REQUEST FOR PROPOSALS

for

CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CM/GC) SERVICES
CITY OF ST HELENS NEW PUBLIC SAFETY BUILDING

April 17, 2023, 1:00pm PST

Figure 1- Artist's Rendering of New Public Safety Building

RFP No. P-526

Mandatory Pre-Proposal Briefing and Site Tour: May 1, 2023, 9:00 A.M.

Proposals Due: May 16, 2023, 3:00 P.M.

Proposal Contact: Sharon Darroux
Engineering Manager
Phone: (503) 366-8243
Email: sdarroux@sthelensoegon.gov

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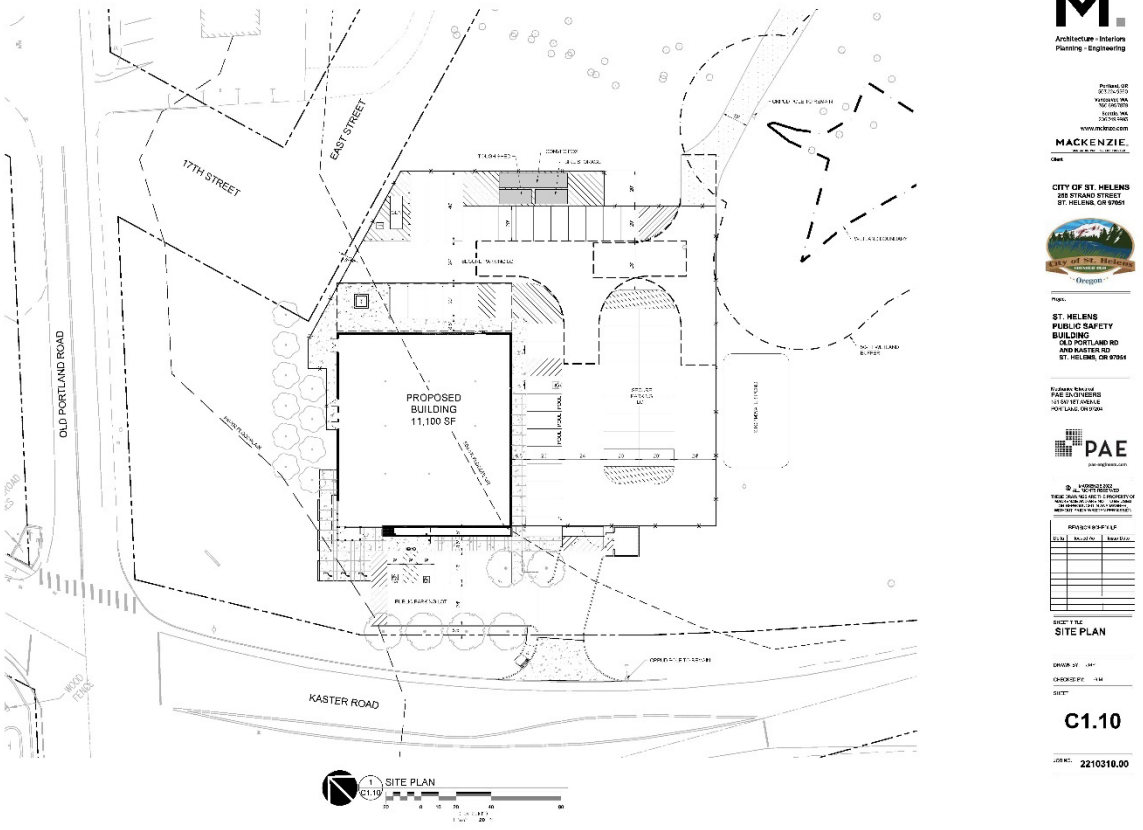
1. SCOPE OF WORK

1.1 General: Overview and Project Background

The City of St. Helens (the City), is seeking to obtain the services of a CM/GC firm to lead and assist with the preconstruction and construction phases of the new Public Safety Building.

The current Police Station was built in 1971 as 2,200 square foot, wood framed building with a detached garage. The garage was updated in 1988 and a second floor has been in the planning stages since the early 1990s but never constructed due to budget constraints. As the current station was built for a police force that didn't need to handle digital data or face current issues such as active shooters, school shootings, online child pornography, or the opioid and mental health crises of today, an entirely new building is needed.

Mackenzie Inc. has designed a new public safety building that will provide a safe space for a modern police force, be ADA compliant, improve evidence storage and ensure the privacy of crime victims. It will also create a space for an emergency preparedness center where first responders can coordinate responses to local disasters. The City has approved $12.6 million for the project budget and hopes to have the doors open by April 2025.



PARKING DATA

	ACCESSIBLE	STANDARD	CARPOOL/VANPOOL	OVERSIZED (10' x 40')	TOTAL
SECURE (10' x 20')	1	40	3	3	47
PUBLIC (9' x 18')	2	4	0	0	6
TOTAL	3	44	3	3	53

LEGEND

	EXISTING	PROPOSED
PROPERTY/ROW LINE		
100-YEAR FLOODPLAIN		
500-YEAR FLOODPLAIN		
EDGE OF PAVEMENT WETLAND		
BOUNDARY		
50-FT WETLAND BUFFER		
TREE		

The CM/GC firm will work closely with the City's representatives, Dave Lintz, and with Mackenzie and the City core team throughout the life of the project. The core team is made up of the City Administrator, and the Police Chief.

1.2 CM/GC RFP Overview

The City is soliciting Requests for Proposals (RFPs) from experienced Construction Manager/General Contractors (CM/GC) capable of constructing the new St. Helens' Public Safety Facility. The CM/GC is being selected early in the project to best serve the City's project in consideration of the following factors:

1. Provide the City and its design team with unique expertise and experience that will assist to select the most economical and timely construction solutions throughout the project.

2. Ensure that existing operations of the City are maintained throughout construction with minimal disruption to ongoing operations of adjacent businesses.

3. Implement procedures to aggressively manage the construction costs, schedule, and phasing requirements; and minimize hazards related to the development of the construction plans.

4. Develop project procedures to manage the high risks and critical need for effective partnering and collaborative decision-making processes to ensure that jobsite safety is not compromised and that impacts on subcontractors are minimized, while performing significant work around any adjacent businesses.

5. Develop means and methods strategies of work-around site logistics solutions and program relocations, to constructing the new Public Safety facility work while maintaining other adjacent ongoing operations. Construction work will need to be carefully staged and coordinated to always ensure safety of the public.

6. Provide procurement and implementation strategies for complex phasing of the Project to leverage early bid package(s), while allowing time for additional design solutions for later bid packages and coordination of work activities with adjacent business operations.

7. Identify cost-effective solutions due to the Project's budget limitations through constructability reviews, value engineering and collaboration with stakeholders to meet budget constraints and grant requirements.

The City seeks a CM/GC who can best provide the services needed to achieve the above goals.

The services requested of the CM/GC shall be provided in two phases:

1. Preconstruction Services: Consultation with the City and its design team during the planning and design of the project.

2. Construction Services: Management and completion of the construction work within the negotiated GMP (guaranteed maximum price) and project schedule.

1.3 Project Description

The detailed project description, floor plan, site plan and geotechnical report are described in Appendix A.

1.4 Project Organization

The City has retained OTAK CPM and SPM Dave Lintz to provide Project Management oversight services on behalf of the City. The Design and Engineering services have been retained by the City utilizing the services of Mackenzie as the prime design consultant to manage and coordinate the design of the project and to provide Construction Administrative (CA) services through construction completion. Hart Crowser has been retained as hazardous materials and environmental assessment consultants as well as geotechnical services. A commissioning agent and other consultants should be anticipated.

1.5 Budget

The City has budgeted $12.6 million for the total project. The construction budget includes construction contingency carried within the GMP. All savings to the GMP will revert back to the City. Please refer to schedule provided in Appendix D of this RFP.

1.6 Mandatory Pre-Proposal briefing and Site Tour

A mandatory pre-proposal briefing and site tour will be conducted at **9:00 AM, Monday, May 1, 2023 at the corner of Old Portland Road and Kaster Road in St. Helens, Oregon**. The meeting will allow for discussion the project requirements and answer questions regarding the project and allow proposers the opportunity to view the construction site, familiarize themselves with site conditions and constraints, and gain a better understanding of the work and the unique aspects of the project. Proposers are required to attend.

1.7 Procurement Schedule

The City anticipates the following general timeline for receiving and evaluating the proposals and selecting a CM/GC for the project. This schedule is subject to change if it is in the City's best interest to do so.

▪ RFP Issued	April 17, 2023
▪ Mandatory Pre-Proposal Briefing & Site Tour	May 1, 2023, 9:00 a.m.
▪ Deadline for Questions	May 5, 2023, 1:00 p.m.
▪ Last Addendum to be Issued	May 9, 2023
▪ **Proposals Due**	**May 16, 2023, 3:00 p.m.**
▪ Respondent Shortlist Notification	May 22, 2023
▪ Due Date for Protest of Shortlist Notification	May 30, 2023
▪ Interviews	May 31 – June 2, 2023
▪ Notice of Intent to Award	June 8, 2023
▪ Due Date for Protest of Award	June 15, 2023
▪ Contract Execution	June 19, 2023
▪ Completion of Contract	June 1, 2025

2. PROPOSAL PROCESS

2.1 General

2.1.1 Evaluation of Proposals

Proposals will be evaluated by an evaluation committee comprised of City representatives, members of the design team, and technically oriented members-at-large. The evaluation will be in accordance with Section 5 Evaluation of Proposals and may include requests by the team for additional information and interviews to determine and clarify the experience and responsibility of the proposer. The evaluation team will make a recommendation to the City Council, who will make the final decision to select and negotiate with the CM/GC.

2.1.2 Obligation to Award

The issuance of this RFP, and the receipt and evaluation of proposals does not obligate the City to award a contract. The City will not pay any costs incurred in responding to this RFP. The City may cancel this procurement without liability at any time prior to the City's execution of a contract.

2.1.3 Commencement of Work

The successful proposer may commence work only after the City delivers a fully executed preconstruction contract to that proposer.

2.1.4 Questions

Questions pertaining to this RFP shall be presented in writing to:

Sharon Darroux, PMP
Engineering Manager
sdarroux@sthelensoregon.gov

Questions must be received by email not later than **1:00 PM, May 5, 2023**. Questions will be compiled and collectively addressed by email to all proposers prior to the deadline for receipt of proposals. Only questions answered by formal written addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

2.2 Pre-Proposal Interpretation of Contract Documents

2.2.1 Changes to RFP

1. The City reserves the right to make changes to the RFP. Changes will be made by a written addendum which will be issued to all prospective proposers on the City's list of RFP holders who attended the mandatory pre-proposal meeting. Oral comments by the City agents or employees are not binding on the City.
2. Prospective proposers may request or suggest any change to the RFP by submitting a written request. The request shall specify the provision of the RFP in question and contain an explanation for the requested change. The request must be submitted per the questions deadline date listed in the RFP calendar.

3. The evaluation team will evaluate all requests submitted but will not be obligated to accept the requested change. Any issue with the RFP or procurement process that could have been addressed by a question or request for change will not be grounds for protest of award.

2.2.2 Acceptance, Rejection, or Award of Contract

The City reserves the right to cancel the contract award for the project at any time before the execution of the contract by both parties if cancellation is deemed to be in the City's best interest. In no event shall the City have any liability for the cancellation of the contract award. The City reserves the right to:

1. Accept or reject any or all proposals received as a result of this RFP.
2. To negotiate contract terms with qualified Proposer.
3. Take into consideration any or all information supplied by the Proposer in their proposal and the City's investigation into the experience and responsibility of the Proposer. In addition, the City may accept or reject proposals based on minor variations from the stated specifications, when such an action is deemed to be in the City's best interest. Further, the City reserves the right to waive informalities in the submitted proposal.
4. Award a contract to that respondent the City determines to be the most responsible and responsive to this RFP. The successful Proposer shall commence work only after an agreement with the City is negotiated, a contract is fully executed, and a notice to proceed has been issued.

2.2.3 Changes to Solicitation by Addenda

The City reserves the right to amend the RFP by written addendum. The City is not responsible for any explanation, clarification, interpretation, or approval made or given in any manner, except by addenda. Proposers are advised to check the City's website regularly for addenda. Proposer may request a change in the RFP by submitting a written request via mail or email to the Project's Contact Person. The request must specify the provision of the RFP in question and contain an explanation of the requested change.

The City will evaluate any request submitted but reserves the right to determine whether to accept the requested change. Changes that are accepted by the City shall be issued in the form of an addendum to the RFP.

Addenda will be issued on the City's website, https://www.sthelensoregon.gov/rfps, not later than seven (7) days prior to the RFP closing date. It is the responsibility of the Proposer to check the webpage for any posted addenda and ensure that their submitted proposal acknowledges all addenda.

Addenda shall have the same binding effect as though contained in the main body of the RFP. No verbal instructions or information concerning the scope of work shall bind the City. Each Respondent is responsible for obtaining all addenda prior to submitting a proposal. Receipt of

each addendum shall be acknowledged on the Proposal Signature Page as part of the proposal, (Section 4 of this RFP).

2.2.4 Disputes

In case of any doubt or differences of opinions as to the items or service to be furnished or the interpretation of the provisions of the RFP, the decision of the City shall be final and binding upon all parties.

2.2.5 Amend or Withdraw Proposal

Proposals submitted before the deadline may be modified or withdrawn only by notice to the designated Project Contact Person. The notice shall be in writing. All such communications shall be worded so as not to reveal any material contents of the original proposal. Withdrawn proposals may be resubmitted up to the deadline.

2.3 Public Disclosure of Proposals

1. Any information provided to the City pursuant to this RFP is subject to public disclosure pursuant to Oregon's public records laws (ORS 192.311 to 192.478). In accordance with ORS 279C.410(1)(b) proposals will not be open for public inspection until after the Notice of Intent to Award is issued.
2. The general requirement for public disclosure is subject to a number of exemptions. Each page containing information deemed by the proposer as exempt from public disclosure (e.g., pages containing trade secret, economic development information, etc.) should be plainly marked.
3. The fact that a proposer marks certain information as exempt from disclosure does not mean that the information is necessarily exempt. The City will make an independent determination regarding exemptions applicable to information that has been properly marked. Information that has not been properly marked may be disclosed in response to a public records request, however, the City will redact exempt information.
4. Unless expressly provided otherwise in this RFP or in a separate communication, the City does not agree to withhold from public disclosure any information submitted in confidence by a proposer unless the information is otherwise exempt under Oregon law. The City considers proposals submitted in response to this RFP to be submitted in confidence only until the City's evaluation is complete and agrees not to disclose proposals until the City has completed its evaluation of all proposals and publicly announced the results.

2.4 Submission of Proposals

2.4.1 Requirements

1. Each proposer's submission in response to this RFP must:
2. Include one original (marked as such) plus 7 copies and one PDF copy on a USB flash drive. No emailed submittals will be accepted.

3. Include the completed and executed Proposal form (Section 4 of this RFP)
4. Be submitted in a sealed envelope that is plainly marked “Proposal to Provide CM/GC Services: “New St. Helens’ Public Safety Building” and bears the proposer’s name, address, telephone number, and email address; and
5. Be delivered to the following addressee **not later than 3:00 PM, May 16, 2023:**

   Sharon Darroux, PMP
   Engineering Manager
   City of St. Helens
   265 Strand Street
   St. Helens, OR 97051

6. No late submissions will be considered and all submissions will be time & date stamped upon arrival.
7. Include Transmittal Letter and Executive Summary

   Transmittal letter and executive summary shall be addressed to John Walsh, City Administrator, and include the name of the proposing CM/GC, full legal name of the proposing business entity, and must specify who will be the CM/GC’s signatory to any contract documents executed with the City.

   Letter shall include principal business address and phone number where the relationship will be managed and be signed by a representative of the Respondent who is authorized to sign and to commit the Respondent to the obligations contained in the Proposal, including name, address, phone number, and email address. The letter should address the Respondent’s willingness and commitment, if selected, to provide the services offered and a description of why the Respondent believes it should be selected. The letter shall name the person(s) authorized to represent the consultant in any negotiations and the name of the person(s) authorized to sign any contract or agreement, which may result. The letter of interest must be signed by a legal representative of the firm or institution, authorized to bind the firm or institution in contractual matters.

   A statement in the letter of shall specifically stipulate that the Respondent accepts all terms and conditions contained in the RFP and the CM/GC Agreement

2.5 RFP Schedule

2.5.1 RFP Milestones

Projected significant milestones for this procurement can be found in 1.7 Procurement Schedule

2.5.2 Period of Irrevocability

Proposals shall be offers that are irrevocable for a period of ninety (90) calendar days after the time and date proposals are due. Proposals shall contain the name, address, and telephone

number of an individual or individuals with authority to bind the company during the period in which the proposal will be evaluated.

2.6 Objections or Protests

2.6.1 Protest of the Solicitation

A proposer or prospective proposer who wishes to object or protest any aspect of this procurement shall comply with requirements of Oregon Administrative Rule: OAR 137-049-0260 and must deliver a written protest to:

Sharon Darroux, PMP
Engineering Manager
City of St. Helens
265 Strand Street
St. Helens, OR 97051

A protest of the procurement must be delivered no later than (10) calendar days prior to the deadline for the City's receipt of the proposals. A protest is delivered when it is actually received by the aforementioned addressee.

A protest shall be deemed to include only the documents timely delivered pursuant to this paragraph. It must clearly state all of the grounds for the protest and must include all arguments and evidence in support of the protest. Testimonial evidence may be submitted by affidavit. The City may investigate as it deems appropriate in reviewing the protest and will issue a written response to the protest. The City may proceed with contract award, execution, and performance while a protest is pending. An issue that could have been raised via protest of the solicitation is not grounds for protest of an award.

2.6.2 Protest Competitive Range

An adversely affected or aggrieved proposer may file a written protest of the City's decision to exclude the proposer from competitive range by delivering the protest in the manner described in Section 2.6.1 within seven (7) calendar dates of the date of issuance of the Respondent Shortlist Notification.

The protest must specify the grounds for protest of award as provided in OAR 137-049-0450(5), including that higher scoring proposals are ineligible for award because their proposals were non responsive or because the City made a substantial violation of a provision in the Solicitation Document or of an applicable Procurement stature or administrative rule, and the protesting proposer was unfairly evaluated and would have , but for such substantial violation, been included the competitive range.

A proposer is only adversely affected or aggrieved if the proposer is eligible for inclusion in the competitive range.

2.6.3. Protest of Award

An adversely affected or aggrieved proposer may file a written protest of the City's Notice of Intent by delivering the protest in the manner described in Section 2.6.1 within seven (7) calendar date of the date of issuance of the Notice of Intent to Award.

The protest must specify the grounds for protest of award as provided in OAR 137-049-0450(4), including that higher scoring proposals are ineligible for award because their proposals were non responsive or because the City made a substantial violation of a provision in the Solicitation Document or of an applicable Procurement stature or administrative rule, and the protesting proposer was unfairly evaluated and would have, but for such substantial violation, been the Responsible Proposer offering the highest ranked Proposal.

A proposer is only adversely affected or aggrieved if the proposer is eligible for award and is not in line for the award.

2.6.4 Cities right to decline

The City shall not review any late protests.

2.7 General Services Overview CM/GC

2.7.1 SCOPE OF CM/GC SERVICES

The City is seeking a CM/GC firm to participate in, design development and construction document development phases as a member of a team with the Program Manager-PM, Owner's Representative, Architect and Engineering team, and other Project consultants, and agencies to provide preconstruction services and to manage and coordinate the subcontractor bidding, buyout, procurement and the construction process.

During preconstruction, the CM/GC shall actively participate as a member of the Project team with the City and the Architect during the Design Development and Construction Documents phases prior to construction. The CM/GC shall be responsible for providing necessary consulting expertise to the City to ensure that the project scope is maximized, and the construction budget and the Project schedule are met.

The CM/GC will work collaboratively and proactively with the City and Architect to proceed with planning, design, and development of the work in a manner which supports the City's efforts to keep costs within the City's budget. The CM/GC shall provide Construction Management (CM) services throughout the Project, from the preconstruction period through construction and shall closely coordinate such work with the City, the City's PM, Owner's Representative, and Architect. The CM/GC's CM services shall include but not be limited to:

1. Assistance in identifying safe work practices and requirements for construction;
2. Assessing and recommending site logistics requirements;
3. Recommending phasing, sequencing of work and construction scheduling;

4. Providing cost-estimating including GMP development and subcontractor procurement
5. Determining and reconciling constructability issues and performing formal constructability analysis reviews of the design documents prior to subcontract bidding;
6. Assessing alternative construction options for cost savings;
7. Identifying products for Value Engineering (VE) and engineering systems for life cycle cost, design considerations and recommending all work necessary to support their implementation and;
8. Participating in City's Design Development and Construction Documents Phases coordination reviews.
9. Provide Critical Path scheduling, long lead item procurement, and site logistics planning,
10. Provide permit procurement assistance and agency coordination
11. Cooperation on funding of project scheduling and cash flow needs

The CM/GC shall provide full general contracting services for construction of the Project in accordance with the requirements of the Contract Documents and except to the extent work is specifically indicated in the Contract Documents to be the responsibility of others.

The CM/GC firm must be skilled in all aspects typical to a general contractor and construction manager, including, but not limited to developing Critical Path Method (CPM) schedules, preparing construction estimates, performing value engineering and life-cycle cost studies, analyzing alternative designs, studying local labor conditions and subcontracting market, understanding construction methods and techniques, understanding local climate conditions and requirements for weather protection during construction, performing constructability reviews, sequencing of work, and coordinating and communicating the activities of the team throughout the design and construction phases to all members of the Project delivery team.

The CM/GC firm will coordinate and manage the construction process as a collaborative member of a team with the City's PM, Owner's Representative, A/E, and other Project consultants and governmental agencies as required.

2.7.1 Preconstruction Services

Preconstruction services will be provided generally under the terms contained in this RFP solicitation process and paid for on a cost reimbursement basis. In general, services are anticipated to include a requirement that the CM/GC:

1 Provide a full description of items that make up the proposed GMP. A complete copy of the GMP estimates in a format approved by City, including all details, must be provided to the City. The CM/GC will cooperate with other City designated Consultants, and advise, assist, and provide recommendations to the City and design team on all aspects of the planning and design of the work.

2 Provide timely and accurate information, estimates, schemes, and participate in decisions regarding construction materials, methods, systems, phasing, and costs to assist in determinations which are aimed at providing the highest quality building within the budget and schedule. CM/GC shall participate in design meetings and be a leading member in Target Value Design (TVD) of the facility.

3 Work with the City in identifying critical elements of the Work that may require special procurement processes, such as prequalification of bidders or qualifications-based selection through trade partnerships.

4 Actively participate in formal Target Value Design (TVD) and Value Engineering (VE) studies anticipated to be held at the end of ~~schematic design and~~ design development. Actively participate in ongoing TVD and VE and constructability reviews to ensure the project budget and design standards are maintained. Demonstrate understanding of the difference between Vulture (scope reduction) and Value Engineering.

5 Review in-progress schematic design documents and provide timely input and advice on construction feasibility, and alternative materials, and availability. Provide formal and informal Constructability Reviews (CR) of the Contract Documents as part of the design development QA/QC process. Provide final CR review of 50% CD design documents and suggest modifications to improve completeness of the documents prior to establishing the final GMP.

6 Provide input to the City and the design team regarding current construction market bidding climate, status of key subcontract markets, and other local economic and weather-related conditions. Recommend division of work to facilitate bidding and award of trade contracts, considering such factors as bidding climate, weather, or accelerating construction completion milestones, minimizing trade jurisdictional disputes, and related issues. Advise the City on subcontracting opportunities for minority/women/ESB firms.

7 Continuously monitor and update the Project schedule and recommend adjustments in the design documents of construction bid packaging to ensure completion of the Project in the most expeditious manner possible. Time is of the essence on this project with critical milestones for relocation of the City's existing facilities. CPM schedule to be submitted with GMP approval.

8 Prepare construction cost estimates for the Project at appropriate times throughout the design phases of the work in compliance with various funding source report requirements. Notify the City and design team immediately if their construction cost estimates appear to be exceeding the construction budget or the GMP. City will not pay for Change Orders resulting from subcontractor procurement buyout overages.

9 Work with the City and design team to maximize energy efficiency in the Project. Provide estimating and value engineering support to the City's analysis and application for energy related incentive programs offered by local utilities.

10 Furnish a Guaranteed Maximum Price (GMP) in accordance with the CM/GC Agreement for the City's review and approval. It is also possible that a partial Early Work Amendment will be authorized to cover construction work in advance of the GMP.

11 In the event that the selected CM/GC is unable to furnish a GMP within the City's budget, or otherwise come to agreement on CM/GC Contract terms, the City retains the sole option to cancel this procurement and start a new process for the construction of the Project, or to terminate the existing CM/GC Contract or contract award and enter into new CM/CG Contract negotiations with the next highest ranked Proposer under this procurement.

12 CM/GC will be required to comply and prepare agreeable responses to the following before a GMP is agreed upon: ORS 279C.337 Procurement of constructions manager/general contractor services:

(3) By the earlier of the date on which a contracting agency and a construction manager/general contractor agree on a fixed price, guaranteed maximum price or other maximum price or the date on which the construction manager/general contractor begins to solicit offers for construction services from subcontractors, the public improvement contract that the contracting agency negotiates with the construction manager/general contractor must:

(a) Describe the methods the construction manager/general contractor will use to qualify and select subcontractors. The methods must be competitive and should provide prospective subcontractors with a reasonable opportunity to participate in the construction manager/general contractor's qualification and selection process.

(b) Identify the portions of the construction work under the public improvement contract for which the construction manager/general contractor may waive the qualification and selection process described in paragraph (A) of this subsection and describe:

(A) How the construction manager/general contractor may determine the portions of the construction work that will not be subject to the qualification and selection process described in paragraph (a) of this subsection; and

(B) The process the construction manager/general contractor will use to qualify and select prospective subcontractors for the portions of the construction work that are not subject to the qualification and selection process described in paragraph (a) of this subsection.

(c) Identify the conditions under which the construction manager/general contractor or an affiliate or subsidiary of the construction manager/general contractor may perform or compete with other prospective subcontractors to perform construction work under the public improvement contract and describe the methods the construction manager/general contractor will use to qualify and select an affiliate or subsidiary to perform the construction work.

(d) Describe how the construction manager/general contractor will announce which prospective subcontractors the construction manager/general contractor has

selected to perform construction services in connection with the public improvement contract.

(e) Describe the conditions under which the construction manager/general contractor will discuss the qualification and selection process described in this subsection with a prospective subcontractor that the construction manager/general contractor did not select for a subcontract if the construction manager/general contractor receives a request from the prospective subcontractor to discuss the process.

(4) As used in this section, "savings" means a positive difference between a fixed price, a guaranteed maximum price or other maximum price set forth in a public improvement contract and the actual cost of the work, including costs for which a contracting agency reimburses a construction manager/general contractor and fees or profits the construction manager/general contractor earns.

2.7.2 Construction Phase Services

During the Construction Phase Services, the CM/GC shall provide and pay for all materials, tools, equipment, labor, and professional and non-professional services, and shall perform all other acts and supply all other things necessary to fully and properly perform and complete the Work, as required by the Contract Documents. Construction related activities of the CM/GC during this phase will include schedule refinement, phasing and site logistics, advance materials procurement, advance construction (if approved via an Early Work Amendment), development of bid packages, subcontractor bidding, quality control of the work in progress, and overall construction management. The CM/GC will also be responsible for ongoing management of the construction budget and monthly, or as requested by City, reporting of budget and work in progress status.

2.7.3 Special Requirements

In order to implement the CM/GC method of construction with a GMP, the City will impose some special requirements to ensure an adequate level of competition. Proposers shall note the following requirements concerning management of this GMP Project:

1 A full description of items that make up the proposed GMP is required from the CM/GC. A complete copy of the GMP estimates in a format approved by City, including all details, must be provided to the City. The CM/GC will cooperate with other City designated cost estimators to reconcile GMP estimates to City-approved limits.

2 The CM/GC shall comply with Oregon Administrative Rules ("OAR") 137-046-0200 and 137-046-0210 in all respects for the solicitation of Minority, Women and Emerging Small Business Enterprises. Compliance shall include pass-through requirements for subcontractor demonstrations of good faith efforts for all subcontract offer packages, for which set goals shall not be utilized.

3 The Contract awarded through this process will require the CM/GC to use an open competitive selection process for subcontracted components of the Project. The processes used to award subcontracts by the CM/GC will be monitored by the City. The CM/GC shall

solicit bids or quotes from subcontractors unless otherwise authorized by the City in writing. The CM/GC shall provide a spreadsheet of all bidding categories and show bid results and make available to the City and its representatives for review. City will review all bids at its discretion and reserves the right of prior written approval of any bids when fewer than three (3) bids are received in response to any solicitation. All Self performed bids will be received a day prior to bids due and be submitted to a City representative in a sealed envelope marked appropriately.

4 By listing individuals in the Proposal, the firm affirms that these individuals will be available to work on the Project at the approximate percentages shown in the Proposal. The City reserves the right to approve or reject any changes to the proposed personnel. City further reserves the right to request a substitution of personnel if deemed to be in the best interest of the City.

5 All Proposers must be registered with the Oregon Construction Contractors Board prior to submitting Proposals. Failure to register will be sufficient cause to reject Proposals as non-responsive.

6 For this Project, the provisions of ORS 279C.800 to 279C.875, relative to prevailing wage rates, will apply. The CM/GC and all subcontractors shall comply with BOLI requirements. The actual prevailing wage rates applicable to this Project will be identified at the time the initial set of construction specifications are made available and are incorporated into the first Early Work Amendment, or, if no Early Work Amendment occurs, then at the time of the GMP Amendment. Those rates will then apply throughout the Project.

7 GMP Contingency: CM/GC firm may be asked to utilize web-based tools for managing costs and other contractual duties via Google, Smartsheet.com and Bluebeam, Procore and the like. Logs will be used for controlling and managing changes to construction, GMP contingency management and closeout requirements utilizing cloud-based logs. The GMP Contingency to be held within the GMP is to be used for five types of changes: owner changes, contractor changes, design changes, unforeseen conditions, and jurisdictional changes. The log should track what type of change is made and project worst case scenarios on estimates and track actuals in order to provide the team with best decision-making data on contingency use and management. All GMP Contingency use must be authorized by the team. The contingency if needed, may be replenished via change order if necessary to the GMP. The contingency is not the contractor's funding but will be managed in an open and careful manner with the team, with all changes and use of funds approved by the City. All overtime is to be pre-approved by the City.

3. PROPOSAL

3.1 Preparation

Proposals shall be prepared simply and economically, providing a straightforward format.

3.2 Format

Proposals shall conform to the following format:

The City will not be liable for any expense incurred in the preparation of proposals. Proposers are encouraged to use creativity and to provide complete information in their written proposals. However, except as provided otherwise below, a proposal response to section 3.2.2 shall be in a font size no smaller than 10 points and shall not exceed 50 single-sided pages or 25 double-sided pages, including pictures or diagrams. Resumes required by section 3.2.2.2, section dividers and proposal form are excluded from the page limit. If a proposer exceeds the page limit in responding to section 3.2.2, the City will consider the information on the first 50 pages and may decline to consider information beyond the 50th page.

3.2.1 Proposal Form

The proposal form is included as Section 4 of this RFP. It shall be completed, executed, and included as the first page of the proposal.

3.2.2 Required Submissions

Proposals shall contain the following information, provided in the order listed below. Concise and direct responses are encouraged.

3.2.2.1 Management of the Work

In detail, describe the overall plan to manage the project, including the following as a minimum:

1 Describe your proposed Preconstruction Services Plan that defines each preconstruction service you intend to provide including but not limited to:

- A Investigation of existing conditions and all material provided by the City to ensure construction documents reflect the actual site conditions.
- B Design and Construction Document coordination review and comments verifying their implementation. Describe your firm's approach when working as a project team member during design.
- C Design and target cost validation, budgeting; cost estimating and tracking and reconciliation with second parties. How do you manage price volatility and market conditions, including staffing shortages when providing cost estimates during the design phase without being unreasonably conservative.
- D Constructability issues including assistance identifying safe work practices and requirements for construction.

E Value Engineering and alternative construction options, products and engineering systems for cost savings and life cycle cost design considerations.

F Schedule, change recommendations and advice of long-lead procurement packages.

G Recommended phasing and sequencing of work to maximize construction site efficiencies.

H Assessment and recommended site logistics requirements.

I Subcontract Plan preparation and procurement buyout planning.

J Cost estimating methodology, and systems utilized to adhere to funding requirements for detailed accounting & tracking of costs in accordance with the project budget.

2 Address the person(s) responsible for each service, a description of the deliverable(s) that will be provided to the City and design team upon completion of each service and the action you intend to take or intend for the design team to take based on the information contained in each deliverable.

3 Briefly identify three or more examples of projects that demonstrate the range of Preconstruction Services your firm has provided on similar previous public sector CM/GC projects with a guaranteed maximum price (GMP). Also provide a concise description of the proposer's ability to satisfy the requirements of this RFP.

4 To clearly show an understanding of the scope and complexity of the work, identify key issues and/or potential constraints and risks anticipated for the project, including areas of design, construction, and management. Describe the plan for addressing these issues and maintaining the progress of the work.

5 Describe the work sequencing and phasing process that will be employed to ensure that existing adjacent businesses are maintained throughout construction operations. With the understanding that a team effort by the City, the design team, and the selected proposer will be required to develop an approach to the design and construction sequencing and phasing; include a discussion of the process employed by your firm to develop sequencing, phasing, and a site logistics plan, that minimize disruptions to existing adjacent businesses.

6 Describe your firm's approach toward managing fast track projects with critical timelines which have completion dates that cannot be moved.

7 Describe the plan to establish and maintain good relationships and foster open and productive communications with the City, Project Managers, the design team, and the public, including communication of current and upcoming construction activities.

3.2.2.2 Proposed Personnel and Organization

1 Provide a project organization chart showing the proposed key staff for this project in the following areas (at a minimum):

- Company executive with responsibility for the project and the authority to bind the company

- Project management
- Construction management and supervision
- Estimating
- Safety
- Quality control
- Describe the duties and responsibilities for all key staff positions.

2 Indicate the approximate percentage of each week that each person shown on the organization chart is anticipated to be working on the project and their primary work location during the design and construction phases of the work.

3 Include resumes for all key individuals shown on the chart. Resumes shall include education, work history, length of tenure with the proposing company, and specific project experience in the role proposed for this project. Each project experience example shall include the title, description, construction cost, dates and durations for the project and the name, company name, position title, and telephone number for the client representative that was responsible for the project.

4 Provide an organizational chart of the company. Include all wholly owned subsidiary companies and define their relationship in providing personnel or equipment for the project.

3.2.2.3 Cost Management

1 Describe how the proposer will approach cost estimating and value engineering.

2 Describe the plan for managing and tracking the cost for the work in adherence to the GMP. Include descriptions of cost tracking tools and summary reports.

3 Describe the approach for establishing and maintaining a GMP contingency fund to ensure that the project budget is not exceeded and your willingness to comply with the use of this contingency described in 2.7.3 (7) Special Requirements above.

4 Describe the proposed method of documenting the line-item components of the Guaranteed Maximum Price (GMP) and the method of determining whether project changes are inside or outside the scope of the GMP.

5 Describe past performance on other CM/GC and design/build contracts within the past five (5) years. For each project, list the project name, client name, completion date, contract GMP, dollar amount of change orders, and client contact person including phone number.

3.2.2.4 Schedule, Quality Control, and Safety

1 Describe approach to managing the construction schedule. Include a description of the elements of this project that are likely to put the schedule at risk and how they would be proactively managed. Include descriptions of schedule tracking tools and summary reports

2 Describe expectations for labor and materials availability on this project. Describe how anticipated challenges with availability of labor or materials could be mitigated. Explain the plan to generate sufficient subcontractor and/or material supplier competition in the bidding to minimize project costs.

3 Discuss opportunities and challenges that you see to complete the project in as efficient of manner as possible. Describe how the opportunities will benefit the City and describe how the foreseeable challenges will be addressed by your firm. Prepare and manage a risk log via cloud-based access.

4 Describe your firms proposed quality control plan and how it will be implemented.

5 Describe your firms proposed general safety program, including training, hazard identification, and audit/inspection. Include specific information on subcontractor and employee accountability for safety, formal disciplinary program, and Company EMR (Experience Modification rating) safety record for the last three years.

3.2.2.5 Contract Formats

1 The sample draft contract and general conditions to the contract presented in Appendix B will be the basis of the agreements for services provided by the selected proposer on the project. The proposer shall identify in its proposal all exceptions and proposed revisions to the contracts. The City will consider all exceptions and proposed revisions, but the City will not be obligated to accept them.

2 The sample negotiated construction agreement included in Appendix B will be used as the contract between the City and selected proposer.

3 The sample general conditions to the contract included in Appendix B will be used as the general conditions between the City and selected proposer.

3.2.2.6 Subcontractor/Supplier Selection Approach

Describe in detail your firm's subcontractor and supplier procurement/selection process. Also, describe how you would provide local subcontractor and supplier opportunities to submit bids to your firm. A local business is defined as a business that has an existing significant place of business located within the electoral and taxing boundaries of the City.

Discuss your local presence in terms of company location to St. Helens as well as your outreach strategy for local subcontractor procurement and involvement.

3.2.2.7 Deviations from the RFP

Identify specifically where and how the proposal deviates from the requirements of this RFP.

3.2.3 Fee Proposal

(Reference APPENDIX C – Elements Of Project Costs To Be Included In General Conditions)

Present a proposed fee for providing the CM/GC services in two parts:

a. Preconstruction Services:

Identify an estimated total cost and proposed hourly billing rates for services to be provided during the design phase of the project, prior to establishment of the negotiated Guaranteed Maximum Price (GMP). Identify activities, labor hours associated with each activity, proposed billing rates per hour for each person/position, and an estimate of expenses. This estimated cost will be the basis of negotiation of a not-to-exceed price for the preconstruction services contract with the City. This price will be the maximum amount due the CM/GC if the CM/GC's services are terminated or the project does not proceed to construction for any reason, and if all of the services had been provided prior to cancellation.

b. Construction Services:

Fixed Fee: Identify the fixed fee, as a percentage of the Guaranteed Maximum Price (GMP) for which the proposer's firm would contract to perform the required services. Identify what costs the proposer will include in the fixed fee. Identify all proposed project staff that would be included as part of the fixed fee. At a minimum, the fixed fee shall include Corporate Overhead and Profit, project executives, corporate office administrative expenses and support staff.

Insurance costs: Identify costs for Performance and Payment bonds, Commercial General Liability/Auto Insurance and Builders Risk insurance separately as a percentage of the GMP.

General Conditions: Identify and estimate the cost of expenses, other than direct construction labor and material costs, which will be included in the reimbursable cost of work as part of the General Conditions. Refer to Appendix E "General Conditions Matrix" as a guideline for developing detailed cost breakdown of costs. Provide detailed breakdown estimate of General Conditions.

Self-performed Work: Identify what portions of the work that the proposer anticipates to self-perform and what mark-ups are proposed to apply to the direct costs of this work. CM/GC shall be required to publicly announce any work for those items which it intends to bid at least 15 days prior to the bid opening. Sealed bids will be delivered to and publicly opened by the City for any work which the CM/GC intends to provide a bid to self-perform 24 hours before the bids are due.

4. PROPOSAL FORM

CONSTRUCTION MANAGER/GENERAL CONTRACTOR (CM/GC) SERVICES

City of St. Helens New Public Safety Facility

The undersigned proposer submits this proposal in response to the City's Request for Proposals (RFP) for the contract named above. The proposer warrants that proposer has carefully reviewed the RFP and that this proposal represents proposer's full response to the requirements described in the RFP. The proposer further warrants that if this proposal is accepted, the proposer will contract with the City, agrees to all terms and conditions found in the attached contract, and will provide all necessary labor, materials, equipment, and other means required to complete the work in accordance with the requirements of the RFP and contract documents.

No proposal will be considered unless the proposer is licensed with the State of Oregon Construction Contractors Board, pursuant to ORS 701.055 (1), prior to submitting a proposal. The proposer hereby acknowledges the requirement to carry or indicates the ability to obtain the insurance required by the contract documents. Indicate in the affirmative by initialing here: ____

The proposer hereby acknowledges receipt of Addendum Nos. ___, ___, ___, ___ to this RFP.

Company Proposing: _____

State of Oregon Construction Contractors Board License No: _____

Business Address: _____

Authorized Signature: _____

Printed/Typed Name: _____

Title: _____

Email Address: _____

Telephone Number: _____ Date: _____

Note: Complete and execute this form and include as the first page of the proposal.

City of St. Helens New Public Safety Facility

Construction Manager/General Contractor (CM/GC) Services RFP

5. EVALUATION OF PROPOSALS

5.1 General

Proposers for the CM/GC services will be evaluated and rated based on their written proposal and interviews. Submittal requirements for the proposal are detailed in above sections. It is the City's intent to select a single CM/GC contractor.

5.2 Competitive Range

An evaluation team will determine which proposals are within the competitive range in accordance with the evaluation criteria set forth below. Competitive range will be based on criteria and scoring of sections: 3.2.2 - 3.2.3 as noted below in section 5.4. The top three scoring firms will determine the competitive range and will be invited to interview.

