads supplied through back of luminaire (for secondary dimming controls by others).

Dynadimmer Automatic Profile Dimming: Automatic dimming profiles (CS50/CM50/CE50) offer safety, median, or economy settings, for shorter or longer duration. Dimming profiles provide flexibility towards energy savings goals while optimizing light levels during specific dark hours. 50% dimming is standard. DA50 offers 50% instantaneous dimming all night (during all dark hours). 75% and 25% dimming is also available if different light levels are required (contact Technical Support for details).

Profile	Dimming		
	Schedule	Duration	Level
Economy	9 PM - 6 AM	9 hours	50%
Median	10 PM - 6 AM	8 hours	50%
Safety	11 PM - 6 AM	7 hours	50%
Reactive 50	all night	dynamic	

IMRI2, IMRI3: Infrared Motion Response Integral (IMRI). IMRI module is mounted integral to the luminaire door and is available with two different sensor lens types to accommodate various mounting heights and occupancy detection ranges (see charts for approximate detection patterns). Motion response for option IMRI is set/operates in the following fashion: The motion sensor is set to a constant 25%. When motion is detected by the PIR sensor, the luminaire returns to 100% light output. Dimming on low is factory set to 25% with 5 minute default in "full power" prior to dimming back to low. When no motion is detected for 5 minutes, the motion response system reduces the wattage by 75%, to 25% of the normal constant wattage reducing the light level. IMRI can also be specified with automatic profile dimming for the added benefit of a combined dimming profile with sensor detection, where the PIR sensor will override the dimming profile when occupancy is detected. Passive infrared (PIR) motion sensor, WattStopper FSP-211, equipped with lens choice specified. Available in 120V or 277V input only. Motion sensor off state power is 0.0 watts. The FSP-211 can also be reprogrammed with WattStopper's FS1R-100 remote programming tool accessory.

DCC: Dual Circuit Control permits separate switching of 32L models only, where a quantity of (2) 16 LED modules are controlled independently by use of two sets of leads, one for each module.

Wireless Controls: Controller radio/sensor module attached to luminaire via WS accessory (included with LLC2 and LLC3 option) and includes radio, photocell and motion sensor. Also available with remote pod accessory where pod is mounted separate from luminaire to pole or wall (see accessories and Wireless Controls information page 4).

F1: Fusing Single (for 120, 277 or 347VAC)

F2: Fusing Double (for 208, 240 or 480VAC)

F3: Fusing Canadian Double Pull (for 208, 240 or 480VAC)

EBPC: Emergency battery pack is cold weather rated down to -20C (-4F) and integral to the luminaire, allowing for a consistent look between emergency and non-emergency sconces. A separate surface mount accessory box is not required. Dual light engines (32L) are wired in parallel, both operating in emergency mode to meet various redundancy lamp requirements. Also available with single light engine (16L). Secondary driver with relay immediately detects AC power loss and powers luminaire for a minimum of 90 minutes from the time power is lost.

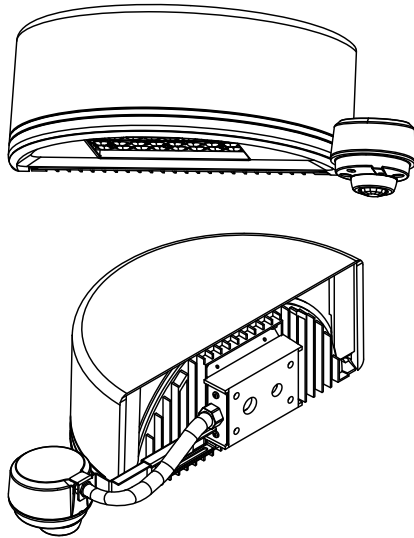
104L Wall sconce LED

Wall Mount

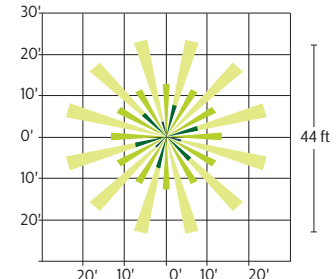
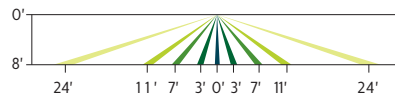
Infrared Motion Response and Wireless Controls Sensor Coverage Patterns

LLC2/3 Luminaire Mounted Controller

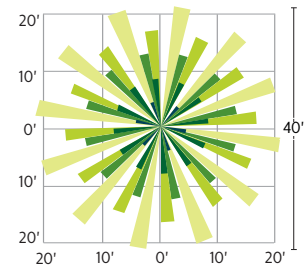
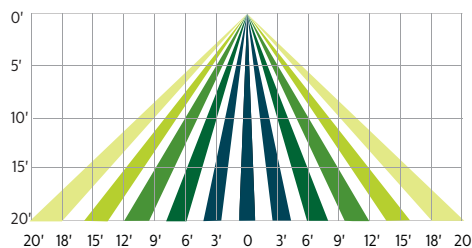
Controller attached to luminaire and Includes radio, photocell and motion sensor with #2 or #3 lens for 8-20' mounting heights.



IMRI2/LLC2/LLCR2

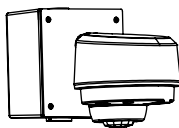


IMRI3/LLC3/LLCR3

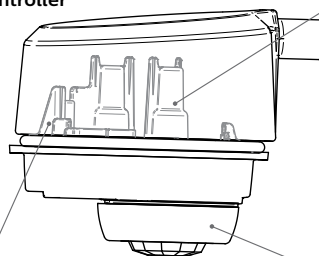


Remote Mount Wireless Controller

Used to extend the communication on site, to extend motion response and add other luminaires that are not pole mounted. Consult factory for more information.



Controller



Wireless Radio

- 1.8 Watts max (no load draw)
- Operating voltage 120-277 VAC RMS
- Communicates using the ZigBee protocol
- Carries out dimming commands from Gateway
- Reports ambient light readings to 1500 Ft-Cd
- Transmission Systems Operating within the band 2400-2483.5Mhz
- ROHS Compliant

Photocell

- Ambient light photocell on every wireless radio that averages the light levels of up to 5 controllers for an accurate reading and optimal light harvesting activity.
- Reports ambient light readings to 1500 Fc.

Motion Response

- Detects motion through passive infrared sensing technology with three different lens configurations
- Motion sensor coverage can be adjusted from a narrow to a wide detection range, which helps reduce false triggers to further increase energy savings.
- Sensing profiles can be updated to adapt to activity levels in the environment, such as occupancy level, wind, and mounting height

104L Wall sconce LED

Wall Mount

Luminaire Configuration Information – Sconce with wireless controls

Gateway

Overview: The gateway opens up communication with the wireless radios installed on equipped luminaires (or pole), allowing you to control your fixtures straight from the web. One gateway can communicate with up to 800 fixtures. Typically one unit is required per parking lot.

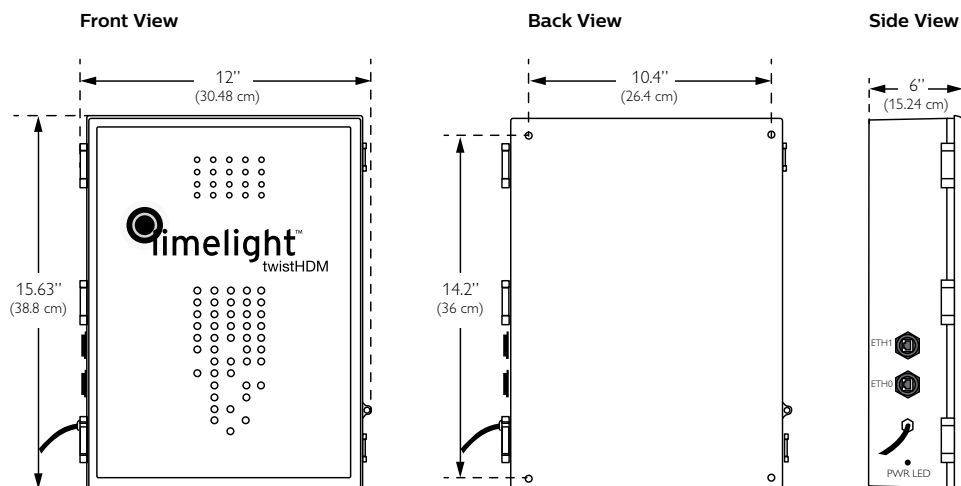
Installation: Gateway has 4 blind threaded holes on the back side that accept 10-32 screws. Mount spacing is 10.41" across and 14.19" vertical.

Requirements: The gateway must be mounted in a secure on-site location. The gateway requires 120V. Distance of gateway to the first radio varies upon application; contact factory. Strong internet connection required.