5.3 Interviews

The evaluation team may interview a short list of finalists of three or more proposers to assist them with their evaluation and final selection of a CM/GC if deemed in the City's best interest. Interviewed proposers should be prepared to respond to questions related specifically to their proposals and other pertinent matters regarding the RFP.

Should your firm be invited to interview, questions will be directed to the proposed key Project staff. At a minimum, the corporate executive dedicated to the Project, the project manager, the project superintendent, project field engineer, project estimator, and the key individuals responsible for preconstruction services should be in attendance.

In addition to presenting qualifications, experience, and the project team's approach to the Project, the interviewees will be expected to respond to questions from the panel regarding the firm's proposal as well as additional questions that might be posed in correspondence directed to the most qualified proposers after this solicitation is closed. The length and format for the interview will be provided to the short-listed firms.

5.4 Evaluation Criteria

The City evaluation team will consider information provided in the written proposal and interviews, according to the following criteria, to rank the proposers in order of suitability to meet the City's needs. Maximum available points for both written proposals and interviews will be 150pts and the maximum points available for each evaluation criteria are listed in parentheses after the criteria. If interviews are not held, maximum points will be based on written total of 100pts.

1. 3.2.2.1 Management of Work: (25 points maximum)
2. 3.2.2.2 Proposed personnel and project organization (20 points maximum)
3. 3.2.2.3 Cost management (15 points maximum)
4. 3.2.2.4 Schedule, quality control and safety plans (10 points maximum)

5 3.2.2.6 Subcontractor/Supplier Selection Approach (5 points maximum)

6 3.2.3 Fee Proposal (Reference APPENDIX C – ELEMENTS OF PROJECT COSTS TO BE INCLUDED IN GENERAL CONDITIONS) (25 points maximum)

7 Interview of short-listed Finalist (50 points)

After evaluation by the team, the team will recommend to the City Council that the top-ranked proposer be invited to work with the City and that negotiations progress to finalize the contract. If the City is unable to successfully negotiate with the top-ranked proposer, the City reserves the right, at its sole discretion, to terminate negotiations and begin new negotiations with the next highest-ranked proposer.

The City reserves the right to waive informalities or to reject any and all proposals.

5.5 Award of Contract

If the City awards a contract pursuant to this RFP it will award a contract to the responsible Proposer whose proposal the City determines in writing is the most advantageous to the City based upon the evaluation process and criteria described in this RFP and the outcome of any negotiations authorized by the RFP.

END OF RFP

APPENDIX A

- **PROJECT DESCRIPTION – 98 pages**
- **FLOOR PLAN – 1 page**
- **SITE PLAN – 1 page**
- **GEOTECHNICAL REPORT – 80 pages**

APPENDIX B

- **EXHIBIT A – GUARANTEED MAXIMUM PRICE AGREEMENT – 29 pages**
- **EXHIBIT B – INSURANCE AND BONDS – 5 pages**
- **EXHIBIT C – AIA A201-2017 GENERAL CONDITIONS – 39 pages**
- **AMENDMENT 1 – MANDATORY TERMS FOR OREGON PUBLIC IMPROVEMENT CONTRACTS – 7 pages**

APPENDIX C

- **ELEMENT OF PROJECT COSTS TO BE INCLUDED IN GENERAL CONDITIONS – 1 Page**

APPENDIX D

- **MASTER SCHEDULE HIGHLIGHTS – 1 Page**

MACKENZIE.

DESIGN DRIVEN | CLIENT FOCUSED

ST. HELENS PUBLIC SAFETY BUILDING

SCHEMATIC DESIGN PRELIMINARY PROJECT DESCRIPTION

To
City of St. Helens

For
St. Helens Public Safety Building, St. Helens, Oregon

Submitted
April 3, 2023

Project Number
2210310.04

TABLE OF CONTENTS

PART 1

PROJECT DESCRIPTION

The following further describes the new St. Helens Police station:

1. The project will be located on an approximately 2.6-acre parcel at the SE corner of Old Portland Rd. and Kaster Rd. in St. Helens, Oregon.
2. The project includes vacation of the 7th street right of way. No right-of-way improvements are anticipated as part of this project.
3. The building is approximately 11,600 sf (including entry canopy, but not carport), one story, and will be designed to meet essential facility requirements.
4. The building has a 2,800 sf Design-Build installed carport on the back side of the facility.
5. The entire roof consists of a low slope roof. The northwest corner of the building will have a wood soffit entry canopy.
6. The construction classification of the building will be Type V-B construction with the following occupancies:
    a. B: Business (Majority of the building)
    b. S-2: Storage (Vehicle Storage)
7. The project includes mechanical, electrical, plumbing, technology, and fire protection systems.

A. SUBSTRUCTURE

A10 FOUNDATIONS

A1010 Standard Foundations

- Exterior bearing walls are constructed of structural brick supported atop continuous concrete strip footings and stem walls.
- Building columns are supported by conventional concrete spread footings with estimated dimensions per plan. Footings are set below and separated from slab on grade.
- Shear wall foundations are supported on continuous spread footings with estimated dimensions per plan and will continue 3’-0” +/- past ends of walls.

A1020 Special Foundations – *NOT USED.*

A1030 Slab on Grade

- Vehicle or movable storage: 6” concrete slab on grade over gravel base.
- All Other Areas: 4” concrete on grade over gravel base.
- Vapor barrier under all portions of the slab.
- Insulation to meet current energy code.

A20 BASEMENT CONSTRUCTION

A2010 Basement Excavation

- None.

A2020 Basement Walls

- None.

B. SHELL

B10 SUPERSTRUCTURE

B1010 Floor Construction

- Not applicable since building is only a single story.

B1020 Roof Construction

- **Roof Structure:**
- Main Roof: 1 ½" metal decking on steel open web joists (OWJ) at 7'-0" +/- o.c. supported by steel OWJ girders spanning to steel columns at roughly 25'-0" o.c.
- Entry Canopy: HSS tubes cantilevered off HSS posts buried in exterior walls along entry. Perimeter of canopy to be clad with continuous channel or hot rolled plate. Angle framing spans between HSS tubes topped with 20-gauge B deck.
- Pre-fabricated carport: steel structure and metal roofing.

B20 EXTERIOR ENCLOSURE

B2010 Exterior Walls

- Exterior walls are 8" structural brick masonry with 2x4 wood stud at 16" o.c. interior furring with R-9.5 batt insulation and R-9.5 mineral fiber board insulation with continuous air barrier (tested) with air gap: Interstate Bricks, Structural Brick, Atlas (7 5/8" D x 3 5/8" H x 15 5/8" L), Running Bond, https://interstatebrick.com Color: "Black Opal" Matte texture with accents of "Midnight Black" Scratch texture. Accent bricks to be same assembly as above except for the air gap. Water repellent on all masonry surfaces. Graffiti guard shall be applied 12'-8" from AFF. Reference character renderings and elevation drawings for locations and quantities. Smart MemBrain vapor retarder on interior face of wall framing. Provide expansion joints and control joints per industry standard and elevations. See exterior wall assembly details for additional information.
- Exterior Planter Wall: Natural Stone Base: Black Horse Alpine Ledgestone. 2'-6" tall around the base of public frontage wall. Reference character renderings and elevation.
  - ∉ https://www.mutualmaterials.com
- entire building. Reference character renderings.
- Canopy soffits: light gauge infill framing supporting tongue and groove wood soffit paneling.
- Flashings: all exterior flashing to be anodized dark bronze aluminum to match the curtainwall and storefront frames.
- Dynamic sealant joints with backer-rod at all penetrations in the exterior envelope.

- Mechanical Roof Screens: assume 9'-0" tall screen wall with tube steel structure, light gauge infill framing, and metal paneling to match metal panel siding. See roof plan for extent and detail drawings for additional information.

B2020 Exterior Windows

- Storefront Frames: Kawneer 601UT storefront system. Color: Dark bronze. Architectural Class 1, anodized aluminum finish. See drawing elevations for quantities.
- Curtainwall Frames: Kawneer 1600UT curtain wall system; Dark Bronze, anodized aluminum finish. (Only at Lobby). Intermediate HSS support framing at all curtain walls.
- Glazing #1: Level III Bullet Resistant glazing. See elevation drawings for quantities.
- Glazing #2: Glazing: 1" insulated glass; ¼ Guardian SN 68 (#2) Clear Annealed, ½" Mill Spacer, ¼" Clear Annealed. Values: Solar heat gain coefficient (.36), U-Factor (.38). Low E coating.
- Glazing #3: Glazing: 1" insulated spandrel glass.

B2030 Exterior Doors

- Storefront Doors: Aluminum framed storefront entry system by Kawneer. See drawings for size.
- Door Hardware: Panic hardware at all exterior doors except at Fire Riser, Electrical and Emergency Electrical Rooms. Finish: Brushed nickel.
- Secured entry 3'-0" (minimum), insulated steel personnel door with fully welded 14-gauge un-grouted steel frames with view panel. See elevation drawings for quantities.
- Power operated telescoping sliding door at the Mud Room exterior and interior entrance doors (7'-0" W x 8'-0" H): Tormax Automatic Series TX9420TL with TORMAX iMotion 2301 direct drive system. Finish: Dark Bronze. See plans and elevations for locations.

B30 ROOFING

B3010 Roof Coverings

- Low slope built-up roofing system (Johns Manville or Firestone) over ½" protection board over (2) layers of continuous rigid insulation with joints staggered (min R-30 total) over ½" plywood substrate. 30-year warranty. See roof assemblies on detail sheet.
- Roof walkway pads. See roof plan for locations and area.
- Solar panels consisting of 1.5% of the overall project budget to be installed on the roof. See roof plan for locations.
- 4" concrete sound attenuation slab extending 8'-0" out from the sides of all mechanical units on the roof. Continuous steel bent plate around perimeter of attenuation slab. Assume 1'-6" tall by 0'-8" thick concrete mechanical unit curbs with spring isolation in addition to attenuation slab.
- 8'-0" +/- tall mechanical screen constructed of HSS tubes and screening around perimeter of attenuation slab. HSS tubes approximately 6'-0" o.c. with hss beams at third points of posts supporting screening.
- Dark bronze anodized aluminum gutter and downspouts at entry canopy.

B3020 Roof Openings

- Roof hatch (steel and insulated) to be 36" x 60" at the top of the pre manufactured ship ladder in the Mechanical Room.

C. INTERIORS

C10 INTERIOR CONSTRUCTION

C1010 Partitions

- Typical wall type P1A: 2x4 wood framing with ⅝" gypsum wallboard (both sides). Additional wall types exist for varying STC ratings. See Sheet A0.02 for wall assemblies and floor plan for location and quantities.
- Rated wall assembly at electrical room.
- Sound attenuation insulation in all interior walls with acoustical sealant at sill and head conditions, typical.
- Interior walls run to the bottom of structural decking, typical.

C1020 Interior Windows

- Interior Relites: Frameless butt glazing, from finished floor to match height of adjacent door frame. 18" width at office and full face of Briefing room, per plan.
- Interior window:
- Frameless butt glazing, from 36" AFF to height of adjacent door frame at Office Evidence Processing, and Evidence Tech, see plan for locations. Frameless, clerestory butt glazing from 72" AFF to height to adjacent door frame at Sergent width per plan. Location: Sergent Provide custom window film allowance as noted on finish plan.
- Provide custom window film at all type F doors and side lites.
- At Records counters, provide Armortex system with level 3 bullet resistant glazing and baffle speaker system. See plans for lengths and locations.

C1030 Interior Doors

- Solid wood doors: Solid core, stain grade wood veneer doors with painted, fully welded hollow metal frames.
- Solid wood doors with full glazed panel: Solid core, stain grade veneer doors with full glazed vision panel with wood trim, with painted fully welded hollow metal frames at all offices, meeting rooms, Defensive Tactic Training.
- Door hardware: Schlage ND series typical at interior wood doors. Panic hardware at Lobby.

C1040 Fittings

- Lockers and Shelving:
    - Freestyle Personal Storage Lockers by Spacesaver, Inc. Size; 18" wide by 24" deep by 72" high. Includes locker and 15" boot locker (bench). Two-tone locker color, custom stained bench. See floor plans for extent and

quantities.
    - Pass-Thru Evidence Lockers by Spacesaver, Inc. 4x units, 36" wide each, one unit to include refrigeration.
    - Weapons Storage by Spacesaver, Inc. (1x) wall mounted four capacity handgun lockers outside of Hard Interview room.
    - (4x) universal lockable weapons racks by Spacesaver
    - (2) lockable ammo cabinets by Spacesaver
    - Lockable range ammo storage by Spacesaver at Evidence Vehicle, see plans for quantities.
    - Bulk storage shelving by Spacesaver at Evidence Storage.
    - High Density Storage shelving by Spacesaver at Evidence Storage and Records storage. See plans for quantities.
    - Gorilla shelving at Drug room. See plans for quantities.
- Visual display boards to be provided at:
    - Briefing room, (2) 4x8 glass whiteboard.
    - Evidence Tech, (1) 4x6 glass whiteboard.
    - Officer Evidence Processing, (1) 4x8 glass whiteboard.
    - All private offices, (1) 4x4 glass whiteboard.
- Interior signage: Provide allowance for code required and individual room signage: Frosted glass signs with stainless stand-offs and individual cut lettering
- Corner Guards: Provide 4'-0" tall stainless steel corner guards at all exterior corners and cased openings.
- Toilet Accessories: Provide Bobrick Contour Series. Provide combination recessed toilet paper, seat cover and waste receptacles, touchless deck mounted soap dispenser, Touchless paper towel dispenser and wastepaper receptacle, shower rods and curtain rings, including two robe hooks per shower.
- All Toilet Shower rooms to have wall-mount mirror at full-length of counter to align with top of wall tile.
- Single Occupancy toilet room to have 24"x36" wall-mount mirror above sink location.
- Acoustic panels: See finish plan on A1.13 for location and finish schedule on A6.13 for product information.

C20 STAIRS

C2010 Stair Construction

- Pre manufacture ship ladder located in the Mechanical Room that goes up to a roof hatch. https://precisionladders.com/products/ships-stairs/

C2020 Stair Finishes

- See stair construction above.

C30 INTERIOR FINISHES

C3010 Wall Finishes

- All walls to receive two coats of paint over a primer coat (3 coats total), typical unless

noted otherwise. Assume 40% accent paint locations with a total of 6 colors.
- Provide Schluter aluminum transition at exposed edges or wall tile and base and interior/exterior corners.
- Porcelain accent tile at break room from counter to underside of upper cabinets and floating shelves. Provide Schluter aluminum transition at exposed edges.
- FRP on two walls in Janitor closet up to 5'-0".
- Wall protection: Acrovyn wall protection and coordinating trim pieces to 4'-0" AFF on all corridor walls, see finish plan for locations.
- Full height acoustic wood paneling on 50% of wall in Lobby. See interior schedule for product info.
- Acoustic Gypsum board, GypTone, USG Ensemble or similar at all walls of Lobby.

C3020 Floor Finishes

- Carpet tile: Provide Cushioned back carpet tile throughout meeting areas and private offices. Assume up to six patterns, with multiple installation patterns.
- Polished concrete at all circulation, lobby, locker rooms, toilet rooms, shower rooms and as noted on finish plan.
- Porcelain tile base at all walls at toilet, shower, and locker rooms. Provide Schluter aluminum transition at exposed edges or wall tile and base and interior/exterior corners.
- Transitions: Provide Schluter aluminum transition at all flooring transitions.
- Walk-off Matt carpet tile at Vestibule and Mudroom, see finish plan and finish schedule.
    - Base: typical at all locations where tile is not defined
        - Rubber base: Roppe, 4" coved base, see finish schedule.
        - Wood Base: 4" H (note, AP-1 match for wood type), stained to match architects' sample Ap-1 for wood type at Lobby.

C3030 Ceiling Finishes

- Assume 9'-0" to 10'-0" ceiling height, depending on location. See reflected ceiling plan.
- Suspended Acoustical tile ceiling:
    - SAT-1: Assume Armstrong Ultima, 9/16" Beveled Tegular 2x4 ceiling tile with 9/16 Suprafine suspensions system, color: blizzard white.
    - Secure suspension system in Hard Interview room, see reflected ceiling plan for locations.
- Open to Structure: Painted structure, piping, ductwork, SAT cabling, typical where exposed per plan.
- Soffits: Painted gypsum board, per plan.
- Acoustic baffles: Lamvin, 2" solid core suspended ceiling baffles, or similar at Defensive Tactics room.

D. SERVICES

D10 CONVEYING

D1010 Elevators and Lifts – *NOT USED*

D1020 Escalators and Moving Walks – *NOT USED*

D1090 Other Conveying Systems – *NOT USED*

D20 PLUMBING

D2010 Plumbing Fixtures (ADA compliant as appropriate) - See attached product sheets.

- Water Closets: Porcelain, wall-mounted, provided with sensor operated, hard wired 1.28 GPF flushometer valves.
- Lavatories: Porcelain, under-mount sinks at restrooms.
- Sinks: Stainless steel, undermount.
- Faucets:
    - Sensor operated, hard wired with satin chrome finish.
    - Gooseneck faucet at all kitchen/coffee locations
    - Showers: Pre-molded fiberglass, accessible (roll-in)
    - Mop sinks: Stainless steel construction
    - Hot and cold-water hose stations will be provided at Covered Parking and Mud Room.
    - Emergency Shower: Emergency eyewashes will be provided. Emergency eyewashes will be supplied tepid water from an emergency mixing valve assembly.

D2020 Domestic Water Distribution

- Domestic cold water distributed to plumbing fixtures at an initial pressure between 50 and 80 psi using Type L copper piping above grade with lead-free solder joints, Type K copper piping below grade with brazed joints.
- **Base Plumbing: Better Option** - The domestic hot water will be provided by electric storage water heater with circulation system. The recirculation pump will be monitored by the BAS system. Master thermostatic mixing valve will be provided at water heater.
- Hose bibbs will be provided at 100-foot intervals around the perimeter of the building.

D2030 Sanitary Waste & Vent

- Cast iron sanitary and storm sewer piping with heavy-duty couplings used to collect waste from plumbing fixtures and connect to building's sewer service. Cast iron pipe will be accepted for sanitary vents.
- Piping systems are to be provided with cleanouts at every 135-degree change in direction and at the upper terminal of each branch line.
- Electronic trap primers will be provided.
- Floor drains will be provided in all single-user restrooms, mechanical room and fire riser room.

D2040 Storm Drainage

- Interior roof drains, cast iron piping with no-hub bands. Roof overflow drains to daylight to the exterior of the building, primary roof drains will connect to the site

storm water system.

- A primary storm water drainage system will be provided to serve all roof drains. The primary storm water drainage system piping will be routed down through the building, to drain by gravity and connect to the storm facility at the building exterior.
- Storm Facility – The storm facility consists of 18" of a Clean Water Services approved water quality topsoil underlain by 12" of drain rock with a perforated storm pipe in the drain rock section. The perforated pipe flows through an overflow drain to a control manhole. The control manhole has a control structure with orifices that release the storm water at or below existing release rates from the site.

D2090 Other Plumbing Systems

- Shop air compressor will be provided. There will be a vertical receiver with an air compressor mounted on top. Air Dryer will be provided.

D2100 Plumbing Devices

- Trap Primer Systems: Trap primers will be provided for all floor drains, floor sinks and hub drains.
- ASSE 1070, point of use mixing valves (temperature limiting device) will be provided on the hot water supply to all public use plumbing fixtures.
- Access panels will be provided for maintenance access to shut-off valves and shock arresters.
- Domestic Water Backflow Preventers, will be provided as follows:
    - Incoming building domestic water service
    - Water supply to the irrigation system

D30 HEATING, VENTILATING AND AIR CONDITIONING (HVAC)

D3050 Heat/Cooling Generating Systems

- **HVAC Heat Pump Rooftop Units with Electric Backup**
    - Three rooftop units with supply and exhaust fans with variable frequency drives (VFD's) to control air volumes based on space heating and cooling needs. Units will be the primary source of outside air ventilation during occupied hours. Air will be conditioned using a heat pump with auxiliary backup electric heat. Simultaneous heating and cooling will not be allowed. Discharge air temperatures from the rooftop units will be maintained between 55F and 65F during occupied hours. The temperature setpoint will vary based on the average temperature of zones served by the unit. Additional heating will be provided by electric reheat in the zone's terminal unit. The unit serving the Offices and Locker rooms will be equipped with a heat recovery plate.
    - Equipment:
        - One 5,000 CFM RTU with heat recovery to serve Lockers
        - One 5,000 CFM RTU to serve Office Area
        - One 2,000 CFM RTU to serve Evidence Area
    - Thirty-seven terminal units equipped with electric reheat
- Morning warm-up and night purge control sequences will be used during unoccupied

hours to decrease energy use and provide a space temperature within design tolerance prior to occupancy. Morning warm-up will start a maximum of three hours prior to occupancy to bring space temperatures to the occupied heating setpoint. This will be accomplished by starting the supply fan, closing the outside air damper, opening terminal unit dampers and heating the recirculated air. A night purge sequence will open the outside air dampers fully during unoccupied hours and start the supply and exhaust fans to pre-cool the occupied space during periods of hot daytime temperatures and cool nighttime temperatures.

- Ductless split systems will be used for Server Rooms and Electrical Room. These consist of an indoor fan coil and outdoor condensing unit.
- Indoor design temperatures maintained between 70- and 75-degrees F year-round. Server Room maintained between 70- and 72-degrees F.
- Air distribution will be through supply air branch ductwork from stub out of the main duct to the VAV terminal units and diffusers. Return air will be ducted back to the units.
- Variable air volume boxes: Single duct VAV and parallel fan-powered terminal units with Direct Digital Controls (DDC). Fan-powered terminal units will serve perimeter zones. Single duct VAV units to serve interior zones. Electric reheat coils manufactured by the manufacturer of the VAV box will be provided integral to the VAV box.
- Controls to be DDC and tied to main Building Management System (BMS).
- Medium pressure ductwork (ductwork upstream of VAV terminal units) will be sized at no more than 2000 fpm. Low-pressure ductwork (ductwork downstream of VAV/FPBs, HRV, and packaged constant volume units) will be sized at 0.08” of water column and no more than 600 feet per minute (FPM). All sheet metal design and installation will be per SMACNA standards. Flexible duct is not allowed in exposed areas. Inlet duct to VAV box to have minimum of 4 duct diameter straight duct.
- VAV Boxes will be installed at each zone for temperature and ventilation control.
- A volume-balancing damper will be provided at each branch duct. All volume dampers in insulated systems will be provided with a 2-inch standoff. All volume dampers shall be accessible. If they are not accessible, a remote damper operator shall be provided.
- All air distribution equipment will be provided with equipment tags.
- All duct systems will be thoroughly cleaned prior to turnover.

D3060 HVAC Instrumentation and Controls

- The system will consist of series of direct digital controllers interconnected by a local area network. BAS system must offer trending, scheduling, downloading memory to field devices, real-time “live” graphic programs, parameter changes of properties, set point adjustments, alarm/event information, confirmation of operators, and execution of global commands. Fire alarm systems, security systems and elevator systems shall not be controlled by a BAS.
- Heating and cooling energy in each zone shall be controlled by a temperature sensor located in that zone. Independent perimeter systems will have at least one temperature sensor for each perimeter zone. A 5°F dead band will be used between independent heating and cooling operations within the same zone.
- Night set-back and set-up controls will be provided for all comfort conditioned spaces, even if initial building occupancy plans are for 24-hour operation. Morning warm-up or cool-down must be part of the control system. Controls for the various operating conditions must include maintaining pressurization requirements.

- Air Systems. Systems supplying heated or cooled air to multiple zones will include controls that automatically reset supply air temperature required by building loads or by outdoor air temperature. No simultaneous heating and cooling will be permitted.
- HVAC control algorithms shall include optimized start/stop for air-handling units and all associated equipment and feed forward controls based on predicted weather patterns. Lighting control shall be accomplished by use of separate control equipment that is not connected to the BAS. Optimal start/stop calculates the earliest time systems can be shut down prior to the end of occupancy hours and the latest time systems can start up in the morning with the aim of minimizing equipment run time without letting space conditions drift outside of the comfort setpoints. Programs also run economizer cycles and heat recovery equipment.
- The BAS shall have the capability to allow building staff to measure energy consumption and monitor performance, which is critical to the overall success of the system.

D3070 Air Distribution Systems

- All ductwork sheet metal will be galvanized.
- Supply ducts upstream of air boxes: SMACNA standards for medium pressure (0" to 4").
- Return air duct, supply duct downstream from terminal boxes, and general exhaust ducts: SMACNA low pressure duct standards (0" to 2").
- All supply, return, and exhaust ducts will be sealed for a maximum of class per SMACNA.
- All supply ducts upstream of terminal boxes will be leak and pressure tested for a maximum of class per SMACNA.
- Flexible Ducts: Pre-insulated with vapor barrier, used for diffuser connection and in concealed ceiling space only.
- Insulation for Ductwork:
    - Concealed supply and return ducts: R-8, 1-1/2" thick fiberglass blanket duct wrap with foil facing.
    - Exposed supply and return ducts: Insulation is not required for ductwork exposed in conditioned space.
    - Internal duct liner: 1-inch thick, Armaflex.
    - Exhaust ducts: Not insulated except for acoustic liner where required.
- Balancing Dampers: Adjustable balancing dampers in each branch take-off for proper control of balancing of the air distribution system will be provided. All operating levers will be readily accessible and be of extended type so as to not be in contact with insulation. Where dampers are inaccessible for adjustment, ceiling flush mounted concealed damper regulators with rod extension to damper, and die cast gears, as manufactured by Ventlock and Young Regulator, or equal will be provided. Dampers will be Ruskin, Johnson, or equal.
- Seismic Restraints: Refrigerant piping, ductwork, and equipment will be provided with adequate restraints conforming to the Oregon Structural Specialty Code.

D3080 Testing, Adjusting, and Balancing

- An independent testing and balancing contractor will be required (as a sub-contractor

to the general contractor), NEBB or AABC certified to balance all air systems and heating and cooling equipment to the required quantities; and to verify the capacity and operating conditions of each piece of equipment.

- They will submit detailed test procedures, forms, etc. for approval prior to beginning the work.
- After balancing is complete and all airflows have been balanced to within +/- 5% of design airflow, the contractor shall submit three complete balance reports.
- Balancing Contractor shall balance the VAV system for both maximum zone airflow and minimum ventilation airflow. Contractor to document minimum required inlet pressure required for maximum airflows.

D40 FIRE PROTECTION

Fire Alarm System Codes and Standards

- Systems will be designed in accordance with the following codes:
    - Oregon Structural Specialty Code (adopted edition).
    - Oregon Fire Code (adopted edition).
    - Oregon Electrical Specialty Code (adopted edition).
    - Oregon Mechanical Specialty Code (adopted edition).
    - Municipal ordinances and amendments.
- The following reference standards will be used in design:
    - ASTM – American Society of Testing and Materials.
    - NEMA – National Electrical Manufacturers Association.
    - NFPA – National Fire Protection Association.
    - NFPA 72, National Fire Alarm and Signaling Code (adopted edition).
    - UL – Underwriters Laboratories.
    - FM – FM Global Approval Guide.
    - ADA – Americans with Disabilities Act.

D4010 Fire Alarm and Detection Systems

- An automatic, addressable, fire alarm system will be provided to meet the requirements of the adopted editions of the Oregon Structural Specialty Code (IBC with Oregon Amendments), Oregon Fire Code (IFC with Oregon Amendments) and NFPA 72.
- The fire alarm system will provide system alarm, supervisory and trouble signal monitoring, and alarm notification for the building. A digital alarm communicating transmitter will facilitate monitoring of the individual signals to the off-site receiving station.
- The system will have batteries to provide a secondary power source in case of primary power loss to the control panel or any remote power supply.
- Activation of system fire detectors, manual pull stations, sprinkler water flow switches and suppression systems will initiate alarm signals on the fire alarm control panel (FACP) and fire alarm annunciator (FAA), and activate the audible and visual notification appliances throughout the building. Activation of sprinkler tamper switches and HVAC duct smoke detectors will initiate supervisory signals, which will annunciate on the FACP and FAA.
- Manual pull stations will be provided at building exits.
- Automatic smoke detection will be provided at the ceiling in all spaces.

- Audible and visible notification appliances will be provided throughout the building.
- Control outputs will be provided for fire safety functions such as elevator control, air handler shut down, fire smoke damper closure and fire door release.

D4020 Automatic Fire Sprinkler System

- The fire alarm system will be contractor designed.
- System annunciation will be located in the main entrance for fire department responders.
- An automatic, addressable, fire alarm system will be provided to meet the requirements of the adopted editions of the Oregon Structural Specialty Code, Oregon Fire Code, and NFPA 72.
- The fire alarm system will provide system alarm, supervisory and trouble signal monitoring, and alarm notification for the building. Any power supplies will have batteries to provide a secondary power source in case of primary power loss to the control panel or any remote power supply.
- Activation of system smoke detectors, manual pull stations and fire sprinkler water flow switches will initiate alarm signals on the fire alarm control panel (FACP) and fire alarm annunciator (FAA), and activate the audible and visible notification appliances throughout the building. Activation of HVAC duct mounted smoke detectors and fire sprinkler valve tamper switches will initiate supervisory signals, which will annunciate on the FACP and the FAA. Fire alarm, supervisory and trouble signals will be transmitted off site to a remote monitoring station.
- Manual pull stations will be provided at building exits as required by code.
- Automatic smoke detection will be provided for protection of fire alarm control equipment and for activation of fire safety functions.
- System type combination smoke and carbon monoxide detectors with audible sounder bases will be provided within sleeping areas and within enclosed common areas.
- Audible and visible alarm notification appliances will be provided throughout the building.
- Control outputs will be provided for actuation of fire safety functions, such as air handler shut down, fire smoke damper closure, and fire door release.

D4040 Sprinklers

- The fire sprinkler system design will be performed by the contractor.
- The building will be provided with a wet pipe system per NFPA 13, local building codes and Fire Marshal requirements. Areas subject to freezing, such as overhangs, canopies and unconditioned spaces, will be protected with a dry pipe system or dry sprinklers.
- Sprinklers, valves, switches, pipe, fittings, backflow preventers, hangers, sway braces and the like will be UL Listed or FM Global Approved for fire protection.
- Quick response sprinklers will be provided in Light Hazard areas.
- Piping will be concealed where possible.
- Polyester finish with polyester escutcheon. Sprinklers in unfinished areas will be bronze finish.
- Concealed heads in gypsum board ceilings, painted to match ceiling. Semi-recessed heads in suspended ceilings.
- There will be a new water service to the building. A double check valve backflow prevention assembly, listed for fire protection, will be provided between the fire

sprinkler system and the public water supply connection.
- Seismic sway bracing, interval-and end-of-branch line restraints will be provided for the sprinkler system.
- Provide sprinklers on underside of exterior canopies (at entry and covered parking).

D4090 Other Fire Protection Systems

- Server room to have a single interlock preaction system.
- The server room will utilize air sampling smoke detection to activate the preaction sprinkler control valve.

D50 ELECTRICAL

- The design goals of the project will be to provide electrical systems that provide flexibility, adaptability and accessibility for both the present and future needs.

D5010 Electrical Service and Distribution

- The serving utility is PGE. PGE is reviewing the best method and pathway to provide the building power. An 800 amp, 277/480V, 3 phase, 4 wire service will be provided with a single utility meter.
- The building will be provided with an oil filled, pad mount transformer. Refer to SD site plan E0.11 in the appendix. A utility vault and raceway connections the utility point of service, and from the vault into the building main distribution panel will be provided per the local utility standards. The utility will provide the primary conductors, the pad mounted transformer, and the secondary conductors into the building main distribution panel (4D-4E).
- The main service will be approximately 800 amps and the main service voltage of 480Y/277V will be used to feed lighting and large mechanical loads. A secondary voltage of 208Y/120V will be derived using energy efficient dry type transformers providing a level of isolation from other loads and deriving new a grounded neutral point. Power distribution throughout the building will be accomplished with underground, conduit and wire, feeders. The mechanical room will contain step down transformer and 208vac branch panel to serve the mechanical loads in the adjacent areas. Satellite 208/120V panelboards will provide power for the general-purpose loads in the adjacent areas.
    - Refer to SD one-line diagram E7.01 and SD floor plans E0.12, E3.10, and, E3.11 in the appendix.
- Quality of power supply is affected by noise sources within a facility as well as outside (utility transferred). The power distribution system will include measures to help safeguard equipment from utility surges and transient conditions. Surge Protective Devices (SPD) will be provided at the service entrance electrical equipment for a first level of protection and at the emergency branch panelboard for a second level of protection. A third level of SPD's could be utilized by the owner using portable plug strips with surge protection at equipment. Load types will be separated on panels to prevent large mechanical loads from affecting general-purpose branch circuitry.
- Copper conductors routed in EMT raceway will be used throughout the building for branch distribution. Flexible metal clad (MC) cabling will be used in areas for local

distribution of branch circuits, the homeruns back to the panel will be EMT/copper conductors. Ground fault circuit interrupter receptacles will be provided in toilet rooms at sinks, roof, outdoor and wet areas.

- Provide duplex receptacles on 25-foot centers in shell spaces.
- Provide receptacles and branch wiring to accommodate furniture layout. Provide receptacles on 10-foot centers in all office areas and 25 foot centers in corridors and public areas. Provide connections for all systems furniture, 3 circuits for every 6 stations.
- Electrical power connections will be made to all mechanical equipment, to include providing all electrically associated devices such as disconnect switches, contactors, magnetic or manual starters, lock-out switches, etc., not furnished under Division 23. VFDs furnished under Division 23 and installed under Division 26.
- Electrical power connections will be made to support miscellaneous equipment. Connections include disconnect safety switches and wiring to support interlocks to remote devices.
- A grounded power system will be provided in compliance with the NEC. This ground system consists of the building service ground consisting of multiple ground rods, UFER ground, ground ring around the building perimeter and bonding to the water service and structure steel. The grounding system will be extended throughout all electrical systems in facility. Grounding busses will be provided in the electrical and server room. All metallic systems will be grounded to the building grid. An equipment grounding conductor will be provided in all feeder and branch wiring runs.
- Emergency and Optional Standby power will be provided by a 400 kW diesel fired generator. The generator will be exterior mounted with a weatherproof, sound attenuated housing and integral fuel tank. Two separate feeders with overload protection will derive from the generator eliminating the need for a separate emergency distribution board. Separate transfer switches are provided for emergency loads and standby loads. Onsite fuel storage will provide a minimum of 75-hours of operation at full load.
- Emergency loads will be those designated as life safety meeting the criteria of NEC 700 and will include egress lighting, alarm systems, and smoke control systems. Per NFPA 110 7.2, a separate main emergency electrical room will be provided.
- Optional Standby loads will include cooling/heating, security systems, computers, and the following rooms (server, evidence, drug, equipment storage, armory). Select receptacles to be included for the following rooms (briefing, patrol, sergeants, hubs, break room,) and will meet the criteria of NEC 702.
- A renewable power source using PV (Photovoltaic) is proposed for the facility. The photovoltaic array will be located on the roof and will be approximately 56kW in size (Calculated from Oregon State's requirement for Green Energy Technology. 1.5% of total contract price). Power inverter(s) will be located within the building and tied into the building normal power source. PV system panel technology to be used panels with a minimum efficiency rating of 20 percent.
- Provisions will be made for (5) Electric Vehicle Charging stations for future installation. (1) charger will be installed with the project.
- Alternative pricing: Provisions for (10) police fleet Electric Vehicle Charging stations for future installation, including conduit infrastructure back to planned secondary outdoor service location.

D5020 Lighting

- General
  - Lighting levels will be designed in accordance with the recommendations of the Illuminating Engineers Society (IES) and with any specific owner requirements.
  - Exterior and Interior egress routes will be illuminated to code required and any owner specified levels. Fixture spacing will be adjusted as needed to meet these levels. Final fixture locations to be confirmed with photometric analysis to ensure target light levels will be achieved.
  - Lighting fixtures will be selected based on visual comfort, energy efficiency and color rendering.
  - The primary goal of the lighting design will be to provide illumination levels appropriate for security and safety while being a high performance and overall energy efficient system.
  - Cutsheet for lighting fixture types included below can be found in the Appendix. All exterior light fixtures are rated for exterior/wet conditions.
- Site and Exterior Building
  - Parking Lot: Parking poles will be type S1 serires or similar with optics optimized for parking lot coverage. Poles will be spaced approximately 30ft on center and provide parking lot illumination levels appropriate for security and safety.
  - Flagpoles: Finial style lighting fixtures similar to type S3 will be mounted at the tops of the flagpoles and provide nighttime illumination for the raised flags.
  - Monument Sign: Continuous lensed LED channel similar to type S4 will be located at the base of the signage and provide upward illumination.
  - Site Furniture: Bench with integrated lighting similar to type S4 will provide general area illumination.
  - Site Planters: Continuous lensed LED channel type S4 will be coordinated with planters to provide low level perimeter illumination.
  - Building Front: Security bollards similar to type S2A and S2B will be vehicle impact resistant and provided with integral LED lighting. Security bollards will be provided with sufficient footing to ensure structural integrity is maintained. Locate security bollards approximately 5ft on center to prevent vehicular passage in between. Coordinate frequency of illuminated vs non illuminated security bollards to ensure adjacent egress route is adequately illuminated.
  - Entryway Canopies: Small diameter downlights similar to type S8 will be recessed into the canopy and provide required egress/exit-way illumination levels. Coordinate with electrical/housing requirements to best integrate with the architecture.
  - Building Perimeter: Surface mount wall fixtures similar to type S10 will be strategically located to provide egress level illumination at exit doors. Locations will be coordinated with building elevations.
  - Carport Structure: Surface mount downlights similar to type S11 will be located to provide light levels appropriate for parking areas.
  - Site Buildings: Surface mount strip light similar to type S12 will be located to provide adequate illumination for related tasks.
- Interior
  - 911 Vestibule: Recessed downlights similar to type L10A will provide required egress illumination levels.
  - Main Entry Lobby: Decorative surface mount similar to type L13 or short drop pendants will be arranged to provide ambient level illumination. Additional cylinder downlights similar to type L7 will be located as needed to provide supplementary illumination.
  - Corridor/Hallways: Will provide general illumination and wall accenting with 2X4 SAT and 2x2 lighting.
  - Individual Offices and Conference Rooms with SAT: General task illumination will be provided by 2x4 recessed fixtures similar to type L8 or linear fixtures similar to type L4 located as needed to

achieve target light levels. Light fixtures at smaller offices are best located at the center of the room to provide similar light levels on perimeter walls.

- ∉ Records, Records Storage, and Examiner: Recessed 2x4 fixtures similar to type L8 will be located to achieve target light levels.
- ∉ Break room: Decorative pendants similar to type L18 will be suspended and provide illumination levels appropriate for this space type. Additional downlights similar to type L10A or L10B will fill in at circulation areas. Undercabinet fixtures similar to type L14 will be located as needed.
- ∉ Brief and Patrol Rooms: Suspended linear fixture similar to type L4 will provide general/task level illumination with recessed downlights similar to type L10A will infill surrounding circulation.
- ∉ Defensive Tactic Training: Suspended linear fixtures similar to type L12 will provide general illumination. Suspension heights to be coordinated with anticipated activities.
- ∉ Lockers: Surface mount strip lights similar to type L20 will be located atop lockers and provide indirect/ambient illumination. Additional recessed downlights similar to type L10B may be needed to supplement indirect illumination.
- ∉ Mud Room and Individual Detective Spaces: Recessed 2x2 similar to type L19 will provide illumination levels for tasks at these locations.
- ∉ Armory: Suspended linear fixtures similar to type L12 will be located here.
- ∉ Restrooms and T/S Rooms: Recessed downlight similar to type L10A will be located at circulation and above showers. Additional vanity fixture similar to type L5 will be located at mirrors.
- ∉ Wellness: Surface wall mount vanity similar to type L5 will provide a user controlled light level suitable for this quiet space.
- ∉ Officer Evidence Processing, Evidence Storage, and Evidence Tech: Suspended industrial pendant similar to type L12 will provide ambient and task illumination. Supplementary task illumination will be provided by task lighting equipment as needed
- ∉ Electrical, Mechanical, Janitor, Storage, Fire Riser, Fire Sprinkler, and Server rooms: Suspended linear strip light similar to type L12 will provide required light levels

- Lighting Controls
    - Daylight sensors to be provided in perimeter spaces as required by Oregon Energy Code.
    - Occupancy/Vacancy sensors to be provided as required by Oregon Energy Code.
    - Spaces with more than one fixture type will be provided with controls for each fixture type to enable maximum flexibility. Controls will be manual on and automatic off by vacancy sensors.
    - Dimming will be provided for all fixture types.

D5030 Communications and Security

- Voice, Data, and CATV Horizontal Cabling Infrastructure
    - This facility will be cabled with 4-pair unshielded twisted pair (UTP) Category 6 voice and data network cabling for all station outlets. Wireless access points will be cabled with unshielded Category 6A. The design will be based on manufacturers offering at least a 20-year, end-to-end solution warranty for the completed installation of these products.
    - Each telecommunications outlet will consist of up to four 8-pin connector modules. Each outlet will be capable of delivering voice or data as selected by the Owner. Outlet locations will be coordinated with the Owner to ensure exact placement as needed.
    - Each outlet will also be capable of accepting a CATV insert/cable if required

by the Owner. The CATV insert would be modular and designed to be used in the modular faceplate. The CATV outlet locations would utilize RG-6 Quadshield coaxial cable. The specific location requirements will be coordinated with the Owner. Amplifiers and splitters will be specified as required to maintain video signal integrity

- Telecommunications outlets will be provided in all required spaces, minimum 2 outlets per office and 2 cables per cubicle. Each outlet will consist of up to four 8-pin connector modules. Each outlet will be capable of delivering voice or data as selected by the Owner. These TO locations will be coordinated with the Owner to ensure exact placement as needed.
- Wireless coverage will be provided throughout the building. Each wireless outlet will be cabled with Category 6A cabling and consist of two cables per outlet. Wireless access points are Owner furnished; Owner installed.
- Cable between the Police Server room and field devices will run through corridors via cable tray.

- Server Racks
  - The Police Server Room will include (1) 7'x19" adjustable four post standalone equipment rack.
  - Quantities to be determined during the design phase based on total number of cables and the amount of Owner provided and installed equipment.
  - All racks will be seismically braced with overhead ladder racking and properly anchored floor hardware. The equipment racks will be mounted to a concrete pad.

- Cable Management
  - All equipment racks will have one 6-inch vertical wire manager on each end and in between each equipment rack.
  - All equipment racks will have one single unit horizontal wire manager at the top and bottom of each column of patch panels and equipment, and one double unit horizontal wire manager in between each patch panel. Additional horizontal wire managers will also be provided for Owner-installed equipment.

- Paging
  - A complete paging system will be provided throughout the building. This system will be designed to provide program distribution and "all-call" to speakers.

- Sound Masking
  - A small, approximately (4) speaker sound masking system will be provided in areas identified specifically as requiring sound masking. This system will be designed to provide a background level of "pink" noise and make conversations originating in the protected area less intelligible. The Sound masking system will work in conjunction with the paging system.

- Clock System
  - The need for a wireless clock system will be determined during DD, in the briefing, patrol, detective area and records. The basis of design will be

Sapling.

- Audio-Video
    - Several offices will have flat screens with CATV and an HDMI input from a wall location to the flat screen.
    - Digital signage may be placed in the lobby.

- Electronic Access Control and Intrusion Detection
    - Card readers will be placed at main entrances and other secure areas as directed by the Owner. Card readers will be OSPD compatible and proximity type. All CR door assemblies will have Door Contacts.
    - Door contacts will be placed on any remaining exterior doors, roll-up doors and where directed to all door position monitoring.
    - A stand-alone Intrusion Detection or integrated Access Control / Intrusion Detection system will be placed in the Evidence Room with a keypad to arm or disarm the system. Motion detection will be ceiling mounted and incorporate dual technology, passive infrared and microwaves.
    - In order to function, a call center or intrusion alarm service will need to be contracted for, along with compatible telephone service.
    - An Access Control Pedestal with Intercom, Access Control and Video Surveillance will be placed at least 15' from each of two motorized, vehicle slide gates and operators. In order to serve the driver, preliminary plans call for the pedestals to be placed at the left side of each gate entry, which will put using vehicles on left side of the road while entering.
    - Authorized vehicles will carry "garage door remote" style credentials to allow access from greater distances and allow entry without pulling up to the security pedestals.
    - Visitors will have the ability to initiate a call from each security pedestal. Intercom units will communicate via the owner's telephone system or stand-alone intercom master stations to view and assess incoming visitors. If authorized, system users will be able to remotely open entry gates.

- Video Surveillance System
    - IP Video Surveillance system will be provided for monitoring of interior and exterior areas, parking lot, entrances and vehicle storage. A Network Video Recorder (NVR) will be used. The video storage server will be sized to accommodate 30-day storage for all cameras.
    - Monitoring of IP Video Surveillance will be via use of PC workstations, local or remote from the facility. ExacqVision software and cameras will be specified. Confidence monitors for viewing all cameras will be placed in the Detective area and in Records.

- Interview Room Recording System
    - An Interview Recording system will be provided by the owner to allow recording of interviews for (3) identified rooms.

E. EQUIPMENT AND FURNISHINGS

E10 EQUIPMENT

E1010 Commercial Equipment

- Administration equipment (supplied by Owner)
- Video conference equipment provided by Owner, installed by Contractor.
- Install one recessed motorized projection screen in Briefing Room.
- Install one ceiling mounted projector in Briefing Room.
- Lockers will be supplied by Contractor, installed by Contractor. See C1040 (Fittings).
- Provide allowance for blocking for all OFCI equipment.
- Provide power/data back boxes for all OFCI TV locations

E1020 Institutional Equipment – *NOT USED*

E1030 Vehicular Equipment - *NOT USED*

E1090 Other Equipment

- Break Room Equipment provided by Contractor, installed by Contractor, including the following:
    - (2) commercial refrigerator with ice maker – Samsung 22.5 cu. ft. RF23HCEDBSR
    - (2) large commercial refrigerator at evidence storage
    - (1) under counter refrigerators – Summit AL54CSSHV
    - (2) microwaves – Samsung MS19M8000A
    - (1) ADA dishwashers – Bosch 800 Series – Stainless Steel SGE68X55UC
    - (1) garbage disposals
    - (1) ADA range – dual fuel electric oven and gas cooktop with vent hood
    - (1) clothes washing machine
    - (1) clothes dryer
    - (1) safe at evidence storage
- Fitness Equipment - Owner furnished, owner installed. Contractor to provide minimum 5 outlets in fitness room for fitness equipment.

E20 FURNISHINGS

E2010 Fixed Furnishings

- Exterior window treatments:
    - Unless noted otherwise, all exterior windows to receive: MechoSystems, Manual Shade System. Assume 3% openness EcoVeil.
    - Provide dual black-out shades at Briefing room, and conference rooms, at interior and exterior window locations: MechoSystems, Manual Shade System, Assume backout, with side trim.
    - Assume valance at all single and dual shade locations
- Casework:
    - All casework custom grade, constructed to AWI standards.
    - Provide casework at the following locations:
        - Records Counters: Wood veneer faced with solid surface counters and transaction counters, large stainless steel drop trays and level 3 bullet resistant glazing with baffle speaker system. Assume Armortex system.

See plans for lengths and locations.

- Mail slots: Plastic laminate faces, counters and mail cubbies.
- Standard cabinetry, per plan: Assume plastic laminate faces with solid surface counters and splash, upper cabinets to be plastic laminate
- Break room, Assume plastic laminate faces with solid surface counters and splash, upper cabinets to be plastic laminate. Plastic laminate island with storage on both sides and integrated trash/recycling, solid surface counters.
- Open lockers at mud room vestibule. See plans for location and quantities.
- Locker Room: shoeshine benches with cubbies below. ADA accessible lengths and heights. See floor plans for locations.
- All other casework locations identified on the floor plan and finish floor plans.

E2020 Movable Furnishings – *NOT USED*

F. SPECIAL CONSTRUCTION AND DEMOLITION

F10 SPECIAL CONSTRUCTION – *NOT USED.*

F20 SELECTIVE DEMOLITION

F2010 Building Elements Demolition

F2020 Hazardous Components Abatement - *NOT USED.*

G. BUILDING SITEWORK

G10 SITE PREPARATION

- Mass grade areas of site as needed, remove excess material from site. See attached grading plan.
- City of St. Helens will be providing site fill material (crushed rock) from a nearby site. Contractor will be responsible for loading and transporting/hauling fill material to site. Please break this out as a separate line item on the cost estimate.
- Finish site grading.
- Erosion control measures for the site.

G20 SITE IMPROVEMENTS

- Site:
    - ADA ramps and signage.
    - Drive aisles, parking, and sidewalks as shown on site plan.
    - Paving striping.
    - (2) cantilevered automatic vehicular gates on roller wheels with corrugated metal panels. 26 feet wide. See landscape and civil plans for locations.
    - Automatic irrigation system, with 2-wire controller, flow sensor, and soil sensor. Provide drip irrigation at raised planters and adjacent building and

plaza. Provide spray irrigation for all other areas.
    - Plant Material: Meadow Seed Mix (Diverse Prairie Mix by Heritage Seedlings, Inc.), Trees 2" caliper, shrubs 1 to 5 gallon with 3 to 4' on center average spacing, and accent plantings 1 gal 18" on center average spacing.
    - (2) public bike stalls per code provide on (1) rack.
    - Shipping container for bike storage on secure side of building - see plans for location.
- Stormwater:
    - Stormwater pond for water quality and detention.
    - Clean outs as required per uniform plumbing code.
    - ADS N-12 stormwater conveyance pipes for catch basins and roof drains.
- Water:
    - 8" D.I.P zinc coated public water main extensions as needed.
    - Fire backflow.
    - Domestic water extended as shown on plans.
    - Domestic water meter and backflow as shown on plans.
    - FDC and fire hydrants as shown on plans.
- Sanitary:
    - Lateral from existing sanitary in 7th Street right-of-way.
    - Clean out as required per uniform plumbing code.

G2040 Site Development

- Provide (3) flag poles: 30ft. in height. With LED pole mounted down lighting (see lighting).
- Provide (1) US flag, (1) State of Oregon flag, and (1) POW/MIA flag.
- Plaza area will consist of the following:
    - Scored concrete paving.
    - (3) concrete seat walls with skates stops and a metal panel running length wise along the top.
    - Low-walled planter with reinforced masonry block and stone cladding to match building. See landscape plans for location.
    - (1) Monument sign to be integrated into concrete seat wall. Powder coated plate steel back (24"H x 17'L) with brushed stainless steel lettering (18" H). Powdercoat color to match dark bronze of exterior building elements. See landscape drawings for location.
    - (2) Illuminated traffic-impact resistant bollards and (2) non-illuminated traffic-impact bollards, placed along egress path from main entry to Old Portland Road, see D5020 Lighting Exterior for fixture information and landscape plans for location.

PART 2

PLUMBING FIXTURE SCHEDULE

SYMBOL	FIXTURE TYPE	DESCRIPTION	BASIS OF DESIGN			CONNECTION				NOTES
			MFR	MODEL	ACCESSORIES	W	V	CW	HW	
EWC-1	DRINKING FOUNTAIN	TWO STATION, WALL HUNG ELECTRIC REFRIGERATED WATER COOLER, BARRIER FREE	ELKAY	LZWS-LRPBM26K		2"	1-1/2"	1/2"	–	
EWC-2	DRINKING FOUNTAIN	REMOVED FROM SCOPE								
DSN-1	DOWNSPOUT NOZZLE	SIDEWALL TERMINATION, CAST BRONZE, NICKEL BRONZE FINISH, BIRD SCREEN	JR SMITH	1770-NB-BS		4"	–	–	–	
DWC-1	DETOX TOILET	REMOVED FROM SCOPE								
FD-1	FLOOR DRAIN	CAST IRON BODY WITH FLASHING COLLAR AND ADJUSTABLE STRAINER HEAD	JR SMITH	2005Y-66-AHP	PRIMER CONNECTION ON P-TRAP	3"	2"	–	–	
FD-2	FLOOR DRAIN	CAST IRON BODY AND FLASHING COLLAR WITH CAST IRON TRACTOR GATE AND SOLID FREE STANDING SEDIMENT BUCKET	JR SMITH	2142Y-M	PRIMER CONNECTION ON P-TRAP	4"	2"	–	–	
FS-1	FLOOR SINK	CAST IRON FLANGED RECEPTOR, SEEPAGE HOLES, ACID RESISTANT COATED INTERIOR, NICKEL BRONZE RIM, 1/2-GRATE, ALUMINUM DOME BOTTOM STRAINER, 6-INCH DEEP	JR SMITH	3140Y-12		3"	2"	–	–	
HB-1	HOSE BIBB	EXPOSED, ANTI-SIPHON, AUTOMATIC DRAINING, CHROME PLATED ASSEMBLY, DOUBLE CHECK BACKFLOW PREVENTER	WOODFORD	28 P3/4		–	–	3/4"	–	
L-1	LAVATORY	WHITE VITREOUS CHINA, DROP-IN, SELF RIMMING, 20" X 17", ADA	SLOAN	SS-3002-SINGLE HOLE	FAUCET: SLOAN EBF-85 (HARD WIRED)	2"	1-1/2"	1/2"	1/2"	
L-2	LAVATORY	16 GAUGE, 304 STAINLESS STEEL, SATIN FINISH, 14"X12"X5", BARRIER FREE	DURA-WARE	1953-1-DMS-PFZ2-H1-GE-OF-TPT-TE	FAUCET: SLOAN EBF-85 (HARD WIRED)	2"	1-1/2"	1/2"	1/2"	
MS-1	MOP SINK	#18 GAUGE STAINLESS STEEL, FLOOR MODEL SERVICE SINK, LK43 DRAIN WITH STRAINER	ELKAY	EFS3321C	FAUCET: CHICAGO FAUCETS 897-CP	3"	2"	1/2"	1/2"	
RD-1	ROOF DRAIN (OVERFLOW DRAIN)	LARGE AREA, EPOXY COATED CAST IRON BODY WITH FLANGE, FLASHING RING WITH GRAVEL STOP, UNDER DECK CLAMP, EXTENSION, SUMP RECEIVER, 2-INCH WATER DAM, ALUMINUM DOME	JR SMITH	1080-AD-C-E-R-Y		4"	–	–	–	
RD-1	ROOF DRAIN	LARGE AREA, EPOXY COATED CAST IRON BODY WITH FLANGE, FLASHING RING WITH GRAVEL STOP, UNDER DECK CLAMP, EXTENSION, SUMP RECEIVER, ALUMINUM DOME	JR SMITH	1210-AD-C-E-R-Y		4"	–	–	–	
S-1	KITCHEN SINK	DOUBLE BOWL SINK, STAINLESS STEEL, 33" X 21-1/4", CABINET SIZE 36", FOUR HOLE, ADA	ELKAY	GECR3321	FAUCET: MOEN 8244	2"	1-1/2"	1/2"	1/2"	
S-2	KITCHEN SINK	SINGLE BOWL SINK, STAINLESS STEEL, 25" X 21-1/4", CABINET SIZE 30", FOUR HOLE, ADA	ELKAY	GECR2521	FAUCET: MOEN 8244	2"	1-1/2"	1/2"	1/2"	
SH-1	SHOWER	ONE PIECE, 36" W X 42" D X 80-3/4" H, SANITARY WARE GEL COAT, ANTI-SLIP FLOOR	FIBER-FAB	3689F	SHOWER VALVE: MOEN 8346	2"	1-1/2"	1/2"	1/2"	
SH-2	SHOWER	BARRIER FREE, ONE PIECE, 36" W X 42" D X 80-3/4" H, SANITARY WARE GEL COAT, ANTI-SLIP FLOOR	FIBER-FAB	3689F	SHOWER VALVE: MOEN 8346	2"	1-1/2"	1/2"	1/2"	
U-1	URINAL	WALL MOUNTED, VITREOUS CHINA, TOP SPUD, HARD WIREDFLUSHOMETER, STANDARD HEIGHT	SLOAN	WEUS-1000.1411-0.125 ECOS HARDWIRE		2"	1-1/2"	3/4"	–	
U-2	URINAL	WALL MOUNTED, VITREOUS CHINA, TOP SPUD, HARD WIRED FLUSHOMETER, BARRIER FREE	SLOAN	WEUS-1000.1411-0.125 ECOS HARDWIRE		2"	1-1/2"	3/4"	–	
WC-1	WATER CLOSET	WALL MOUNTED, VITREOUS CHINA, ELONGATED BOWL, HARD WIRED FLUSHOMETER	SLOAN	WETS-2051.1101-1.1 ECOS	FLUSHOMETER: SLOAN 111-1.28 HW	4"	2"	1"	–	
WC-2	WATER CLOSET	WALL MOUNTED, VITREOUS CHINA, ELONGATED BOWL, HARD WIRED, BARRIER FREE	SLOAN	WETS-2051.1101-1.1 ECOS	FLUSHOMETER: SLOAN 111-1.28 HW	4"	2"	1"	–	
WC-3	WATER CLOSET	REMOVED FROM SCOPE								
WCL-1	WATER CLOSET	REMOVED FROM SCOPE								
WCL-2	WATER CLOSET	REMOVED FROM SCOPE								
WH-1	HOSE BIBB	ENCASED, NON-FREEZE, ANTI-SIPHON, AUTOMATIC DRAINING, CHROME PLATED BOX/DOOR ASSEMBLY, DOUBLE CHECK BACKFLOW PREVENTER	WOODFORD	B67-P		–	–	3/4"	–	

NOTES:

* UNLESS NOTED OTHERWISE ON DRAWINGS

EWC-1

ELKAY®

SPECIFICATIONS

No Lead Two-Level SwirlFlo® Filtered Wall Mount, Barrier-Free Refrigerated Fountain with EZH2O® Bottle Filling Station Model LZWS-LRPBM28K

Rated for Indoor Use Only

PRODUCT SPECIFICATION

Architectural fountains with integral bottle filling station. LZWS-LRPBM28K shall deliver 8 GPH of 50°F drinking water at 90°F ambient and 80°F inlet water. Units shall be stainless steel construction with plastic ABS alcove. Sensor-activation with an auto 20-second shut-off timer. Shall include Green Ticker™ displaying count of plastic bottles saved from waste. Bottle filler shall provide 1.1 gpm flow rate with laminar flow to minimize splashing. Shall include the Water Sentry® Plus 3000-gallon capacity filter, certified to NSF/ANSI 42 and 53, with visual monitor to indicate when replacement is necessary. Shall include integrated silver ion anti-microbial protection in key areas. Unit shall meet ADA guidelines. Unit shall be lead-free design which is certified to NSF/ANSI 61 and 372 and meets Federal and State low-lead requirements. Unit shall be certified to UL399 and CAN/CSA 22.2 No. 120.

FOUNTAINS GENERAL

Fully exposed two-level fountain basins are #18 gauge, 300 series stainless steel polished to a lustrous satin finish with high shine outer edge. #16 gauge, 300 series tubular stainless steel support arms incorporate unique recess to be integrated with basin. One fountain positioned lower on the right for wheel-chair use. The other positioned on the left at standing height.

Fountains have contoured basin that minimizes splashing. Flexi-Guard® Safety bubblers are keyed in location to prevent rotation. Fully functional, vandal-resistant front push button. Flow regulator provides constant stream from 20 to 105 psi water pressure.

BOTTLE FILLER STANDARD FEATURES

- Sanitary, touchless activation with auto 20-second shut-off (Bottle Filler)
- WaterSentry®Plus 3000-gallon capacity Filtration System, certified to NSF/ANSI 42 & 53 (Lead, Class 1 Particulate, Chlorine, Taste & odor)
- Integrated Silver Ion Anti-microbial Protection in key areas
- Quick Fill Rate: 1.1 gpm
- Laminar Flow provides minimal splash
- Real Drain System eliminates standing water
- Visual User Interface display includes:
  - Innovative Green Ticker™ counts bottles saved from waste
  - LED Visual Filter Monitor shows when replacement is necessary
- Includes lower panel for easy access and servicing

OPTIONAL FEATURES (Additional Cost)

- For front access to bottle filler electricals, use access panel Item #ACCESS12X38-5)

Shown with one optional access panel installed

COOLING SYSTEM

- Compressor: Hermetically-sealed, reciprocating type, single phase. Sealed-in lifetime lubrication.
- Condenser: Fan cooled. Fan motor is permanently lubricated.
- Cooling Unit: Combination tube-tank type. Continuous copper tubing with stainless steel tank. Fully insulated with EPS foam which meets UL requirements for self-extinguishing material.
- Refrigerant control: Refrigerant R134a is controlled by accurately calibrated capillary tube.
- Temperature Control: Enclosed adjustable thermostat is factory preset. Requires no adjustment other than for altitude requirements, easily accessible by removing lower grille panel.

CAPACITIES CHART

Model	Voltage / Hertz	Chilling Capacity	F.L. Amps	Rated Watts	Approx. Ship Wt.
LZWS-LRPBM28K	115V / 60Hz	8 GPH	5.0	370	173

Model LZWS-LRPBM28K

CONSTRUCTION

LZWS-LRPBM28K two-level fountain furnished complete withFlexi-Guard® fully assembled with front push button, flow regulator (120 to 105 psi), stainless steel back panel and surface mounting plate. No traps are furnished.

- Stainless Steel bottle filler construction with ABS plastic alcove
- Includes stainless steel lower panel
- Furnished with wall mounting frame constructed of galvanized steel
- Mounting can be ordered separately for pre-install

Replacement Filters: Available as Singles and Multi-packs. Order part numbers:

- 51300C (single)
- 51300C_3PK (three)
- 51300C_12PK (twelve)
- 51300C_24PK (twenty-four)
- 51300C_48PK (forty-eight)

Warranty: 5 year limited warranty on the unit's refrigeration system. Electrical components and water system are warranted for 12 months from date of installation or 18 months from factory shipment, whichever date falls first.

CERTIFICATIONS / STANDARDS

- ADA Compliant
- UL399 and CAN/CSA 22.2 No. 120 Certified
- NSF/ANSI 42 and 53 Certified (Filter Only)
- NSF/ANSI 61 and 372 Certified
- GreenSpec Listed

GreenSpec® LISTED www.GreenSpec.com

Intertek C USA

This specification describes an Elkay product with design, quality and functional benefits to the user. When making a comparison of other producer's offerings, be certain these features are not overlooked.

In keeping with our policy of continuing product improvement, Elkay reserves the right to change specification without notice. Please visit elkay.com for the most current version.

2222 Camden Court
OakBrook, IL 60523
630-572-3192
elkay.com

SPEC00048 (02/2015)

No Lead Two-Level SwirlFlo®
Filtered Wall Mount, Barrier-Free
Refrigerated Fountain with EZH2O® Bottle Filling Station
Model LZWS-LRPBM28K

ELKAY®

ROUGH-IN DIMENSIONS

INSTALLER NOTE:
THIS DRINKING FOUNTAIN IS FURNISHED WITH A BUBBLER AND VALVE INCLUDING ALL CONNECTING FITTINGS WHICH ARE MANUFACTURED OF COMPLETELY LEAD FREE MATERIAL. SHUTOFF VALVE (NOT FURNISHED) TO ACCEPT 3/8" O.D. UNPLATED COPPER TUBE.

WALL OPENING
IMPORTANT: It is necessary to create a wall opening 37 ½" W x 52 ⅛" H and 4 ½" above the floor line.

ELECTRICAL DATA
Junction box for a (3) wire 10 AMP branch circuit. Standard 120 Volt, 60 Hz, single phase.

Electrical outlet, three (3) conductor grounded. Locate within safe reach of power cord.

MOUNTING INSTRUCTIONS
Refer to rough-in for location of plumbing and electrical sources. The support frame is to be installed first. Hang upper panel to hanger on frame. Fountains are to be attached to panel and wall frame. Water service lines, waste lines and electrical are assembled as required. Perform a final check for leaks and correct functions of fountains and chiller. (For details see the installation instructions.)

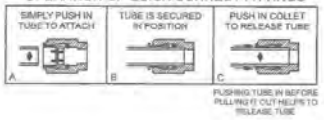
Installation requires trap to be installed in wall. Trap and service stop not included.

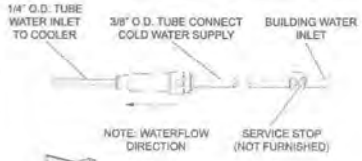
Job Name: _____

Date: _____ Qty. _____

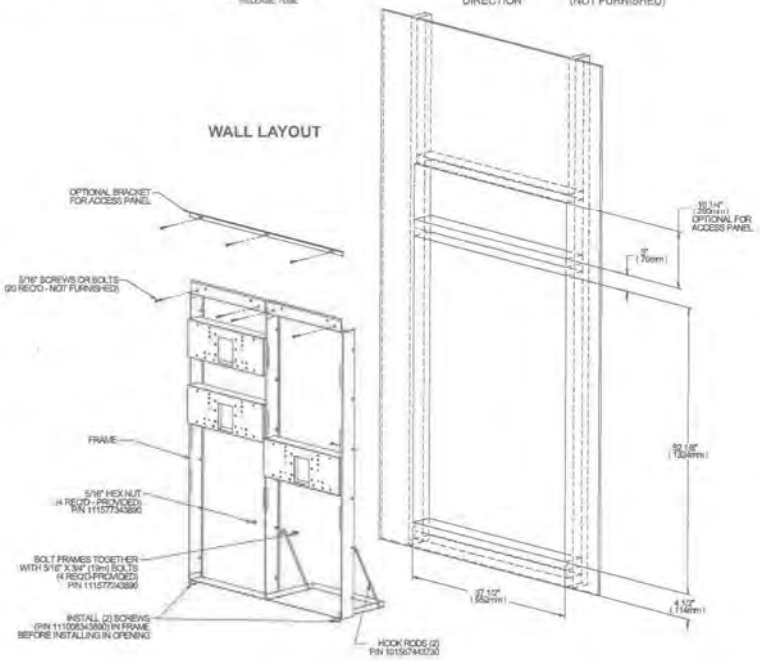
Contact Info (Name, Phone, Email): _____

Approval: _____



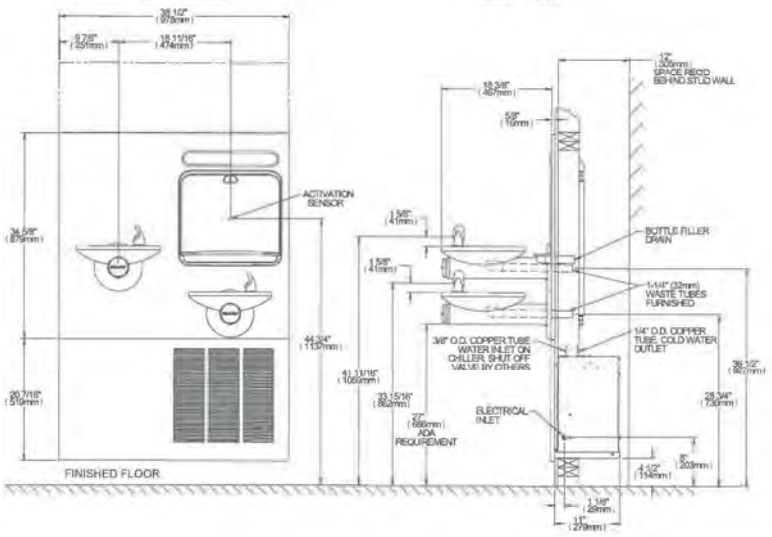


WALL LAYOUT



FRONT VIEW

SIDE VIEW



2222 Camden Court
Oak Brook, IL 60523

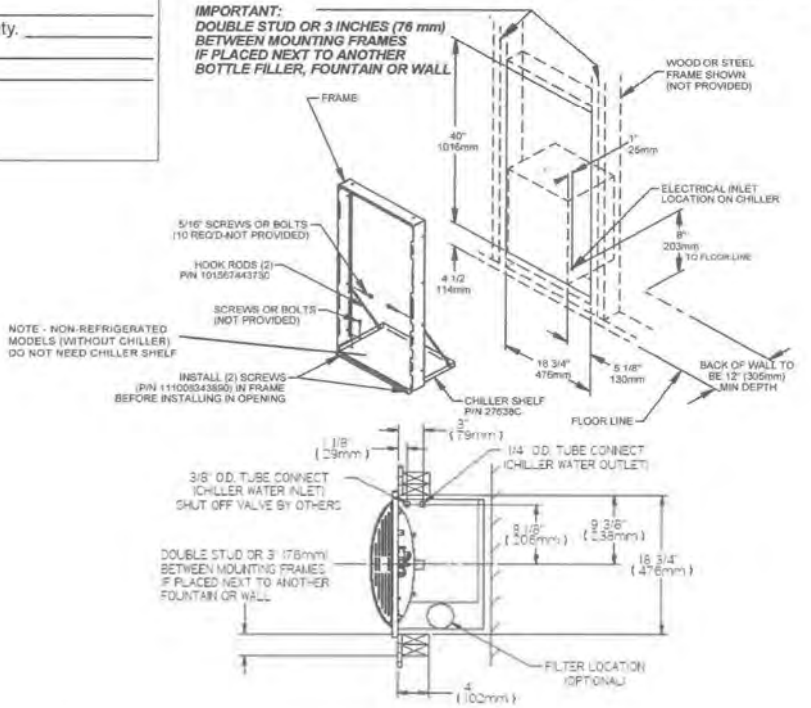
EZH2O® In-Wall Bottle Filling Station with Single Filtered SwirlFlo® GRN Refrigerated Fountain
Model LZWS-SFGRN8K

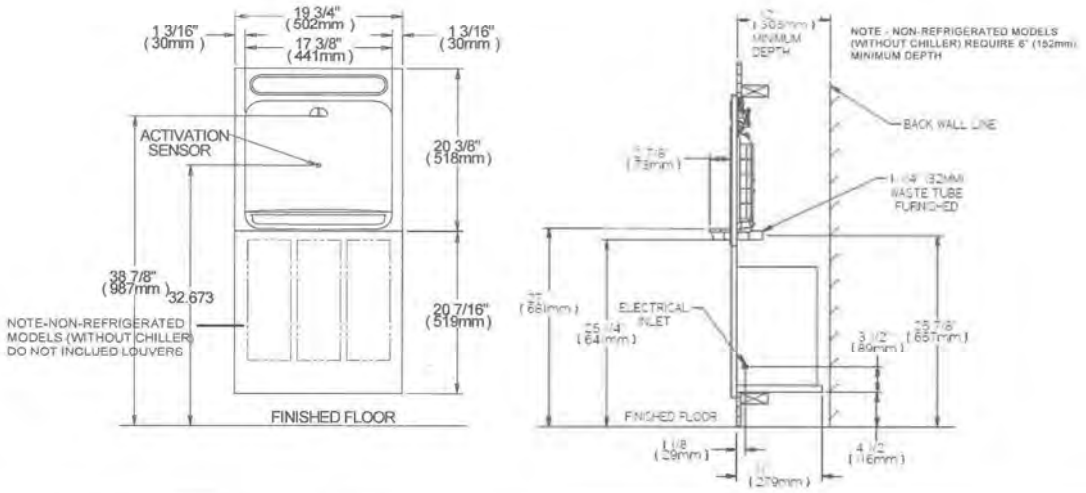
ELKAY®

ROUGH-IN DIMENSIONS

RATED FOR INDOOR USE ONLY

Job Name: _____
Model: _____ Qty. _____
Contact: _____
Approval Signature: _____
Notes:





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elkay.com

EZH2O® In-Wall Bottle Filling Station with Single Filtered SwirlFlo® GRN Refrigerated Fountain Model LZWS-SFGRN8K

ELKAY®

ROUGH-IN DIMENSIONS

RATED FOR INDOOR USE ONLY

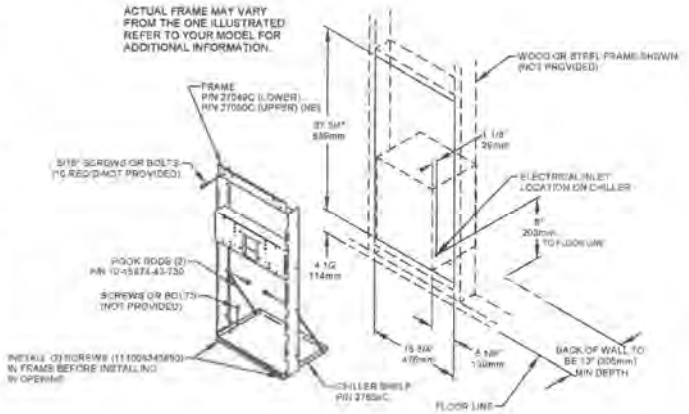
IMPORTANT!
INSTALLER PLEASE NOTE:

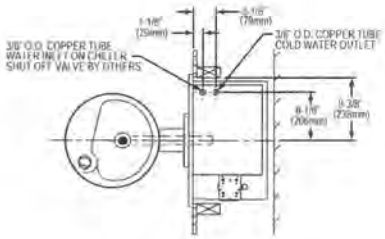
The grounding of electrical equipment such as telephone, computers, etc., to water lines is a common procedure. This grounding may be in the building or may occur away from the building. This grounding can cause electrical feedback into a water cooler, creating an electrolysis which causes a metallic taste or causes an increase in the metal content of the water. This condition is avoidable by using the proper materials as indicated below. The drain fittings which are provided by the installer should also be plastic to electrically isolate the cooler from the building plumbing system

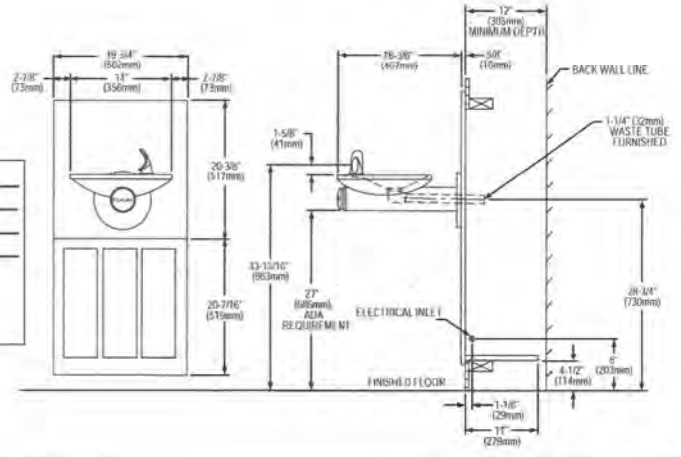
FOUNTAIN MOUNTING FRAME INSTRUCTIONS

1. Cut a square rectangular wall opening 18-3/4"(476mm) W x 37-3/4" (959mm) H and 4-1/2"(114mm) above the floor line. These dimensions are required to obtain proper rim and bubbler heights for compliance with ANSI standard.
2. Reinforce the wall opening on all sides so that it will adequately support the water fountain. This reinforcement must support up to 150 lbs static load and provide a means for securing the frame assembly in place. NOTE: Building construction must allow for adequate air flow on both sides and top of remote chiller unit. Minimum of 4" (102mm) is required.
3. Install plumbing and electrical rough-ins. See Figure for location of the supply water inlet to chiller and for the location of the waste water outlet. A junction box for a (3) wire, 10 amp branch circuit is provided on the inside of the chiller. (Standard 115 Volts, 60 Hz and single phase)
4. Remove frame and related hardware from packaging. Release the two shelf rods by cutting cable ties. Install the frame squarely in wall opening with frame upright edges flush with the finished wall face. Place shelf inside frame and line up the (2) holes on each. Insert loose ends of rods into holes on sides of shelf panel. Using appropriately sized wood screws (not provided), fasten the shelf and frame to bottom of wall opening. Secure the frame sides and top to the wall using (10) 5/8" x 2" lag bolts or screws (not provided).

NOTE: Be sure that frame is squared in location. Do not use less than required screw quantity and size.







Job Name: _____
Model: _____ Qty. _____
Contact: _____
Approval Signature: _____
Notes:

2222 Camden Court
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FD-1

SMITH® JAY R. SMITH MFG. CO.®
MEMBER OF ACORN'S FAMILY OF COMPANIES
POST OFFICE BOX 3237
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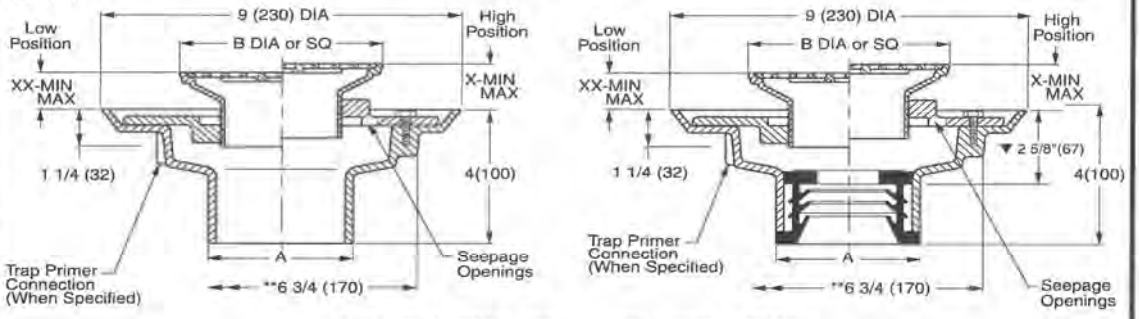
TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com
CUSTOMER DRIVEN
MEMBER OF:

LOCATION

FLOOR OR SHOWER DRAINS
WITH ADJUSTABLE STRAINER HEADS

FUNCTION: General service floor drain for use in showers, toilets, kitchens and other finished areas where foot traffic is expected. The round top strainer head is used for all types of poured finished floors. The square top is particularly adaptable to floors that are finished in material of square or straight line pattern. Reversible flashing collar permits adjustment of the strainer to meet finished floor level.



A (Pipe Size) = 02(50), 03(75), 04(100), 05(125) or 06(150)

NO-HUB OUTLET

☐ **Fig. 2005Y.....(A) ROUND TOP**
☐ **Fig. 2005Y.....(B) SQUARE TOP**

Outlet Size	Nickel Bronze Strainer Head
▲ 02(50)	05(125) DIA or SQ
▲ 03(75)	06(150) DIA or SQ
▲ 04(100)	08(205) DIA or SQ

SPEEDI-SET OUTLET

☐ **Fig. 2005L.....(A) ROUND TOP**
☐ **Fig. 2005L.....(B) SQUARE TOP**

Strainer Size B DIA or SQ	*Collar In High Position X MIN	*Collar In High Position X MAX	*Collar In Low Position XX MIN	*Collar In Low Position XX MAX	Free Area SQ IN (SQ CM) ROUND	Free Area SQ IN (SQ CM) SQUARE
☐ 05 (125)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	7(45)	6.5(42)
☐ 06 (150)	1 1/4(32)	2 1/4(57)	3/4(19)	1 5/8(41)	9(58)	12.5(81)
☐ 07 (180)	1 1/4(32)	2 1/4(57)	7/8(22)	1 7/8(48)	14(90)	11(71)
☐ 08 (205)	1 1/2(38)	2 1/2(64)	1(25)	1 7/8(48)	17(110)	14(90)
☐ •09 (230)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	18(116)	16(103)
☐ •10 (255)	1 1/2(38)	2 3/8(60)	1(25)	1 7/8(48)	23(48)	16(103)

▼ This dimension to internal stop of speedi-set gasket.
• Add 3/8"(10) to all min/max dimensions for round strainers.
* Collar is reversible to obtain extreme high and low strainer positions.
•• Not available for 5"(125) size strainer.
** MIN 6 3/4"(170) hole required for core drilled application.

REGULARLY FURNISHED:
Duco Cast Iron Body with Flashing Collar and Adjustable Strainer Head as indicated by Suffix Letter Selected.

VARIATIONS:
☐ Flapper Type Backwater Valve -V
☐ Hinged Grate -H
☐ L Speedi-Set Service Weight 2(50), 3(75) & 4"(100) only
☐ LXH Speedi-Set Extra Heavy 2(50), 3(75) & 4"(100) only
☐ Sediment Bucket -B
☐ Trap Primer Connection -P050 1/2" (13) & -P075 3/4" (19)
☐ Vandal Proof Screws -U
☐ Wide Flanged Strainer (Specify Fig. DX2005)
☐ T Threaded Outlet Heelproof Grate -HP -AHP (Round) or -BHP (Square)

OPTIONAL MATERIALS:
☐ Bronze Body -BB
☐ Chrome Plated Strainer -CP
☐ Galvanized Cast Iron Body -G
☐ Nickel Bronze Strainer -NB
☐ Polished Bronze Strainer -PB
☐ Stainless Steel (Specify Fig. 9700-A)

NOTE: Dimensions shown in parentheses are in millimeters.

▲ **Meets ASME Standard A112.6.3-2001 02(50), 03(75) or 04"(100) sizes only.**

SEE PM0457 FOR OPTIONAL STRAINER HEADS.

REV.	DATE	DESCRIPTION	BY	CKD. BY
Q	11-18-11	Rev. Dwg., Var.	TBW	CR
P	11-20-09	Revised Variations	RN	BW
N	12/18/08	Addition to Variations	JJ	BW
M	10/24/06	NO-HUB to SPEEDI-SET	RN	CL

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER **2005**

FIGURE NUMBER 2005 | DRAWN BY: PJ | CHECKED BY: TD | APPROVED BY: TD | DATE: 5-17-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S2005 | Q

DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE
WE CAN ASSUME NO RESPONSIBILITY FOR USE OF SUPERSEDED OR VOID DATA

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MEMBER OF:

LOCATION

OPTIONAL STRAINER HEADS

ROUND STRAINER

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

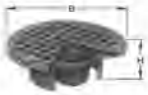
VARIATIONS:
·Hinged Grate (Specify Suffix -AH)
Sediment Bucket -B
Vandal Proof Screws -U

B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/2 (64)	2 3/4 (70)

Specify Type, Size & Finish eg: A05NB
*Not available for 05" (125) size

SUFFIX -A

FLAPPER TYPE BACKWATER VALVE



FUNCTION: Provides backwater protection at point where protection is needed.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS
·Hinged Grate (Specify Suffix -AH)
Vandal Proof Screws -U

B DIA	05 (125)	06 (150)	07 (180)	08 (205)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

Specify Type, Size & Finish eg: AV05NB
*Not available for 05" (125) size

SUFFIX -AV

SQUARE STRAINER

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -BV) 05 (125), 06 (150), 07 (180) or 08" (205) sizes only
*Hinged Grate (Specify Suffix -BH)
Sediment Bucket -B
Vandal Proof Screws -U

B DIA	05 (125)	06 (150)	07 (180)	08 (205)	09 (230)	10 (255)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 1/4 (57)
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 1/2 (38)	1 1/2 (38)
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 1/4 (57)	2 3/8 (60)

Specify Type, Size & Finish eg: B05NB
*Not available for 05" (125) size

SUFFIX -B

STRAINER HEAD w/SQUARE HINGED COVER

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Gasketed Water Tight Cover -GC
Secured Cover -SC
Secondary Strainer Grate-SG

Specify Type, Size & Finish
eg: BSNB

SUFFIX -BS

REINFORCED ROUND STRAINER

FUNCTION: Used in finished floors where light wheeled loads are anticipated.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -CV)
Sediment Bucket -B
Vandal Proof Screws -U

B DIA	05 (125)	06 (150)	08 (205)	10 (255)
H	2 (51)	2 (51)	2 1/2 (64)	2 3/4 (70)
MIN	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)	1 7/8 (48)
MAX	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)	2 3/4 (70)

SUFFIX -C

Specify Type, Size & Finish eg: C06NB

REINFORCED TRACTOR STRAINER

FUNCTION: Used in finished floors where medium weight wheeled loads are anticipated and loose set non-tilt tractor grate is desired.