Specifications:

- High density RF Mesh coordinator
- Ethernet or wireless internet connection to server
- Proprietor of software "rules of operation"
- Watertight Ethernet connections
- Highly protected, long life ac/dc power supply
- Single board, ARM compliant 520Mhz Intel computer.
- Operating Temperature -20°C to 55°C
- Tamper proof housing

Gateway Dimensions



104L Wall sconce LED

Wall Mount

Specifications

Housing

Main body cast housing and back plate made of a low copper die cast Aluminum alloy for a high resistance to corrosion, 0.100" (2.5mm) minimum thickness. Hinged door allows access to driver and LED compartment.

Mounting

Mounting is completed through integral back plate that features a separate recessed feature for hook and lock quick mount plate that secures with two set screws from bottom of luminaire. Mounting plate is located in the center of the luminaire width and 3.5" above the luminaire bottom (lens down position). Luminaire ships fully assembled, ready to install.

Light Engine

Composed of 4 main components: Heat Sink / LED Module / Optical System / Driver. Electrical components are RoHS compliant. IP66 sealed light engines. LEDs tested by ISO 17025-2005 accredited lab in accordance with IESNA LM-80 guidelines extrapolations in accordance with IESNA TM-21. Metal core board ensures greater heat transfer and longer lifespan.

Heat Sink

Integral door/heat sink design made of low copper die cast Aluminum alloy for a high resistance to corrosion.

LED Module

Composed of high performance white LEDs. Color temperature as per ANSI/NEMA bin Neutral White, 4000K nominal (+/- 275K), CRI 70 Min. Available in other color temperatures including Cool White, 5700K and Warm White, 3000K.

LED Performance

Predicted lumen depreciation data ¹				
Ambient Temperature (°C)	Driver mA	Calculated L ₇₀ hours ^{1,2}	L ₇₀ per TM-21 ^{2,3}	Lumen Maintenance % @ 60,000 hours
25°C	up to 1200 mA	>100,000	>60,000	88%

1. Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions.
2. L₇₀ is the predicted time when LED performance depreciates to 70% of initial lumen output.
3. Calculated per IESNA TM21-11. Published L₇₀ hours limited to 6 times actual LED test hours.

Hardware

All exposed screws shall be stainless and/or corrosion resistant and captive.

Optical System

The advanced LED optical systems provide IES Types 2, 3, 4. Composed of high performance UV stabilized optical grade polymer refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. System is rated IP66. Performance shall be tested per LM-63, LM-79 and TM-15 (IESNA) certifying its photometric performance. Dark sky compliant with 0% uplight and U0 per IESNA TM-15.

Driver

High power factor of 90% min. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC or 347 to 480 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

Surge Protection

Each luminaire is provided as standard with surge protector (Philips designed SP1) tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/5kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) Model Specification for LED Roadway Luminaires Appendix D Electrical Immunity High Test Level 10kV / 5kA.

Wiring (supplied by others)

Splices must be made in the junction box.

Finish

Five standard colors offered in textured black, white, bronze, dark gray and medium gray. Color in accordance with the AAMA 2604 standard. Application of polyester powder coat paint 2.5 mils minimum. The thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. RAL and custom color matching available.

LED Products Manufacturing Standard

The electronic components sensitive to electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with EC61340-5-1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

LED Useful Life

Luminaire Useful Life accounts for LED lumen maintenance. Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, LED LM-80/TM-21, expected to reach 100,000 + hours with >L70 lumen maintenance @ 25°C.

Certifications and Compliance

cULus Listed for Canada and USA suitable for wet locations when mounted downward facing. cULus Listed for Canada and USA suitable for damp locations when inverted upward facing when mounted in covered ceiling application. Emergency Battery Pack option is tested and listed to UL924 and CSA C22.2 No. 141-10 DesignLights Consortium qualified on models as listed on DLC QPL. Luminaire is rated for operation in ambient temperature of -40°C (-40°F) up to +40°C (+104°F).

Limited Warranty

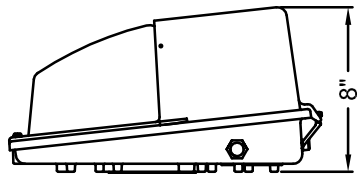
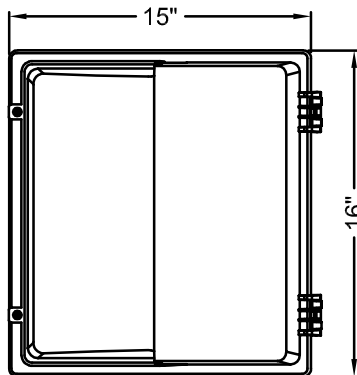
5-year limited warranty. See philips.com/warranties for details and restrictions. Visit our eCatalog or contact your local sales representative for more information.

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Philips Lighting North America Corporation
200 Franklin Square Drive, Somerset, NJ 08873
Tel. 855-486-2216

Philips Lighting Canada Ltd.
281 Hillmount Rd, Markham, ON, Canada L6C 2S3
Tel. 800-668-9008

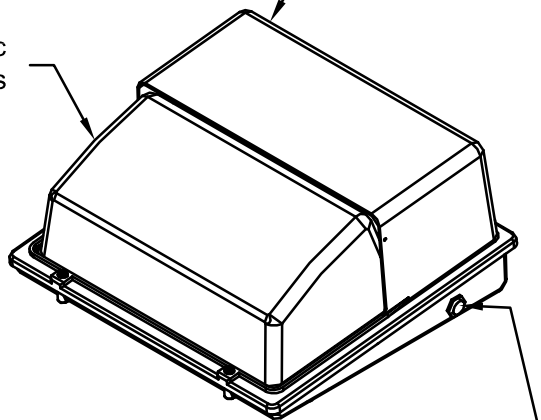


Maximum Weight - 28 Lbs.



Prismatic
Glass Optics

Ballast Compartment
Access Door



Photocontrol Window

Wallpack® IV
GLASS LED

INFRASTRUCTURE
OUTDOOR

HOLOPHANE®
An Acuity Brands Company
LEADER IN LIGHTING SOLUTIONS

W4GLED

Series
W4GLED

LED's
10C = 10 LED (ONE ENGINE)
20C = 20 LED (TWO ENGINES)
30C = 30 LED (ONE ENGINE)

DRIVE CURRENT
1000 = 1000 mA (1A)

COLOR TEMPERATURE
40K = 4000K
50K = 5000K

DISTRIBUTION
T3M = TYPE III
MEDIUM

ORDERING INFORMATION:

VOLTAGE
MVOLT = MULTIVOLT ¹
120.208.240.277 ¹
120 = 120 VOLT ¹
208 = 208 VOLT ¹
240 = 240 VOLT ¹
277 = 277 VOLT ¹
347 = 347 VOLT ²
480 = 480 VOLT ²

CONTROL OPTIONS
DMG = 0-10V DIMMING DRIVER
PE = PHOTOELECTRIC CELL ³
BUTTON TYPE
PER = NEMA TWIST-LOCK
RECEPTACLE ONLY
(NO CONTROLS)

OPTIONS
SHIPPED INSTALLED
SF = SINGLE FUSING 120, 277 & 347 VOLTS ⁴
DF = DOUBLE FUSING 208, 240 & 480 VOLTS ⁴
TP = TAMPER RESISTANT SCREWS
NOM = NOM CERTIFIED
SPD = SEPERATE SURGE PROTECTION ⁵
ELSW = EMERGENCY BATTERY BACKUP
(STANDARD 0°C) ⁶
ELCW = EMERGENCY BATTERY BACKUP
(COLD WEATHER -20°C) ⁶
LWG = WIRE GUARD ⁹
LVG = VANDAL GUARD ⁹

FINISH
BKSDP = BLACK
GYSDP = GRAY
WHSDP = WHITE
BZSDP = BRONZE

ACCESSORIES
DLL127F 1.5 JU = PHOTOCELL -SSL
TWIST-LOCK (120-277V) ⁷
DLL347 1.5 CUL JU = PHOTOCELL -SSL
TWIST-LOCK (347V) ⁷
DLL480 1.5 CUL JU = PHOTOCELL -SSL
TWIST-LOCK (480V) ⁷
SC U = SHORTING CAP ⁷
W4GVGU = VANDAL GUARD ⁸
W4GWGU = WIRE GUARD ⁸

NOTES:

1. MVOLT driver operates on any line voltage from 120- 277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options) or photocontrol (PE).
2. Not available with 10C option.
3. Must specify voltage; not available with MVOLT.
4. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
5. See the electrical section on page 2 for more details.
6. Not available with 30C, 347, 480, PER, or SPD.
7. Requires luminaire to be specified with PER option. Ordered and shipped as a separate line item.
8. Requires field modification (only when ordered as a separate accessory).
9. Casting is pre-drilled for guard. Wire Guard ships separately.