MATERIALS:
Cast Iron -CI
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -DV or -EV)
Sediment Bucket -B
Vandal Proof Screws -U

SUFFIX	B DIA	H	X MIN	X MAX
-D	07 (180)	3 1/4 (83)	2 5/8 (67)	3 1/2 (89)
-E	09 (230)	3 1/2 (89)	2 3/4 (70)	3 1/2 (89)

Specify Type, Size & Finish eg: D09PB E09PB

SUFFIX -D-E

TILE FLANGE

FUNCTION: Provides integral flange set 5/32" (4) below rim to receive floor covering. Flange may have option of tapped holes for securing pan and gasket.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -FV)
Holes in Flange -SH
Sediment Bucket -B
Vandal Proof Screws -U

X MIN	X MAX
1 1/4 (32)	2 1/8 (54)

SUFFIX -F

Specify Type, Size & Finish eg: F06NB

ADJUSTABLE STRAINER HEAD

FUNCTION: Used in a non-traffic area when a funnel type strainer head is required and space does not allow use of the 3500 series funnel. The extended rim allows use as an anti-flood and anti-splash drip pan.

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -F37V or F38V)

SUFFIX	-F37	-F38
B DIA	07 (180)	09 (230)
H	3 1/4 (83)	3 1/2 (89)
X MIN	2 5/8 (67)	2 3/4 (70)
X MAX	3 1/2 (89)	3 1/2 (89)

MATERIALS:
Cast Iron -CI
Chrome Plated -CP
Galvanized Cast Iron -G
Polished Bronze -PB
Nickel Bronze -NB

SUFFIX -F37-F38

Specify Type, Size & Finish eg: F37NB F38CP

REV.	DATE	DESCRIPTION	BY	CKD. BY
G	10-4-01	Revised Suffix-BS	RN	CL
F	8-24-99	Revised	TBW	
E	6-11-99	Revised Tables	CMD	BS
E	11-4-97	Added Nickel Bronze	EMB	BS

FIGURE NUMBER
2010 SERIES OPTIONAL STRAINER HEADS
1 0f 2

FIGURE NUMBER: 2010 SERIES OPTIONAL STRAINER HEADS
DRAWN BY: PJ
CHECKED BY: TD
APPROVED BY: TD
DATE: 5-17-85
SCALE: NONE
SIZE: A
DRAWING NUMBER: PM0457 SH 1 of 2
G

ASSUME NO RESPONSIBILITY OR USE OF SUPERSEDED OR VOID DATA
DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

NOTE: Dimensions shown in parenthesis are in millimeters.

FIGURE NUMBER | DRAWING NUMBER PM0457 SH 2 of 2 | SIZE A | SCALE NONE | DATE 5-17-85 | APPROVED BY: TD | CHECKED BY: TD | DRAWN BY: PJ | 2010 SERIES OPTIONAL STRAINER HEADS | H

ASSUME NO RESPONSIBILITY OR USE OF SUPERSEDED OR VOID DATA

DIMENSIONS ARE SUBJECT TO MANUFACTURERS TOLERANCE AND CHANGE WITHOUT NOTICE

SMITH® JAY R. SMITH MFG. CO.®
MEMBER OF ACORN'S FAMILY OF COMPANIES
POST OFFICE BOX 3237
MONTGOMERY, ALABAMA 36109-0237 (USA)
TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com
CUSTOMER DRIVEN
MEMBER OF:

LOCATION

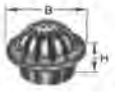
OPTIONAL STRAINER HEADS

LOW DOME STRAINER

FUNCTION: Used in gutters and recessed areas where excessive debris build-up is expected. Dome insures drainage even when partly covered.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -GV)
Sediment Bucket -B
Vandal Proof Screws -U



B DIA	05 (125)	06 (150)	08 (205)
H	2 (51)	2 (51)	2 1/2 (64)
MIN	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
MAX	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

SUFFIX -G Specify Type, Size & Finish eg: G08PB

SOLID HINGED COVER

FUNCTION: Used in areas where intermittent drain use is required. Solid cover prevents intrusion of chips, saw-dust, etc., which are swept up before cover is opened for washdown. The secondary strainer prevents debris from entering the waste line.

MATERIALS:
Cast Iron -CI
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -GV)
Vandal Proof Screws -U

B DIA	05 (125)	06 (150)	07 (180)	08 (205)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

SUFFIX -H Specify Type, Size & Finish eg: H05CP

SPANNER WRENCH COVER

FUNCTION: Solid gas tight, vandal proof, threaded cover for areas where intermittent drain use is required.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve (Specify Suffix -JV)
Holes in Flange -SH
Sediment Bucket -B
Vandal Proof Screws -U

X MIN	X MAX
2 (51)	3 (76)

SUFFIX -J Specify Type, Size & Finish eg: J06NB

REINFORCED SQUARE STRAINER

FUNCTION: Used in finished floors where some light wheeled traffic is anticipated.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve(Specify Suffix -KV)
Sediment Bucket -B
Vandal Proof Screws -U

B SQ	05 (125)	06 (150)	07 (180)	08 (205)
H	2 (51)	2 (51)	2 1/4 (57)	2 1/2 (64)
X MIN	1 1/4 (32)	1 1/4 (32)	1 1/4 (32)	1 1/2 (38)
X MAX	2 1/4 (57)	2 1/4 (57)	2 1/4 (57)	2 1/2 (64)

SUFFIX -K Specify Type, Size & Finish eg: K07CP

RECTANGULAR STRAINER

FUNCTION: Used in finished floors where light wheeled loads and or heavy foot traffic are anticipated.

MATERIALS:
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Sediment Bucket -B
Vandal Proof Screws -U

SUFFIX	L	M	N	P	W	T
H	2 1/4 (57)	2 1/2 (64)	2 3/8 (57)	3 (76)	2 1/4 (57)	3 (76)
X MIN	1 3/8 (35)	1 7/8 (48)	1 3/8 (35)	2 1/8 (54)	1 3/8 (35)	2 1/8 (57)
X MAX	2 3/8 (60)	2 3/4 (70)	2 3/8 (60)	3 (76)	2 5/8 (60)	3 1/8 (79)

SUFFIX -L-M-N-P-R-T Specify Type,Size & Finish eg: LNB

ANGLE STRAINER

FUNCTION: Shower room drain set at wall and floor junction. Vertical grate openings prevent drain stoppage should flat surface become covered.

MATERIALS:
Cast Iron -CI
Chrome Plated -CP
Polished Bronze -PB
Nickel Bronze -NB

VARIATIONS:
Vandal Proof Screws -U

SUFFIX	B	C	D	X MIN	X MAX
-V	3 1/2 (89)	3 1/2 (89)	4 1/2 (115)	1 5/8 (41)	2 5/8(67)
-W	6 3/4 (170)	6 3/4 (170)	5 1/2 (165)	1 5/8 (41)	2 5/8(67)

SUFFIX -V -W Specify Type, Size & Finish eg: VPB, WNB

EXTENSION ADAPTOR

FUNCTION: Used when a strainer head must be raised to accommodate deeper floor fill.

REGULARLY FURNISHED:
Duco Cast Iron -CI

MATERIALS:
Cast Bronze -CB
Galvanized Cast Iron -G

NOTE: Extension can be stacked for increased maximum adjustment.

SUFFIX -X

OVERFLOW WITH STANDPIPE

FUNCTION: Used as overflow drain in decorative pools, fish ponds or similar areas. Dome prevents floating objects from entering drain line.

MATERIALS:
Chrome Plated -CP
Nickel Bronze -NB
Polished Bronze -PB

VARIATIONS:
Less Dome -LD
Standpipe Height other than 6" (150) (Specify Height)

SUFFIX	A SIZE	X MIN	X MAX
-Y	2 (51)	3/4 (19)	2 1/8 (54)
-Z	3 (76)	3/4 (19)	2 1/8 (54)

SUFFIX -Y-Z Specify Type, Size & Finish eg: YCP, ZCP

HEAVY DUTY ADJUSTABLE

FUNCTION: Used in finished floors where light wheeled loads and or heavy foot traffic are anticipated.

MATERIALS:
Polished Bronze -PB
Rough Bronze -RB
Nickel Bronze -NB

VARIATIONS:
Flapper Type Backwater Valve(Specify Suffix -69V)
Sediment Bucket -B
Vandal Proof Screws -U

SUFFIX-69 eg: A06NB-69

Fig. 3580

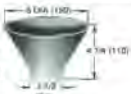


Fig. 3581

Fig. 3590

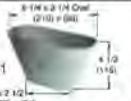


Fig. 3591

REV.	DATE	DESCRIPTION	BY	CKD. BY
H	8-24-99	Revised	TBW	BS
G	6-11-99	Revised Tables	CMD	
F	1-22-99	T Strainer was S Strainer	TBW	BS
E	11-4-97	Added Nickel Bronze	EMB	BS
D	10-28-96	Chg'd Func of Suffix -V -W		BS

FIGURE NUMBER
2010 SERIES OPTIONAL STRAINER HEADS
2 of 2

NOTE: Dimensions shown in parenthesis are in millimeters.

FD-2

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TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com
CUSTOMER DRIVEN
MEMBER OF:

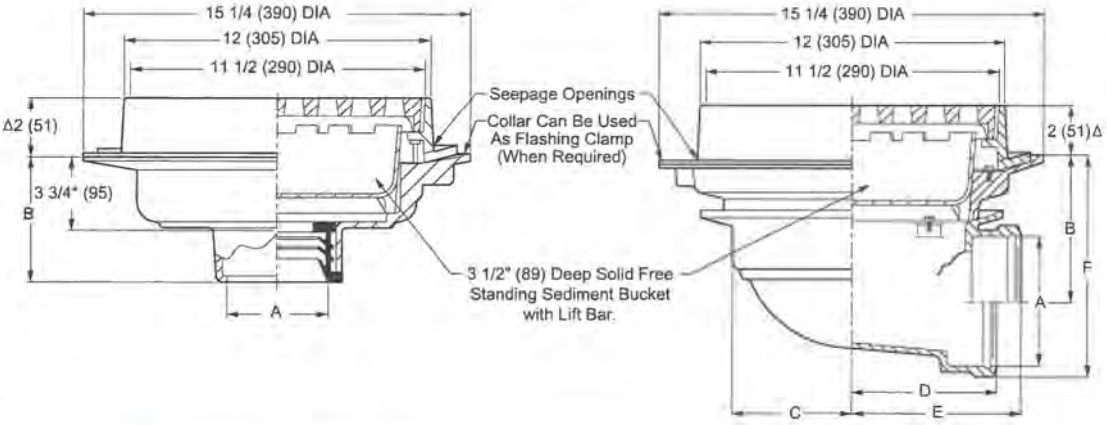
LOCATION

FLOOR DRAINS
WITH HEAVY DUTY TRACTOR GRATE

12" (305) ROUND TOP SOLID FREE STANDING SEDIMENT BUCKET

FUNCTION: Used in heavy trucking or traffic areas where waste water contains sand, sediment and other debris. Drain has solid free standing bucket to intercept this type of debris.

Free Area
29 SQ IN
(187) SQ CM



☒ Fig. 2142C.....CAULK OUTLET
☒ Fig. 2142Y.....NO-HUB OUTLET

☐ Fig. 2147C.....CAULK OUTLET
☐ Fig. 2147T.....THREADED OUTLET

A Size	B Caulk, NO-HUB & Speedi-Set	B Threaded
02(50,03(75)04(100) 05(125) & 06(150)	5 (125)	3 3/4 (95)

A SIZE	02(50)	03(75)	04(100)	05(125)	06(150)
B	6 7/8(175)	6 3/8(162)	5 7/8(149)	5(125)	4 1/2(115)
C	4 3/4(120)	4 3/4(120)	4 3/4(120)	6 1/4(160)	6 1/4(160)
D	6(150)	6(150)	6(150)	6 5/8(168)	6 7/8(175)
E	7 1/4(185)	7 1/2(190)	7 3/4(195)	7 3/4(195)	7 3/4(195)
F	8 5/8(219)	8 3/4(220)	8 3/4(220)	8 1/2(215)	8 1/2(215)

REGULARLY FURNISHED:
Duco Cast Iron Body and Flashing Collar with Cast Iron Tractor Grate and Solid Free Standing Sediment Bucket.

VARIATIONS:
- ☐ Flat Bottom Strainer -FBS
- ☐ L Speedi-Set Service Weight 02(50), 03(75) & 04"(100) sizes only. (Fig. 2142 only)
- ☐ LXH Speedi-Set Extra Heavy 02(50), 03(75) & 04"(100) sizes only. (Fig. 2142 only)
- ☐ NO-HUB Adaptor (Specify Fig. 2646Y) (Fig. 2140 & 2147 only)
- ☐ Seepage Holes in Bucket -FP (Frost Proof)
- ☐ Square Top -S
- ☐ Trap Primer Connection -P050 1/2" (13) & -P075 3/4" (19) (Fig. 2142 only)
- ☐ Vandal Proof Grate -U
- ☐ T Threaded Outlet

OPTIONAL MATERIALS:
- ☒ Ductile Iron Grate -M
- ☐ Galvanized Cast Iron -G
- ☐ Nickel Bronze Top -NB
- ☐ Polished Bronze Top -PB

Δ Add 1/8" (3) when bronze top is specified.
*This dimension to internal stop of Speedi-Set gasket.

NOTE: 02(50, 03(75), & 04"(100) sizes require a transition collar (as shown in above illustration) which fits between the body & collar. 05(12) & 06"(150) sizes do not require transition collar.

NOTE: Dimensions shown in parentheses are in millimeters.

REV.	DATE	DESCRIPTION	BY	CKD.
G	01/30/04	Revised Bucket Note	JJ	JM
F	1-18-99	Submittal redraw Illustrator	CMD	BS
E	2-6-96	Added Millimeters	EMB	BS

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 2142, 2147

FIGURE NUMBER 2142, 2147 | DRAWN BY: BS | CHECKED BY: TD | APPROVED BY: TD | DATE: 5-17-85 | SCALE: NONE | SIZE A | DRAWING NUMBER S2142, 2147 | G

FS-1

SMITH® JAY R. SMITH MFG. CO.®
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TEL: 334-277-8520 FAX: 334-272-7396 www.jrsmith.com
CUSTOMER DRIVEN SINCE 1926
MEMBER OF:

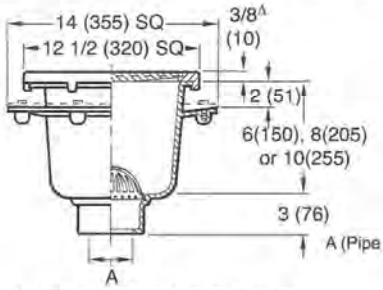
LOCATION

SANI-CEPTOR® ACID RESISTANT COATED FLOOR & INDIRECT WASTE DRAINS

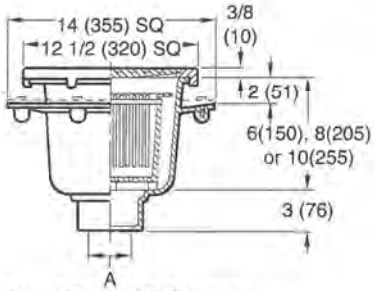
SQUARE NICKEL BRONZE TOP

12 1/2" (320) TOP - MEDIUM, DEEP & EXTRA DEEP RECEPTORS

FUNCTION: Used in kitchens, hospitals, food markets, restaurants, schools and all types of food handling areas where the ultimate in sanitation is desirable and a medium capacity receptor is required.



Free Area
42 SQ IN
(271) SQ CM



WITH DOME BOTTOM STRAINER

	6"(150) deep	8"(205) deep	10"(255) deep			6"(150) deep	8"(205) deep	10"(255) deep
Fig.	☐ 3140C	☐ 3150C	☐ 3160C	CAULK OUTLET	Fig.	☐ 3141C	☐ 3151C	☐ 3161C
Fig.	☐ 3140Y	☐ 3150Y	☐ 3160Y	NO-HUB OUTLET	Fig.	☐ 3141Y	☐ 3151Y	☐ 3161Y

WITH SEDIMENT BUCKET

FEATURES, OPTIONS & ORDERING INFORMATION

REGULARLY FURNISHED: Cast Iron Flanged Receptor with Seepage Holes, Acid Resistant Coated Interior, Nickel Bronze Rim and Secured Grate. Aluminum Dome Bottom Strainer or White ABS Sediment Bucket as Indicated by Figure Number.

OPTIONAL MATERIALS:
- ☐ All Duco Cast Iron Receptor -CI
- ☐ All Galvanized Receptor -G

VARIATIONS:
- ☐ Aluminum Flat Bottom Strainer -FBS
- ☐ Flashing Clamp -C
- ☐ Less Flange (Fig. 3155, 3156 only)
- ☐ Polished Aluminum Dome Bottom Strainer -PDBS
- ☐ Vandal Proof Screws -U
- ☐ L Speedi-Set Service Weight 02(50), 03(75) & 04"(100) sizes only
- ☐ LXH Speedi-Set Extra Heavy 02(50), 03(75) & 04"(100) sizes only

NOTE: Dimensions shown in parentheses are in millimeters.

SUFFIX NUMBER SQUARE RIM	DESCRIPTION
☐ -10	Less NB Rim and Grate
☐ -11	Less Grate w/NB Rim
☐ -12	With NB Rim and 1/2 Grate
☐ -13	With NB Rim and 3/4 Grate
☐ -14	With NB Rim and Grate with 2 1/2"(64) SQ Center Hole
☐ -15	With NB Rim and Aluminum Recessed Grate
☐ -19	With NB Rim and Hinged Grate
☐ -21	With NB Rim and Grate with 4"(100) DIA NB Funnel
☐ -22	With NB Rim and Grate with 6"(150) DIA NB Funnel
☐ -25	With NB Rim and Grate with 8 1/4(210) x 3 1/4(83) x 4 1/2"(115) High Oval NB Funnel
☐ -26	With NB Rim and Grate with 6(150) x 2 1/2(64) x 1"(25) High Oval NB Funnel
☐ -41	With NB Rim and Solid Cover
☐ -42	With NB Rim and 1/2 Solid Cover
☐ -43	With NB Rim and 3/4 Solid Cover
☐ -44	With NB Rim and Solid Cover with 2 1/2"(64) DIA Center Hole
☐ -69	With NB Rim and XH Stainless Steel Secured Grate [^3/8"(10) dimension becomes 1"(25)]

REV.	DATE	DESCRIPTION	BY	CKD. BY
L	8-4-14	Revised Variations	TBW	CL
K	6-10-14	Revised Reg. Furn., Var.	TBW	TWK
J	10-31-12	Revised Variations	TBW	BW
H	01/20/11	Updated Logo	JJ	TW

WEIGHT POUNDS | VOLUME CUBIC FEET | FIGURE NUMBER 3140-3161 Series

FIGURE NUMBER: 3140-3161 Series
DRAWN BY: PJ
CHECKED BY: JD
APPROVED BY: SJM
DATE: 9-19-85
SCALE: NONE
SIZE: A
DRAWING NUMBER: S3140
L

HB-1

(../WFDIndex.html)Woodford Model 26 Wall Faucet

Model 26 Specs | Stem Lock | Modular Box | Pricing | Buy Online | Troubleshooting | Submittal Sheets | Print PDF

The Model 26 and B26 are field testable, backflow protected wall faucets intended for irrigation purposes in mild climate areas. The Model B26 is enclosed in a wall mounted box. Both models are designed to blend with modern architecture for installation on or in homes, service stations, churches, motels, drive-in restaurants, etc. The Model Y26 is designed to be used on a stand pipe in the lawn and garden, etc.

SPECIFICATIONS:

MODEL 50HF BACKFLOW PREVENTER - *Patent Pending*

- ASSE 1052 Approved
- Listed by IAPMO
- Field Testable
- Two Independent Check Valves
- Drains automatically when hose is removed
- No spray back

FEATURES:

EPDM PACKING: Prevents leaking.

PACKING NUT: Adjustable brass nut with deep stem guard.

VALVE SEAT: Standard "O" size washer.

HANDLES: Furnished with polycarbonate wheel handle and loose tee key. Optional: Metal wheel handle.

INLETS: Model 26 as shown below.
Model B26: 26P- ½ or 26P ¾ only.
Model Y26: ¾ " FPT.

MAX PRESSURE: 125 p.s.i.

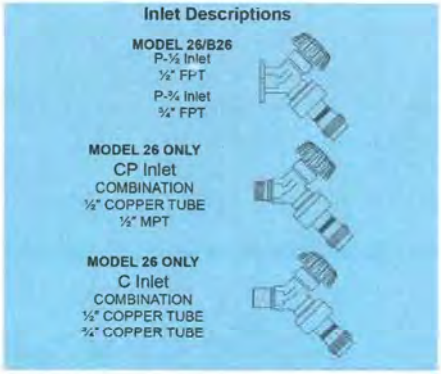
MAX TEMPERATURE: 120° F

SHIPPING WEIGHT: (per unit)

MODEL 26 & Y26: 1.2 lbs

MODEL B26: 14.6 lbs (brass or chrome box)
6.5 lbs (aluminum box)

Inlet Descriptions



For Installation / Troubleshooting Instructions go to www.woodfordmfg.com or call 1-800-621-6032

WOODFORD

Backflow Protected

Wall Faucets

Model 26/B26/Y26

MODEL 26

Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Chrome (PC)

MODEL B26

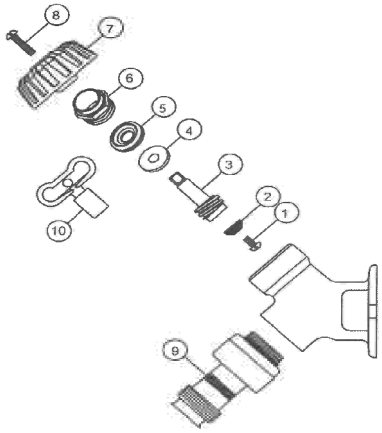
Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Brass (PB)
Other Options: Anodized Aluminum Box and Door

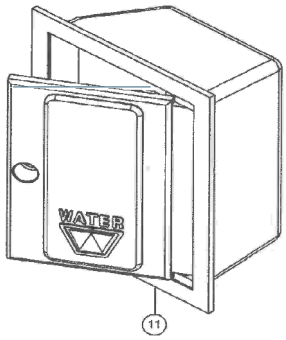
MODEL Y26

Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Chrome (PC)

Rev. 02/12 Form No. 26.109

WOODFORD





ITEM	PART#	DESCRIPTION
1	30009	Washer Screw
2	30008	Washer
3	30104	Operating Stem
4	30105	Packing Support Washer
5	30247	EPDM Packing
6	30109	Packing Nut - chrome

301 20 Wh e el H an dle - Clear

) 30121 Handle Screw - Nickel

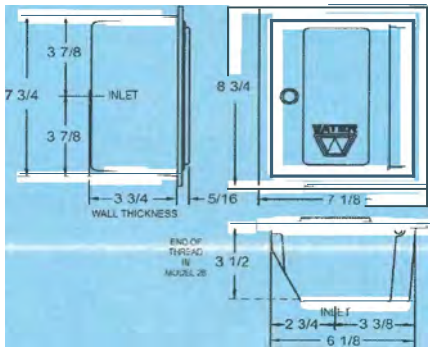
} 50HF-CH) Port F Backflow Preventer - Chrome
) 50I4F-BR SOHF 6aMflo'w_Preventer - Orass

10) 50009

) B26BX-BR Box/Dcor Assembly - Brass
) B26B -Phi y - PD
B26BX-AL Bo<'Door Assembly - Anodize•d, Aluminum

} RK-H 34) Brass Repair "Kit (Includes items 1-8)

MODEL B26
Rough-In Dimensions



Manufactured under one or more of the following patents: U.S. Patents: 3,414,001; 3,543,786; 4,178,956; 4,316.481; D216,790; D216,791; D277,365; D277,366; Canada Patents: 822,458; 852,529; 865,995

For more in formation contact ..

WOODFORD MANUFACTURING COMPANY

2121 Waynoka Road, Colorado Springs, Colorado 80915 • Phone: (BOO) 621-6032 * Fax: (800) ?'65-4115
To view our complete product line visit: www'.woodfbrx/mr .com *or email: sales@woodrordmf'g.com*
A Division Of WCM Industries, Inc.

TOTO®

LT641

Dartmouth® Undercounter Lavatory

FEATURES

- 21-1-4"W x 16-1/4"D
- ADA compliant
- Front or rear overflow
- Mounting assembly complete with installation template and mounting screw set for wood countertops
- THU410 is required for marble/granite type counter top installation and must be purchased separately

MODELS

- LT641
  (#01, #03, #11, #12, #51)

COLORS/FINISHES

- #01 Cotton
  #03 Bone
  #11 Colonial White
  #12 Sedona Beige
  #51 Ebony

CODES/STANDARDS

- Meets and exceeds ASME A112.19.2/CSA B45.1
- Certifications: IAPMO(cUPC), State of Massachusetts , City of Los Angeles, and others
- Meets ADA guidelines and ANSI A117.1 requirements when countertop is installed 864mm (34") from finished floor and lavatory is installed 205mm (8-1/8") minimum from front edge.

PRODUCT SPECIFICATION

The undercounter lavatory shall be made of vitreous china. Lavatory shall be 18-3/4"in length and 13-3/4" in width. Product shall be with overflow and lavatory shall include mounting assembly. Lavatory shall be TOTO Model LT641_____.

L-1,2

SLOAN®
OPTIMA SYSTEMS

OPTIMA® plus
Battery Powered Hand Washing Faucet

EBF-85

▶ **Description**
Battery Powered, Sensor Activated Electronic Hand Washing Faucet for tempered or hot/cold water operation.

▶ **Flow Rate**
☐ 0.5 gpm/1.9 Lpm Vandal Resistant Spray Head
(See Accessories for other Spray Head options)

▶ **Specifications**
ADA Compliant, Battery Powered, Sensor Activated, Chrome Plated Brass Hand Washing Faucet with the following features:
- Splash-proof Circuit Control Module
- Fiber Optic, Automatic, Self-adaptive Sensing
- Isolated Latching Solenoid Operator, isolates magnetic components from water contact
- Audible Tone Low Battery Indicator
- Serviceable Filtered Solenoid Valve
- Bak-Chek® Tee for Hot/Cold Supply
- Trim Plate with Anti-Rotation Pin (specify 4" or 8")
- Vandal Resistant Spray Head with Pressure Compensating Flow Control
- Polypropylene Optic Cable Protection
- Includes four (4) C-size Alkaline Batteries

▶ **Variations**
(Add suffix to Model Number for Inclusion with Faucet)

- **Trim Plate (must be specified)**
  - ☐ -4 Trim Plate for 4" Centerset Sink
  - ☐ -8 Trim Plate for 8" Centerset Sink
- **Temperature Mixing Valves (optional)**
  - ☐ ADM Above Deck Mechanical Mixing Valve
  - ☐ BDM Below Deck Mechanical Mixing Valve
  - ☐ BDT Below Deck Thermostatic Mixing Valve

Bak-Chek® Tee not required or provided when a Temperature Mixing Valve is included with the faucet.

Consult Factory for Finish Variations

▶ **Accessories (Specify separately)**

- **Vandal Resistant Spray Heads**
  - ☐ ETF-1027-A 2.2 gpm/8.3 Lpm Laminar Flow Spray Head (recommended for medical applications)
  - ☐ ETF-1022-A 2.2 gpm/8.3 Lpm Aerator
- **Grid Strainer**
  - ☐ ETF-460-A Chrome Plated Brass Grid Strainer w/1¼" Outlet Tube

See OPTIMA Accessories Section of the Sloan Catalog for a complete listing of OPTIMA Faucet Accessories and Variations.

▶ **ADA Compliant**

▶ **Automatic**
The Sloan OPTIMA *Plus*® EBF-85 Battery Powered, Electronic Hand Washing Faucet operates by means of an adaptive infrared sensor that is linked to the faucet by a fiber optic cable. Once the user's hands enter the sensor's effective range, the Solenoid activates the water flow. Tempered water flows from the Faucet until hands are moved away. The Faucet then automatically shuts off.

▶ **Hygienic**
The ultimate in sanitary protection — there are no handles to turn or buttons to push. Helps to control the spread of infectious diseases.

▶ **Economical**
Automatic operation provides water usage savings over other faucet devices. Reduces maintenance and operation costs. Self-adaptive Range Adjustment makes installation quick and easy. Battery operation ideal for Retrofit installations.

▶ **Warranty**
3 year (limited)

▶ **Compliant to:**
ASME A112.18.1-2005/CSA B125.1-05
ISO/IEC 17025

LOW-LEAD UPC C ®

This product may contribute to LEED credits. See details on LEED calculation worksheet.

This space for Architect/Engineer approval

Job Name _____ Date _____

Model Specified _____ Quantity _____

Variations Specified _____

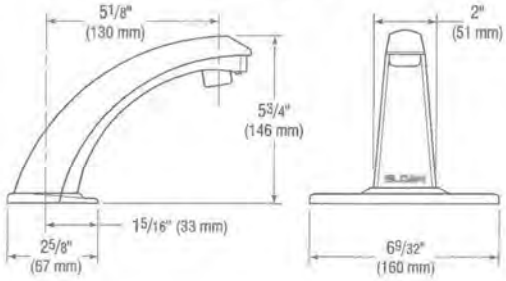
Customer/Wholesaler _____

Contractor _____

Architect _____

EBF-85

FAUCET DIMENSIONS
(Shown with 4" Trim Plate)



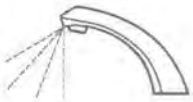
- **Description**
  Battery Powered, Sensor Activated Electronic Hand Washing Faucet for tempered or hot/cold water operation.
- **Flow Rate**
  ☐ 0.5 gpm/1.9 Lpm Vandal Resistant Spray Head
  (See Accessories for other Spray Head options)

ELECTRICAL SPECIFICATIONS

- **Control Circuit**
  6 VDC — Operates on four (4) alkaline C-size batteries. Self-adaptive Range Adjustment, Audible Troubleshooting and Low Battery Indicator. Fiber Optic Cable between Electronic Module and Faucet keeps all electronic signals below the sink.
- **Battery Life**
  2 years at 8,000 cycles/month
- **OPTIMA® Sensor Range**
  Nominal: 4"- 5" (102 mm - 127 mm)
  Self-adaptive Zone: 2" - 8"
  (51 mm - 203 mm) — Faucet self-adjustment range within this zone dependent upon depth and reflectivity of basin.
- **Solenoid Valve**
  Low Energy Latching Solenoid with Self-cleaning By-pass and Integral Clean Out Strainer Filter.
- **Time Out Adjustment Settings**
  30 seconds — The Faucet Time out Setting determines the maximum time the faucet will run upon continuous detection. The EBF-85 is factory set at the 30 second time out. Consult factory for time out settings to meet individual application requirements.
- **Maximum Distance Control Module may be Installed from Spout**
  30" (762 mm)

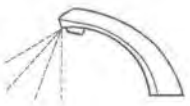
OPERATION

1. Continuous, invisible light beams are emitted from the OPTIMA® Sensor. Fiber optic cables transmit the light from the circuit to the spout.

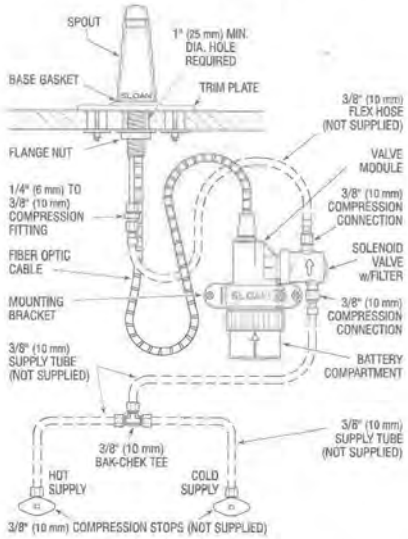


2. The faucet is activated by placing hands beneath the spray head, thus activating the Solenoid Valve. Tempered water flows for as long as hands continue to stay within the Sensor's range (30 second automatic shut off).

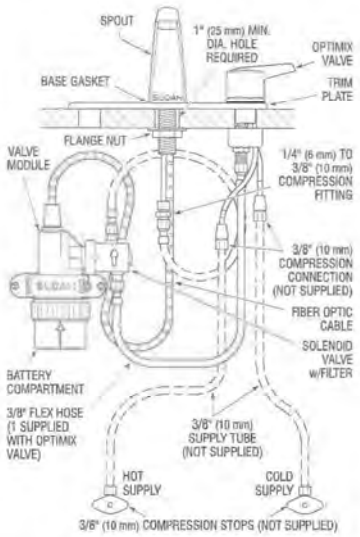
3. When hands are removed, the water flow automatically stops. The faucet is then ready for the next user.



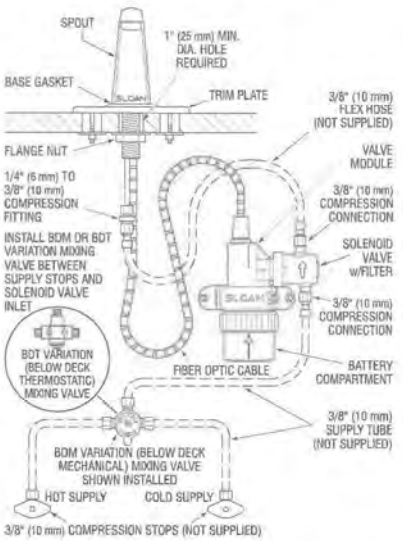
EBF-85 Faucet with Bak-Chek® Tee for Hot and Cold Water Supply (shown with 4" trim plate)



EBF-85 Faucet with ADM Variation Mixing Valve for Hot and Cold Water Supply (shown with 8" trim plate)



EBF-85 Faucet with BDM and BDT Variation Mixing Valves for Hot and Cold Water Supply (shown with 4" trim plate)



SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
Phone: 1-800-982-5839 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com

Dura-Ware® 1953: 18" Lavatory - ADA Compliant

WALL THICKNESS AND TYPE (Must Specify)
Thickness _____ Type: ❑ Concrete ❑ Block ❑ Steel

MODEL NUMBER AND OPTIONS SELECTION

BASE MODEL NUMBER
☑ 1953 18" x 22" ADA Compliant Lavatory

FIXTURE MOUNTING AND WASTE (Must Specify)
☑ -1 Off-Floor, Wall Outlet

BUBBLER OR SPOUT SELECTION (Must Specify)
❑ -CSG Centerset with Gooseneck Spout and Wrist Blade Handles
❑ -DMS Deck Mounted Spout, 1.4 GPM

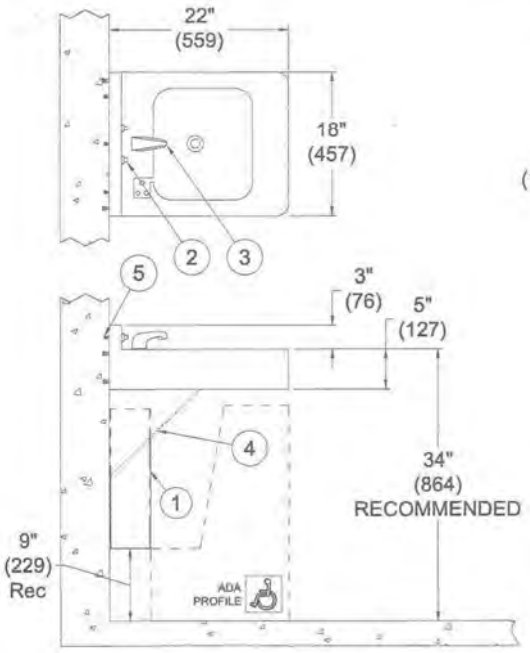
VALVE SELECTION (Must Specify)
❑ -03-M Air-Control, Single Temp, Metering
❑ -04-M Air-Control, Hot & Cold, Metering
❑ -9 Without Valves (Must Specify Deck Punching)
❑ -MVC1 Time-Trol - Single Temp
❑ -MVC2 Time-Trol - Hot & Cold
❑ -PPZ1 Programmable Piezo Button - Single Temp w/ 9VDC Plug-In Transformer
❑ -PPZ2 Programmable Piezo Button - Hot & Cold w/ 9VDC Plug-In Transformer

DECK PUNCHING
Must specify when indicating -09 Without Valves option, Ø1-5/16" holes provided.
❑ -H1 Single Hole, On Center
❑ -H24 4" Centerset; Two Holes
❑ -H34 4" Centerset; Three Holes
❑ -H28 8" Centerset; Two Holes*
❑ -H38 8" Centerset; Three Holes*
* Eliminates soap dish when selected.

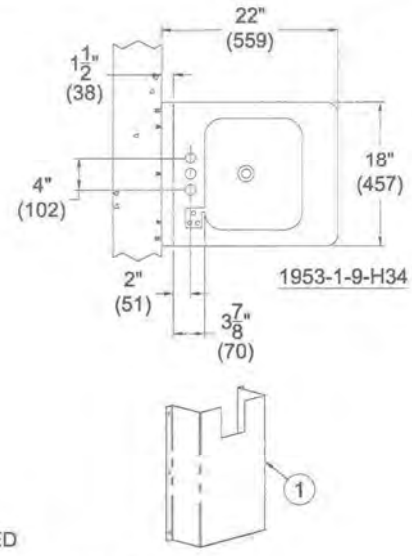
LAVATORY WASTE OPTIONS
❑ -GE Grid Strainer w/Close Elbow 1-1/4"
❑ -GT Grid Strainer w/Tailpiece 1-1/4"
❑ -OF Lavatory Overflow
❑ -TPT Tubular P-Trap 1-1/4" x 1-1/2"

PRODUCT OPTIONS
❑ -BRS Brass Body Valve
❑ -EE Elbow Enclosure
❑ -EG Enviro-Glaze Color, Specify: _____
❑ -FG 14 Gage Housing
❑ -TE Trap Enclosure

Please visit ***www.acorneng.com*** for most current specifications.



1953-1-DMS-04



1953-1-9-H34

NOTES:
1. Valve Cover Provided With Electronic Metering or Air-Control Valve Options Only
2. Lavy Valve Pushbuttons
3. Optional -DMS Deck Mounted Spout
4. Standard Angle Brace
5. Wall Mounting Anchors (By Others)

Important: Installation instructions and current rough-in are furnished with each fixture. Do not rough in without certified dimensions.

Selection Summary	Approved for Manufacturing
Model No. & Option_____	Company_____ Title_____
Quantity_____	Signature_____ Date_____

Acorn Engineering Company • 15125 Proctor Avenue • P.O. Box 3527 • City of Industry, CA 91744-0527 U.S.A.
Tel: (800) 488-8999 • (626) 336-4561 • Fax: (626) 961-2200 • www.acorneng.com • E-mail: info@acorneng.com

MS-1

ELKAY®

Service Sink, Floor Model
Models EFS2523C and EFS3321C

SPECIFICATIONS

GENERAL

#16 gauge, type 304 (18-8), stainless steel floor model service sink with 1-3/4" (44mm) radius vertical and horizontal coved corners. Apron on three sides. Top has 5/32" (4mm) raised rim. Exposed surfaces are polished to a lustrous satin finish. Underside is fully undercoated to prevent condensation and dampen sound. Furnished with wall hanger and LK43 drain with strainer.

(CHECK MODEL SPECIFIED)

☐ EFS2523C
☐ EFS3321C

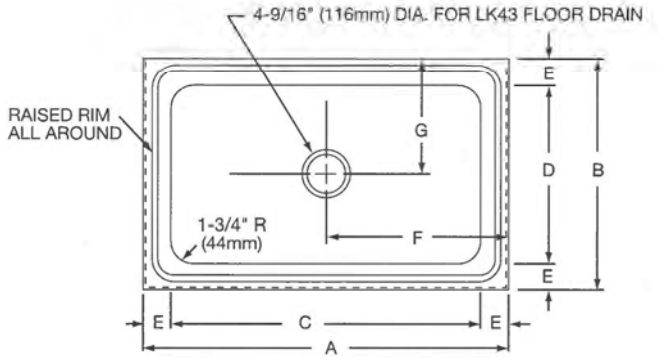
Model EFS3321C

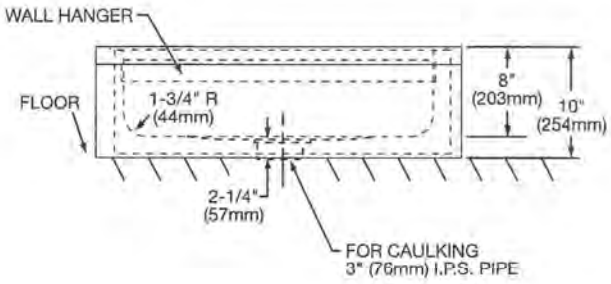
FURNISHED COMPLETE WITH:

DRAIN: LK43. Chrome plated brass body drain outlet fitting. Field adjustable stainless steel flat grid strainer or dome strainer. Designed to attach to 3" (76mm) I.P.S. pipe utilizing sealant by others.