ORDER #:

TYPE:

DRAWN: TAR

DATE: 10-8-15

DWG #: W4GLED

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Lumen Output

Lumen values are from photometric test in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerance allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	DIST. TYPE	50K (5000K, 65 CRI)				
				LUMENS	B	U	G	LPW
10C (10 LED)	1000	39W	T3M	3398	0	3	3	87
20C (20 LED)	1000	72W	T3M	7027	1	3	4	97
30C (30 LED)	1000	104W	T3M	8427	1	3	5	81

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

AMBIENT		LUMEN MULTIPLIER
0° C	32° F	1.02
10° C	50° F	1.01
20° C	68° F	1.00
25° C	77° F	1.00
30° C	86° F	1.00
40° C	104° F	.98

Project LED Lumen Maintenance

Data references the extrapolated performance projections for the W4GLED 30C 1000 platform in a 25° C ambient based on 10,000 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	.969	.935	.870

ELECTRICAL LOAD

LED's	DRIVE CURRENT (mA)	SYSTEM WATTS	CURRENT (A)					
			120	208	240	277	347	480
10C	1000	39W	0.36	0.21	0.18	0.16	-	-
20C	1000	72W	0.67	0.38	0.33	0.29	0.23	0.17
30C	1000	104W	0.96	0.56	0.48	0.42	0.33	0.24

FEATURES & SPECIFICATIONS

INTENDED USE

The energy savings, long life and easy-to-install design of the W4GLED make it the smart choice for building-mounted doorway and pathway illumination for nearly any facility.

CONSTRUCTION

Die-cast aluminum housing has an impact-resistant, tempered glass lens that is fully gasketed. Modular design allows for ease of maintenance. The LED driver is mounted to the front casting to thermally isolate it from the light engine for low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

Protective glass lens covers the light engine's precision-molded proprietary acrylic lenses. Light engines are available in 4000K and 5000K configurations.

ELECTRICAL

Light engine(s) consist of 10 or 30 high-efficacy LEDs mounted to a metal-core circuit board and integral aluminum heat sink to maximize heat dissipation and promote long life (L87/100,000 hrs at 25°C). The electronic driver has a power factor of >90%, THD <20%, and a minimum 2.5 KV surge rating. When ordering the SPD option, a separate surge protection device is installed within the luminaire which meets a minimum Category C low operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Back housing is separated from front housing, eliminating ballast weight and promoting easy handling. Top 3/4" threaded wiring access. Back access through removable 3/4" knockout. Feed-thru wiring can be achieved by using a conduit tee. Mount on any vertical surface. Not recommended in applications where a sprayed stream of water can come in direct contact with glass lens.

LISTINGS

UL listed for wet locations. Rated for -40°C minimum ambient. Luminaire is IP55 rated. DesignLights Consortium® (DLC) qualified product. Not all versions of this product may be DLC qualified. Please check the DLC Qualified Products List at www.designlights.org to confirm which versions are qualified.

WARRANTY

Five year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

NOTE:

Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25°C. Specifications subject to change without notice.

Wallpack® IV
GLASS LED

INFRASTRUCTURE
OUTDOOR

HOLOPHANE®
An Acuity Brands Company
LEADER IN LIGHTING SOLUTIONS

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ORDER #:

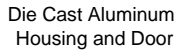
TYPE:

DRAWN: TAR

DATE: 10-8-15

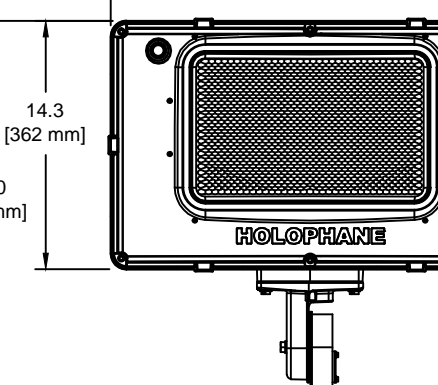
DWG #: W4GLED

Max Weight = 47 lbs (21.32 kg)
Max EPA = 3.0 ft² (0.28 m²)
UL Listed
Wet Location
Ambient Rating: 40°C
ANSI C136.31: 3G rated



Stainless Steel Tool-Less Access to Electrical Housing (TL)

Adjustable Knuckle Fitter with Wireway



Technical drawing of the HoloPhane 22.8x14.3. The drawing shows the front view of the light fixture, which is rectangular with rounded corners. The outer dimensions are 22.8 inches (578 mm) wide and 14.3 inches (362 mm) high. The inner dimensions of the light housing are 24.0 inches (610 mm) wide and 14.3 inches (362 mm) high. The word "HOLOPHANE" is printed in bold, capital letters on the front panel. The fixture is mounted on a bracket with a central screw. The drawing includes dimension lines and arrows indicating the measurements.

KNUCKLE MOUNT

Customer Preferred: (Most Frequently Ordered Catalog Numbers)
PMLED61000mA5K5AS1KGPNR

PMLED

Series
Predator Medium LED

Predator Medium LED

Number of LED'S
2 = 2 Modules

- 2 = 2 Modules
- 3 = 3 Modules
- 4 = 4 Module
- 5 = 5 Modules
- 6 = 6 Modules

Color Temperature
4K = 4,000K CCT

4K = 4,000K CCT
5K = 5,000 K CCT

Drive Current
10A = 1050 mA Driver

10A = 1050 mA Driver
07A = 700mA Driver

Voltage

AS – Auto-sensing

AS = Auto-sensing
Voltage (120 thru 277)
AH = Auto-sensing
Voltage (347thru 480)

Beam pattern	

44 = 4x4 (prismatic glass)
45 = 4x5 (prismatic glass)
55 = 5x5 (prismatic glass)
65 = 6x5 (prismatic glass)
66 = 6x6 (prismatic glass)

Mounting

1 = Tenon Slipfitter Knuckle
3 = Yoke Stainless Steel
4 = Yoke Galvanized

UL Category

1K = Wet Locations
1L = Marine Outside

Color

BP = Black Superdurable with Epoxy Primer
GP = Grey Superdurable with Epoxy Primer
HP = Graphite Superdurable with Epoxy Primer
WP = White Superdurable with Epoxy Primer
ZP = Bonze Superdurable with Epoxy Primer

	Cord Length Option
--	--------------------

04 = 4 ft Cord Length	12 = 12 ft Cord Length
05 = 5 ft Cord Length	15 = 15 ft Cord Length
06 = 6 ft Cord Length	20 = 20 ft Cord Length
08 = 8 ft Cord Length	25 = 25 ft Cord Length
10 = 10 ft Cord Length	30 = 30 ft Cord Length

Cord Type	Material	Length (ft)	Weight (lb)	Notes
1
2
3
4
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11
12
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97
98
99
100

63 = 16 Gage, 3 Conductor
43 = 14 Gage, 3 Conductor
23 = 12 Gage, 3 Conductor

Options

See Sheet 2

Accessories

See Sheet 2

ORDERING INFORMATION:

Predator® Medium LED

Infrastructure
Specialty

 **HOLOPHANE®**
LEADER IN LIGHTING SOLUTIONS

An Acuity Brands Company

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ORDER #:	
TYPE:	
DRAWN:	CEA
DATE:	8/18/14
DWG #:	LUM_PMLED

Options

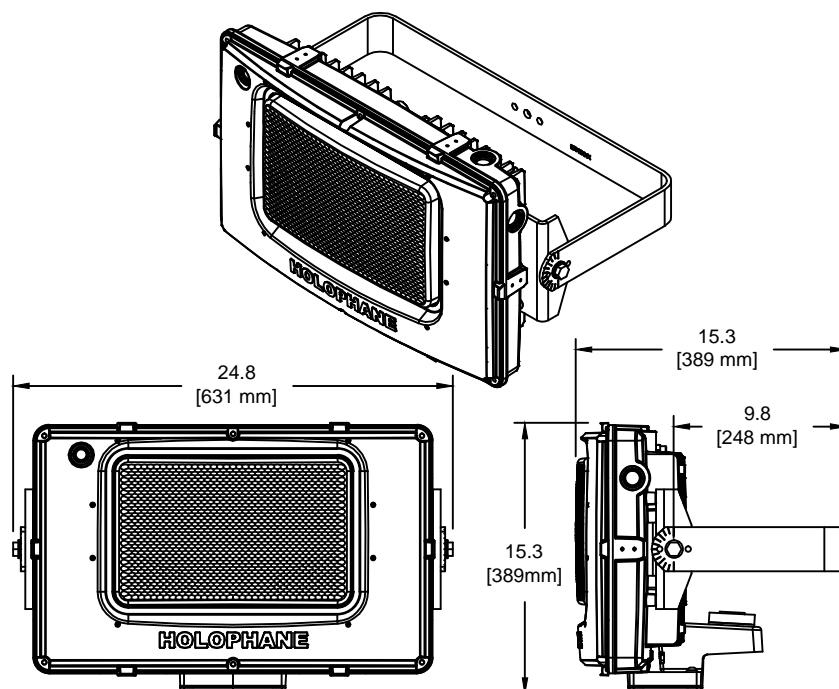
²P3 = Photocontrol Receptacle
²P5 = 5-Pin Receptacle
²P7 = 7-Pin Receptacle
PCL1 = Photocontrol 120V
PCL3 = Photocontrol 347V
PCL4 = Photocontrol 480V
PCSS = DSS 120-277V PC
DM = 0-10V Dimmable Driver
DE = RoamVue Concierge
DE34 = RoamVue Concierge 347V
DE48 = RoamVue Concierge 480V
VE = RoamVue
VE34 = RoamVue 347V
VE48 = RoamVue 480V
NL = NEMA Label
TL = Tool-less Entry with latches
F1 = Single Fusing
F2 = Double Fusing
SH = Shorting Cap

Accessories

PMLED FV-BP = Full Visor, Black
PMLED FV-GP = Full Visor, Gray
PMLED FV-HP = Full Visor, Graphite
PMLED FV-WP = Full Visor, White
PMLED FV-ZP = Full Visor, Bronze
SH = Shorting Cap
PMLED UBV-BP = Upper/Bottom Visor, Black
PMLED UBV-GP = Upper/Bottom Visor, Gray
PMLED UBV-HP = Upper/Bottom Visor, Graphite
PMLED UBV-WP = Upper/Bottom Visor, White
PMLED UBV-ZP = Upper/Bottom Visor, Bronze
PMLED VG = Vandal Guard
PMLED WG = Wire Guard
08657-BP = Yoke to 2.375" OD Tenon Adaptor, Black
08657-GP = Yoke to 2.375" OD Tenon Adaptor, Gray
08657-HP = Yoke to 2.375" OD Tenon Adaptor, Graphite
08657-WP = Yoke to 2.375" OD Tenon Adaptor, White
08657-ZP = Yoke to 2.375" OD Tenon Adaptor, Bronze
08775-BP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Black
08775-GP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Gray
08775-HP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Graphite
08775-WP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, White
08775-ZP = Yoke to 2.375" OD Tenon Adaptor with Photocontrol Receptacle, Bronze

Notes:

1. Only available with SS Yoke (3).
2. Not available with Marine (L).



YOKE MOUNT

Predator[®] Medium LED

Infrastructure Specialty



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ORDER #:	
TYPE:	
DRAWN:	CEA
DATE:	8/18/14
DWG #:	LUM_PMLED

Performance specification

Optical

Performance of the PMLED is to replace 100-400 watt HID luminaires. The optical system utilizes state of the art chip on board technology with 4000K and 5000K color temperature choices with a 70 CRI minimum. The luminaire uses a highly specular internal reflector designed for superior field to beam ratios, uniformity and spacing. NEMA beam pattern choices of 4X4, 4X5, 5X5, 6X5, and 6X6 are available. Optional shielding is available to control uplight and light trespass. The optical enclosure is a borosilicate prismatic glass lens.

Electrical

Long Life: LED light engines are rated > 100,000 hours at 25C, L70. Electronic driver has a rated life of 100,000 hour at a 25C ambient.

Surge protection device provides IEEE/ANSI C62.4 Category C (10kV/5kA) level of protection .

Mechanical

Rugged low copper A360 alloy die cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convection cooling. The die cast aluminum housings are painted with a super durable polyester paint finish over an epoxy primer pretreat yields a finish that achieves a scribe creepage of 8 after 5,000 hours exposure to salt spray providing durability and corrosion resistance.

The luminaire is available in either knuckle mount or yoke mount. The knuckle mount is adjustable and is designed to fit 2.375 inch to 2.875 inch tenons. The yoke mount is available in either galvanized steel or stainless steel. The luminaire comes standard prewired eliminating the lineman from opening the unit during installation. The knuckle version is pre-wired to the wiring chamber at the fitter. The yoke mount has provision for a pre-wired cord drop to specified length in the ordering information.

The luminaire comes standard with the door frame bolted to the housing. Optional tool less stainless steel latches are available to allow easy access to LED drivers, surge protection, and optional terminal block.

The optical enclosure is sealed and gasketed to an IP66 rating. All luminaire mountings are 3G vibration rated per ANSI C136.

Controls

The NEMA three pin locking -style photocontrol receptacle and an optional five pin receptacle is available.

Dimming version (available with DE and VE option) uses proprietary Acuity Brands components to enable continuous 0-10V dimming down to 10% output via the ROAM smart controls system. (sold separately)

Photocontrol for solid-state lighting meets ANSI C136.10 criteria

Warranty & Standards

Rated for -40C to 40C ambient

UL 1598 A wet location, UL 1598A Marine Outside Type(Salt Water)

Predator[®]
Medium LED

**Infrastructure
Specialty**

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LEADER IN LIGHTING SOLUTIONS
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ORDER #:	
TYPE:	
DRAWN:	CEA
DATE:	8/18/14
DWG #:	LUM_PMLED

Operating Characteristics

PMLED	Distribution	Lumens	Input operating Amps						Input Watts	Input Watts	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V	(AS)	(AH)		
02 07A			0.436	0.257	0.226	0.203	0.164	0.130				
	44	4,971							52	57	96	87
	45	5,056							52	57	97	89
	55	5,393							52	57	104	95
	65	5,426							52	57	104	95
	66	5,328							52	57	102	93

PMLED	Distribution	Lumens	Input operating Amps						Input Watts	Input Watts	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V	(AS)	(AH)		
03 07A			0.668	0.392	0.351	0.317	0.234	0.176				
	44	7,242							80	80	91	91
	45	7,365							80	80	92	92
	55	7,857							80	80	98	98
	65	7,920							80	80	99	99
	66	7,762							80	80	97	97

PMLED	Distribution	Lumens	Input operating Amps						Input Watts	Input Watts	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V	(AS)	(AH)		
04 07A			0.873	0.506	0.448	0.402	0.304	0.224				
	44	9,943							105	105	95	95
	45	10,111							105	105	96	96
	55	10,787							105	105	103	103
	65	10,873							105	105	104	104
	66	10,657							105	105	101	101

PMLED	Distribution	Lumens	Input operating Amps						Input Watts	Input Watts	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V	(AS)	(AH)		
05 07A			1.076	0.621	0.545	0.484	0.373	0.273				
	44	12,275							129	129	95	95
	45	12,483							129	129	97	97
	55	13,317							129	129	103	103
	65	13,423							129	129	104	104
	66	13,157							129	129	102	102

PMLED	Distribution	Lumens	Input operating Amps						Input Watts	Input Watts	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V	(AS)	(AH)		
06 07A			1.336	0.784	0.702	0.634	0.468	0.352				
	44	14,484							160	160	91	91
	45	14,730							160	160	92	92
	55	15,714							160	160	98	98
	65	15,840							160	160	99	99
	66	15,525							160	160	97	97

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WARRANTY

Limited warranty located at
www.acuitybrands.com/CustomerResources/Terms and conditions.aspx

NOTE

Specifications subject to change without notice.

Actual performance may differ as a result of end-user environment and application.

Actual wattage may differ by +/- 8% when operating at nominal input voltage +/- 10%.

ORDER #:

TYPE:

DRAWN: CEA

DATE: 4/21/14

DWG #: LUM_PMLED

Operating Characteristics

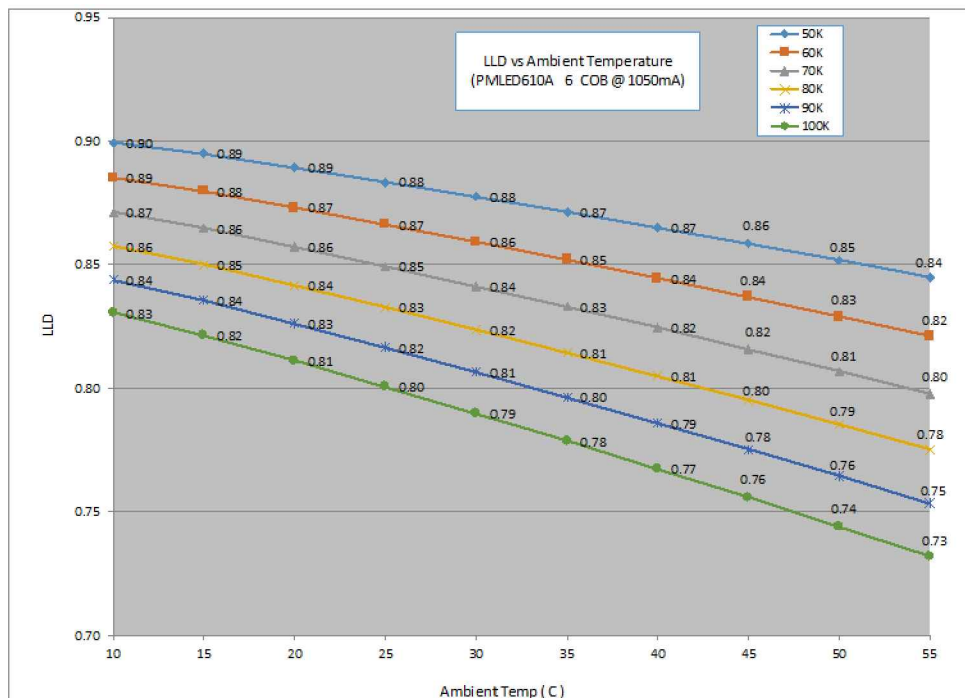
PMLED	Distribution	Lumens	Input operating Amps						Input Watts (AS)	Input Watts (AH)	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V				
02 10A			0.680	0.401	0.351	0.316	0.250	0.202				
	44	7,011							81	89	87	79
	45	7,130							81	89	88	80
	55	7,606							81	89	94	85
	65	7,667							81	89	95	86
	66	7,514							81	89	93	84