DIMENSIONS

Model Number	A		B		C		D		E		F		G	
	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm
EFS2523C	25	635	23	584	20	508	18	457	2½	64	12½	318	11½	292
EFS3321C	33	838	21	533	28	711	16	406	2½	64	16½	419	10½	267





In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice.

This specification describes an Elkay product with design, quality and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Elkay Manufacturing Company
www.elkay.com

2222 Camden Court
Oak Brook, IL 60523

(Rev. 1/02) 3-1F

MECHANICAL FAUCETS

897-CP

MS-1

CHICAGO FAUCETS
a Geberit company

Manual and Metering Faucets

Product Type

Wall Mounted 8" Body, Adjustable Arms 7 5/8" - 8 3/4" Hot and Cold Water Sink Faucet

Features & Specifications

- 8" Body, Adjustable Arms 7 5/8" - 8 3/4"
- 2-3/8" Lever Handle
- Quaturn Compression Operating Cartridge
- 1/2" NPT Adjustable Female Union Nut Supply Arms
- 3/4" Male Hose Thread Outlet
- Integral Stop Valves for Servicing the product
- Atmospheric Vacuum Breaker, Not Intended for Continuous Pressure Applications
- Vacuum Breaker Spout with Pail Hook and Wall Brace
- Atmospheric Vacuum Breaker, Not Intended for Continuous Pressure Applications
- CFNow! Item Ships in 5 Days

Performance Specification

- Rated Operating Pressure: 20-125 PSI
- Rated Operating Temperature: 40-140ºF

Warranty

- Lifetime Limited Faucet Warranty
- 5-Year Limited Cartridge Warranty
- 1-Year Limited Finish Warranty

Codes & Standards

- ASME A112.18.1/CSA B125.1
- ADA ANSI/ICC A117.1

Job Name _____

Item Number _____

Section/Tag _____

Model Specified _____

Architect _____

Engineer _____

Contractor _____

[ ] Submitted as Shown [ ] Submitted with Variations

Date _____

2100 South Clearwater Drive
Des Plaines, IL
P: 847/803-5000
F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

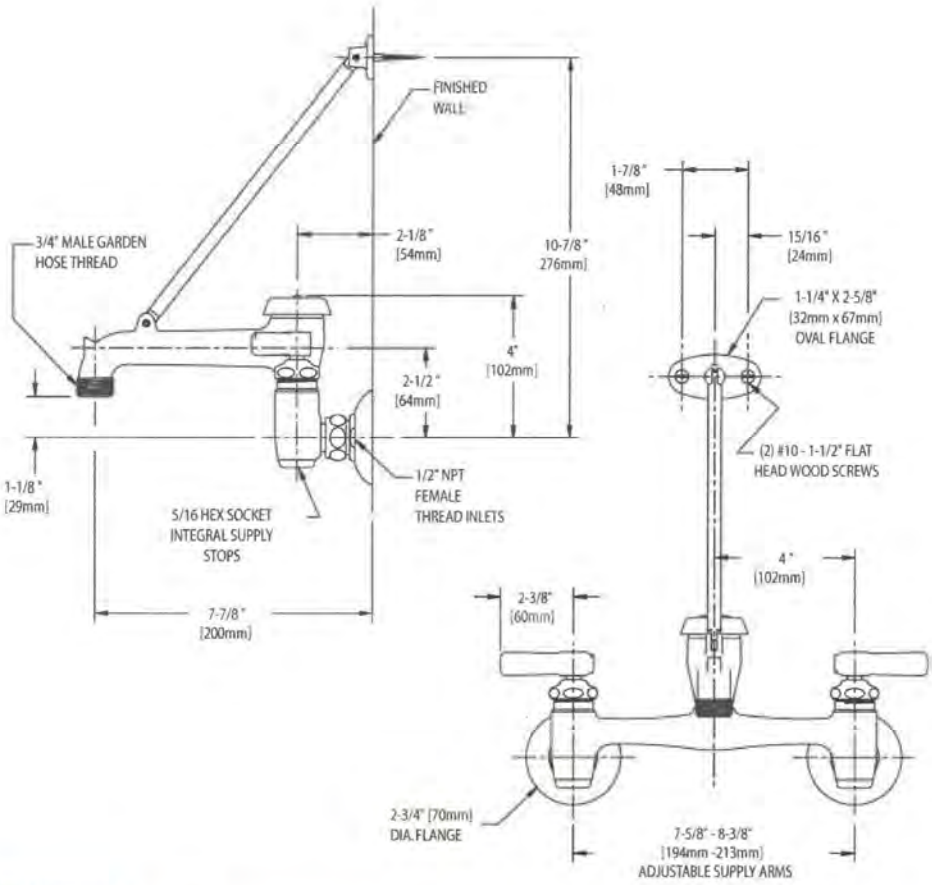
897-CP

Manual and Metering Faucets

CHICAGO FAUCETS
a Geberit company

Architect/Engineer Specification

Chicago Faucets No. 897-CP, Wall Mounted 8" Body, Adjustable Arms 7 5/8" - 8 3/4" Hot and Cold Water Sink Faucet, Chrome Plated solid brass construction. Vacuum Breaker Spout with Pail Hook and Wall Brace. 2-3/8" Metal Lever handle(s) with Eight Point Tapered Broach and Secured Blue and Red Buttons. Quaturn™ rebuildable compression cartridge, opens and closes 90°, closes with water pressure, features square tapered stem. 1/2" NPT Adjustable Female Union Nut Supply Arms. 3/4" Male Hose Thread Outlet. Integral Stop Valves for Servicing the product. Atmospheric Vacuum Breaker, Not Intended for Continuous Pressure Applications. Atmospheric Vacuum Breaker, Not Intended for Continuous Pressure Applications. Secondary Control Valve: Vacuum Breaker Spout with Pail Hook and Wall Brace. .



Operation and Maintenance

Installation should be in accordance with local plumbing codes. Flush all pipes thoroughly before installation. After installation, remove spout outlet or flow control and flush faucet thoroughly to clear any debris. Care should be taken when cleaning the product. Do not use abrasive cleaners, chemicals or solvents as they can result in surface damage. Use mild soap and warm water for cleaning and protecting the life of Chicago Faucet products. For specific operation and maintenance refer to the installation instructions and repair parts documents that are located at www.chicagofaucets.com.

Chicago Faucets, member of the Geberit Group, is the leading brand of commercial faucets and fittings in the United States, offering a complete range of products for schools, laboratories, hospitals, office buildings, food service, airports and sport facilities. Call 1.800.TECTRUE or 1.847.803.5000 Option 1 for installation or other technical assistance.

2100 South Clearwater Drive
Des Plaines, IL
P: 847/803-5000
F: 847/803-5454
Technical: 800/TEC-TRUE
www.chicagofaucets.com

S-1

ELKAY SPECIFICATIONS

Gourmet Undermount Sink with Perfect Drain™
Model ELUHAD Series - A.D.A. Compliant

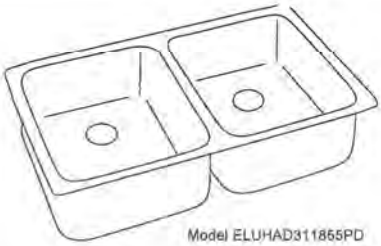
NEW ELUH Installation Options
ELUH models have been redesigned to accommodate 1/2" reveal and no reveal installation options.

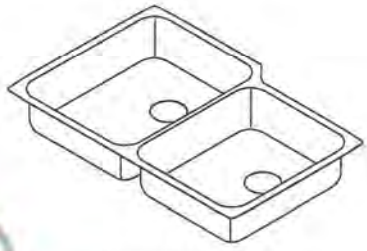
GENERAL
Highest quality sink formed of #18 (1.2mm) gauge, type 304 (18-8) nickel bearing stainless steel with **Perfect Drain**. Undermount.

DESIGN FEATURES
Bowl Depths: See chart on next page.
Coved Corners: 1-3/4" (44mm) vertical and horizontal radius.
Finish: Exposed surfaces are hand blended to a Lustrous Highlighted Satin finish.
Underside: Fully protected by Sound Guard® undercoating to reduce condensation and dampen sound.
Perfect Drain: Seamlessly welded stainless steel collar eliminates the gap between a traditional drain and the sink for a sanitary and gap free installation. Each sink shipped with two LKPD1 drain kits, or a garbage disposer can be installed on either sink bowl for user convenience.
Patent Pending

OTHER
Drain opening: 3-3/8" (86mm)
NOTE: All Elkay undermount sinks are designed to affix to the underside of any solid surface countertop.
Waste Fitting complies with ASME A112.18.2/CAN/CSA-B125.2
Sink complies with ASME A112.19.3/ CSA B45.4

Sinks are listed by IAPMO® as meeting the applicable requirements of the Uniform Plumbing Code®, International Plumbing Code®, and National Plumbing Code of Canada.


Model ELUHAD311865PD


Model ELUHAD312045RPD

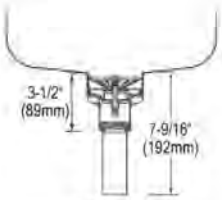
Sinks Are MADE IN USA™

THIS PRODUCT, AS CONSTRUCTED IS SUBJECT TO INTERPRETATION OF A.D.A. REQUIREMENTS. THE UNOBSTRUCTED KNEE SPACE REQUIRED TO SATISFY A.D.A. STANDARDS MAY NOT BE DESIRABLE.

in sink erator

Elkay® Perfect Drain™ sinks are designed and approved for compatible disposers manufactured by InSinkErator® utilizing the Quick Lock® mounting configuration. Use of non-approved disposers may void Elkay warranty.

InSinkErator, Quick Lock and the mounting collar configuration are trademarks of Emerson Electric Co.



Sink with Drain Kit Installed

In keeping with our policy of continuing product improvement, Elkay reserves the right to change product specifications without notice. Please visit elkay.com for the most current version of Elkay product specification sheets.

This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Elkay
elkay.com

2222 Camden Court
Oak Brook, IL 60523

ELKAY

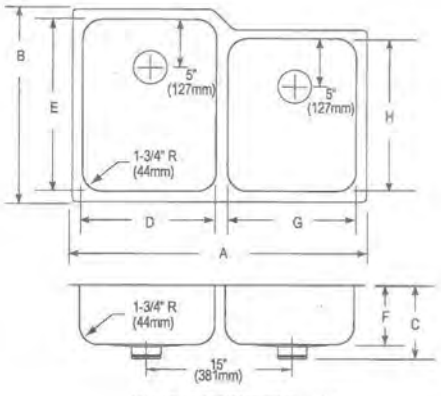
SPECIFICATIONS

Gourmet Undermount Sink with Perfect Drain™
Model ELUHAD Series - A.D.A. Compliant

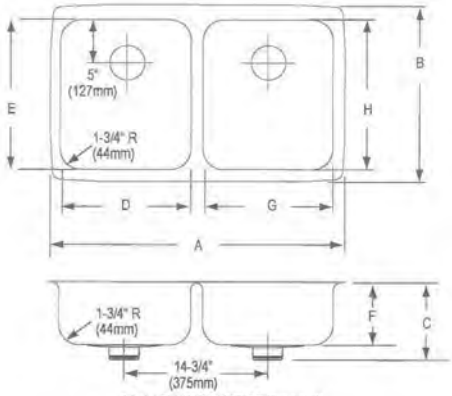
SINK DIMENSIONS*

Model Number	Overall L A	Overall W B	Overall D C	Inside Left Bowl L D	Inside Left Bowl W E	Inside Left Bowl D F	Inside Right Bowl L G	Inside Right Bowl W H	Inside Right Bowl D F	Cutout in Countertop	Minimum Cabinet Size
ELUHAD311845PD	30-3/4 (781mm)	18-1/2 (470mm)	5-7/8 (149mm)	13-1/2 (343mm)	16 (406mm)	4-3/8 (111mm)	13-1/2 (343mm)	16 (406mm)	4-3/8 (111mm)	See Template**	36 (914mm)
ELUHAD311850PD	30-3/4 (781mm)	18-1/2 (470mm)	6-3/8 (162mm)	13-1/2 (343mm)	16 (406mm)	4-7/8 (124mm)	13-1/2 (343mm)	16 (406mm)	4-7/8 (124mm)		36 (914mm)
ELUHAD311855PD	30-3/4 (781mm)	18-1/2 (470mm)	6-7/8 (175mm)	13-1/2 (343mm)	16 (406mm)	5-3/8 (137mm)	13-1/2 (343mm)	16 (406mm)	5-3/8 (137mm)		36 (914mm)
ELUHAD312045RPD	31-1/4 (794mm)	20-1/2 (521mm)	5-7/8 (149mm)	14 (356mm)	18 (457mm)	4-3/8 (111mm)	13-1/2 (343mm)	16 (406mm)	4-3/8 (111mm)		36 (914mm)
ELUHAD312050RPD	31-1/4 (794mm)	20-1/2 (521mm)	6-3/8 (162mm)	14 (356mm)	18 (457mm)	4-7/8 (124mm)	13-1/2 (343mm)	16 (406mm)	4-7/8 (124mm)		36 (914mm)
ELUHAD312055RPD	31-1/4 (794mm)	20-1/2 (521mm)	6-7/8 (175mm)	14 (356mm)	18 (457mm)	5-3/8 (137mm)	13-1/2 (343mm)	16 (406mm)	5-3/8 (137mm)		36 (914mm)

*Length is left to right. Width is front to back.
**Template #1000001312(ELUHAD3118) or #1000001388(ELUHAD3120R) is packed with every sink.

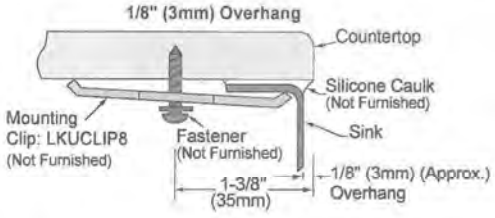


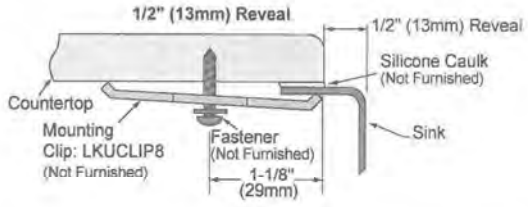
Model ELUHAD312055RPD Illustrated



Model ELUHAD311855PD Illustrated

Installation Profile





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This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

Elkay
elkay.com

2222 Camden Court
Oak Brook, IL 60523

(Rev. 05/14) 1-421A

S-1,2

MOEN®
COMMERCIAL

Specifications

DESCRIPTION
- Brass construction with chrome plated finish
- 1/2" IPS connections
- Includes side spray with Hydrolock® quick-connect system

OPERATION
- Wrist blade style handles with hot and cold color indicators
- Vandal resistant torx head screws
- 1/4 turn to open (clockwise to close)

FLOW
- Aerator is limited to 2.2GPM Max (8.34 Min.)

CARTRIDGE
- Brass shell, ceramic disc cartridge
- Nonmetallic/nonferrouse and ceramic material

STANDARDS
- Third party certified to meet ASME A112.18.1/CSA B125.1 and all applicable specifications referenced therein
- Certified to NSF 61/9
- Contains no more than 0.25% weighted average lead content
- Complies with California Proposition 65 and with the Federal Safe Drinking Water Act
- **ADA** for lever handles

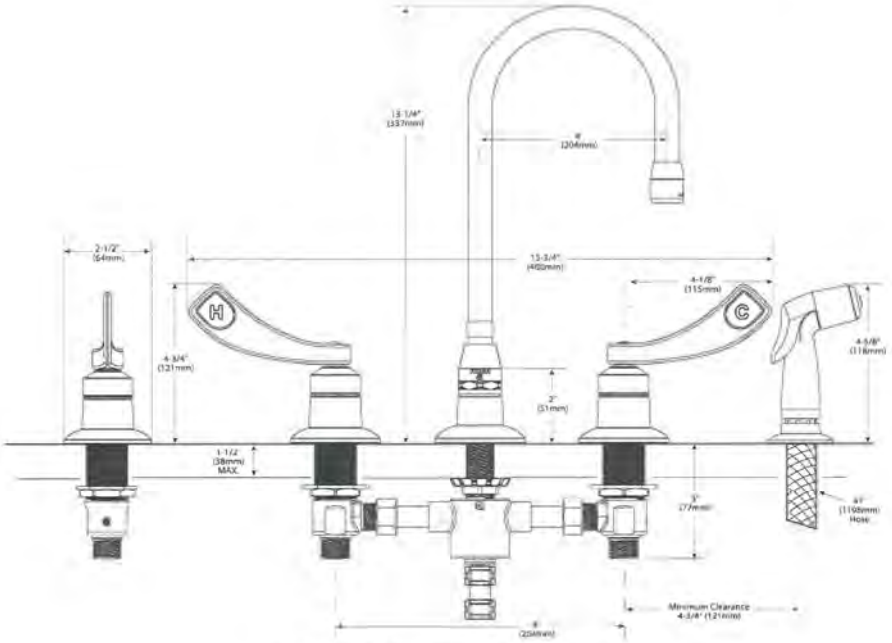
WARRANTY
- Warranted for 5 years against material or manufacturing defects

Two-Handle Kitchen Faucet w/Side Spray

Model: 8244

BUY AMERICAN ACT COMPLIANT

NOTE: Designed to be installed through 4 holes - 1" min. dia.



CRITICAL DIMENSIONS

(DO NOT SCALE)

Rev. 11/11

MOEN SPECIFIER SERVICES 1-800-321-8809 Ext. 2158
www.moen.com

S-2

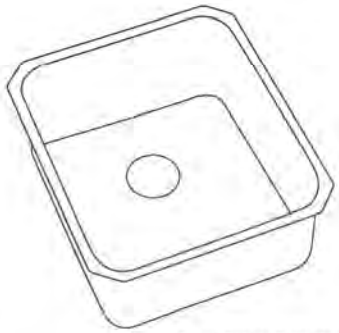
ELKAY SPECIFICATIONS

Gourmet Undermount Sink with Perfect Drain™ Model ELUHAD Series - A.D.A. Compliant

NEW ELUH Installation Options
ELUH models have been redesigned to accommodate 1/2" reveal and no reveal installation options.

GENERAL
Highest quality sink formed of #18 (1.2mm) gauge, type 304 (18-8) nickel bearing stainless steel with **Perfect Drain**. Undermount.

DESIGN FEATURES
Bowl Depths: See chart on next page.
Coved Corners: 1-3/4" (44mm) vertical and horizontal radius.
Finish: Exposed surfaces are hand blended to a Lustrous Highlighted Satin finish.
Underside: Fully protected by Sound Guard® undercoating to reduce condensation and dampen sound.
Perfect Drain: Seamlessly welded stainless steel collar eliminates the gap between a traditional drain and the sink for a sanitary and gap free installation. Each sink shipped with one LKPD1 drain kit, or a garbage disposer can be installed on sink bowl for user convenience.
Patent Pending



Model ELUHAD131655PD

OTHER
Drain opening: 3-3/8" (86mm)
NOTE: All Elkay undermount sinks are designed to affix to the underside of any solid surface countertop.
Waste Fitting complies with ASME A112.18.2/CAN/CSA-B125.2

Sink complies with ASME A112.19.3/ CSA B45.4

Sinks are listed by IAPMO® as meeting the applicable requirements of the Uniform Plumbing Code®, International Plumbing Code®, and National Plumbing Code of Canada.

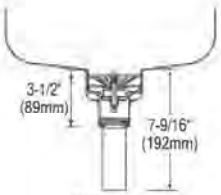
Sinks Are MADE IN USA™

THIS PRODUCT, AS CONSTRUCTED IS SUBJECT TO INTERPRETATION OF A.D.A. REQUIREMENTS. THE UNOBSTRUCTED KNEE SPACE REQUIRED TO SATISFY A.D.A. STANDARDS MAY NOT BE DESIRABLE.

in sink erator

Elkay® Perfect Drain™ sinks are designed and approved for compatible disposers manufactured by InSinkErator® utilizing the Quick Lock® mounting configuration. Use of non-approved disposers may void Elkay warranty.

InSinkErator, Quick Lock and the mounting collar configuration are trademarks of Emerson Electric Co.



Sink with Drain Kit Installed

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This specification describes an Elkay product with design, quality, and functional benefits to the user. When making a comparison of other producers' offerings, be certain these features are not overlooked.

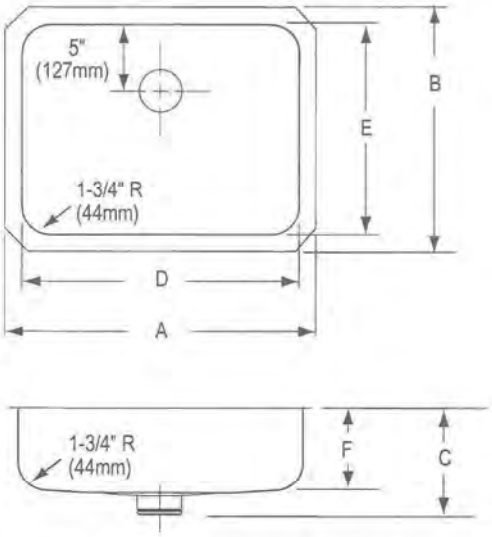
ELKAY SPECIFICATIONS

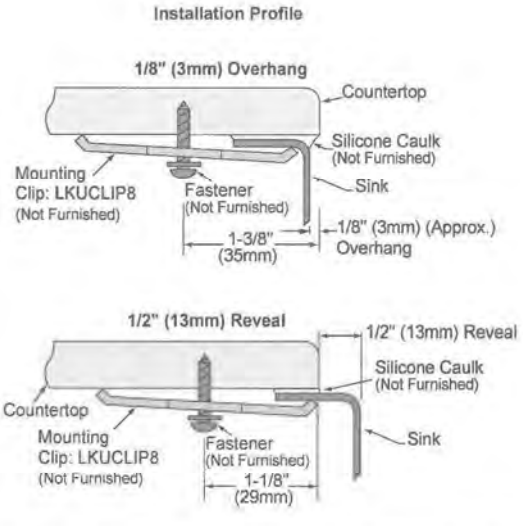
Gourmet Undermount Sink with Perfect Drain™
Model ELUHAD Series - A.D.A. Compliant

SINK DIMENSIONS*

Model Number	Overall L A	Overall W B	Overall D C	Inside Bowl L D	Inside Bowl W E	Inside Bowl D F	Cutout in Countertop	Minimum Cabinet Size	Template Number
ELUHAD131645PD	16 (406mm)	18-1/2 (470mm)	5-7/8 (149mm)	13-1/2 (343mm)	16 (406mm)	4-3/8 (111mm)	See Template packaged with sink	21 (533mm)	1000001399
ELUHAD131650PD	16 (406mm)	18-1/2 (470mm)	6-3/8 (162mm)	13-1/2 (343mm)	16 (406mm)	4-7/8 (124mm)		21 (533mm)	1000001399
ELUHAD131655PD	16 (406mm)	18-1/2 (470mm)	6-7/8 (175mm)	13-1/2 (343mm)	16 (406mm)	5-3/8 (137mm)		21 (533mm)	1000001399
ELUHAD141845PD	16-1/2 (419mm)	20-1/2 (521mm)	5-7/8 (149mm)	14 (356mm)	18 (457mm)	4-3/8 (111mm)		21 (533mm)	1000001307
ELUHAD141850PD	16-1/2 (419mm)	20-1/2 (521mm)	6-3/8 (162mm)	14 (356mm)	18 (457mm)	4-7/8 (124mm)		21 (533mm)	1000001307
ELUHAD141855PD	16-1/2 (419mm)	20-1/2 (521mm)	6-7/8 (175mm)	14 (356mm)	18 (457mm)	5-3/8 (137mm)		21 (533mm)	1000001307
ELUHAD211545PD	23-1/2 (597mm)	18-1/4 (464mm)	5-7/8 (149mm)	21 (533mm)	15-3/4 (400mm)	4-3/8 (111mm)		27 (686mm)	1000001400
ELUHAD211550PD	23-1/2 (597mm)	18-1/4 (464mm)	6-3/8 (162mm)	21 (533mm)	15-3/4 (400mm)	4-7/8 (124mm)		27 (686mm)	1000001400
ELUHAD211555PD	23-1/2 (597mm)	18-1/4 (464mm)	6-7/8 (175mm)	21 (533mm)	15-3/4 (400mm)	5-3/8 (137mm)		27 (686mm)	1000001400
ELUHAD281645PD	30-1/2 (795mm)	18-1/2 (464mm)	5-7/8 (149mm)	28 (711mm)	16 (406mm)	4-3/8 (111mm)		36 (914mm)	1000001414
ELUHAD281650PD	30-1/2 (795mm)	18-1/2 (464mm)	6-3/8 (162mm)	28 (711mm)	16 (406mm)	4-7/8 (124mm)		36 (914mm)	1000001414
ELUHAD281655PD	30-1/2 (795mm)	18-1/2 (464mm)	6-7/8 (175mm)	28 (711mm)	16 (406mm)	5-3/8 (137mm)		36 (914mm)	1000001414

*Length is left to right. Width is front to back.





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Elkay
elkay.com

2222 Camden Court
Oak Brook, IL 60523

Fiber-Fab®

World Class Tubs & Showers

Submittal Sheet

Model 38H1, BF—ADA Compliant

Date: _____ Job Name: SH-1,2

Customer: _____ Bid #: _____

Modifications: _____ Quantity: _____

Color	White
Ext. Dim.	38" W x 42" D x 80 ¾" H
Warranty	10 Year Limited Warranty
Weight	150 Lbs. ± 10 Lbs
Material	Gelcoat

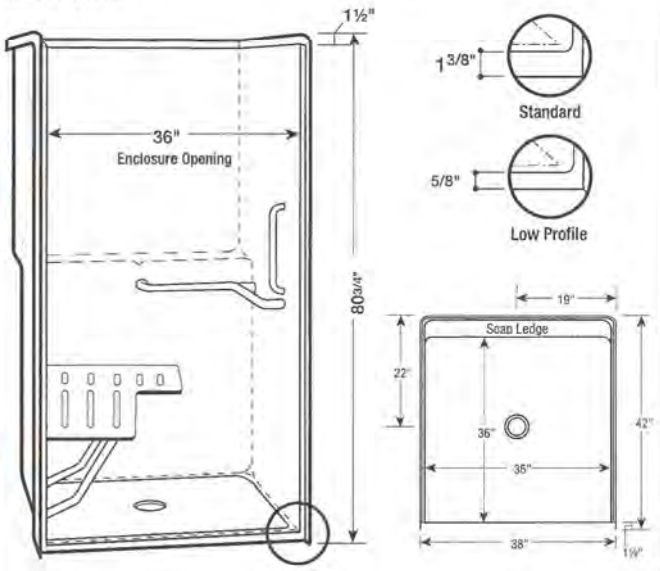
STANDARD FEATURES

1. Meets Federal ADA requirements.
2. One-piece construction allows for easy installation
3. Sandwich-Wall Construction
4. Sanitary Ware Gel Coat
5. Full-width soap and shampoo ledge across the back wall
6. Anti-slip floor provides added safety (meets ASTM -462)
7. Clear floor space is 36" x 36"

OPTIONAL FEATURES

- Low Profile bottom
- Pre-installed through-bolted curtain rod
- Pre-plumbed and installed pressure-balancing mixing valve with slide bar and hand-held spray
- Removable threshold
- Pre-installed through-bolted flangeless grab bar(s)
- Pre-installed four-legged fold-down seat
- Barrier-free ramps
- Barrier-free splash guard

Model 38H1



Dimensional Tolerance ± ¼". Dimensions needed for site preparation should be measured from the unit.

Model 38H1: Is **ADA** and **ANSI 117** compliant and features a fold-down seat with phenolic plate and stainless steel support tubing, as well as a 1¼" diameter "L" shaped stainless steel grab bar and 18" vertical bar as shown above. Please specify Left– or Right– hand plumbing.*

Model 38BF: Is **ADA** ready, but it does not include a seat or bar. The seat and bar can be added at a later time for **ADA** compliance.**

Low Profile Option: This option brings the threshold height on the 38" transfer shower to ½ after the installation of flooring. **However, a 14"x14" area must be blocked out around the drain to allow the drain to sit below the subfloor.**

* Because the 38H1 is a transfer shower, the ADA guidelines allow a half-inch threshold.

** Revised ADA guidelines allow the installation of a barrier-free shower (no seat and no bar) provided the seat and grab bar can be added later. The two-legged or the four-legged fold-down seat may be installed after the initial construction.

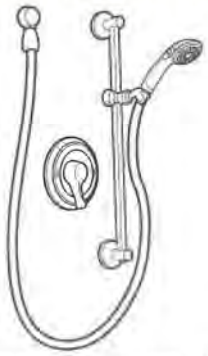
Plumbing Contractor Approval	Date	General Contractor Approval	Date
Engineer Approval	Date	Architect Approval	Date

12657 Portland Road NE • P.O. Box 78 Gervais, Oregon 97026-0078 • Phone: (503) 792-3456 • 1-877-792-3456 • Fax: (503) 792-3603
E-mail: ffi@fiberfab.com • www.fiberfab.com • Monday - Friday from 8:00 am to 4:30 pm

SH-1,2

MOEN®
COMMERCIAL

Specifications



Single-Handle Pressure Balancing Shower Valve With Hand-Held Shower System

Model: 8346, 8346EP15

DESCRIPTION
- Chrome plated metal construction
- Pressure balancing cycle valve design with 1/4 turn stops
- Contains: hand-held shower with non-positive pause, 30" slide bar, drop ell, vacuum breaker, 69" metal hose and mounting hardware
- **Slide bar is NOT DESIGNED TO BE A GRAB BAR**
- Supplied with vandal resistant screws
- Quick cleaning rubber nozzles

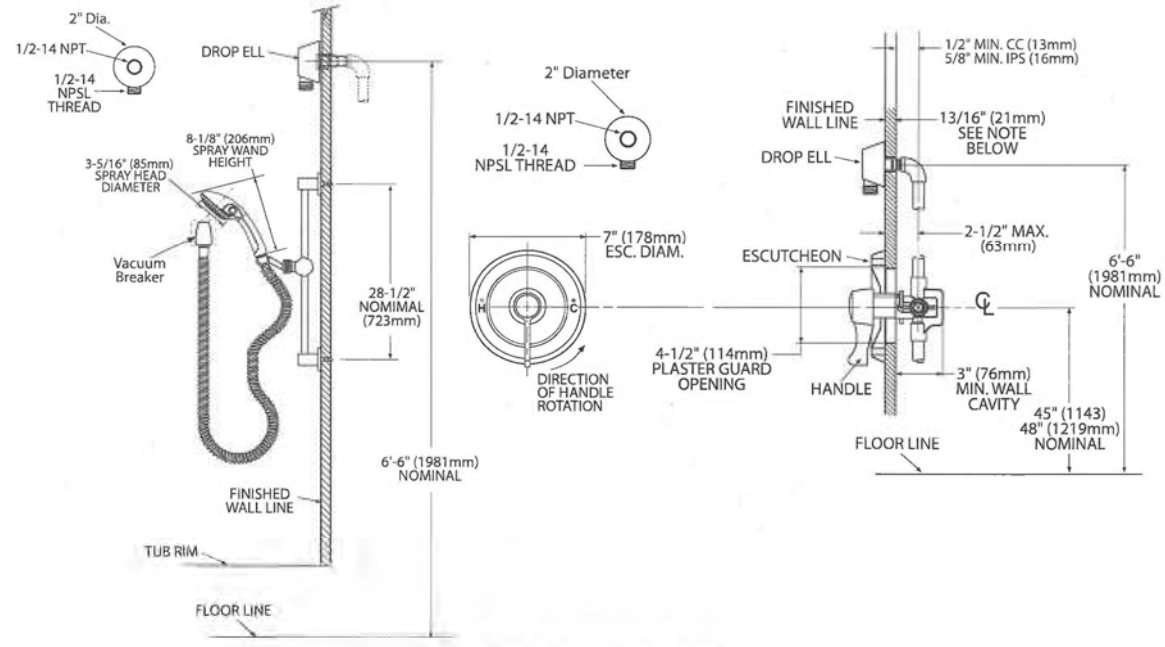
OPERATION
- Temperature valve has ADA compliant lever style handle
- Handle operates counterclockwise through a 270° arc with off at 6 o'clock, and maximum hot at the 9 o'clock position. Shut off in clockwise direction
- Adjustable temperature limit stop
- Pressure balancing mechanism maintains selected discharge temperature to ± 2°
- Single function spray pattern
- Easy to operate pause button (reduces the flow of water to a trickle)

FLOW
8346 (2.5gpm/9.5 lpm)
8346EP15 (1.5gpm/5.7 lpm); **WaterSense® Certified**

CARTRIDGE
- 1222HD brass cartridge design
- Brass construction with stainless steel materials
- Accommodates back-to-back installations

STANDARDS
- Third party certified to ASME A112.18.1/CSA B125.1 and all applicable requirements referenced therein
- **ADA** for lever handle

WARRANTY
- Warranted for 5 years against material or manufacturing defects



CRITICAL DIMENSIONS

(DO NOT SCALE)

WC-1 & WC-2

SLOAN
Water Connects Us™

Model
WETS-2051.1101-1.1 ECOS®
Electronic HET Flushometer and HET Water Closet

Buy American Act Compliant

DESCRIPTION

Complete system with exposed, sensor activated, Sloan ECOS® electronic Flushometer and HET vitreous china water closet.

Flush Cycle
Model WETS 2051.1101-1.1 (1.1 gpf/4.2 Lpf)
Code: 20511101

HET

Note: 1.1 gpf flushometer only recommended in new contruction installations or those where sufficient drain line carry can be assured. Alternatives include 1.28 gpf or 1.6 gpf flushometers.

Meets the American Disabilities Guidelines and ANSI A117.1 requirements when installed according to these requirements.

NOTE:
Plumbing System Requirements
- Minimum **Operating** Pressure: 25 PSI
- Maximum Fixture Operating Pressure: 80 PSI
- Minimum Operating Flow Rate: 18 GPM

SPECIFICATIONS

Quiet, exposed, battery powered, sensor activated, diaphragm type, ECOS® closet Flushometer for either left or right hand supply with the following features:

Flushometer
- PERMEX® Synthetic Rubber Diaphragm with Dual Filtered Fixed Bypass
- Flex Tube Diaphragm designed for improved life and reduced maintenance
- ADA Compliant Sloan ECOS® Battery Powered Infrared Sensor for automatic "No Hands" operation
- Infrared Sensor with Multiple-focused, Lobular Sensing Fields for high and low target detection
- Latching Solenoid Operator
- Engineered metal cover w/ replaceable lens window
- Courtesy Flush® Override Button
- User Friendly Three (3) Second Flush Delay
- Four (4) Size AA Batteries factory installed
- "Low Battery" Flashing LED
- Infrared Sensor Range Adjustment Screw
- Initial Set-up Range Indicator Light (first 10 minutes)
- 1" IPS screwdriver Bak-Chek® angle stop with Free Spinning Vandal Resistant Stop Cap
- High Back Pressure vacuum breaker flush connection with one-piece bottom hex coupling nut
- Spud coupling and flange for 1½" top spud
- Sweat solder adapter w/ cover tube and cast wall flange with set screw
- High copper, low zinc brass castings for dezincification resistance
- Flush Accuracy Controlled by CID Technology
- Diaphragm, Stop Seat and Vacuum Breaker to be molded from PERMEX® rubber compound for chloramine resistance
- Valve Body, Tailpiece and Control Stop shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Valve shall be in compliance with the applicable sections of ASSE 1037.

Water Closet
- Wall hung vitreous china elongated bowl
- Siphon jet flushing action
- 1½" IPS top spud inlet
- 2¼" fully glazed trapway diameter
- Integral flushing rim
- Water spot area 9 ½" x 8 ¼"
- Mounting hardware, carrier and toilet seat not included
- Recommended seats:
  Bemis - 1955CT/1955SSCT & 2155CT/2155SSCT
  Church - 295CT/295SSCT & 2155CT/2155SSCT
- Water closet shall be in compliance to the applicable sections of ASME A112.19.2/CSA B45.1
- Compliant with the Buy American Act when purchased as a combination

FEATURES

Automatic
The Flushometer operates by means of an infrared sensor that adapts to its surroundings. Once the user enters the sensor's effective range and then steps away, the Flushometer Solenoid initiates the flushing cycle to flush the fixture.

Manual
Sloan ECOS® Electronic Flushometers include a button design for manual use. The flush is controlled by the button.

Hygienic
User makes no physical contact with the Flushometer surface.

Economical
Automatic operation provides water usage savings over other flushing devices. Reduces maintenance and operation costs.

Practical
Solid state electronic circuitry assures years of dependable, trouble-free operation.

Warranty
3 year (limited)

This space for Architect/Engineer approval

Job Name _____ Date _____

Model Specified _____ Quantity _____

Variations Specified _____

Customer/Wholesaler _____

Contractor _____

Architect _____

The information contained in this document is subject to change without notice.

SLOAN
Sloan Valve Company
10500 Seymour Avenue
Franklin Park, IL 60131
Phone: 1-800-9-VALVE-9 (982-5839)
or 1-847-671-4300
Fax: 1-800-447-8329 or 1-847-671-4380
www.sloanvalve.com

WETS-2051.1101-1.1 11-14

SLOAN
Water Connects Us™

Model
WETS-2051.1101-1.1 ECOS®
Electronic HET Flushometer and HET Water Closet

Buy American Act Compliant

DESCRIPTION

Complete system with exposed, sensor activated, Sloan ECOS® electronic Flushometer and HET vitreous china water closet.

Flush Cycle
Model WETS 2051.1101-1.1 (1.1 gpf/4.2 Lpf)

Code: 20511101

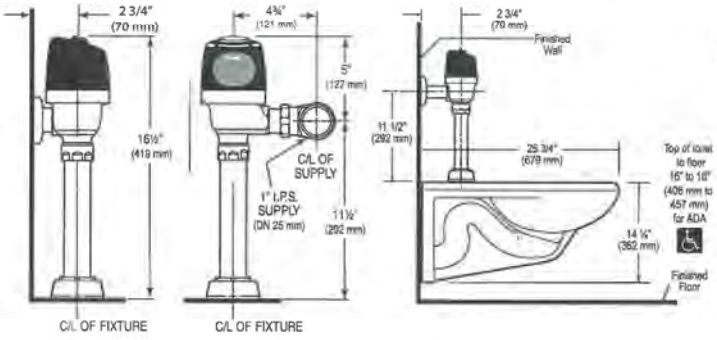
ELECTRICAL SPECIFICATIONS

- **Control Circuit**
  Solid state
  6 VDC input
  8 second arming delay
  24 hour Sentinel Flush
- **Sloan ECOS® Sensor Type**
  Active infrared
- **Sloan ECOS® Sensor Range**
  Nominal 22" – 42" (559 mm – 1067 mm),
  Adjustable ± 8" (203 mm)
- **Battery Type**
  (4) AA Alkaline
- **Battery Life**
  3 Years @ 4,000 flushes/month
- **Indicator Lights**
  Range adjustment/low battery
- **Sentinel Flush**
  Once every 72 hours after the last flush

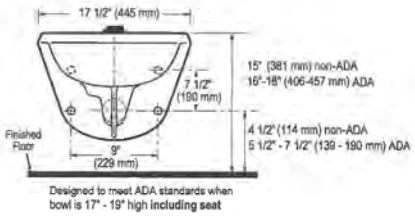
OPERATION

1. A continuous, invisible light beam is emitted from the Sloan ECOS® Sensor.
2. As the user enters the beam's effective range, 22" - 42" (559 mm to 1067 mm), the beam is reflected into the Scanner Window to activate the Output Circuit. Once activated, the Output Circuit continues in a "hold" mode for as long as the user remains within the effective range of the sensor. A full flush will automatically initiate when the user leaves.
3. Once a user is detected, the circuit automatically resets and is ready for the next user.

DIMENSIONS/ROUGH-IN



NOTE : All vitreous china dimensions shown in these drawings are nominal. Dimensions can vary within the tolerances established in the governing ASME A112.19.2/ CSA B45.1 standard. Please take this into consideration when planning rough-in and plumbing layouts.



SLOAN VALVE COMPANY • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
Phone: 1-800-9-VALVE-9 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com

WK-1 & WK-2

SLOAN®

Water Connects Us™

ECOS Hardwire Single Flush

Buy American Act Compliant

111-1.28 HW

HET HIGH EFFICIENCY TOILET

Description
Exposed, Hardwire, sensor-activated Sloan ECOS® Hardwire high-efficiency water closet flushometer.