PMLED	Distribution	Lumens	Input operating Amps						Input Watts (AS)	Input Watts (AH)	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V				
03 10A			0.983	0.573	0.505	0.442	0.359	0.276				
	44	10,213							118	130	87	79
	45	10,386							118	130	88	80
	55	11,080							118	130	94	85
	65	11,169							118	130	95	86
	66	10,947							118	130	93	84

PMLED	Distribution	Lumens	Input operating Amps						Input Watts (AS)	Input Watts (AH)	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V				
04 10A			1.360	0.802	0.702	0.63	0.500	0.404				
	44	14,021							162	186	87	75
	45	14,259							162	186	88	77
	55	15,212							162	186	94	82
	65	15,333							162	186	95	82
	66	15,029							162	186	93	81

PMLED	Distribution	Lumens	Input operating Amps						Input Watts (AS)	Input Watts (AH)	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V				
05 10A			1.663	0.974	0.856	0.76	0.609	0.478				
	44	17,310							200	223	87	78
	45	17,604							200	223	88	79
	55	18,780							200	223	94	84
	65	18,930							200	223	95	85
	66	18,554							200	223	93	83

PMLED	Distribution	Lumens	Input operating Amps						Input Watts (AS)	Input Watts (AH)	LPW (AS)	LPW (AH)
		4K	120V	208V	240V	277V	347V	480V				
06 10A			1.996	1,146	1,010	0.884	0.718	0.552				
	44	20,426							236	260	87	79
	45	20,773							236	260	88	80
	55	22,160							236	260	94	85
	65	22,337							236	260	95	86
	66	21,894							236	260	93	84



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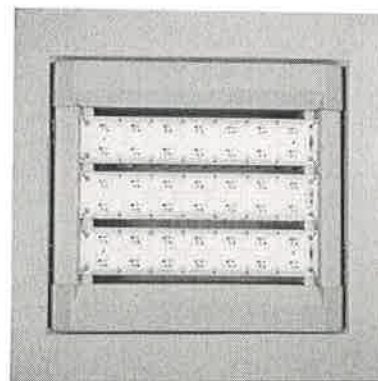
ORDER #:
TYPE:
DRAWN: CEA
DATE: 4/21/14
DWG #: LUM_PMLED



LED Features:

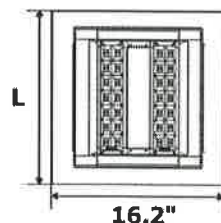
- CREE XLAMP XPG2 LEDS >100 Lm/W
- Available in 11 IES light distributions
- Patented heat dissipation design for optimum efficiency
- Excellent optical presentation for high bays
- Solid State with high-shock and vibration resistance
- Die-cast aluminum housing with custom colors
- Modular design for easy maintenance or upgrade
- Quad eyelet for suspended Gripple Y-fit mounting
- High CRI - RA>75 enhances all original colors
- Philips Xitanium Class I 0-10V Dimming Power Supply
- External photocell and motion sensor capable
- No infrared or UV radiation
- Operating Temperature: -40 to 55 degrees celsius
- 100,000 hour LED life - 700mA drive current
- 5 year system warranty
- CE, FCC, RoHS, cUL, UL, CSA - IP66 outdoor rated

Garage / Canopy Vega RM Series



Models:

- VVDRM014: 14 LEDS - 33W - 3100 Lm - 6.6" (L) - 10.8 lbs
- VVDRM028: 28 LEDS - 62W - 5800 Lm - 9.2" (L) - 12.3 lbs
- VVDRM042: 42 LEDS - 93W - 8800 Lm - 11.8" (L) - 13.8 lbs
- VVDRM056: 56 LEDS - 123W - 12300 Lm - 14.3" (L) - 15.5 lbs



Ordering: moq = 2 Units

Part #	Color Temp	Lens Type	Voltage	Case Color	Dimming
VVDRM014	W - 2700-3300K	S1M1 - 150 x 90 - Type I Medium	V27 - 100-277V	BK - Black	ND - No Dim
VVDRM028	N - 3700-4300K	S1S1 - 95 x 85 - Type I Short	V48 - 347-480V**	SG - Silver Gray	D1 - 0-10V Dim
VVDRM042	P - 4700-5300K	S1S2 - 95 x 85 - Type I Short Anti-Glare	D12 - 12V DC	WT - White	DL - Dali
VVDRM056	C - 5700-6500K	A2M1 - 150 x 75 - Type II Medium	D24 - 24V DC	BZ - Bronze	PD - Program Dim
	CS - Custom	A2M3 - 145 x 65 - Type II Medium		CS - Custom	(Specify Time Schedule)
	(Specify Kelvin/Nm)	A3L2 - 155 x 100 - Type III Long		(Specify Pantone/RAL)	
		A3M2 - 145 x 45 - Type III Medium			
		S5M1 - 75 Degree - Type V Medium			
		S5N2 - 18 Degree - Type V Narrow			
		S5W2 - 145 Degree - Type V Wide			
		S7M1 - 130 x 30 - Type VII Medium			

Ordering Example:
VVDRM014-N-S1M1-V27-BK-ND



**CSA & cUL Listed 62W - 308W Only



www.vividleds.us



info@vividleds.us



800.974.3570

The product on this page is a manufactured to order, non-stocking item. This product cannot be returned for refund or credit.

Revised 8/1/15



Consistent with LEED® goals
& Green Globes™ criteria
for light pollution reduction

Autobahn Series ATBS

Roadway & Security Lighting

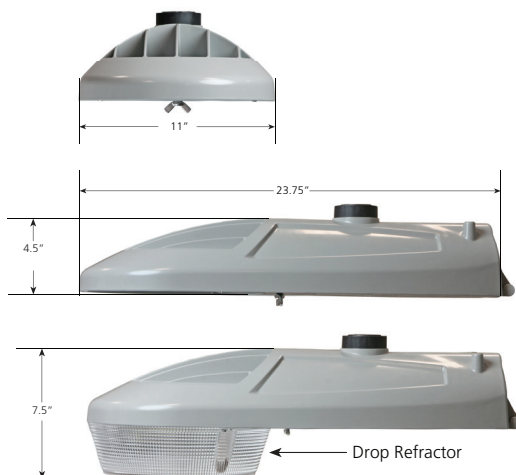
PRODUCT OVERVIEW



Applications:

Residential streets
Parking lots
General security lighting

DIMENSIONS



Effective Projected Area (EPA) The EPA for the ATBS is 0.3 sq. ft.,
Approx. Wt. = 12 lbs. (5 kg)

Features:

OPTICAL

Same Light: Performance is comparable to 50W – 150W HPS and up to 175W Mercury Vapor roadway and security lighting luminaires.

White Light: Correlated color temperature - standard 4000K, 70 CRI minimum or optional 5000K, 70 CRI minimum.

IP66 rated borosilicate glass optics ensure longevity and minimize dirt depreciation. Unique IP66 rated LED light engines provide 0% uplight and restrict backlight to within sidewalk depth, providing optimal application coverage and optimal pole spacing.

Available distributions are Type II, III, and V roadway distributions. When used with the optional acrylic refractor the unit provides approximately 10% uplight and increased vertical foot-candles

ELECTRICAL

Expected Life: LED light engines are rated >100,000 hours at 25°C, L70. Electronic driver has an expected life of 100,000 hours at a 25°C ambient.

Lower Energy: Saves an expected 40-60% over comparable HID luminaires.

Robust Surge Protection: Three different surge protection options provide a minimum of IEEE/ANSI C62.41 Category C (10kV/5kA) protection.

MECHANICAL

Includes standard AEL lineman-friendly features such as tool-less entry, 3 station terminal block and quick disconnects. Bubble level located inside the electrical compartment for easy leveling at installation.