Flush Cycle
Model 111-1.28 High Efficiency (1.28 gpf/4.8 Lpf)

Specifications
Quiet, Exposed, Diaphragm Type, Chrome Plated Closet Flushometer for either left or right hand supply (includes 9" electrical cable, right hand electrical rough-in may require 18" cable – consult factory) with the following features:

- PERMEX® Synthetic Rubber Diaphragm with twin linear filtered bypass and vortex cleansing action
- Flex Tube Diaphragm designed for improved life and reduced maintenance
- ADA Compliant Sloan ECOS® Electronic Line Powered Infrared Sensor for automatic "No Hands" operation
- Infrared Sensor with Multiple-focused, Lobular Sensing Fields for high and low target detection
- Latching Solenoid Operator
- Engineered Metal Cover with replaceable Lens Window
- User friendly three (3) second Flush Delay
- Courtesy Flush® Override Button
- Line Powered with 6 VAC Step Down Transformer
- Infrared Sensor Range Adjustment Screw
- Initial Set-up Range Indicator Light (first 10 minutes)
- 1" I.P.S. Screwdriver Bak-Chek® Angle Stop
- Free Spinning, Vandal Resistant Stop Cap
- Adjustable Tailpiece
- High Back Pressure Vacuum Breaker Flush Connection with One-piece Bottom Hex Coupling Nut
- Spud Coupling and Flange for 1½" Top Spud
- Sweat Solder Adapter with Cover Tube and Cast Wall Flange with Set Screw
- High Copper, Low Zinc Brass Castings for Dezincification Resistance
- Fixed Metering Bypass and No External Volume Adjustment to Ensure Water Conservation
- Flush Accuracy Controlled by CID Technology
- Diaphragm, Stop Seat and Vacuum Breaker molded from PERMEX® Rubber Compound for Chloramine resistance

Valve Body, Tailpiece and Control Stop shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Valve shall be in compliance with the applicable sections of ASSE 1037. Installation conforms to ADA requirements.

Special Finishes

☐	**PB**	Polished Brass (PVD Finish)
☐	**BN**	Brushed Nickel (PVD Finish)
☐	**SF**	Satin Chrome

Accessories

☐	**EL-386**	Transformer Plug (120 VAC/6 VAC)
☐	**EL-451**	Transformer Box (120 VAC/6 VAC 25VA)

See Accessories Section and Sloan ECOS® Electronic Accessories Section of the Sloan catalog for details on these and other Sloan ECOS® Electronic flushometer variations.

Fixtures
Consult Sloan for matching Sloan brand fixture options.

Automatic
Sloan ECOS® Flushometers activate via multi-lobular sensor detection to provide the ultimate in sanitary protection and automatic operation.

Functional & Hygienic
Touchless, sensor operation eliminates the need for user contact to help control the spread of infectious diseases. The ECOS® Flushometer is provided with an Override Button to allow a "courtesy flush" for individual user comfort.

Warranty
3 year (limited)

Patented
D598,974

This space for Architect/Engineer approval

Job Name _____ Date _____

Model Specified _____ Quantity _____

Variations Specified _____

Customer/Wholesaler _____

Contractor _____

Architect _____

ECOS

MODEL
111-1.28
Hardwire

Description
Exposed, Hardwire, Sensor Activated Sloan ECOS® Hardwire High Efficiency Water Closet Flushometer.

Flush Cycle
Model 111-1.28 High Efficiency (1.28 gpf/4.8 Lpf)

ELECTRICAL SPECIFICATIONS

Control Circuit
Solid State
6 VAC Input
4.5 VAC Output
8 Second Arming Delay
3 Second Flush Delay

Sloan ECOS® Sensor Type
Active Infrared

Sloan ECOS® Sensor Range
Nominal 22" - 42" (559 mm -1067 mm),
Adjustable ± 8" (203 mm)

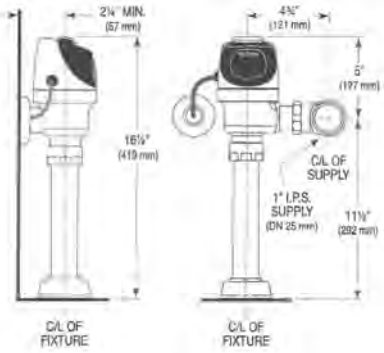
Indicator Lights
Range Adjustment

Operating Pressure
15 - 100 psi (104 - 689 kPa)

Sentinel Flush
Once Every 72 Hours After the Last Flush

Transformers
Sloan Part No. EL-386
120 VAC, 60 Hz Primary
6 VAC, 60 Hz Secondary
Class II, 1/2 Amp - Plug-In Style

Sloan Part No. EL-451
120 VAC, 60 Hz Primary
6 VAC, 60 Hz Secondary
Class II, 25 VA - Box Style



OPERATION

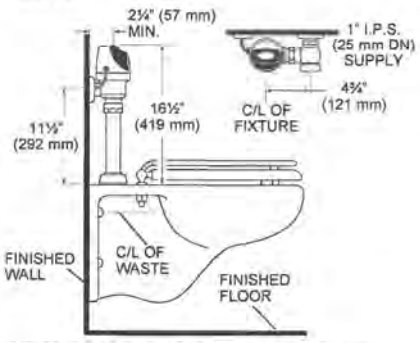
1. A continuous, invisible light beam is emitted from the Sloan ECOS® Sensor.

2. As the user enters the beam's effective range (22" to 42") the beam is reflected into the Sloan ECOS® Scanner Window and transformed into a low voltage electrical circuit. Once activated, the Output Circuit continues in a "hold" mode for as long as the user remains within the effective range of the Sensor.

3. When the user steps away from the Sloan ECOS® Sensor, the circuit waits 3 seconds (to prevent false flushing) then initiates an electrical signal that operates the Solenoid. This initiates the flushing cycle to flush the fixture. The Circuit then automatically resets and is ready for the next user.

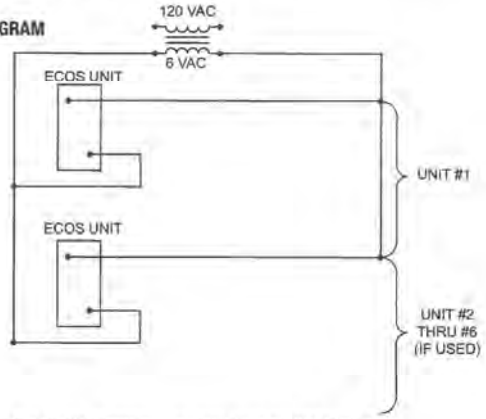
VALVE ROUGH-IN

Model 111



When installing the Sloan ECOS® Hardwire in a handicap stall:
Per the ADA Guidelines (section 604.9.4) it is recommended that the grab bars be split or shifted to the wide side of the stall.

WIRING DIAGRAM



One 25 VA Transformer serves up to six ECOS™ units.

SLOAN • 10500 SEYMOUR AVENUE • FRANKLIN PARK, IL 60131
Phone: 1-800-9-VALVE-9 or 1-847-671-4300 • Fax: 1-800-447-8329 or 1-847-671-4380 • www.sloanvalve.com

WH-1

(../WFDIndex.html)Woodford Model 26 Wall Faucet

Model 26 Specs | Stem Lock | Modular Box | Pricing | Buy Online | Troubleshooting | Submittal Sheets | Print PDF

The Model 26 and B26 are field testable, backflow protected wall faucets intended for irrigation purposes in mild climate areas. The Model B26 is enclosed in a wall mounted box. Both models are designed to blend with modern architecture for installation on or in homes, service stations, churches, motels, drive-in restaurants, etc. The Model Y26 is designed to be used on a stand pipe in the lawn and garden, etc.

SPECIFICATIONS:

MODEL 50HF BACKFLOW PREVENTER - *Patent Pending*

- ASSE 1052 Approved
- Listed by IAPMO
- Field Testable
- Two Independent Check Valves
- Drains automatically when hose is removed
- No spray back

FEATURES:

EPDM PACKING: Prevents leaking.

PACKING NUT: Adjustable brass nut with deep stem guard.

VALVE SEAT: Standard "O" size washer.

HANDLES: Furnished with polycarbonate wheel handle and loose tee key. Optional: Metal wheel handle.

INLETS: Model 26 as shown below.
Model B26: 26P- ½ or 26P ¾ only.
Model Y26: ¾ " FPT.

MAX PRESSURE: 125 p.s.i.

MAX TEMPERATURE: 120° F

SHIPPING WEIGHT: (per unit)

MODEL 26 & Y26: 1.2 lbs

MODEL B26: 14.6 lbs (brass or chrome box)
6.5 lbs (aluminum box)

Inlet Descriptions

For Installation / Troubleshooting Instructions go to www.woodfordmfg.com or call 1-800-621-6032

WOODFORD

Backflow Protected Wall Faucets

Model 26/B26/Y26

MODEL 26

Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Chrome (PC)

MODEL B26

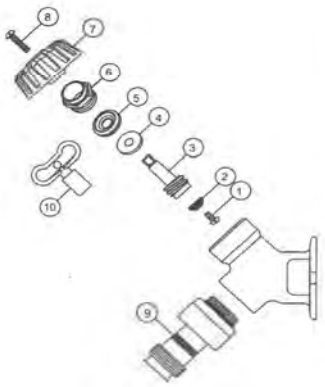
Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Brass (PB)
Other Options: Anodized Aluminum Box and Door

MODEL Y26

Exterior Finish:
Standard - Chrome
Optional- Rough Brass (BR) or Polished Chrome (PC)

Rev. 02/12 Form No. 26.109

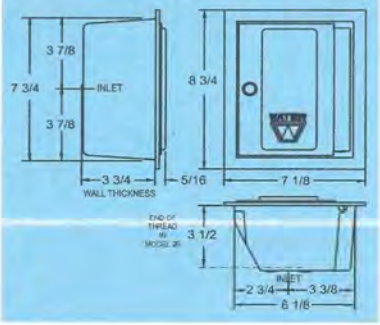
WOODFORD



MODEL 26/B26/Y26 PARTS LIST

ITEM	PART#	DESCRIPTION
1	30009	Washer Screw
2	30008	Washer
3	30104	Operating Stem
4	30105	Packing Support Washer
5	30247	EPDM Packing
6	30109	Packing Nut - chrome
	30107	Packing Nut - Brass
7	30120	Wheel Handle - Clear
	30233	Wheel Handle - Tan
8	30121	Handle Screw - Nickel
	30002	Handle Screw - Brass
9	50HF-CH	50HF Backflow Preventer - Chrome
	50HF-BR	50HF Backflow Preventer - Brass
10	50009	Tee Key
11	B26BX	Box/Door Assembly - Chrome
	B26BX-BR	Box/Door Assembly - Brass
	B26BX-PB	Box/Door Assembly - Polished Brass
	B26BX-AL	Box/Door Assembly - Anodized Aluminum
	RK-24	Chrome Repair Kit (Includes items 1-8)
	RK-H34	Brass Repair Kit (Includes items 1-8)

MODEL B26
Rough-In Dimensions



Manufactured under one or more of the following patents: U.S. Patents: 3,414,001; 3,543,786; 4,178,956; 4,316,481; D216,790; D216,791; D277,365; D277,366; Canada Patents: 822,458; 852,529; 865,995

For more information contact...

WOODFORD MANUFACTURING COMPANY

2121 Waynoka Road, Colorado Springs, Colorado 80915 • **Phone:** (800) 621-6032 • **Fax:** (800) 765-4115

To view our complete product line visit: ***www.woodfordmfg.com*** *or email:* ***sales@woodfordmfg.com***

A Division Of WCM Industries, Inc.

PART 3

LUMA

St. Helens Public Safety Building

100% Schematic Design

03/23/2023
lumald.com

St. Helens Public Safety Building

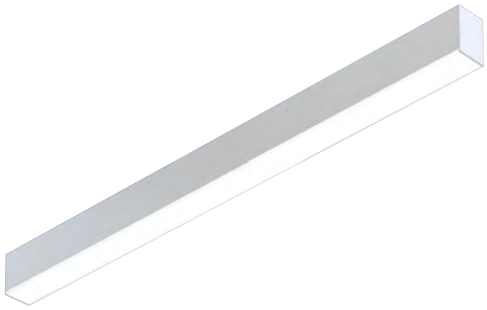
Type: L4

Luminaire Cut Sheets

Coronet
designed and built in the USA

a CarbonNeutral company

LS2 indirect/direct

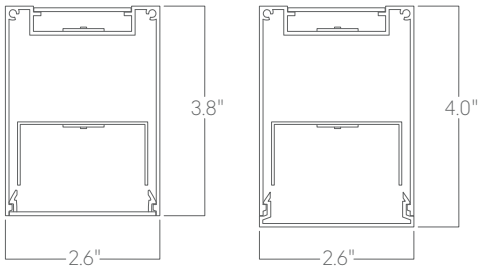


The LS Series of architectural luminaires offers a wide range of profiles and mounting options. Custom lengths and patterns are tailored to suit any modern space.

Features

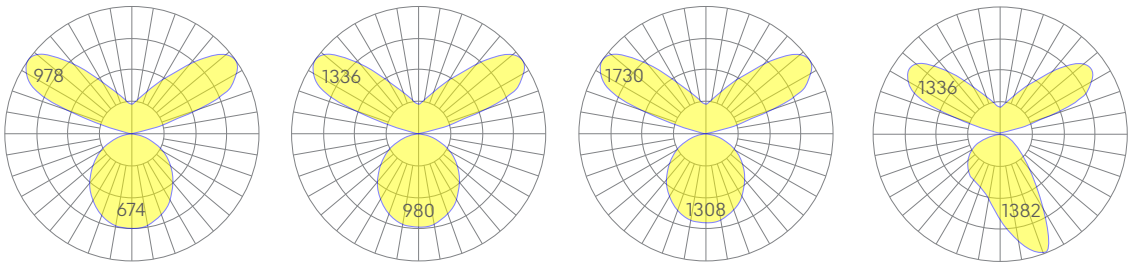
- Extruded recycled aluminum housing
- Aluminum core LED boards, specifiable optics
- Specifiable color temperature. CRI > 90, R9 >50
- Custom lengths, welded patterns, and finishes available
- Integral specifiable dimmable drivers or PoE
- 5 Year, 50,000 hour warranty
- WELL Building Standard compatible learn more

Dimensions



Flat Lens Reveal Lens

Optics



low medium high avi-asymmetric

Representative distribution and peak candela. For other options see order information or IES files here.

Modification date: April,2022

Page 1 of 4

Coronet reserves the right to make design changes for continuous improvement.

coronetled.com
T 973 345 7660

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L4

Luminaire Cut Sheets

Coronet®
designed and built in the USA

a CarbonNeutral company

LS2 indirect/direct

Ordering Information

1	2	3	4a	4b	5	6	7	8	9a	9b	10	11	12

Example: LS2 UPDN - 8 - 35 - MED - MED - UNV - DB - W - AC - FL - FL - CCS - DAYCKT - NA

Fixture ID 1

LS2 UPDN

Length 2

2	2 ft
4	4 ft
8	8 ft
X'-X"	Specify Length[1]
PAT	Pattern (Consult Factory)

[1]Precision lengths may be specified to the nearest 1/8".

Color Temperature 3

27	2700K/90 CRI
30	3000K/90 CRI
35	3500K/90 CRI
40	4000K/90 CRI
50	5000K/90 CRI
WD[1]	Warm Dim 2200K–3000K
TW[2]	Tunable White 2700K–6500K
RGBW30[3]	RGB +white, 3000k
RGBW35[3]	RGB +white, 3500k
RGBW40[3]	RGB +white, 4000k

[1]Must use WD10 driver.
[2]Must use TW10 or PSQdriver.
[3]Must use remote DMX driver. **"High" output not available.**

Output 4a - 4b -

4a - Indirect

LOW	Low output
MED	Medium output
HIGH	High output
CUST	Custom output[1]

4b - Direct

LOW	Low output
MED	Medium output
HIGH	High output
CUST	Custom output[1]

[1]consult factory

Voltage 5

UNV	Universal (120/277V)
347V[1]	347V

[1]Must use DB Driver

Driver 6

DB	Standard 0-10V 1%
DB.1%	0-10V 0.1%
ELV	2-wire 1% (120V only)
TRI	Forward phase (120V only)
LDE1	Lutron Digital EcoSystem
JA8	JA8 compliant 1% dimming
DALI	DALI-2 Driver
PoE	Power over ethernet.
TW10	Dual channel, 0-10V for tunable white.
WD10	0-10V Warm Dim
PSQ	Lutron T-Series 2-channel 1% for tunable white
DMX[1]	DMX512

[1]Set to default address 001. RDM capable. Contact us for other addressing needs. All DMX drivers provided in remote enclosuers.

Finish 7

W	White
BLK	Black
CC[1]	Custom Color
CWF[1]	Custom Wood Finish

[1]Custom Color. See finish options here.

White SJ cord and canopy provided; for other requests, see section 12 to specify.

Mounting 8

AC	Aircraft Cable (50")
AC3.5	3.5" canopy + jbox adaptor[1]
WM	Wall Mount
PS-X	Pendant Stem (12", 18", 24", 36", 48")

[1]Adaptor must be mudded-in.
White stems and canopy provided unless otherwise specified in options (section 12).

Optics 9a - 9b -

9a - Indirect

FL	Flat Diffuser
AVI-BAT	120° Batwing

9b - Direct

FL	Flat Diffuser
RV	0.2" Reveal Lens
AVI ASY	Flat, Asymmetric Diffuser

Sensors/Controls 10

NA	None
EIS	Enlighted sensor
WISM	Wattstopper occupancy sensor
WISD	Wattstopper daylight sensor
ACM	Acuity nLight module only
ACS	Acuity nLight sensor
CCS	Casambi module
LV	Lutron Vive

Consult factory for other options.

Circuit 11

NA	None
EM120V	Emergency Pack
EM277V	Emergency Pack
EMCKT	Emergency Circuit
DAYCKT	Daylight Circuit

Options 12

NA	None
CAN-X[1]	Canopy + color
SJ-X[2]	SJ Cord + color

[1]White SJ cord and canopy provided; use above nomenclature for other requests.
[2]See finish options here.

Performance

Output[1]	indirect Watts/ft	indirect Lumens/ft	direct Watts/ft	direct Lumens/ft
Low	5	500	5	537
Medium	7	721	7	743
High	10	967	10	1022

[1]Based on a typically configured 90 CRI, 3500K luminaire using one driver.

Custom outputs available. Please consult factory.
For 4000K multiply by 1.05; for 3000K 0.96; for 2700K, 0.92.

Technical Information

click here or scan QR code

Wiring diagrams, PoE and sensor details

Modification date: April,2022

coronetled.com
T 973 345 7660

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L5

Luminaire Cut Sheets

Catalog Number	
Notes	
Type	

Contractor Select™

FMVCSLS Vanity LED

Contemporary Switchable Square Vanity

Provides an LED lighting platform to deliver general or task lighting for residential and light commercial applications. Light engine delivers long life and excellent color to ensure a quality, low-maintenance light installation. Ideal for use in bathrooms, lavatories, hallways, corridors, stairways, utility areas and more.

FEATURES:

- Available in 24" and 48"
- 24in produces 1550 lumens, standard input = 27 watts.
- 48in produces 2960 lumens, standard input = 36 watts.
- Fixture is rated to deliver L70 performance at 50,000 hours and operates at 120-277 volts.

Catalog Number	UPC	Description	Lumens	Input Watts	Voltage	Color Temperature	Pallet qty.
FMVCSLS 24IN MVOLT 30K35K40K 90CRI BN M6	191848792117	2' LED Vanity	1550	27W	MVOLT	3000K, 3500K, 4000K	108
FMVCSLS 48IN MVOLT 30K35K40K 90CRI BN M4	191848792179	4' LED Vanity	2960	36W	MVOLT	3000K, 3500K, 4000K	48

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L5

Luminaire Cut Sheets

CS CONTRACTOR SELECT™

LITHONIA LIGHTING

Specifications

INTENDED USE:
Provides an LED lighting platform to deliver general or task lighting for residential and light commercial applications. Light engine delivers long life and excellent color to ensure a quality, low-maintenance light installation. Ideal for use in bathrooms, lavatories, hallways, corridors, stairways, utility areas and more.

CONSTRUCTION:
The Contemporary Square Vanity is constructed of an acrylic diffuser with housings available in a brushed nickel finish. The included canopy/junction box cover is removable for a more low-profile look (2'-4' lengths only). The white acrylic diffuser provides even illumination and softens the appearance of the LEDs for improved aesthetics.

OPTICS:
The FMVCSLS Contemporary Square Vanity has an integrated switch to select 3000K, 3500K or 4000K color temperature at the time of installation.

2' delivers 1550 lumens, and 4' delivers 2960 lumens at 3000K CCT with 50,000 hours of life.

See table to the right for delivered lumens at the different CCT color switch settings.

Extruded acrylic diffuser is of highly transmissive material to minimize LED image and provides high angle brightness control.

ELECTRICAL:
Long-life LEDs, coupled with a multivolt and dual dimmable capable driver, provide extended service life. Standard input = 27 watts, (2'); 36 watts, (4'). Fixture is rated to deliver L70 performance at 50,000 hours and operates at 120-277 volts.

This fixture is dimmable by either triac or 0-10V dimming. Use with approved triac or 0-10v dimmer only.

LISTINGS:
UL Listed to US and Canadian safety standards. Listed for damp locations. ENERGY STAR® certified.

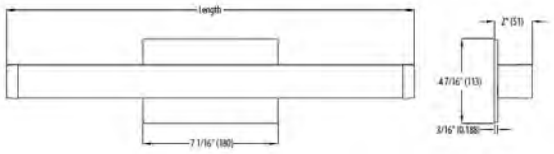
WARRANTY:
5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

Dimensions

SPECIFICATIONS	2FT	4FT
Length:	21-7/16 (545)	45-1/16 (1145)
Weight:	2.15 (.98)	3.15 (1.43)
3000K Lumens (LPW)	1550 (87)	750 (79)
3500K Lumens (LPW)	1725 (99)	815 (88)
4000K Lumens (LPW)	1740 (96)	830 (87)

All dimensions are inches (millimeters) unless otherwise indicated. Weights are pounds (kilograms).



Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L6

Luminaire Cut Sheets

D2.1.16

JUNO

TRAC-LITES™ 10W LED CYLINDER

R605L SERIES

Project:

Fixture Type:

Location:

Contact/Phone:

Buy American

ENERGY STAR

TITLE 24 PART 6

PRODUCT DESCRIPTION

The R605L Series 10W LED is an economical and affordable trac fixture, with a simple and timeless aesthetic. It approximates the light output and distribution of 50W MR16 halogen lamps, utilizing about 20% of the energy and having a rated life of 50,000 hours. It is available in 2700K, 3000K, 3500K and 4000K color temperatures with a minimum 80 CRI. Optional high CRI versions are available with a minimum 90 CRI. The R605L Series LED is available in spot, narrow flood, flood and wide flood beam distributions which can be achieved with interchangeable precision-molded custom TIR optics. It is available with an optional, bayonet-mount accessory holder that accommodates one accessory if desired. It is compatible with Juno Trac-Lites™ and Trac-Master™ trac and system components.

PRODUCT SPECIFICATIONS

Construction Die cast aluminum heat sink provides outstanding thermal management of LED, yielding 70% average lumen maintenance at 50,000 hours of operation • Simple, timeless design complements any decor • Available in white, black, bronze and silver finishes.

LED High performance LED array provides outstanding reliability, performance and color quality/consistency • 2700K, 3000K, 3500K or 4000K white phosphor high performance LEDs • Chromaticity range within a 3-step MacAdam Ellipse • Exceptional 80 CRI minimum on a standard product • Optional high CRI versions offer 90 CRI minimum.

Driver Integrated into fixture housing behind LED light engine to minimize overall fixture footprint • Insulating air gap between driver and LED light engine, plus thermal potting compound, optimizes thermal operation • Provides quiet operation with or without dimming • Dimmable using high quality, factory-approved dimmers - see R605L-DIM • Solid state electronic, Class 2 compliant • Integral overcurrent and short circuit protection • Designed for greater than 50,000 hour operating life • FCC Certified to Part 15 Class B EMI standards.

Optics Proprietary, interchangeable computer-designed custom TIR optics available in four factory-configured beam spreads • One TIR optic provided with fixture (as specified in catalog number) • Simply snaps into baffled bayonet mount optic holder • Accessory optics available to enable simple beam changes in the field • Beam patterns can be altered as desired using a variety of available light control accessories.

Accessory Holder Optional accessory ring attaches to baffled optic holder without tools • May be specified as a factory-installed option or ordered separately as a field-installed accessory • Precision bayonet mounting • Accommodates one accessory if desired.

Juno Universal Trac Adapter Universally compatible with both Trac-Master 1-circuit or 2-circuit trac, Trac-Lites trac, monopoints and special mountings • Also UL Recognized for use on ConTech® LT Series track • Copper alloy contacts provide precise spring action – no arcing and will not take a set • True, positive electrical ground • On /off switch included • Patented embossed polarity arrows on bottom of adapter • Spring-loaded positive latch with embossed polarity arrows secures trac light to trac • Two-position power contact provided for two-circuit application.

Alternate GTYPE Trac Adapter Compatible with track systems based on GES type track, including Lithonia LT Commercial Track (not LTS type) • System specific and assembled to trac fixture • Available in black, silver, and white finish only • Consult factory for additional information.

Alternate HTYPE Trac Adapter Compatible with track systems which use a H-type track adapter, including Lithonia LTS Decorative Track (not LT type) • System specific and assembled to trac fixture • Two-position power contact provided for two-circuit application • Available in black, silver, and white finish only • Consult factory for additional information.

Alternate LTYPE Trac Adapter Compatible with track systems which use a L-type track adapter • System specific and assembled to trac fixture • Two-position power contact provided for two-circuit application • Available in black and white finish only • Consult factory for additional information.

Aiming 350° horizontal coverage • 90° vertical aiming capability.

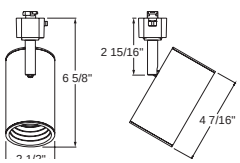
Labels UL and C-UL Listed • ENERGY STAR® certified • Union made • Assembled in U.S.A • 90 CRI version certified as CEC Title 24 Compliant.

Buy American This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FARS, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

Warranty 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions.

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.

DIMENSIONS



Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L6

Luminaire Cut Sheets

D1.1.0

JUNO

TRAC-MASTER®

One Circuit Track System

TRACK SECTION, JOINERS & FEEDS

T Series

Buy American

Project:

Fixture Type:

Location:

Contact/Phone:

PRODUCT DESCRIPTION

Low-Profile, single-circuit track sections for surface or pendant mounting. I-beam cross section provides added strength and rigidity in pendant suspended applications. Compatible with a full range of feed, connector and mounting accessories, as listed on back of this page, to complete virtually any installation requirement. Accepts all Trac-Master and Trac-Lites track fixtures.

PRODUCT SPECIFICATIONS

Construction Extruded aluminum "I" beam channel • One-piece thermoplastic insulator • Injection molded polycarbonate dead-end with set screw • Standard lengths may be cut-to-length by installer.

Electrical Two 12 gauge solid copper conductors • Rated 20 amps at 120 volts • Aluminum channel used as system ground • One-piece insulator insures consistent conductor spacing for reliable electrical contact • Insulating bushings supplied at mounting hole locations to prevent shorts to ground.

Labels UL listed, CSA certified.

Buy American This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

PRODUCT INSTALLATION

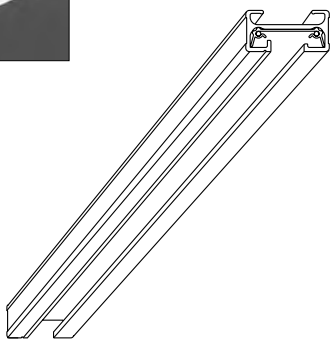
Debossed polarity line provides visual cue to proper track, track connector and fixture alignment • Supplied with toggle bolts for surface mounting • Integral raceway in top of channel accommodates pendant mounting hardware and wire routing to electrical feed • Insulator stays same length as extrusion to simplify field-cutting of track • Connectors and feeds simply push into track sections.

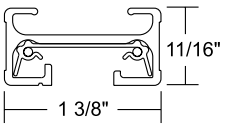
WARRANTY 1-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions.

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

Specifications subject to change without notice.

DIMENSIONS





ORDERING INFORMATION

Example: T 8FT WH

Series	Length	Finish
T Trac-Master 1-Circuit Track Sections	**2FT** 2-foot track section; actual length 19-7/8" **4FT** 4-foot track section; actual length 43-7/8" **6FT** 6-foot track section; actual length 67-7/8" **8FT** 8-foot track section; actual length 91-7/8" **12FT** 12-foot track section; actual length 139-7/8"	**BL** Black **SL** Silver **WH** White

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L7

Luminaire Cut Sheets

ALW

CORE 300 LX
UP + DOWN PENDANT

PROJECT

Job _____

Type _____

Part # _____

Notes

SPECIFICATIONS

Source	Two Xicato XTM LED modules - up to 3000 lumens each
CCT	2700K, 3000K, 3500K or 4000K
Color Consistency	1x2 SDCM (MacAdam) along BBL, CCT +/- 40K to 70K, Duv +/- .001
CRI (Ra)	83 or 98
Driver / Location	Included / Remote mount or deep canopy options
Dimming	0-10V or phase dimming to 10% standard; DALI, DMX and 1% dimming available
Input Voltage	100 to 277VAC, phase dimmable versions are 120VAC only
Power	Up to 47 watts max, depending on LED module / driver
Reflector	20˚, 40˚ or 60˚ - field replaceable without tools
Material	CNC machined aluminum with stainless steel hardware
Finish	Powder coat - TGIC polyester for exterior and interior use
Weight	5 lb. [2.3 kg]
Location	Listed for Wet & Damp locations
Approvals	ETL Listed to UL 1598, 2108, 8750 and CSA C22.2# 9 & #250.0
L80 Life	> 50,000 hours at 80% lumen maintenance based on IESNA LM-80-08
Warranty	Lifetime Limited Warranty - see warranty for details
IES Files	LM-79-08 IES files available
Modifications	Any modification or customization is possible - consult factory

LED · INDOOR OUTDOOR · WET LOCATION · DIMMABLE · LIGHTSOURCE BY XICATO · TITLE 24 COMPLIANT · ETL US LISTED Intertek

ORDERING LOGIC

Example	Driver Location	Dimming	# of Circuits	Mounting Location	Up Direction Output	Up Direction CRI *	Up Direction C.C.T.	Up Direction Reflector	Down Direction Output	Down Direction CRI *	Down Direction C.C.T.	Down Direction Reflector	Shell Color	Suspension	Options
C3LT -					-				-				-		-
	R=Remote **D**=Deep Canopy	**N**=None **P**=Phase **V**=0-10V **Z**=Other	**1** **2**	**D**=Damp **W**=Wet	**07**=700lm **10**=950lm **13**=1300lm **20**=2000lm **30**=3000lm	**83**=83 **98**=98*	**27**=2700K **30**=3000K **35**=3500K **40**=4000K	**20**=20° **40**=40° **60**=60°	**07**=700lm **10**=950lm **13**=1300lm **20**=2000lm **30**=3000lm	**83**=83 **98**=98*	**27**=2700K **30**=3000K **35**=3500K **40**=4000K	**20**=20° **40**=40° **60**=60°	**XX** (see chart on page 4) **ZZ**=Custom	**BK**=Black Cord **CB**=Clear Cord	

* 98 CRI not available in 3000 lm

Example Part Number: **C3LT-RN1D-13832720-20832740-S3BK**

CORE **3**00 **L**X Pendan**T** - **R**emote Driver, **N**o Dimming, **1** Circuit, **D**amp Location - UP= **13**00 lm, **83** CRI, **27**00K, **20**° Reflector - DOWN = **20**00 lm, **83** CRI, **27**00K, **40**° Reflector - **S3** Red, **B**lac**K** Cord

A 1035 22nd Avenue, Unit 1 · Oakland, CA 94606 **P** 510.489.2530 **E** TalkToUs@alwusa.com **W** alwusa.com

rev 200317

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

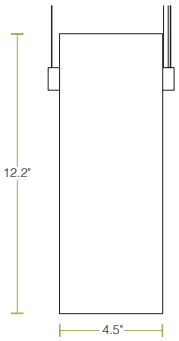
Type: L7

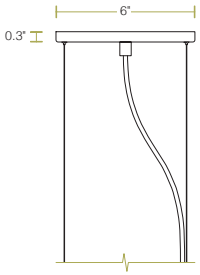
Luminaire Cut Sheets

ALW

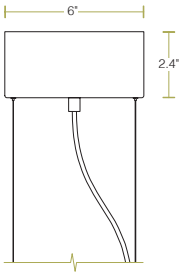
CORE 300 LX
UP + DOWN PENDANT

DIMENSIONS





Standard shallow canopy
for remote mounted LED drivers



Optional deep canopy
for canopy mounted LED drivers
Order Code = **D**
Diameter depends on LED driver size

Dual aircraft cable + cord suspension

Standard cable length = 6'

Cable length is field adjustable

To order longer cable put length in options section at the end of the part number

Canopies fit standard 3.5" and 4" round and octagonal junction boxes

Not to scale, dimensions are nominal
Consult factory for CAD drawings

LED OPTIONS

Reflector Option	LES[1]	CRI	LED Specifications Lumens[2, 3, 4]	Wattage[5] (W)	Efficacy[6] (lm/W)
20°, 40° & 60°	19mm	Ra = 83 ± 3	700	5.6	129
			950	8.2	118
			1300	11.7	111
			2000	19.5	102
			3000	29.3	102
		Ra = 98 R9 ≥ 90 R15 ≥ 95	700	7.4	97
			950	10.9	89
			1300	15.6	83
			2000	26.4	76

1 LES: Light Emitting Surface diameter
2 ±10%
3 Source lumens - see photometrics on page 3 for LOR to calculate delivered lumens
4 Higher lumen outputs are available in CORE / QUBE 400 series
5 Maximum luminaire wattage including LED driver = LED wattage x 1.2
6 Higher efficacies are available via lower drive currents - consult factory

CONTROL OPTIONS

Standard LED Drivers* (included in base price)	Order Code **V** = 0-10V dimming to 10%
	Order Code **P** = Phase dimming to 10% Compatible with both forward and reverse phase dimmers
Optional LED Drivers*	eldoLED 0-10V, DALI, or DMX dimming to 0%
	Lutron Hi-lume™ A-series, EcoSystem or forward phase dimming to 1%
	Lutron Hi-lume™ 5-series, EcoSystem dimming to 5%

* Standard LED drivers are suitable for Wet Location
* Optional LED drivers are suitable for Damp Location
* All LED drivers must be mounted in a deep canopy or remote
* Dual LED drivers available for independant Up + Down control
* Choosing different lumen outputs for Up + Down may require dual drivers
  Consult factory for details
* For EM applications:
  All LED drivers may be used with 3rd party inverter style systems

CORD OPTIONS

Clear Silver
Order Code = **CB**

For dry and damp locations

Black
Order Code = **BK**

For all locations

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rev 200317

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L8

Luminaire Cut Sheets

LITHONIA LIGHTING®

DIGITAL NAVIGATION

Ordering Tree nLight Platform Sensor Switch JOT Photometrics Performance Data

FEATURES & SPECIFICATIONS

INTENDED USE —The BLT Best-in-Value Low Profile LED luminaire features a popular center basket design that offers a clean, versatile style and volumetric distribution. High efficacy LED light engines deliver energy savings and low maintenance compared to traditional sources. An extensive selection of configurations and options make the BLT the perfect choice for many lighting applications including schools, offices and other commercial spaces, retail, hospitals and healthcare facilities. The low profile BLT design (2-3/8") also makes it an excellent choice for renovation projects.

CONSTRUCTION — Prior to fabrication, BLT components are coated with a proprietary paint blend and die-formed for dimensional consistency.

The BLT reflector is available in both smooth and ribbed finishes. Choose RB from the fixture style section below for a ribbed finish.

End plates contain easy-to-position integral T-bar clips for securely attaching the luminaire to the T-grid. For additional T-grid security, optional screw on T-bar clips are available.

Diffusers are extruded from impact modified acrylic for increased durability.

LED boards and drivers are accessible from the plenum.

OPTICS — Volumetric illumination is achieved by creating an optimal mix of light to walls, partitions and vertical and horizontal work surfaces – rendering the interior space, objects and occupants in a more balanced, complimentary luminous environment. High performance extruded acrylic diffusers conceal LEDs and efficiently deliver light in a volumetric distribution. Four diffuser choices available - curved and square designs with ribbed or a smooth frosted finish.

ELECTRICAL — Long-life LEDs, coupled with high-efficiency drivers, provide superior quantity and quality of illumination for extended service life. 80% LED lumen maintenance at 60,000 hours (L80/60,000). Color Variation within 3-step MacAdam ellipse (3SDCM).

Non-Configurable BLT: Generic 0-10 volt dimming driver. Dims to 10%

Configurable BLT: available in High Efficiency (HE) versions for applications where a lower wattage (over the standard product) is required. The High Efficiency versions deliver >130 LPW and can be specified via the Lumen Package designations in the Ordering Information below.

eldoLED driver options deliver choice of dimming range, and choices for control, while assuring flicker-free, low-current inrush, 89% efficiency and low EMI.

Optional integrated nLight®controls make each luminaire addressable - allowing it to digitally communicate with other nLight enabled controls such as dimmers, switches, occupancy sensors and photocontrols. Connection to nLight is simple. It can be accomplished with integrated nLight AIR wireless RIO, RES7 sensors, or through standard Cat-5 cabling. nLight offers unique plug-and-play convenience as devices and luminaires automatically discover each other and self-commission. nLight AIR is commissioned easily through an intutitive mobile app.

Lumen Management: Unique lumen management system (option N80) provides on board intelligence that actively manages the LED light source so that constant lumen output is maintained over the system life, preventing the energy waste created by the traditional practice of over-lighting.

Step-level dimming option allows system to be switched to 50% power for compliance with common energy codes while maintaining fixture appearance.

SENSOR— Integrated sensor (individual control): Sensor Switch MSD7ADCX ((Passive infrared (PIR)) or MSDPDT7ADCX ((PIR/Microphonics Dual Tech (PDT)) integrated occupancy sensor/automatic dimming photocell allows the luminaire to power off when the space is unoccupied or enough ambient light is entering the space. See page 4 for more details on the integrated sensor.

Integrated Sensor (nLight Wired Networking): This sensor is nLight-enabled, meaning it has the ability to communicate over an nLight network. When wired, using CAT-5 cabling, with other nLight-enabled sensors, power packs, or WallPods, an nLight control zone is created. Once linked to a Gateway, directly or via a Bridge, the zone becomes capable of remote status monitoring and control via SensorView software. See page 4 for the nLight sensor options.

Integrated Smart Sensor (nLight Air Wireless Platform): The RES7 sensor is nLight AIR enabled, meaning it has the ability to communicate over the wireless nLight control platform. It is available with an automatic dimming photocell, and either a digital PIR or a microphonics (PDT) dual technology occupancy sensor. It pairs to other luminairs and wall switches through our mobile app, CL**AIR**ITY+, which allows for simple sensor adjustment. See page 4 for more details on the Integrated Smart Sensor.

Integrated Wireless Sensor (single room control): Sensor Switch VERTEX JOT or JOTVTX15 luminaire-embedded occupancy and ambient light sensor allows the luminaire to power off when the space is unoccupied or when enough ambient light is entering the space. See page X for more details on the integrated wireless sensor.

INSTALLATION — The BLT's low profile design of only 2-3/8" provides increased installation flexibility especially in restrictive plenum applications. Designed for use in NEMA standard Type G (1" & 15/16") , NFG (9/16"), and SS (9/16") grid ceilings. Consult factory about other ceiling types.

For recessed mounting in hard ceiling applications, Drywall Grid Adapters (DGA) are available as an accessory. See Accessories section. Suitable for damp location.

LISTINGS — CSA Certified to meet U.S. and Canadian standards. IC rated. Tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive and negative pressure clean rooms.

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

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

Catalog Number	
Notes	
Type	

BLT Series LED

ADP Diffuser Option

2BLT4

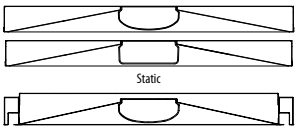
2' x 4' LED

Ribbed Reflector Option

Specifications

Length: 47-3/4 (121.2)
Width: 23-3/4 (60.3)
Depth: 2-3/8 (6.0)
Depth with Air supply/return: 2-3/4 (6.9)

All dimensions are inches (centimeters) unless otherwise specified.



Static

Air Supply/Return

Embed nLight controls today. Prepare for tomorrow.

Now	Tomorrow
User-friendly install	Scalability
Enhanced energy savings	Space configuration
Code compliance	Future-ready

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L8

Luminaire Cut Sheets

2BLT Volumetric Recessed Lighting 2'x4'

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: 2BLT4 40L ADP EZ1 LP840

2BLT4

Series	Fixture Style	Air function	Lumens ‡		Diffuser	Voltage	Driver	Color temperature
2BLT4 2x4 BLT	(blank) Smooth Reflector RB Ribbed Reflector	(blank) Static A Air supply/ return ‡	**Standard efficiency (>100 LPW)** 30L 3000 40L 4000 48L 4800 60L 6000 72L 7200 85L 8500 100L 10000 120L 12000	**High efficiency ‡ (>130 LPW)** 30LHE 3000 40LHE 4000 48LHE 4800 60LHE 6000 72LHE 7200 85LHE 8500	ADP Curved, ribbed ADSM Curved, smooth SDP Square, ribbed SDSM Square, smooth **Includes trim rings to match sensored version** ADPT Curved, ribbed ADSMT Curved, smooth SDPT Square, ribbed SDSMT Square, smooth	(blank) MVOLT 120 120V 277 277V 347 347V ‡	EZ1 eldoLED dims to 1% (0-10 volt dimming) GZ1 Dims to 1% (0-10V dimming) GZ10 Dims to 10% (0-10V dimming) SLD Step-level dimming ‡	LP830 82CRI, 3000 K LP835 82CRI, 3500 K LP840 82CRI, 4000 K LP850 82CRI, 5000 K LP930 90CRI, 3000K LP935 90CRI, 3500K LP940 90CRI, 4000K LP950 90CRI, 5000K

nLight Interface

nLight Wired

(blank)	no nLight ® interface
N80	nLight with 80% lumen management
N80EMG	nLight with 80% lumen management For use with generator supply EM power ‡
N100	nLight without lumen management
N100EMG	nLight without lumen management For use with generator supply EM power ‡

nLight Wireless

(blank)	no nLight AIR ® interface
NLTAIR2	nLight AIR Generation 2 enabled ‡

Control ‡

nLight Wired ‡

(blank)	No sensor control
NES7	nLight™ nES 7 PIR integral occupancy sensor
NESPDT7	nLight™ nES PDT 7 dual technology integral occupancy control
NES7ADCX	nLight™ nES 7 ADCX PIR integral occupancy sensor with automatic dimming photocell
NESPDT7ADCX	nLight™ nES PDT 7 dual technology integral occupancy sensor with automatic dimming photocell

nLight Wireless

RES7	nLight AIR control with PIR integral occupancy sensor and automatic dimming photocell ‡
RES7PDT	nLight AIR control with PDT dual technology integral occupancy sensor and automatic dimming photocell ‡
RIO	nLight AIR radio module without sensor ‡
RES7EM	nLight AIR PIR integral occupancy sensor with automatic dimming photocell and UL924 Emergency Operation, via power interrupt detection ‡
RES7PDTEM	nLight AIR microphonics dual technology occupancy sensor with automatic dimming photocell and UL924 Emergency Operation, via power interrupt detection ‡
RIOEM	nLight AIR radio module less sensor, with UL924 Emergency Operation, via power interrupt detection ‡

Individual Control

MSD7ADCX	PIR integral occupancy sensor with automatic dimming control photocell ‡
MSDPDT7ADCX	PDT integral occupancy sensor with automatic dimming control photocell ‡
JOT	Wireless room control with "Just One Touch" pairing ‡
JOTVTX15	Wireless occupancy sensor with "Just One Touch" pairing ‡

Standy Mode

NOC	NOC Occupancy sensor disabled ‡

Options

BDP Disconnect Plug

EL7L	700 lumen battery pack (Noncompliant with CA T20) ‡
EL14L	1400 lumen battery pack (Noncompliant with CA T20) ‡
EL14LSD	1400 lumen battery pack with self-diagnostic testing feature (Noncompliant with CA T20) ‡
E10WLCP	EM Self-Diagnostic battery pack, 10W Constant Power, Certified in CA Title 20 MAEDBS ‡

CP	Chicago plenum ‡
BGTD	Bodine Generator Transfer Device ‡
PWS1836	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit
PWS1846	6' pre-wire, 3/8" diameter, 18 gauge, 2 circuit
PWS1846 PWSLV	Two cables: one 6' pre-wire, 3/8" diameter, 18 gauge, 2 circuits; one 6' pre-wire, 3/8" diameter, 18 gauge ‡
PWS1856LV	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit w/low voltage wires ‡

GLR	Fast-blowing fuse ‡
GMF	Slow-blowing fuse ‡
NPLT	Narrow pallet
RRL_	RELOC®-ready luminaire ‡
LATC	Earthquake clip
DWAM	Anti-Microbial paint
JP14	Job packaging ‡
JP18	Job packaging ‡
IP5X	Gasketed diffuser compartment to meet IP5X rating ‡
BAA	Buy America(n) Act Compliant

NOTE: ‡ indicates option value has ordering restrictions. Please reference the Option Value Ordering Restictions chart on the next page. Options are sorted alphanumerically.

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L10

Luminaire Cut Sheets

ACULUX

ACULUX LUMINAIRE

Luminaire Type:

Catalog Number (autopopulated):

AX3 G4 3DH

PRODUCT SPECIFICATIONS

LED Light Engine 2 step MacAdam ellipse binning • 2700K, 3000K, 3500K, or 4000K CCTs available with 80 CRI minimum • 2700K and 3000K also available with 90 CRI and 95 CRI minimum (R9>90).

Quiet, Glare-free Ceiling 45° visual cutoff to source and source image.

Modular Optics Available with 12°, 24°, 35° and 50° field interchangeable optics • 20°, 30°, 40°, 45° and 60° FWHM can be achieved with diffusing films and 12° optic • Patented (US Patent 8,950,911) auto-adjusting optic holder maximizes efficiency by maintaining optimal LED optic position • AX3 A/AX3 D accommodates three (3) beam control lenses and/or filters • AX3 LPA/AX3 LPD accepts two (2) beam control lenses and/or filters.

Reflector .040" aluminum, Patented Hyperbolic Reflector (U.S. Patent No. 10,670,227 B2) in black specular Alzak finish shields housing interior.

Trim Styles Trim Ring, Self Flanged and Flangeless trims styles available • Must specify FMA3 (gypsum) or SFM3 (wood/stone/tile) option for flangeless installations.

LED Driver Accommodates 120-277V input and multiple control protocols • For a list of compatible dimmers, refer to ACLXLED3-DIM • Power Factor > 0.9 • Field replaceable from below ceiling.

Life Rated for 50,000 hrs at 70% lumen maintenance.

Buy American: This product is assembled in the USA and meets the Buy America(n) government procurement requirements under FARS, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

Warranty - 5YR 5-year limited warranty. Complete warranty terms located at: http://www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Codes/Labels UL and cUL listed for through branch wiring, damp locations • Meets energy code Air Leakage requirements per ASTM E283 • ENERGY STAR® certified with select trims and housings • Can be used to comply with Title 24, Part 6 with select trims and housings • ICAT housings are rated for direct contact with insulation • AX3 08LM/12LM/15LM (ICAT option) are compatible with spray foam insulation with an R-Value of 3.7 per inch or less • Union made.

New Construction Mounting Features patented (US Patent 8,038,113) Pro-Vl™ bar hanger system • All fixtures except for 25LM ICAT also feature vertically adjustable mounting brackets (butterfly brackets) • Centerline indicators on plaster frame and patented (US Patent 8,277,090) Tru-Line™ Platform featuring +/- ½" translation aids fixture alignment after installation, prior to drywall.

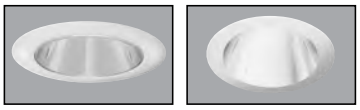
3" LED RECESSED DOWNLIGHT

NEW CONSTRUCTION HYPERBOLIC REFLECTOR

AX3/3DH

800 - 3000 LUMEN

Buy American



Trim Ring | Self Flanged

Flangeless (Gypsum) | Flangeless (Wood/Stone/Tile)

Housing Styles Fixed Downlight and Universal New Construction housings are available • Fixed downlight housings are compatible with downlight trims • Universal housings are compatible with downlight, adjustable, and wall wash trims.

Junction Box Rated for 4 No. 12 AWG 90° C through branch circuit conductors and includes (6) ½", (1) ¾", and (4) Non-metallic sheathed cable knock-outs • Push-in electrical connectors for field connections.

Ceiling Thickness 1/2" – 1 5/8" ceiling

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.

A+ Capable options indicated by this color background .

Design2Ship Quick Ship Program: Options in green text qualify for Design2Ship — 5 business days from order entry to ship. Refer to Design2Ship Brochure for complete program details. **Maximum Order Quantity: 50 units for housings; 25 units for trims.**

ORDERING INFORMATION

Example: AX3 LPD G4 12LM 30K 80CRI 24D FPC 120 ICAT 3DH CS WHR

HOUSING OPTIONS

Housing Style		Lumens		CCT		CRI	Beam		Driver		Voltage[3]	Options	
Downlight Housings		08LM	800 Lumens	27K	2700K	80CRI	12D	12° beam	GZ1	0-10V, 1% dim	120	CP[4]	Chicago Plenum
AX3 D G4	New Construction Fixed Downlight	12LM	1200 Lumens	30K	3000K	90CRI[2]	24D	24° beam	EZ1	eldoLED 0-10V, 1% dim	277	ICAT[5]	IC, Air-Tight
AX3 LPD G4	Low Profile Fixed Downlight	15LM	1500 Lumens	35K	3500K	95CRI[2]	35D	35° beam	EZB	eldoLED 0-10V, <1% dim	MVOLT (120-277)	NLIGHT[6]	nLight dimming pack controls
		20LM	2000 Lumens	40K	4000K		50D	50° beam	FPC	Phase cut dimming, 5% dim			
		25LM	2500 Lumens						ECOS2	Lutron Hi-Lume 2-wire forward phase, 1% dim			
		30LM[1]	3000 Lumens						ECOD	Lutron Hi-Lume EcoSystem, 1% dim			
Universal ADJ/DL/WW Housings									EDXB	eldoLED DMX, <1% min			
AX3 A G4	New Construction Universal ADJ/DL/WW								EDAB	eldoLED DALI, 1% min			
AX3 LPA G4	Low Profile Universal ADJ/DL/WW												

TRIM OPTIONS

Trim Style		Reflector Finish		Flange Style / Finish		Ceiling Installation	
3DH	Hyperbolic Reflector	BS	Black Specular	*FLANGED*		*FLANGED*	
		CD	Clear Diffuse	WHR	White Trim Ring	———	Ceiling ≤ .875"
		CS	Clear Specular	SF	Self-Flanged	CTA3/125	Ceiling 0.875" - 1.25"
		WTD	Wheat Diffuse	WHSF	Self-Flanged, White painted flange	CTA3/163	Ceiling 1.25" - 1.625"
		W	White Paint	*FLANGELESS*[7]		*FLANGELESS, GYPSUM*	
				FM	Flangeless	FMA3/087	Ceiling ≤ .875"
						FMA3/125	Ceiling 0.875" - 1.25"
						FMA3/163	Ceiling 1.25" - 1.625"
						FLANGELESS, WOOD/STONE/TILE[8]	
						SFM3/087 (B,W)	Ceiling ≤ 0.875"
						SFM3/125 (B,W)	Ceiling 0.875" - 1.25"
						SFM3/163 (B,W)	Ceiling 1.25" - 1.625"

NOTES

Ordering Notes

[1] 30LM not available with LPD or LPA .

[2] 90CRI and 95CRI available on 27K and 30K only.

[3] MVOLT standard on GZ1, EZ1, EZB, ECOD, EDXB, EDAB unless NLIGHT specified. Must be 120 for FPC or ECOS2.

[4] CP available up to 20LM for LPD and LPA; available up to 25LM for D and A.

[5] ICAT not available with LPD or LPA at 25LM; not available with D or A at 30LM.

[6] Must specify 120 or 277 volts. NLIGHT only available with EZ1 or EZB. Not available with CP.

[7] Must specify FMA3 or SFM3 option.

[8] Specify finish: B = Black, W = White.

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L10

Luminaire Cut Sheets

ACULUX®

AX3 G4 3DH

3" LED RECESSED DOWNLIGHT
NEW CONSTRUCTION
HYPERBOLIC REFLECTOR
AX3/3DH
800 - 3000 LUMEN

ACCESSORIES

Accessories			
3AXOPT/12D	12° Optic	**CGF 200 MPINK**	Med. Pink Color Filter
3AXOPT/24D	24° Optic	**CGF 200 WRED**	Warm Red Color Filter
3AXOPT/35D	35° Optic	**CGF 200 DLTBLUE**	Daylight Blue Color Filter
3AXOPT/50D	50° Optic	**CGF 200 MBLU**	Med. Blue Color Filter
AF3/10	10° Diffusing Film	**CGF 200 MAMB**	Med. Amber Color Filter
AF3/20	20° Diffusing Film	**CGF 200 MGRN**	Med. Green Color Filter
AF3/30	30° Diffusing Film	**DGF 200 DRED**	Red Dichroic Lens
AF3/40	40° Diffusing Film	**DGF 200 MGRN**	Med. Green Dichroic Lens
AF3/50	50° Diffusing Film	**DGF 200 MBLU**	Med. Blue Dichroic Lens
AF3/60x1	60°x1° Diffusing Film	**DGF 200 DYEL**	Yellow Dichroic Lens
		DGF 200 MAGEN	Magenta Dichroic Lens
HB1	Real Nail 3 Bar Hangers	**DGF 200 CYAN**	Blue Green Dichroic Lens
HB26	26" C-Channel Bar Hangers	**DCCF 200 HAL4250**	Daylight Blue Correction Lens
HB50	50" C-Channel Bar Hangers	**DIFF 200**	Diffuse Spread Lens
LB27	27" Linear Bar Hangers	**SOLITE 200**	Uniformity Lens
		UVF 200	UV Filter Lens
EMI20	20W Remote Mount Emergency Inverter (Compatible with 20LM max)	**PRISM 200**	Prismatic Lens
		LSPREAD 200	Linear Spread Lens
		HCLBL 200	Hexcell Louver

DIFFUSING FILMS

Desired FWHM	Primary Optic	Film
12°	12D	-
20°	12D	**AF3/10**
24°	24D	-
30°	12D	**AF3/20**
35°	35D	-
40°	12D	**AF3/30**
45°	12D	**AF3/40**
50°	50D	-
60°	12D	**AF3/50**
20°x60°	12D	**AF3/60x1**

To achieve the desired beam angle (FWHM), specify the following primary LED optic on the luminaire and order the diffusing film from the table below

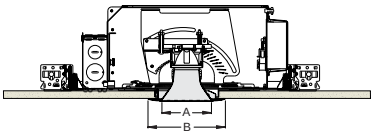
ELECTRICAL DATA

Lumen Package	08LM		12LM		15LM		20LM		25LM		30LM	
Voltage	120	277	120	277	120	277	120	277	120	277	120	277
Input Power	7.0	7.6	11.0	12.0	13.8	14.6	19.7	20.2	25.8	26.3	32.9	33.3
Input Current	0.03	0.06	0.09	0.05	0.12	0.06	0.17	0.08	0.22	0.1	0.28	0.13
Frequency	50/60Hz		50/60Hz		50/60Hz		50/60Hz		50/60Hz		50/60Hz	
Power Factor	>0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9	> 0.9

	CCT/CRI:	80CRI 27K, 30K, 35K, 40K	90CRI 27K, 30K
	Optic:	12D, 24D, 35D, 50D	
	Reflector Finish:	BS, CS, CD, W, WTD	

	Construction:	ICAT
	CCT/CRI:	90CRI 27K, 30K
	Optic:	12D, 24D, 35D, 50D
	Reflector Finish:	BS, CS, CD, W, WTD

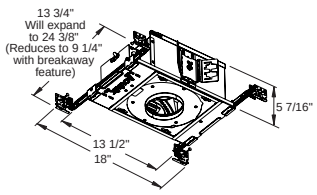
DIMENSIONS



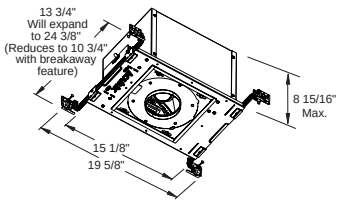
	A	B
Trim Ring	3 1/4"	5"
Self Flanged	3 3/8"	4 5/8"
Flangeless	3 3/8"	3 7/8"

4 1/4" CEILING CUTOUT
(REFER TO INSTRUCTION SHEET FOR FLANGELESS CEILING CUTOUT)

NEW CONSTRUCTION (AX3 D/AX3 A)

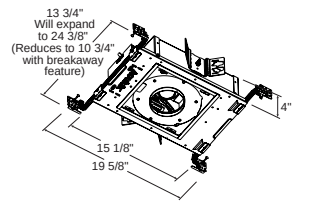


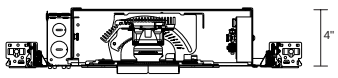
ICAT: 20LM & Less
Non-ICAT: 25LM & 30LM



ICAT: 25LM

LOW PROFILE (AX3 LPD/AX3 LPA)





ICAT: 20LM & Less
Non-ICAT: 25LM

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L12 & L20

Luminaire Cut Sheets

Snap™ | Linear, Surface & Wall

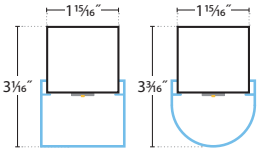
White Acrylic

PRUDENTIAL LTG.
PRULITE.COM 213.746.0360

Type:

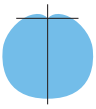
Job:

WHITE ACRYLIC LENS (WA)



Our basic lighting building block.

This perfectly scaled wrap simply snaps quickly, neatly and securely into a wide range of spaces. Industry-leading optical performance and integrated controls help make Snap one of our best-selling fixtures. Our LPA lens turns Snap into an outstanding Stack fixture ideal for warehouses, manufacturing, libraries and more. See HalfSnap for a smaller profile.



HIGH OUTPUT:
S1-LED4-HO-04-WA

3760	Delivered Lumens
43	Watts
87	lm/w

UP TO 99 LPW

	LO	MO	SO	HO
lm/ft	500	700	850	940
w/ft	5	7	9	11

(CLICK HERE)

5 YEAR WARRANTY

LED Details

Made in the USA

Lumen output may vary +/- 5%
4000K used for lm/ft estimates above
3500K –2% llf, 3000K –4%, 2700K –6%
-10% LLF for 90 CRI (4K, 3500K and 3K)
See LED Details PDF for more info

SERIES	LED COLOR	OUTPUT	NOMINAL LENGTH	SHIELDING	COLOR/ FINISH	VOLTAGE	MOUNTING	CEILING SYSTEMS	DRIVERS	OPTIONS, SENSORS & CORNERS
				WA						
R1 Round S1 Square	LED27 2700K (90CRI) LED3 3000K LED35 3500K LED4 4000K LED3-90 90CRI LED35-90 90CRI LED4-90 90CRI	LO Low MO Medium SO Standard HO High PROG Programmable Light Output (Specify desired lm/ft or w/ft)	2′ 3′ 4′ 6′ 8′ R___ (Row length in 1′ increments) SRL Symmetric Row Length Row lengths are typically made up of 8′ and 4′ fixtures, (eg. 12′ row is (1) 8′ and (1) 4′), unless SRL Symmetric Row Lengths are spec'd **NOTES**: Individual fixtures are NOT intended for row mounting	WA White Acrylic **NOTE:** See other spec sheet for Satin Acrylic and Linear Prismatic Stack lenses	TMW Textured Matte White YGW Gloss White (Standard) Y__ Premium Color CC Custom Color **NOTE**: All canopies are painted the same color as the fixture. Consult factory to specify	UNV (120-277) 347 (Emergency battery requires a Step Down transformer)	SUR Surface or Wall Mount CA48″, 96″ or 144″ Aircraft Cable (Adjustable)	X1 T-Bar 15/16″ or 9/16″ Exposed (Standard) Consult factory for 9/16″ Tegular X3 Hard Ceiling X6 Slot Grid or Interlude	ND Non-Dimming DM01 0-10v, 1% Dimming (Standard) LDE1 Lutron Hi-lume 1% EcoSystem LED (Soft fade on, fade-to-black dimming) ECO 1% 0-10v, EldoLED (Logarithmic dimming std) ECDA 1% DALI, EldoLED (Logarithmic dimming std) SOLO 0.1% 0-10v, EldoLED (Dim-to-dark, Logarithmic dimming std) SODA 0.1% DALI, EldoLED (Dim-to-dark, Logarithmic dimming std)	EMHE Emergency Battery (900 delivered lumens, CA Title 20 compliant, *4′ or longer (remote for < 4′)* TRS Tamper-Resistant Screws EBCP1G /2G Single / Dual Gang (Electrical Box Cover Plate/Mud Ring) **SENSORS:** 205-ON/OFF† WattStopper PIR Occupancy **205-STEP:** Dim to 50% **205-DM:** Dim to 1% 211-FSP L2 /L3 WattStopper DLH & Infrared Occupancy (Adds 6″ to fixture length) LUX† Phillips DLH 505 WattStopper Ultrasonic Occupancy (SUR on wall mount only) **505-STEP:** Dim to 50% **505-DM:** Dim to 1% **NOTE :** NA <4′ Sensor off center for 6′ or 8′ fixtures ENL† Enlighted 2-Wire DLH & Environmental † Adds 3″ to fixture length **CORNERS:** C2 Unlit 90° 2-Way C2-120 Unlit 120° 2-Way C3 Unlit 90° 3-Way C3-120 Unlit 120° 3-Way C4 Unlit 90° 4-Way All corners available S1 Square Only

Linear 1

01-17-2022

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L12 & L20

Luminaire Cut Sheets

Snap™ | Linear, Surface & Wall

White Acrylic

PRUDENTIAL LTG.

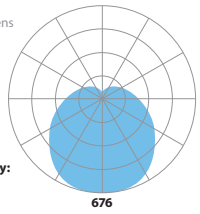
PRULITE.COM 213.746.0360

PHOTOMETRICS

HIGH OUTPUT:

S1-LED4-HO-04-WA

3760	Delivered Lumens
43	Watts
87	lm/w
4000	CCT
Test	#L021508901



Zonal Lumen Summary:
0-90 (Down) = 77%
90-180 (Up) = 23%

Vertical Angle	0°	25°	45°	65°	90°
0°	676	676	676	676	676
5°	684	682	680	678	676
15°	708	704	692	666	649
25°	716	710	676	641	605
35°	703	685	645	590	538
45°	669	646	596	524	450
55°	613	585	563	442	351
65°	539	507	440	345	240
75°	451	416	343	240	69
85°	365	330	296	146	23
90°	342	306	230	124	1
95°	335	299	224	117	0
105°	313	279	207	106	0
115°	283	252	186	93	0
125°	245	218	159	77	0
135°	201	177	123	56	0
145°	151	131	84	37	0
155°	98	77	54	23	0
165°	47	35	24	12	0
175°	9	8	7	6	0
180°	0	0	0	0	0

Luminance Chart:

Angle	0°	45°	90°
45°	7517	7421	7930
55°	7303	7113	7512
65°	7054	6744	6821
75°	6770	6277	5465
85°	6665	5974	2510

LUMEN MAINTENANCE

Designed to last with cool running mid-power LEDs projected to maintain 90% (L90) of their initial output for 100,000 hours (at HO), and L70 exceeding 150,000 hours.

LED SYSTEM LED modules and drivers are field replaceable.

PROG (OPTIONAL) Programmable light output. Specify desired lumens or watts per linear foot. Min: 2.5 w/ft, consult factory for requests above 12 w/ft.

BINNING Standard binning (all Prudential LED boards) includes testing at the chip level and board integration to provide consistent color temperature within a 3-step MacAdams ellipse, with +/- 5% lumen output range and +/- .004 Duv.

LABELS CSA and ETL damp labeled and I.B.E.W. manufactured.

ELECTRICAL Must specify LED dimming controls. LED fixtures have constant current driver(s) with less than 20% THD when loaded to a minimum of 60%. Drivers sink a maximum of 6mA per driver. DM10 LED drivers are 0-10V dimmable and are compatible with most 0-10V wall slide dimmers and direct 0-10V analog signal dimmers. Max driver size 1.65˝ w x 1.25˝ h.

CONSTRUCTION

Housing Die-formed 22-gauge steel, >20% PC recycled, 100% recyclable.

End Plates Spring-fastened aluminum, >25% PC recycled, 100% recyclable.

Lens Single-piece (up to 8´ lengths) extruded acrylic, 100% recyclable.

LensLens 2 lbs/ft.

MOUNTING Surface mounted to walls or ceilings or suspended by cable.

WARRANTY Single-source, 5 year limited warranty covers standard components and construction.

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L13

Luminaire Cut Sheets

RIM 4704 / 4704B

PROJECT PROJET

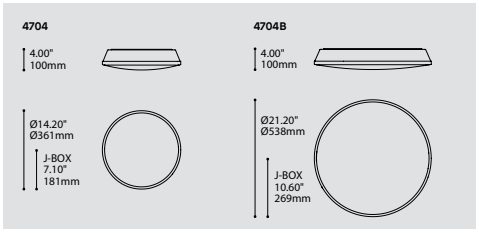
SPEC TYPE

NOTES

FAMILY FAMILLE

4404

4704 (WALL SURFACE)



ORDERING SPECIFICATION SPÉCIFICATION DE COMMANDE		CODE
MODEL MODÈLE		
4704	RIM 14"	
4704B	RIM 21"	
LIGHT SOURCE SOURCE LUMINEUSE		
4704		
LED.10	10W, LED	
4704B		
LED.24	24W, LED	
COLOR TEMPERATURE TEMPÉRATURE DE COULEUR [A]		
27*	2700K	
30	3000K	
35	3500K	
40	4000K	
	* LONGER LEAD TIME MAY APPLY, PLEASE CONTACT YOUR EUREKA REPRESENTATIVE	
COLOR RENDERING INDEX (CRI) INDICE DE RENDU DE COULEUR (IRC) [B]		
80	80+ CRI	
90*	90+ CRI	
	* LONGER LEAD TIME MAY APPLY, PLEASE CONTACT YOUR EUREKA REPRESENTATIVE	
VOLTAGE VOLTAGE		
120V	120 VOLT	
277V	277 VOLT	
DIMMING OPTION OPTION DE GRADATION [C]		
DV	0-10V DIMMING (120V-277V)	
DP	PHASE DIMMING (120V ONLY)	
	LED DIMMING DRIVER IS STANDARD IN THIS PRODUCT, PLEASE SPECIFY YOUR DIMMING TYPE	
EMERGENCY BATTERY BATTERIE D'URGENCE		
EM*	EMERGENCY BATTERY INSIDE LUMINAIRE	
	* ONLY AVAILABLE WITH LED NON-DIMMING AND DIMMIND DP ONLY	
STRUCTURE FINISH FINI STRUCTURE		**WH**
WH	WHITE	
DIFFUSER FINISH FINI DIFFUSEUR		**WH**
WH	WHITE	
RING FINISH FINI ANNEAU		**CHR**
CHR	CHROME	

PRODUCT CHARACTERISTICS CARACTÉRISTIQUES DU PRODUIT

BIM DIM EM IES LED

DESIGN: Stylish all-rounder highlighted by a sparkling metal band. Rim offers smooth direct / indirect illumination.
LIGHT SOURCE: Dimmable bespoke LED engines. EM option is available.
STRUCTURE: Spun steel back plate with highly reflective white polyester powder coat finish and chrome plated trim ring.
DIFFUSER: Thermoformed, white translucent PMMA with flex-fit attachment for easy access.
CERTIFIED: c-CSA-us, c-UL-us

CONCEPTION: Un passe-partout stylisé serti d'une bande métallique étincelante. Rim offre un éclairage diffus direct / indirect.
SOURCE LUMINEUSE: Module DEL à gradation conçu sur mesure. Version d'urgence offerte en option.
STRUCTURE: Plaque arrière d'acier repoussé avec peinture électrostatique à base de polyester et anneau décoratif plaqué chrome.
DIFFUSEUR: Acrylique translucide blanc thermoformé avec installation facile par encliquetage.
CERTIFIÉ: c-CSA-us, c-UL-us

EUREKA **SPECIFICATION**

www.eurekalighting.com
V4.0 — 2021.02

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

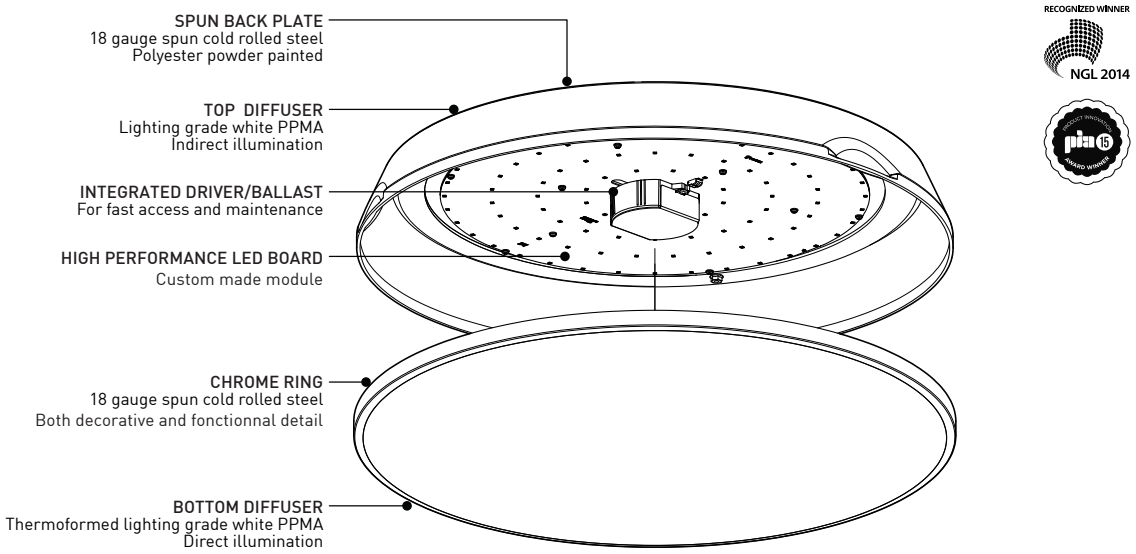
Type: L13

Luminaire Cut Sheets

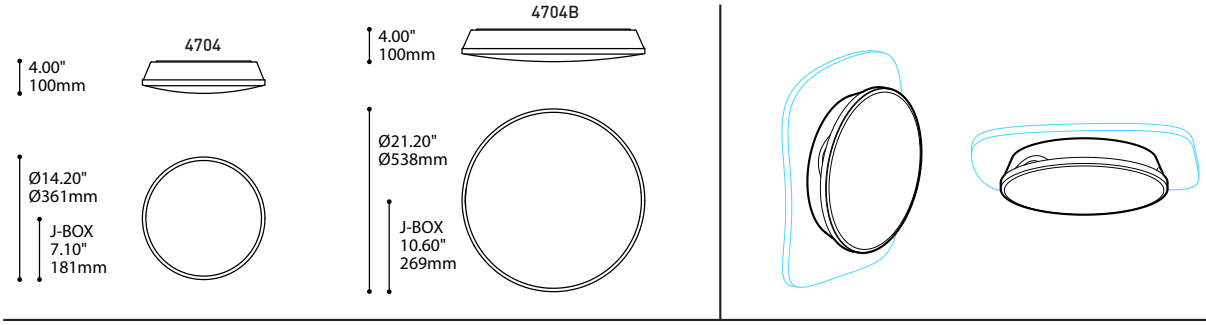
ANATOMY

BIM EM IES LED DIM

RIM



RECOGNIZED WINNER NGL 2014



SPECIFICATIONS	LED 4704	LED 4704B
LIGHT SOURCE	44 x NICHIA - total ±10W	96 x NICHIA - total ±25W
MODULE	UL recognized - made in USA	UL recognized - made in USA
LUMENS (DELIVERED)	1055 lm (4000K)	2547 lm (4000K)
CRI	80+ CRI or 90+ CRI	80+ CRI or 90+ CRI
CCT	2700K, 3000K, 3500K or 4000K 3-step	MacAdam ellipse binning
STRUCTURE	Die-spun steel structure	Die-spun steel structure
LIGHT DISTRIBUTION	Direct-Indirect	Direct-Indirect
DIFFUSER	White PPMA	White PPMA
VOLTAGE	120 or 120-277V	120 or 120-277V
BALLAST	N/A	N/A
DIMMING DV	350 mA 0-10V Dim (120-277V)	700 mA 0-10V Dim (120-277V)
DIMMING DP	350 mA Phase Dim (120V)	700 mA Phase Dim (120V)
EMERGENCY	Integrated Emergency Battery	Integrated Emergency Battery
LM-79 & ROHS	On request & Compliant	On request & Compliant
WARRANTY	5 years (on electronic components)	5 years (on electronic components)
CERTIFICATION	CSA recognized	CSA recognized

EUREKA
225 de Liège Ouest, Suite #200
Montréal (QC), Canada H2P 1H4
Tel : 514.385.3515 Fax : 514.385.4169
www.eurekalighting.com

4704
4704B

www.eurekalighting.com

V4.0-202101

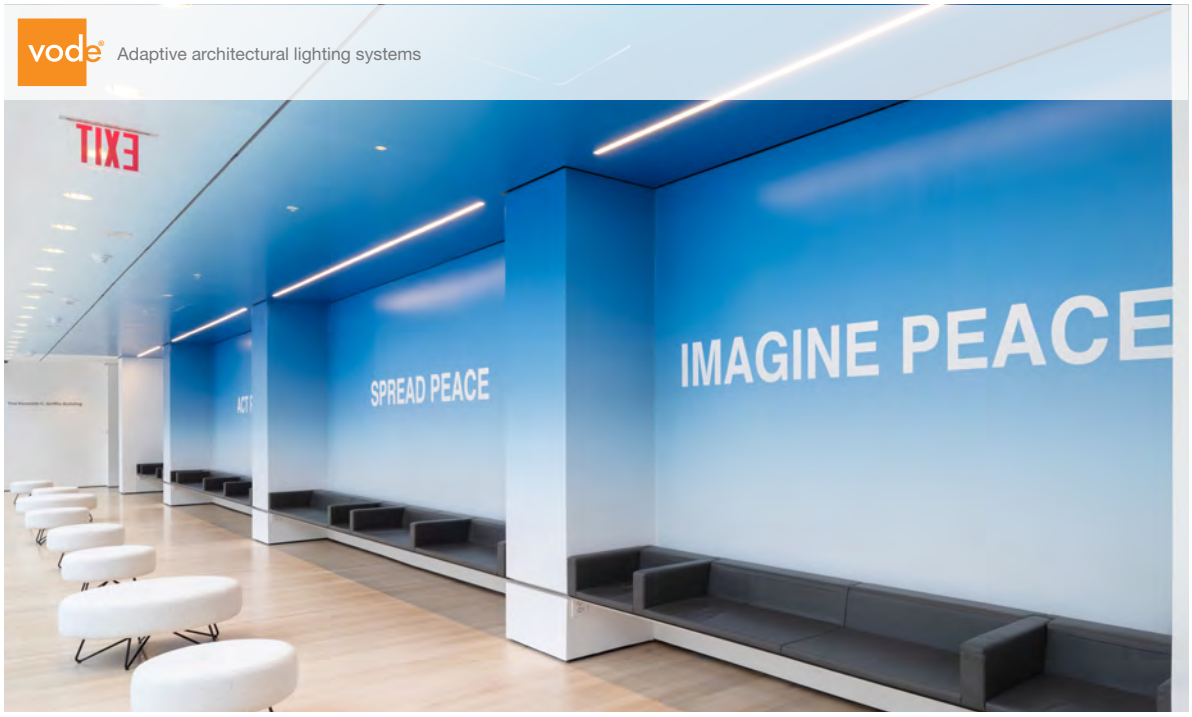
Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L14

Luminaire Cut Sheets



Spec Guide

ZipOne | 707

Accent or task lighting for under cabinet, cove and reveal accent.

ZipOne: direct or indirect, task and cove light.

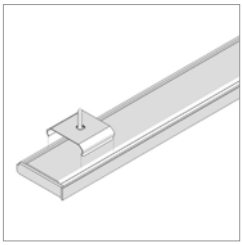
Benefits & Features

Micro Profile, Robust design
Flat profile. 0.30" (7mm) x 1.14" (29mm).

Superior Light Quality & Performance
Output up to 1193 lm/ft (3913 lm/m) (HO), 122 lm/W (HO). 80 or 90 CRI & tunable white (2200K-5000K) available.

Versatile Mounting Options, Easy Installation
Magnet with tape-on ferrous strip or low profile clip allow for mounting to almost any surface.

Better Optics & Beam Control
100° beam distribution with EdgeSoft™ lens for excellent cutoff and glare control.



Clip

Magnet

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L14

Luminaire Cut Sheets

ZipOne | 707 Spec Guide

Build Your Specification

707-Z1	SL				0

System & Rail Type
707-Z1 ZipOne

System Type
SL Standard Linear

System Length
Specify overall system length in ft/in or M/mm.

*Corner and Shapes Available **See Guide** for details.*

Rail Length
24 24" (610mm)
36 36" (914mm)
48 48" (1219mm)
60 60" (1524mm)
72 72" (1829mm)
96 96" (2438mm)
ZZ Other rail length or layout (please specify)

*See **Rail Length Chart** for more details.*

Mounting
C Clip
T Magnet with Tape-On Metal Strip
ZZ Other (please specify)

Arm/Cord Length
0 None

Power Location
PP Portable Power

Remote Power
RP10 10' (3.048m) Wire Harness
RP25 25' (7.62m) Wire Harness
RP50 50' (15.24m) Wire Harness
RP75 75' (22.86m) Wire Harness
RP100 100' (30.48m) Wire Harness

Power Type

Portable Power
WP Wall Plug with On/Off Switch [2]

Flexible 1 to 1 Power
AE eldoLED 0-10V, 1.0% Dimming
AT eldoLED 0-10V, 0.1% Dimming
AD eldoLED DALI, 0.1% Dimming
AX eldoLED DMX, 100-0% Dimming
AH Hi-lume 1% EcoSystem, Soft On / Fade to Black Technology, LDE1
AH2 Hi-lume 1% 2-wire LTEA2W (120V forward phase only)

Optimized Power
Add '**O**' to power type
example: AE**O**, AT**O**...etc. [3]

VodeNODE
Add '**N**' to power type for Flexible 1 to 1 Power
Add '**ON**' to power type for Optimized Power
example: AE**N**, AT**N**, AE**ON**, AD**ON**...etc. [4]

ZZ Other (please specify)

*See **Power Guide** for driver features & limitations.*

Voltage
1 120V
2 120V - 277V
4 120V - 240V
X Not Yet Specified

Emergency Power
0 No Emergency Power
ZZ Emergency Power *(specify requirements)*

	Z			A2	

LED Type
Z Zipper Board

Lumen Output
LO Low Output
SO Standard Output
HO High Output
ZZ Other (please specify)

*See **IES Files** page for details.*
*See **Power Guide** for driver features & limitations.*

Color Temperature

80+ CRI
27 2700K
30 3000K
35 3500K
40 4000K

90+ CRI
279 2700K
309 3000K
359 3500K
409 4000K

ZZ Tunable White Available
See Guide for details.

Optics
A2 100° Asymmetric

Sensors
0 None
ZZ Other (please specify) [5]

AL	

Finish
AL Clear Anodized

Options
3 3.5" (89mm) Fixture Cord
18 18" (457mm) Fixture Cord
36 36" (914mm) Fixture Cord
9 9' 18/3 Cord and Plug [6]

NOTES & LIMITATIONS
[1] *WP is only available with Low Output (LO) and 120V - 240V in 36" and 48" Rail Lengths.*
[2] *Wall plug (WP) version is 120V - 240V.*
[3] *Optimized Power is not available with Lutron Hi-lume 1% EcoSystem (AHO) Power Type.*
[4] *VodeNODE enclosure is not available with Hi-lume 1% 2-wire (AH2) Power Type.*
[5] *Sensors are available please contact Vode for more information.*
[6] *9' 18/3 Cord and Plug only available with Remote Power (RP).*
Contact factory for Chicago Plenum.

*Standard 5 Year Limited Warranty. See details **here**. Contact factory for options on Limited Warranties up to 20 years.*

Listed to UL standards for damp location by a Nationally Recognized Testing Laboratory (NRTL) recognized by OSHA. Certain limitations exist for each Certification. Contact factory for verification.

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L18

Luminaire Cut Sheets

BEVEL

CONTOUR
BEVEL OVERVIEW

Large & Small Contour Bevel in Translucent Suede Varia

STANDARD DIMENSIONS
Custom options available
21"Dia x 15"H
21"Dia x 21"H

MATERIALS
1/8" 3form Varia EcoResin
White Opal diffuser
Fixture price available upon request

SPECIFICATIONS

LIGHTING:

Dimmable 9.5W LED A19 Lamp

E26 base, 3000k, 120v

Approx. LED Lumens 800

HARDWARE:

5"Dia. canopy and dress plate mounts to standard junction box (provided by others)

3/64" stainless steel cables to ceiling

Adjustable suspension

Power cord to canopy

STANDARDS:

4-6 week lead time

CSA Approved to UL standards

250+ 3form material options

Damp Rated

5 year limited warranty

Contact for custom material pricing

MADE IN U.S.A. Declare Red List Free Ingredients

Last Update: 11/16/2021

align *People Product Planet*

LightArt® 4770 OHIO AVE SOUTH, SUITE B, SEATTLE, WA 98134
P: 206.524.2223 | LIGHTART.COM

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L18

Luminaire Cut Sheets

BEVEL

CONTOUR
BEVEL PART NUMBER SPECIFICATION

Complete form to order Bevel fixture(s)

SPECIFICATION CODE *Example:* 2 QTY COL-CON-BEVE-15H-VP-9W-STD-WPC-WH

☐ COL-CON-BEVE - ☐ (1) - ☐ (2) - ☐ (3) - ☐ (4) - ☐ (5) - ☐ (6)

Qty.