Rugged die-cast aluminum housing and door are polyester powder-coated for durability and corrosion resistance. Rigorous five-stage pre-treating and painting process yields a finish that achieves a scribe creepage rating of 8 (per ASTM D1654) after over 5000 hours exposure to salt fog chamber (operated per ASTM B117).

Mast arm mount is adjustable for arms from 1-1/4" to 2" (1-5/8" to 2-3/8" O.D.) diameter. The 2 – bolt clamping mechanism provides 3G vibration rating per ANSI C136.

The Wildlife shield is cast into the housing (not a separate piece).

CONTROLS

NEMA 3 pin photocontrol receptacle is standard, with the Acuity designed ANSI standard 5 pin and 7 pin receptacles optionally available.

Premium solid state locking-style photocontrol – PCSS (10 year rated life)
Extreme long life solid state locking-style photocontrol – PCL1 (20 year rated life)

Optional onboard Adjustable Output module allows the light output and input wattage to be modified to meet site specific requirements, and also can allow a single fixture to be flexibly applied in many different applications.

STANDARDS

Rated for -40°C to 40°C ambient
CSA Certified to U.S. and Canadian standards
Complies with ANSI: C136.2, C136.10, C136.14,
C136.31, C136.15, C136.37

Note: Specifications subject to change without notice. Actual performance may differ as a result of end-user environment and application.

Autobahn Series ATBS

Roadway & Security Lighting

ORDERING INFORMATION

Example: ATBS A MVOLT R2

Series	Performance Packages	Voltage	Optics
ATBS Autobahn LED Roadway & Security	A 1,900 lumens B 2,600 lumens E 4,000 lumens F 4,800 lumens G 6,100 lumens H 7,100 lumens I 8,500 lumens	MVOLT Multi-volt, 120-277V	R2 Roadway Type II R3 Roadway Type III R5 Roadway Type V D2 Type II, Drop Refractor included D3 Type III, Drop Refractor included D5 Type V, Drop Refractor included

Options

Color Temperature (CCT)

(Blank)	4000K CCT, 70 CRI Min. (standard)
5K	5000K CCT, 70 CRI Min.

Paint

Blank	Gray (Standard)
BK	Black
WH	White
BZ	Bronze

Surge Protection

Standard 10kV/5kA SPD

Blank	Acuity SPD-10kV/5kA with inductive filter (Standard)
MP	MOV Pack
IL	SPD with Indicator Light

Misc.

HSS	House Side Shield
NL	NEMA Label
XL	Not CSA Certified

Controls

(Blank)	3 Pin NEMA Photocontrol Receptacle
NR¹	No Photocontrol Receptacle
DM²	0V-10V Dimmable Driver
P5	5 Pin Photocontrol Receptacle (dimmable driver included)
P7	7 Pin Photocontrol Receptacle (dimmable driver included)
PCSS¹	DTL DSS Photocontrol
PCL¹	DTL DLL Photocontrol 120-277V
AO	Field Adjustable Output
SH	Shorting Cap

Install Packages

PKGS	DTL DSS Photocontrol
PKGL	DTL DLL Photocontrol
Packages ship with selected photocontrol, 24", 1 1/4" diameter arm, 5' of prewire and mounting hardware	

Accessories

ATBSREF	Drop Refractor for field installation
ATBSHSS	House Side Shield for field installation
ATBSLTS	Light Trespass Shield for field installation

Notes

1. Not available with Install Packages.
2. Not available with AO option.



AEL Headquarters, 3825 Columbus Road, Granville, OH 43023
www.americanelectricalighting.com

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Warranty Five-year limited warranty. Complete warranty terms located at: www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx
Actual performance may differ as a result of end-user environment and application. All values are design or typical values, measured under laboratory conditions at 25 °C. Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

Autobahn Series ATBS

Roadway & Security Lighting

PERFORMANCE PACKAGE

Performance Package	Distribution	Lumens	Input Watts	LPW	50K Hours	LLD @ 25°C 75K Hours	100K Hours
A	R2	1,978	19	104	0.93	0.89	0.85
	R3	1,972		104			
	R5	2,033		107			
	D2	1,884		99			
	D3	1,860		98			
	D5	1,933		102			
B	R2	2,611	27	97	0.93	0.89	0.85
	R3	2,603		96			
	R5	2,694		100			
	D2	2,487		92			
	D3	2,456		91			
	D5	2,564		95			
E	R2	4,196	40	105	0.93	0.89	0.85
	R3	3,977		99			
	R5	4,282		107			
	D2	3,996		100			
	D3	3,752		94			
	D5	4,091		102			
F	R2	4,661	47	99	0.93	0.89	0.85
	R3	4,821		103			
	R5	4,666		99			
	D2	4,439		94			
	D3	4,548		97			
	D5	4,554		97			
G	R2	6,235	50	125	0.94	0.92	0.90
	R3	6,101		122			
	R5	6,404		128			
	D2	5,938		119			
	D3	5,756		115			
	D5	6,193		124			
H	R2	7,194	60	120	0.94	0.92	0.90
	R3	7,141		119			
	R5	7,508		125			
	D2	6,851		114			
	D3	6,737		112			
	D5	7,150		131			
I	R2	8,653	76	114	0.94	0.92	0.90
	R3	8,525		112			
	R5	9,003		118			
	D2	8,241		108			
	D3	8,042		106			
	D5	8,574		124			

Note: Information shown above is based on nominal system data. Individual fixture performance may vary. Specifications subject to change without notice.



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www.americanelectricleighting.com

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All values are design or typical values, measured under laboratory conditions at 25 °C.
Specifications subject to change without notice.

Please contact your sales representative for the latest product information.

APPENDIX– LIGHT FIXTURE SCHEDULES

- 1. 5th Ave & Michigan Ramp Light Fixture Schedule**
- 2. East 1st Street Medical Ramp Light Fixture Schedule**
- 3. Lake Place Plaza Light Fixture Schedule**
- 4. Tech Village Ramp Light Fixture Schedule**

LUMINAIRE SCHEDULE - 5TH AVE & MICHIGAN ST RAMP

FIXTURE ID	TYPE	MANUFACTURER	MODEL	CONTROLS	NOTES
5M-S1A THROUGH 5M-S24A	A	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	

LUMINAIRE SCHEDULE - EAST 1ST STREET MEDICAL RAMP

FIXTURE ID	TYPE	MANUFACTURER	MODEL	CONTROLS	NOTES
MP-S1AG THROUGH MP-S237A3	A & A1	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	EXCLUDES FIXTURE ID'S AS LISTED IN TYPES 'B', 'B1', 'J' AND 'J1'
MP-S45AG THROUGH MP-S55AG	B	GARDCO	104L-32L-530-NW-G1-2-UNV-DD-BZ	WIRELESS	
MP-S114A1 THROUGH MP-S116A1	B1	GARDCO	104L-32L-530-NW-G1-2-UNV-DD-BZ	WIRELESS	
MP-P238A4 THROUGH MP-P244B4	J	HOLOPHANE	ATBS-H-MVOLT-R3-P5-SH WITH HZ-08-BOW-BZ	WIRELESS	POLE MOUNTED
MP-S245A4 THROUGH MP-S246A4	J1	HOLOPHANE	ATBS-H-MVOLT-R3-P5-SH WITH HZ-08-BOW-BZ	WIRELESS	WALL MOUNTED

LUMINAIRE SCHEDULE - LAKE PLACE PLAZA

FIXTURE ID	TYPE	MANUFACTURER	MODEL	CONTROLS	NOTES
LP-P1A/B THROUGH LP-P12A/B + LP-P25A/B THROUGH LP-P29A/B	DD1	HOLOPHANE	GPLF2-RFD190426	WIRELESS	PROVIDE SEPARATE ID NUMBER FOR EACH FIXTURE MOUNTED ON SINGLE POLE RESPECTIVELY (A OR B). COLOR=TIGER DRYLAC RAL REFER TO SPECIFICATION AND OPR FOR ADDITIONAL MOUNTING HARDWARE REQUIREMENTS
LP-P13A THROUGH LP-24A	DD	HOLOPHANE	GPLF2-RFD190426	WIRELESS	REFER TO SPECIFICATION AND OPR FOR ADDITIONAL MOUNTING HARDWARE REQUIREMENTS
LP-SXX THROUGH LP-SXX	FF	VIVIDLEDS	VVDRM028-N-A3M2-V27-BZ-D1	WIRELESS	FIELD VERIFY EXACT QUANTITY AND COORDINATE FIXTURE ID TAG

LUMINAIRE SCHEDULE - TECH VILLAGE RAMP

FIXTURE ID	TYPE	MANUFACTURER	MODEL	CONTROLS	NOTES
TV-S125A2 THROUGH TV-S279A4	A	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	EXCLUDES FIXTURE TYPE 'CC'
TV-S1AG THROUGH TV-S124A1	B	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	EXCLUDES FIXTURE TYPE 'C'
TV-S57AG,58 + TV-S101A1 THROUGH TV-S106A1	C	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	
TV-S29AG THROUGH TV-S47AG	C1	HOLOPHANE	PLED2-05L-4K-AS-UN-NA-W-L5-SH	WIRELESS	PENDANT MOUNT, EXCLUDES FIXTURE TYPE 'B'
TV-S282A5 THROUGH TV-S283C5	AA	HOLOPHANE	ATBS-H-MVOLT-R3-P5-SH WITH HZ-08-BOW-BZ	WIRELESS	SINGLE HEAD POLE MOUNT, EXCLUDES TYPE 'EE'
TV-S280A/B/C5 + TV-S284A/B/C5	BB	HOLOPHANE	ATBS-H-MVOLT-R3-P5-SH WITH HZ-08-BOW-BZ	WIRELESS	THREE (3) HEAD POLE MOUNT
TV-S136A2, 163A2, 188A3, 215A3, 240A4, 267A4, 281A5, 285A5	CC	HOLOPHANE	W4PLED-10C-700-40K-T3M-MVOLT-DMG-BZSDP	WIRELESS	
TV-S282B5 + TV-S283B5	EE	HOLOPHANE	PMLED-2-4K-10A-AS-55-1-K-ZP-P5-SH	WIRELESS	POLE MOUNT FLOOD LIGHT

Owner's Project Requirements

City of Duluth Energy Efficiency Lighting Project Project Number 84493



Prepared for
City of Duluth

Prepared by
Gausman & Moore Associates, Inc.

**Gausman
& Moore**
Mechanical and
Electrical Engineers

Owner's Project Requirements

City of Duluth Energy Efficiency Lighting Project Duluth, MN

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Introduction

The purpose of this project is to develop product standards and procedures for the City of Duluth to reduce energy and maintenance costs associated with the energy efficiency project improvements. This project includes the creation of Owner project requirements for lighting replacement and building automation upgrades. This project also includes: Bid package #1- light fixture replacement at indoor (parking ramps and buildings) and exterior (parks/pathways); Bid package #2- exterior (parks, trails/pathways, and parking lot) site locations through-out the City of Duluth; and Bid package #3 - addition of air curtains at fire station #4. The scope of work includes upgrading existing light fixtures to LED source type with controls that include but are not limited to wireless control and monitoring, dimming, occupancy, and day-light harvesting.

Owner's Project Requirements (OPR)

Key OPRs have been identified that are critical to the success of these projects.

For Lighting systems in this project, the key OPR are:

- Light fixture installation-
 - Reduce energy consumption.
 - Reduce maintenance costs.
 - Increase controllability.
 - Conform to UDCC, ASHRAE and IES standards and procedures, and City of Duluth operating hours.
 - The installation of interior and exterior light fixtures must meet all of the City of Duluth construction requirements.
 - Use of stainless steel screws and/or bolts to help prevent screws and bolts from rusting in place and adding to maintenance costs.
 - Replace branch circuit wiring within existing light pole (s).
- Sustainability - The design and construction of the lighting, lighting control system and air curtain systems must take into account long term and life cycle issues. The lighting, lighting control system, demand limiting controllers, and air curtain systems must be easily maintainable by staff maintenance personnel, with easy and non-disruptive access to components and systems for routine maintenance.

General Project Description

The City of Duluth Energy Efficiency Lighting Project includes three (3) separate bid packages as follows:

Bid Package #1- Includes the Medical District Ramp, Tech Center Ramp, City of Duluth Parking area within the Michigan Street and 5th Avenue Parking Ramp and Lake Place Park trails/pathways and area lighting. Each ramp will receive new LED lighting and wireless controls to achieve energy savings, lower maintenance costs and provide the City with the ability to control lighting functions remotely.

Bid Package #2- Includes the Lakewalk, Leif Erickson Park, Rose Garden, Channel Walk, Bayfront Park, and the corner of Lake Avenue/Carriage Walk/Sister Cities Garden pathway and area lighting. Each area will receive new LED lighting and wireless controls to achieve energy savings, lower maintenance costs and provide the City with the ability to control lighting functions remotely.

Bid Package #3- This package includes the installation of air curtains above four (4) overhead garage doors at Fire Station #4. The installation of air curtains will allow the city to determine the energy savings of adding air curtains and potential savings at other sites.

Task	Date
Bid Package 1:	
Bid Package 1 Issue for Bid	7/22
Bid Package 1 Bids Due	8/8
Bid Package 1 Notice to Proceed	8/15
Bid Package 1 Substantial Completion	Note 1
Bid Package 2:	
Bid Package 2 Issue for Bid	8/11
Bid Package 2 Bids Due	8/25
Bid Package 2 Notice to Proceed	9/9
Bid Package 2 Substantial Completion	Note 1
Bid Package 3:	
Bid Package 3 Issue for Bid	9/2
Bid Package 3 Bids Due	9/16
Bid Package 3 Notice to Proceed	10/7
Bid Package 3 Substantial Completion	Note 1
Project Close-Out	12/12 - 12/30

Note 1: Bid submissions shall include substantial completion date.

System Guideline

Guidelines for energy efficient lighting upgrades include:

1. Lighting upgrades- The existing lighting at specific sites listed will be upgraded to LED type. Existing lighting lay-outs may be revised to achieve or maintain IES recommended lighting levels and performance.
2. Lighting controls- Lighting controls will be added or upgraded at specific sites listed to provide energy savings and energy monitoring through occupancy sensors, day-light harvesting, timed on/off control and associated remote monitoring system provide with lighting control package. Controls will be provided that interface with existing City of Duluth Echelon system
 - a. Wireless control system will include necessary software/hardware with related equipment and programming to provide City of Duluth the capability for remote control and data logging/tracking for reporting purposes.
3. Energy efficiency goals – the following are the goals for energy efficiency.
 - a. Use light harvesting as described in ASHRAE 90.1
 - b. Use occupancy sensors and/or timed control to turn off lights when space is not in use.
 - c. Complete Minnesota Power Energy Rebate Program documentation on behalf of the City of Duluth.

4. Environmental and sustainability goals:
 - a. Lighting – Lower energy consumption utilizing LED lighting, occupancy sensors and daylighting sensors.
5. Adaptability for future changes and upgrades –Future projects will have capability (full function) for wireless and/or a combination of wireless and hardwired connection to the City of Duluth controls (Echelon system) implemented under this and previous projects.
6. Provide a key plan including identification (engraved mechanically fastened “ID-Tag”) for each light fixture included in project (s).
7. The following items represent minimum expectations and goals for a successful project:
 - a. The project remains on time and budget to meet bonding schedule requirements and avoid penalties.
 - b. Reduced utility expenses compared to historic data and current demand charges.
 - c. All of the goals of this OPR are met.
 - d. The goals set during the planning/user meetings are met and that the design is efficient for users.
 - e. The City receives a properly operating lighting and control system for sites identified in this document.
 - f. Clear maintenance and operation requirements.
 - g. Shipping schedule related issues.
 - h. Poor systems performance after turnover.
 - i. A project that does not incorporate commissioning.
 - j. End user changes during construction. This will be the owner’s responsibility.

Functional Uses

1. Bid Package #1 – City of Duluth Parking Ramps
 - a. Energy Efficient LED Lighting System
 - b. Low Maintenance requirements for installed lighting and control systems.
 - c. Light fixtures and associated control systems that are easy to maintain and repair.
 - d. Provide adjustable control system that allows the Owner to easily make modifications. The control system shall be compatible with other systems and their devices for future modifications and/or additions.
2. Bid Package #2- City of Duluth Parks and Trails
 - a. Energy Efficient Lighting System
 - b. Low Maintenance requirements for installed lighting and control systems.
 - c. Light fixtures and associated control systems that are easy to maintain and repair.
 - d. Provide adjustable control system that allows the Owner to easily make modifications. The control system shall be compatible with other systems and their devices for future modifications and/or additions.
 - e. Light fixtures are LED source robust, rated for specified installation, and includes integral lighting control where specified.
3. Bid Package #3- City of Duluth Buildings
 - a. Low Maintenance requirements for installed air curtain systems.
 - b. Air curtain systems that are easy to maintain and repair.
 - c. Air curtains to off-set heat loss in winter months

Occupancy Requirements

Project sites will remain operational during described work. Phase and schedule work to allow facilities to remain fully functional during the hours of operation.

1. Bid Package #1- The parking ramps identified in this project are regularly occupied by City of Duluth building maintenance and parking attendant from 7 a.m. to 5 p.m., Monday through Friday, with 24 hour public use.
2. Bid Package #2- The parks and trails identified in this project are regularly occupied by City of Duluth Parks and Recreation staff and patrolled by security. These parks and trails are open 24 hours a day, seven days a week for general public use.
3. Bid Package #3- The Fire Hall #4 identified as receiving the air curtain system is occupied by staff 24 hours a day, seven days a week.

Budget Considerations and Limitations

The budget for this project is \$500,000 including design and construction. The project is broken into three (3) separate Bid Packages that will allow the City to monitor and determine the work that can be accomplished with this budget. After each Bid Package is issued and bids are received the City can review and determine if the budget will allow them to proceed with construction. All three (3) Bid Packages may or may not be completed based on the cost of construction. If funding is not available within this budget to complete one or more of the Bid Packages, paybacks from energy savings, reduced maintenance costs and/or energy rebates from the previous Bid Package(s) may be allocated to complete in the future. These paybacks may also fund future projects not included in this scope.

Performance Criteria

The performance criteria upon which this project is being evaluated by the Commissioning Team are included in this section. Each performance criterion is verified during the Pre-Design, Design, Construction, and/or Occupancy & Operations phase(s) of the project. The performance criteria are categorized into the following groups:

- General
- Construction Process
- Maintenance and Operations

General

1. Quality requirements of materials and construction –the level of quality of the light fixtures and associated controls is defined by:
 - a. Durability – high durability with resistance to damage by ambient conditions, users or operation and maintenance personnel.
 - b. Time expectancy between failures – no equipment failures during the first five years of operation.
 - c. Time expectancy between replacements – 25 years.
 - d. Owner general expectations of quality of construction – above average.

2. Aesthetics –Exposed conduit shall be limited. Where exposed conduit is required, route parallel to building structure to minimize visibility.
3. Communications – There shall be one communication system (backbone) for lighting at each site, which the lighting control system will use between its components.

Construction Process

Because of the phasing that will occur with the Energy Efficiency project there are certain construction considerations that must be met. They include:

1. Keeping the project on budget
2. Amicable cooperation among all project team members
3. Minimal change orders
4. Minimal occupant disruption during construction
5. Phasing coordination from site to site

Maintenance and Operations

Training requirements for owner's personnel – the owner will be utilizing in-house operations and maintenance resources. These personnel will have between 10 and 25 years of experience and it is assumed they are conversant in basic maintenance techniques and are computer proficient. The training needs to contain a variety of sessions that operations and maintenance personnel will attend. The sessions shall be digitally recorded and processed for long-term availability to changing staff. The following defines what is considered successful training:

1. Equipment and system level training – Each contractor will provide equipment and system level training to the maintenance crew for systems and equipment that they provided and installed.
2. Training style – Training sessions will be both classroom style and hands on, in field at the equipment.
3. Sequence of Operations – Designer and control contractor shall provide training to the maintenance crew on the operational sequences of the equipment and systems.
4. Capture training sessions – All training sessions should be captured digitally for future training use by City of Duluth.
5. Technical support – Telephone and email contact information for contractors should be provided to the owner for future technical support.

Warranty Requirements – All lighting, lighting control, and air curtain systems warranties are to begin at substantial completion, regardless of when the component is delivered, installed, or started-up. For small components (those under \$100,000 in first cost) the warranty shall be for one year. For large components (those over or equal to \$100,000 in first cost) the warranty shall be for five years and include all labor costs, parts, and consumables. Any item required to be accomplished by the operations and maintenance personnel must be clearly documented and provided prior to the start of warranties. Prior to any changes to components, the warranty requirements summary will be reviewed to avoid voiding of warranties.

The system documentation must be accurate and consistent with actual installed components and operation. The requirements for the system documentation include:

1. O & M Manuals - timely manner (before final payment/retainage), hard copy and electronic backup.
2. Controls/smart controls - sequence of operation and training, control diagrams, for each phase, analytical program.
3. Full set of Electrical plans (As-builts) - Electronic as-built drawings in CAD software, redline drawings (before final payment/retainage).
4. Shakedown period documentation - commissioning report
5. Design Parameters - A listing of input parameters in the control system; default values
6. Asset management program - third party, owners responsibility

Equipment and system maintainability expectations – the requirements for the system maintenance include:

1. All equipment must be easily accessible, locatable, and clearly labeled.
2. Robust equipment for low maintenance frequency – long lifecycle, tough finishes, ease of cleaning, low maintenance high traffic, efficient service.
3. Standardization of paint colors, parts, light bulbs, etc. for all systems.
4. Smart controls and analytics – reportable and recordable, ability to track, control and analyze.
5. Equipment and systems that are repairable and maintainable – ease of access.
6. Equipment that is energy efficient – not expensive to maintain.
7. Long term Shake-down – Provide 18 month trending, system analyzing period to fine tune controls system.
8. A proactive preventative maintenance program – work orders, preventive maintenance program based off of O&M Manuals.
9. Understandable and intuitive – Control system, mechanical systems and infrastructure, labeling of components.
10. Adaptability – any changes to the space or system will be evaluated against the current OPR and BoD to verify the system can meet the new requirements and any changes to the systems are properly documented. The Lighting and lighting control systems shall be flexible to future changes without the need for additional investment or outside resources.

Lighting Fixtures

Light fixtures, as specified below, will be purchased by the City directly including integral lighting control module(s) where applicable. The City has purchased fixtures for some projects specified and will purchase the additional remaining fixtures as needed.

Replace light fixture branch circuit wiring within pole, no splices allowed.

To limit light pollution (dark sky compliance), enhance or maintain public safety and ensure appropriate aesthetic lighting qualities in public spaces as most appropriate in each individual lighting application.

Bid Package #1 – LED parking garage style light fixture for parking ramps identified for this project, see cut sheet included in this document. Also LED pole mounted light fixtures for park/pathways identified for this project. Install lock-tight substance furnished with light fixture per manufacturer requirements and/or recommendations. Provide 6" aluminum nipple welded to fixture arm, painted to match light fixture, as manufactured by Duluth Steel Fabricators, Inc. Contact Mark Youngren, 218-624-5793. This applies to pole mounted fixtures, verify exact quantity with city prior to order. Light fixtures will be controlled via wireless control system as outlined in this document. Aluminum arm welding scope with Duluth Steel Fabricators will include a minimum of 10 arms per each work order package.

Bid Package #2 – LED pole mounted and post top mounted decorative light fixtures for parks and trails/pathways identified for this project, see cut sheets included in this document. Install lock-tight substance furnished with light fixture per manufacturer requirements and/or recommendations. Provide 6" aluminum nipple welded to fixture arm, painted to match light fixture, as manufactured by Duluth Steel Fabricators, Inc. Contact Mark Youngren, 218-624-5793. This applies to pole mounted fixtures, verify exact quantity with city prior to order. Light fixtures will be controlled via wireless control system as outlined in this document. Aluminum arm welding scope with Duluth Steel Fabricators will include a minimum of 10 arms per each work order package.

Network Lighting Control Systems

General

Provide programmable wireless lighting control system(s) as identified on the plans, specifications, and this document. Lighting control systems shall be rated for their specified use and conform to nationally recognized testing agencies. Lighting control systems shall include but are not limited to occupancy sensor devices, day-light harvesting devices, photocell, time-clock, and head end equipment (gateway) and associated control programming for a complete and operational system. Lighting control system manufacturer shall provide a mock-up of system for City of Duluth personnel to test and approve prior to purchase.

The City has identified the 'Lumewave' by 'Echelon' and 'Roam' by 'Holophane' lighting control systems as approved manufacturers. Some of the purchased light fixtures include integral lighting control modules of the above-mentioned lighting control systems.

Energy Rebates

This project is eligible for energy rebates through Minnesota Power. Coordinate with Energy Insights for energy rebate form submission to Minnesota Power. Rebates received through this project will allow for funding of future projects similar to this.

16-0499 Energy Efficiency Lighting Project – Bid Package 1

Q&A

1. Within the noted bid document it is noted that the city will provide fixtures. Has there been a bid for the fixtures noted in this project? If yes, what were the bid results?

We have not requested bids for lighting. That said, we have chosen the new fixtures; these fixtures will be purchased after a bid is accepted for the install and the control system is known.

2. Does the city have a preferred control system?

Yes, the Streets department is installing an Echelon system, we would prefer this, however we are open to discussing options.

3. Will this contract need a PLA?

This is unknown at this point, however, as referenced in the bid request anything over 150K will.

4. Parking ramp installation: Will work need to be done after ours?

This is unknown at this point, however it isn't our intent for that to be the case. We expect the selected company to work with PFM and Parking officials to work out an installation plan that achieves or task in a timely and cost effective manner while still providing the needed services to the city's residents and guests.

5. When can work start?

Work can start when the contracting paperwork is complete.

6. When will lights be ordered by the City?

Lights will be ordered as soon as we know what lighting control system will be used.