*For each number, make one selection and enter in the corresponding box above. *Indicates modified choices; additional lead times and/or costs may apply.*

1 SIZE

- ☐ 15H
- ☐ 21H

Small 21"Dia x 15"H
Large 21"Dia x 21"H

2 MATERIAL

- ☐ VP
- ☐ TS
- ☐ CUST

VP Veil Pure
TS Translucent Suede
CUST* Custom Color

3 LED CRI / CCT

- ☐ 9W

9.5W 800lm / 3000k / 120v

4 SUSPENSION

- ☐ STD
- ☐ EXT

STD 12"–96"
EXT* 12"–240"

5 CANOPY COLOR

- ☐ WPC
- ☐ BPC

WPC White
BPC Black

6 POWER CORD

- ☐ WH
- ☐ BK

WH White
BK Black

Indicates modified choices; additional lead times and/or costs may apply.

MADE IN U.S.A. Declare Red List Free Ingredients

Last Update: 11/16/2021

align People Product Planet

LightArt® 4770 OHIO AVE SOUTH, SUITE B, SEATTLE, WA 98134
P: 206.524.2223 | LIGHTART.COM

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: L19

Luminaire Cut Sheets

LITHONIA LIGHTING®

DIGITAL NAVIGATION

Ordering Tree | nLight Platform | Sensor Switch JOT | Photometrics | Performance Data

FEATURES & SPECIFICATIONS

INTENDED USE — The BLT Best-in-Value Low Profile LED luminaire features a popular center basket design that offers a clean, versatile style and volumetric distribution. High efficacy LED light engines deliver energy savings and low maintenance compared to traditional sources. An extensive selection of configurations and options make the BLT the perfect choice for many lighting applications including schools, offices and other commercial spaces, retail, hospitals and healthcare facilities. The low profile BLT design (2-3/8") also makes it an excellent choice for renovation projects.

CONSTRUCTION — Prior to fabrication, BLT components are coated with a proprietary paint blend and die-formed for dimensional consistency.

The BLT reflector is available in both smooth and ribbed finishes. Choose RB from the fixture style section below for a ribbed finish.

End plates contain easy-to-position integral T-bar clips for securely attaching the luminaire to the T-grid. For additional T-grid security, optional screw on T-bar clips are available.

Diffusers are extruded from impact modified acrylic for increased durability.

LED boards and drivers are accessible from the plenum.

OPTICS — Volumetric illumination is achieved by creating an optimal mix of light to walls, partitions and vertical and horizontal work surfaces – rendering the interior space, objects and occupants in a more balanced, complimentary luminous environment. High performance extruded acrylic diffusers conceal LEDs and efficiently deliver light in a volumetric distribution. Four diffuser choices available - curved and square designs with ribbed or a smooth frosted finish.

ELECTRICAL — Long-life LEDs, coupled with high-efficiency drivers, provide superior quantity and quality of illumination for extended service life. 80% LED lumen maintenance at 60,000 hours (L80/60,000). Color Variation within 3-step MacAdam ellipse (3SDCM).

Non-Configurable BLT: Generic 0-10 volt dimming driver. Dims to 10%

Configurable BLT: available in High Efficiency (HE) versions for applications where a lower wattage (over the standard product) is required. The High Efficiency versions deliver >130 LPW and can be specified via the Lumen Package designations in the Ordering Information below.

eldoLED driver options deliver choice of dimming range, and choices for control, while assuring flicker-free, low-current inrush, 89% efficiency and low EMI.

Optional integrated nLight®controls make each luminaire addressable - allowing them to digitally communicate with other nLight enabled controls such as dimmers, switches, occupancy sensors and photocontrols. Connection to nLight is simple. It can be accomplished with integrated nLight AIR wireless rIO and rES7 sensors, or through standard Cat-5 cabling. nLight offers unique plug-and-play convenience as devices and luminaires automatically discover each other and self-commission. nLight AIR is commissioned easily through an intuitive model app.

Lumen Management: Unique lumen management system (option N80) provides on board intelligence that actively manages the LED light source so that constant lumen output is maintained over the system life, preventing the energy waste created by the traditional practice of over-lighting.

Step-level dimming option allows system to be switched to 50% power for compliance with common energy codes while maintaining fixture appearance.

SENSOR— Integrated sensor (individual control): Sensor Switch MSD7ADCX ((Passive infrared (PIR)) or MSDPDT7ADCX ((PIR/Microphonics Dual Tech (PDT)) integrated occupancy sensor/automatic dimming photocell allows the luminaire to power off when the space is unoccupied or enough ambient light is entering the space. See page 4 for more details on the integrated sensor.

Integrated Sensor (nLight Wired Networking): This sensor is nLight-enabled, meaning it has the ability to communicate over an nLight network. When wired, using CAT-5 cabling, with other nLight-enabled sensors, power packs, or WallPods, an nLight control zone is created. Once linked to a Gateway, directly or via a Bridge, the zone becomes capable of remote status monitoring and control via SensorView software. See page 4 for the nLight sensor options.

Integrated Smart Sensor (nLight Air Wireless Platform): The RES7 sensor is nLight AIR enabled, meaning it has the ability to communicate over the wireless nLight control platform. It is available with an automatic dimming photocell, and either a digital PIR or a microphonics (PDT) dual technology occupancy sensor. It pairs to other luminaires and wall switches through our mobile app, CL*AIR*ITY, which allows for simple sensor adjustment. See page 4 for more details on the Integrated Smart Sensor.

Integrated Wireless Sensor (single room control): Sensor Switch VERTEX JOT or JOTVTX15 luminaire-embedded occupancy and ambient light sensor allows the luminaire to power off when the space is unoccupied or when enough ambient light is entering the space. See page X for more details on the integrated wireless sensor.

INSTALLATION — The BLT's low profile design of only 2-3/8" provides increased installation flexibility especially in restrictive plenum applications. Designed for use in NEMA standard Type G (1" & 15/16") , NFG (9/16"), and SS (9/16") grid ceilings. Consult factory about other ceiling types.

For recessed mounting in hard ceiling applications, Drywall Grid Adapters (DGA) are available as an accessory. See Accessories section. Suitable for damp location.

LISTINGS — CSA Certified to meet U.S. and Canadian standards. IC rated. Tested in accordance with ISO 14644-1; suitable for ISO Class 5-9 positive and negative pressure clean rooms.

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

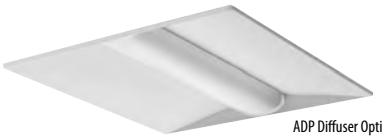
BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT.
Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

Catalog Number	
Notes	
Type	

BLT Series LED



2BLT2

ADP Diffuser Option

2' x 2'
LED

Ribbed Reflector Option

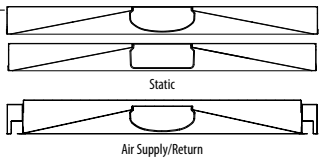
Buy American

JOT JUST ONE TOUCH

Specifications

Length: 23-3/4 (60.3)
Width: 23-3/4 (60.3)
Depth: 2-3/8 (6.0)
Depth with Air supply/return: 2-3/4 (6.9)

All dimensions are inches (centimeters) unless otherwise specified.



Static

Air Supply/Return

Embed nLight controls today. Prepare for tomorrow.

Now	Tomorrow
User-friendly install	Scalability
Enhanced energy savings	Space configuration
Code compliance	Future-ready

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks when ordered with drivers marked by a shaded background*
- This luminaire is part of an A+ Certified solution for nLight control networks, providing advanced control functionality at the luminaire level, when selection includes driver and control options marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: L19

Luminaire Cut Sheets

2BLT Volumetric Recessed Lighting 2'x2'

A+ Capable options indicated by this color background.

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: 2BLT2 33L ADP EZ1 LP835

2BLT2

Series	Fixture Style	Air function	Lumens ‡		Diffuser	Voltage	Driver	Color temperature
2BLT2 2X2 BLT	(blank) Smooth Reflector RB Ribbed Reflector	(blank) Static A Air supply/ return ‡	**Standard efficiency ‡ (>125 LPW)** 20L 2000 33L 3300 40L 4000 48L 4800	**High efficiency ‡ (>130 LPW)** 20LHE 2000 33LHE 3300 40LHE 4000 48LHE 4800	ADP Curved, ribbed ADSM Curved, smooth SDP Square, ribbed SDSM Square, smooth **Includes trim rings to match sensored version** ADPT Curved, ribbed ADSMT Curved, smooth SDPT Square, ribbed SDSMT Square, smooth	(blank) MVOLT 120 120V 277 277V 347 347V ‡	EZ1 eldoLED dims to 1% (0-10 volt dimming) GZ1 Dims to 1% (0-10V dimming)[8] GZ10 Dims to 10% (0-10V dimming) ‡ SLD Step-level dimming ‡	LP830 82CRI, 3000 K LP835 82CRI, 3500 K LP840 82CRI, 4000 K LP850 82CRI, 5000 K LP930 90CRI, 3000K LP935 90CRI, 3500K LP940 90CRI, 4000K LP950 90CRI, 5000K

nLight Interface

nLight Wired

(blank)	no nLight ® interface
N80	nLight with 80% lumen management
N80EMG	nLight with 80% lumen management For use with generator supply EM power ‡
N100	nLight without lumen management
N100EMG	nLight without lumen management For use with generator supply EM power ‡

nLight Wireless

(blank)	no nLight ® interface
NLTAIR2	nLight AIR Generation 2 enabled ‡

Control ‡

nLight Wired

(blank)	No sensor control
NES7	nLight™ nES 7 PIR integral occupancy sensor ‡
NESPDT7	nLight™ nES PDT 7 dual technology integral occupancy control ‡
NES7ADCX	nLight™ nES 7 ADCX PIR integral occupancy sensor with automatic dimming photocell ‡
NESPDT7ADCX	nLight™ nES PDT 7 dual technology integral occupancy sensor with automatic dimming photocell ‡

nLight Wireless

RES7	nLight AIR control with PIR integral occupancy sensor and automatic dimming photocell
RES7PDT	nLight AIR control with PDT dual technology integral occupancy sensor and automatic dimming photocell
RIO	nLight AIR radio module without sensor
RES7EM	nLight AIR PIR integral occupancy sensor with automatic dimming photocell and UL924 Emergency Operation, via power interrupt detection ‡
RES7PDTEM	nLight AIR microphonics dual technology occupancy sensor with automatic dimming photocell and UL924 Emergency Operation, via power interrupt detection ‡
RIOEM	nLight AIR radio module less sensor, with UL924 Emergency Operation, via power interrupt detection ‡

Individual Control

MSD7ADCX	PIR integral occupancy sensor with automatic dimming control photocell ‡
MSDPDT7ADCX	PDT integral occupancy sensor with automatic dimming control photocell ‡
JOT	Wireless room control with "Just One Touch" pairing ‡
JOTVTX15	Wireless occupancy sensor with "Just One Touch" pairing ‡

Standy Mode

NOC	NOC Occupancy sensor disabled ‡

Options

BDP Disconnect Plug

EL7L	700 lumen battery pack (Noncompliant with CA T20) ‡
EL14L	1400 lumen battery pack (Noncompliant with CA T20) ‡
EL14LSD	1400 lumen battery pack with self-diagnostic testing feature (Noncompliant with CA T20) ‡
E10WLCP	EM Self-Diagnostic battery pack, 10W Constant Power, Certified in CA Title 20 MAEDBS ‡

CP	Chicago plenum ‡
BGTD	Bodine Generator Transfer Device ‡
PWS1836	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit
PWS1846	6' pre-wire, 3/8" diameter, 18 gauge, 2 circuit
PWS1846 PWSLV	Two cables: one 6' pre-wire, 3/8" diameter, 18 gauge, 2 circuits; one 6' pre-wire, 3/8" diameter, 18 gauge ‡
PWS1856LV	6' pre-wire, 3/8" diameter, 18 gauge, 1 circuit w/low voltage wires ‡

GLR	Fast-blowing fuse ‡
GMF	Slow-blowing fuse ‡
NPLT	Narrow pallet
RRL_	RELOC®-ready luminaire ‡
LATC	Earthquake clip
DWAM	Anti-Microbial paint
JP28	Job packaging ‡
JP36	Job packaging
IP5X	Gasketed diffuser compartment to meet IP5X rating ‡
BAA	Buy America(n) Act Compliant

NOTE: ‡ indicates option value has ordering restrictions. Please reference the Option Value Ordering Restictions chart on the next page. Options are sorted alphanumerically.

LITHONIA LIGHTING®

BLT-2X2

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S1

Luminaire Cut Sheets

D-Series Size 1

LED Area Luminaire

Buy American

Catalog Number

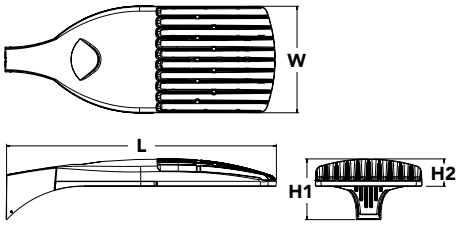
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	1.01 ft² (0.09 m²)
Length:	33" (83.8 cm)
Width:	13" (33.0 cm)
Height H1:	7-1/2" (19.0 cm)
Height H2:	3-1/2"
Weight (max):	27 lbs (12.2 kg)



Introduction

The modern styling of the D-Series is striking yet unobtrusive - making a bold, progressive statement even as it blends seamlessly with its environment. The D-Series distills the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.

The outstanding photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. It is ideal for replacing up to 750W metal halide in pedestrian and area lighting applications with typical energy savings of 65% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX1 LED P7 40K T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

DSX1 LED

Series	LEDs	Color temperature	Distribution		Voltage	Mounting
DSX1 LED	**Forward optics** P1 P4[1] P7[1] P2 P5[1] P8 P3 P6[1] P9[1] **Rotated optics** P10[2] P12[2] P11[2] P13[1,2]	30K 3000 K 40K 4000 K 50K 5000 K	T1S Type I short (Automotive) T2S Type II short T2M Type II medium T3S Type III short T3M Type III medium T4M Type IV medium TFTM Forward throw medium	T5VS Type V very short[3] T5S Type V short[3] T5M Type V medium[3] T5W Type V wide[3] BLC Backlight control[4] LCCO Left corner cutoff[4] RCCO Right corner cutoff[4]	MVOLT[5] XVOLT (277V-480V)[6,7,8] 120[9] 208[9] 240[9] 277[9] 347[9] 480[9]	**Shipped included** SPA Square pole mounting RPA Round pole mounting[10] WBA Wall bracket[3] SPUMBA Square pole universal mounting adaptor[11] RPUMBA Round pole universal mounting adaptor[9] **Shipped separately** KMA8 DDBXD U Mast arm mounting bracket adaptor (specify finish)[12]

Control options			Other options	Finish *(required)*	
Shipped installed			**Shipped installed**	DDBXD	Dark bronze
NLTAIR2	nLight AIR generation 2 enabled[13]	PIR High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 5fc[20,21]	HS House-side shield[23]	DBLXD	Black
PIRHN	Network, high/low motion/ambient sensor[14]	PIRH High/low, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 5fc[20,21]	SF Single fuse (120, 277, 347V)[9]	DNAXD	Natural aluminum
PER	NEMA twist-lock receptacle only (controls ordered separate)[15]	PIR1FC3V High/low, motion/ambient sensor, 8-15' mounting height, ambient sensor enabled at 1fc[20,21]	DF Double fuse (208, 240, 480V)[9]	DWHXD	White
PER5	Five-pin receptacle only (controls ordered separate)[15,16]	PIRH1FC3V Bi-level, motion/ambient sensor, 15-30' mounting height, ambient sensor enabled at 1fc[20,21]	L90 Left rotated optics[2]	DDBTXD	Textured dark bronze
PER7	Seven-pin receptacle only (controls ordered separate)[15,16]	FAO Field adjustable output[20,21]	R90 Right rotated optics[2]	DBLBXD	Textured black
DMG	0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately)[17]		HA 50°C ambient operations[1]	DNATXD	Textured natural aluminum
DS	Dual switching[18,19,20]		BAA Buy America(n) Act Compliant	DWHGXD	Textured white
			Shipped separately		
			BS Bird spikes[24]		
			EGS External glare shield		

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S1

Luminaire Cut Sheets

Ordering Information

Accessories

Ordered and shipped separately.

DLL127F 1.5 JU	Photocell - SSL twist-lock (120-277V) [25]
DLL347F 1.5 CUL JU	Photocell - SSL twist-lock (347V) [25]
DLL480F 1.5 CUL JU	Photocell - SSL twist-lock (480V) [25]
DSHORT SBK U	Shorting cap [25]
DSX1HS 30C U	House-side shield for P1, P2, P3, P4 and P5 [23]
DSX1HS 40C U	House-side shield for P6 and P7 [23]
DSX1HS 60C U	House-side shield for P8, P9, P10, P11 and P12 [23]
PUMBA DDBXD U*	Square and round pole universal mounting bracket (specify finish) [26]
KMA8 DDBXD U	Mast arm mounting bracket adaptor (specify finish) [12]
DSX1EGS (FINISH) U	External glare shield

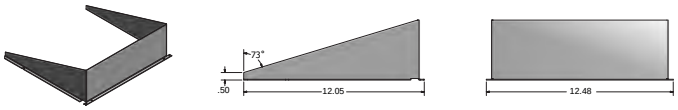
For more control options, visit DTL and ROAM online.

NOTES

1 HA not available with P4, P5, P6, P7, P9 and P13.
2 P10, P11, P12 or P13 and rotated optics (L90, R90) only available together.
3 Any Type 5 distribution with photocell, is not available with WBA.
4 Not available with HS.
5 MVOLT driver operates on any line voltage from 120-277V (50/60 Hz).
6 XVOLT only suitable for use with P3, P5, P6, P7, P9 and P13.
7 XVOLT works with any voltage between 277V and 480V.
8 XVOLT not available with fusing (SF or DF) and not available with PIR, PIRH, PIR1FC3V, PIRH1FC3V.
9 Single fuse (SF) requires 120V, 277V or 347V. Double fuse (DF) requires 208V, 240V or 480V. XVOLT not available with fusing (SF or DF.
10 Suitable for mounting to round poles between 3.5" and 12" diameter.
11 Universal mounting brackets intended for retrofit on existing, pre-drilled poles only. 1.5 G vibration load rating per ANCI C136.31. Only usable when pole's drill pattern is NOT Lithonia template #8
12 Must order fixture with SPA option. Must be ordered as a separate accessory; see Accessories information. For use with 2-3/8" diameter mast arm (not included).
13 Must be ordered with PIRHN. Sensor cover available only in dark bronze, black, white and natural aluminum colors.
14 Must be ordered with NLTAIR2. For more information on nLight Air 2 visit this link.
15 Photocell ordered and shipped as a separate line item from Acuity Brands Controls. See accessories. Shorting cap included.
16 If ROAM® node required, it must be ordered and shipped as a separate line item from Acuity Brands Controls. Node with integral dimming.
17 DMG not available with PIRHN, PER5, PER7, PIR, PIRH, PIR1FC3V or PIRH1FC3V, FAO.
18 Provides 50/50fixture operation via (2) independent drivers. Not available with PER, PER5, PER7, PIR or PIRH. Not available P1, P2, P3, P4 or P5.
19 Requires (2) separately switched circuits with isolated neutrol.
20 Reference Controls Option Default settings table on page 4.
21 Reference Motion Sensor table on page 4 to see functionality.
22 Not available with other dimming controls options.
23 Not available with BLC, LCCO and RCCO distribution. Also available as a separate accessory; see Accessories information.
24 Must be ordered with fixture for factory pre-drilling.
25 Requires luminaire to be specified with PER, PER5 or PER7 option. See Control Option Table on page 4.
26 For retrofit use only. Only usable when pole's drill pattern is NOT Lithonia template #8.

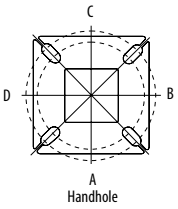
Options

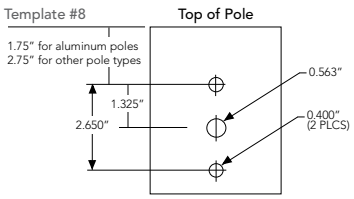
EGS - External Glare Shield



Drilling

HANDHOLE ORIENTATION





Tenon Mounting Slipfitter

Tenon O.D.	Mounting	Single Unit	2 @ 180	2 @ 90	3 @ 90	3 @120	4 @ 90
2-3/8"	RPA	AS3-5 190	AS3-5 280	AS3-5 290	AS3-5 390	AS3-5 320	AS3-5 490
2-7/8"	RPA	AST25-190	AST25-280	AST25-290	AST25-390	AST25-320	AST25-490
4"	RPA	AST35-190	AST35-280	AST35-290	AST35-390	AST35-320	AST35-490

Mounting Option	Drilling Template	Single	2 @ 180	2 @ 90	3 @ 90	3 @ 120	4 @ 90
Head Location		Side B	Side B & D	Side B & C	Side B, C & D	Round Pole Only	Side A, B, C & D
Drill Nomenclature	#8	DM19AS	DM28AS	DM29AS	DM39AS	DM32AS	DM49AS

DSX1 Area Luminaire - EPA

*Includes luminaire and integral mounting arm. Other tenons, arms, brackets or other accessories are not included in this EPA data.

Fixture Quantity & Mounting Configuration	Single DM19	2 @ 180 DM28	2 @ 90 DM29	3 @ 90 DM39	3 @ 120 DM32	4 @ 90 DM49
Mounting Type						
DSX1 LED	1.013	2.025	1.945	3.038	2.850	3.749

	Drilling Template	Minimum Acceptable Outside Pole Dimension					
SPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
RPA	#8	2-7/8"	2-7/8"	3.5"	3.5"	3"	3.5"
SPUMBA	#5	2-7/8"	3"	4"	4"	3.5"	4"
RPUMBA	#5	2-7/8"	3.5"	5"	5"	3.5"	5"

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S2

Luminaire Cut Sheets

BEGA LED system bollard - luminaire head
with shielded light - 360°

Enclosure: Housing constructed of die-cast aluminum. Die-castings are marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy. Glass diffuser, inside white. Fully gasketed for weather tight operation using molded silicone gasket.

Installation: BEGA LED system bollards are designed for easy attachment to system bollard tubes using an interlocking stainless steel mechanism and stainless steel set screw threaded into stainless steel insert. An accompanying bollard tube must be selected for proper installation, see below chart for compatible tube options.

Electrical: 16.5W LED luminaire, 19.8 total system watts, -30°C start temperature. Integral 120V through 277V electronic LED driver, 0-10V dimming. LED module(s) are available from factory for easy replacement. Standard LED color temperature is 3000K with a >80 CRI. Available in 4000K (>80 CRI); add suffix K4 to order.
Note: LEDs supplied with luminaire. Due to the dynamic nature of LED technology, LED luminaire data on this sheet is subject to change at the discretion of BEGA-US. For the most current technical data, please refer to www.bega-us.com.

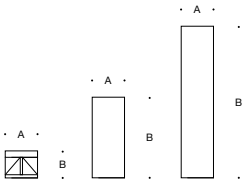
Finish: All BEGA standard finishes are polyester powder coat with minimum 3 mil thickness. Available in four standard BEGA colors: Black (BLK); White (WHT); Bronze (BRZ); Silver (SLV). To specify, add appropriate suffix to catalog number. Custom colors supplied on special order.

CSA certified to U.S. and Canadian standards, suitable for wet locations. Protection class IP65

Weight: 8.4 lbs

Luminaire Lumens: 1286

Type:
BEGA Product:
Project:
Voltage:
Color:
Options:
Modified:

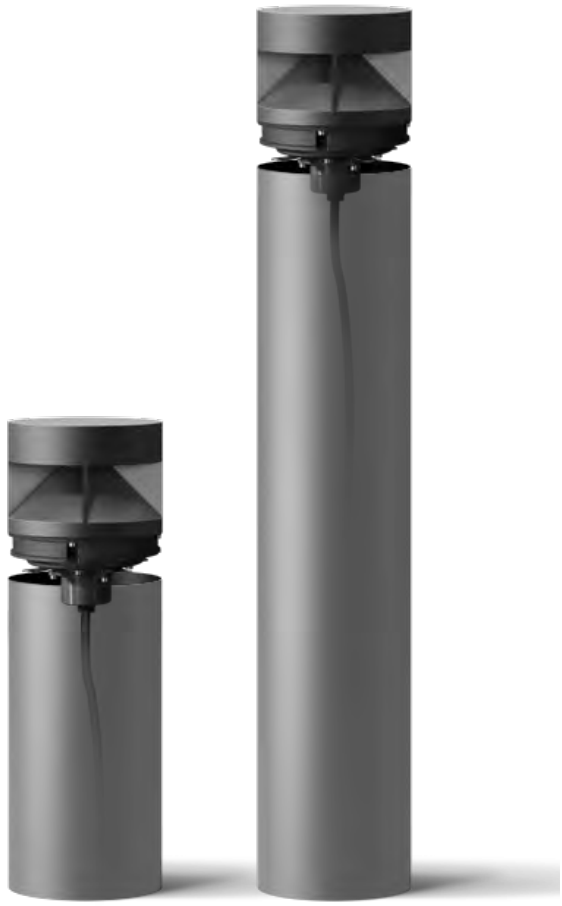


Bollard heads · **shielded** · **360°**

	Lamp	A	B
99 862	16.5 W LED	7½	5½

Bollard tubes

	Integrated components	Door	A	B	Anch. unit
99 622	—	✔	7½	32	**79 818**
99 644	1 LED floodlight 19.3 W	✔	7½	32	**79 818**
99 626	GFCI outlet	✔	7½	32	**79 818**
99 658	Passive infrared motion sensor	✔	7½	32	**79 818**
99 635	Emergency lighting battery 10 W	✔	7½	32	**79 818**
99 615	—		7½	14½	**79 817**



BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 FAX (805) 566-9474 www.bega-us.com

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S2

Luminaire Cut Sheets

System bollard tube - with access door - height 32 1/8

BEGA

Application
Bollard tubes without any additional components form the basic tubes of the BEGA system bollards. Provided with mounting system that allows the luminaire to be adjusted independent of the anchor bolt orientation.

Materials
Bollard tube and base plate constructed of extruded and die-cast marine grade, copper free (≤ 0.3% copper content) A360.0 aluminum alloy
Cast aluminum wiring box for electrical connections internal to tube
5-conductor cable with quick connect for attachment to BEGA system bollard head
Mechanically captive stainless steel fasteners
Anchorage constructed of galvanized steel

NRTL listed to North American Standards, suitable for wet locations
Weight: 13.0 lbs

Finish
All BEGA standard finishes are matte, textured polyester powder coat with minimum 3 mil thickness.

Available colors ☐ Black (BLK) ☐ White (WHT) ☐ RAL:
☐ Bronze (BRZ) ☐ Silver (SLV) ☐ CUS:

Type:
BEGA Product:
Project:
Modified:

Compatible bollard head (select one)

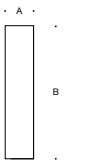
☐ **84 683** Unshielded with safety guard
☐ **99 727** Unshielded
☐ **99 776** Unshielded with safety guard - 180°
☐ **99 765** Unshielded with safety guard - 360°
☐ **99 857** Shielded with reflector - 180°
☐ **99 856** Shielded with reflector - 360°
☐ **99 862** Shielded
☐ **99 622** Shielded
☐ **71 127** Non-illuminated cap

See individual bollard head spec sheet for details.

Available accessories

☐ **70 896** Direct burial anchorage

See individual accessory spec sheet for details.



System bollard tube · with access door · height 32 1/8

	Door	A	B	Anchorage
99 622	✓	7 1/2	32 1/8	**79 818**

BEGA 1000 BEGA Way, Carpinteria, CA 93013 (805) 684-0533 info@bega-us.com

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

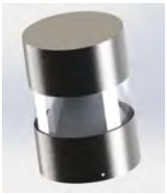
St. Helens Public Safety Building

Type: S2 OPT

Luminaire Cut Sheets

Lobby Bollards – Lighted, Fixed
Delta Scientific DSC800

*Note: Existing bollards at FRE125 are not recommended as they don't meet the security requiremer

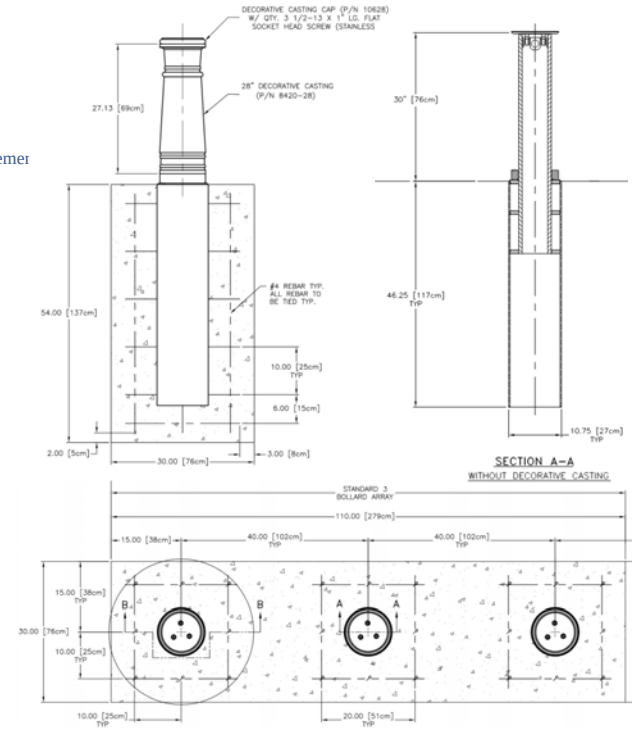


Product Type: Lighted; Fixed Bollard; Deep Foundation

https://deltascientific.com/product/bollards-dsc800/

Additional Notes:

- **Rating:** M30/P1 crash test rated
- **Height:** 30" – can increase with sleeve to match FRE125 height
- **Spacing:** Typical is 40" o.c. but can increase to 48" on center
- **Diameter (w/ sleeve):** 10.75"
- **Sleeve:** Can be provided to look similar to FRE125 bollards (see above)
- **Foundation:** 54" deep, 30" wide



Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S3

Luminaire Cut Sheets

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S3

Luminaire Cut Sheets

American Beacon – Internal Halyard Series

The American Beacon Internal Halyard Series provides lighting options for both Winch and Cam Cleat flagpoles systems in heights from 20' – 80'. These options provide the most environmentally correct way for flagpole illumination, properly lighting the flag during nighttime hours without lighting adjoining properties and the night sky!

- Internal Halyard 359° Revolving Truck
- 12 Volt System With Driver Contained Inside the Truck
- Warm White, 3000K LED Lights Rated for 25,000+ Hours
- 110V / 120V Input, 12 Volt Output
- Wire Provided For Flagpole Height Plus 10' (Flagpole Height To Be Provided in Part #)
- Standard 1-1/4" NPT Spindle
- Solar Options Available
- Standard 1/2"-13NC Top Drilling on Dual and Quad Internal Winch Models (5/8"-11NC Available Upon Request)

Patent #7,275,495

***** - Specifiy Finish Option**
SAT = Satin
BZT = BronzeTone Powder Coat
BLK = Black Powder Coat
WHT = White Powder Coat

Internal Halyard Beacon - Dual Light

Winch System - Wire Halyard

Flagpole Max Top Dia.	Description	Total Lumens	Beacon Size	Part Number	1+ Satin	1+ PowderCoat
Beacon						
3.5"	BEACON - Dual Light	500	6" Dia.	ABW2-##FS-***	$4,091	$4,206
4"	BEACON - Dual Light	500	8" Dia.	ABW2-##4S-***	$5,227	$5,342
Beacon Plus						
3.5"	BEACON PLUS - Dual Light	572	6" Dia.	ABW2-##FP-***	$4,634	$4,749
4"	BEACON PLUS - Dual Light	572	8" Dia.	ABW2-##4P-***	$5,227	$5,342

Example Part #: ABW2-30FS-SAT
American Beacon Internal Halyard Dual Light, 30' Flagpole, 3.5" Max Top Flagpole Diameter, Standard Beacon, Satin Finish

= Specifiy Flagpole Height (20, 25, 30 etc.)
***** = Specifiy Finish Option**

Beacon Plus - Dual Light
Illuminate the flag while at rest! The Internal Halyard, Dual Light Beacon Plus incorporates two vertical 2 Watt MR16 LED bulbs.

Internal Halyard Beacon - Quad Light

Winch System - Wire Halyard

Flagpole Max Top Dia.	Description	Total Lumens	Beacon Size	Part Number	1+ Satin	1+ PowderCoat
Beacon						
4"	BEACON - Quad Light	1000	8" Dia.	ABW4-##4S-***	$5,380	$5,495
Beacon Plus						
4"	BEACON PLUS - Quad Light	1072	8" Dia.	ABW4-##4P-***	$5,999	$6,114

Example Part #: ABW4-604P-BZT
American Beacon Internal Halyard Quad Light, 60' Flagpole, 4" Max Top Flagpole Diameter, Beacon Plus, BronzeTone Powder Coat Finish

= Specifiy Flagpole Height (20, 25, 30 etc.)
***** = Specifiy Finish Option**

Beacon Plus - Quad Light
Illuminate the flag while at rest! The Internal Halyard, Quad Light Beacon Plus incorporates two vertical 2 Watt MR16 LED bulbs.

Internal Halyard Cam Cleat Beacon

Rope Halyard - Cam Cleat System

- 8" Gold or Silver Anodized Ball Only
- Accepts up to 5/16" Rope Halyard

Flagpole Max Top Dia.	Ball Color	Description	Total Lumens	Beacon Size	Part Number	1+ Satin	1+ PowderCoat
Beacon							
3"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##3S-GLD-***	$3,582	$3,697
3.5"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##FS-GLD-***	$3,660	$3,775
4"	Gold	Cam Cleat BEACON	500	8" Dia.	ABCC-##4S-GLD-***	$4,508	$4,551
3"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##3S-SIL-***	$3,582	$3,697
3.5"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##FS-SIL-***	$3,660	$3,775
4"	Silver	Cam Cleat BEACON	500	8" Dia.	ABCC-##4S-SIL-***	$4,508	$4,623
Beacon Plus							
3"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##3P-GLD-***	$4,203	$4,318
3.5"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##FP-GLD-***	$4,160	$4,275
4"	Gold	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##4P-GLD-***	$5,128	$5,243
3"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##3P-SIL-***	$4,203	$4,318
3.5"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##FP-SIL-***	$4,172	$4,286
4"	Silver	Cam Cleat BEACON PLUS	572	8" Dia.	ABCC-##4P-SIL-***	$5,128	$5,243

Beacon Plus - Internal Cam Cleat
Illuminate the flag while at rest! The Internal Halyard Beacon Plus incorporates two vertical 2 Watt MR8 bulbs.

Example Part #: ABCC-25FS-GLD-BLK American Beacon Internal Halyard Cam Cleat, 25' Flagpole, 3.5" Max Top Flagpole Diameter, Standard Beacon, Gold Anodized Ball, Black Powder Coat Finish

= Specifiy Flagpole Height (20, 25, 30 etc.)
***** = Specifiy Finish Option**
(Specified Finishes Applied to Truck Only.)

CONCORD AMERICAN FLAGPOLE

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S4

Luminaire Cut Sheets

CH-006

EXTRUDED ALUMINUM MOUNTING CHANNEL

Fixture Type: _____

Project: _____

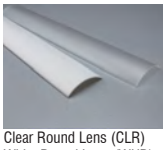
Location: _____

PRODUCT FEATURES

- Available in 2 meter sections
- Extruded aluminum construction
- Anodized matte finish
- Consult factory for custom lengths & finishes

SPECIFICATIONS

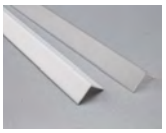
Model	CH-006
Length	78.74" (2m)
Overall Width	0.625" (16mm)
Internal Width	0.375" (10mm)
Height	0.625" (16mm)
Clip Height	0.811" (20mm)



Clear Round Lens (CLR)
White Round Lens (WHR)
Frosted Round Lens (FRR)

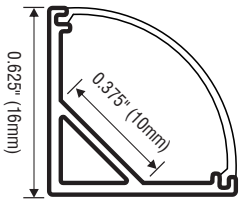
Round End Cap with Hole
Round End Cap without Hole

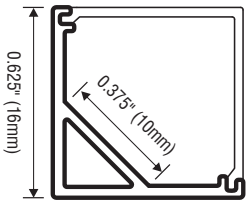
Mounting clips (CP)



Clear Square Lens (CLS)
White Square Lens (WHS)
Frosted Square Lens (FRS)

Square End Cap with Hole
Square End Cap without Hole





ORDERING INFORMATION

Example: **CH006-2-WHR-CP-EC**

Series	Length	Lens	Mounting	End Cap
CH006	2		CP	EC
CH-006	**2 meter**	**CHR** - Clear Round **WHR** - White Round **FRR** - Frosted Round **CHS** - Clear Square **WHS** - White Square **FRS** - Frosted Square	**CP** - Mounting Clip	**EC** - End Caps (Included)

Questions/Support | 800-789-3810 | quotes@kelvix.com

060321DM

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S4

Luminaire Cut Sheets

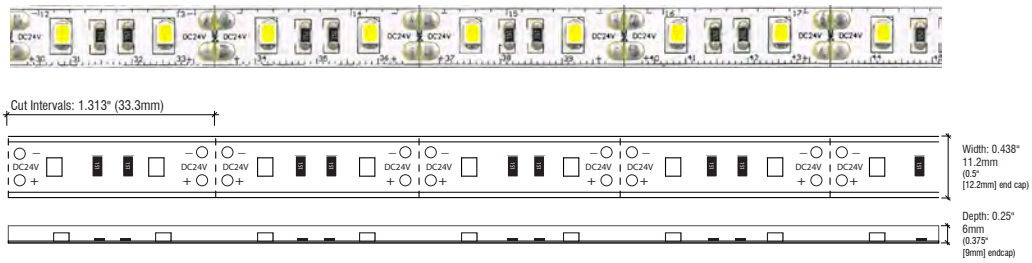
PERFORMANCE 300 (OUTDOOR)

PH SERIES | RUBBER COATED | LINEAR LED LIGHTING

Fixture Type: _____

Project: _____

Location: _____



MODEL:	PH27K-WR-24V	PH30K-WR-24V	PH35K-WR-24V	PH40K-WR-24V	PH50K-WR-24V
Kelvin	2700K	3000K	3500K	4000K	5000K
Lumens	322 lm/ft	330 lm/ft	340 lm/ft	347 lm/ft	356 lm/ft
Rating	IP67	IP67	IP67	IP67	IP67

PRODUCT FEATURES

- 90+ CRI
- Dimmable
- 50,000 hour life
- 5-year warranty
- UL-listed for indoor and outdoor use
- 3M™ Industrial adhesive backing
- For use with 24V power supplies

KELVIN COLOR TEMPERATURE SCALE

SPECIFICATIONS

Series	PH - Performance 300 (Outdoor)
Input Voltage	24V DC / Constant Voltage
Watts per Foot	3.2W/ft @ Maximum Run Length
Beam Spread	120°
Max Run Length	Unlimited, power every 30ft
Production Intervals	1.313" (33.3mm)
End Cap Dimensions	0.5" (12.2mm) × 0.375" (9mm)
Tape Dimensions	0.438" (11.2mm) × 0.25" (6mm)
CRI	90+
Diode	2835
Dimming Options	PWM, Triac, 0-10V, DMX, Hi-lume
Temp Range	-40°F (-40°C) to 149°F (65°C)

TOTAL WATTAGE USED AT EACH LENGTH

1ft	2ft	3ft	4ft	5ft	6ft	7ft	8ft	9ft	10ft	11ft	12ft	13ft	14ft	15ft
4.2	8.5	12.7	16.8	21	25.4	29.2	32.9	36.9	40.5	44.2	48	51.4	54.6	57.7
16ft	**17ft**	**18ft**	**19ft**	**20ft**	**21ft**	**22ft**	**23ft**	**24ft**	**25ft**	**26ft**	**27ft**	**28ft**	**29ft**	**30ft**
60.7	64.3	67	70.4	71.8	75.2	77.7	80	83	85.1	86.6	88.7	91.2	93.7	94.6

Conforms to ANSI/UL Standard 2108
Certified to CAN/CSA Standard C22.2 No. 250.0

RoHS COMPLIANT | c UL us LISTED | 24V DC | WET LOCATION RATED

Questions/Support | 800-789-3810 | quotes@kelvix.com

092519DM

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S8

Luminaire Cut Sheets

G1.10.0G2

JUNO

2" IC 600 AND 1000 LUMENS LED ROUND DOWNLIGHT BAFFLE

2LEDTRIM G2 DB

Project:

Fixture Type:

Location:

Contact/Phone:

PRODUCT DESCRIPTION

2 inch aperture recessed downlight is IC rated for insulated or non-insulated applications • Luminaire produces up to 1000 lumens and is available with optical distributions approximating that of 75W MR16 halogen lamps • Low profile form factor allows luminaire to fit in 2 x 6 construction • Designed to provide 50,000 hours of life • 5 year limited warranty on LED Components.

ENVIRONMENTALLY FRIENDLY, ENERGY EFFICIENT

- No harmful ultraviolet or infrared wavelengths
- No lead or mercury, RoHS compliant
- Comparable light output up to a 75W MR16 halogen lamp

PRODUCT SPECIFICATIONS

LED Light Engine Exceptional fixture to fixture color consistency within a 3-step MacAdam ellipse • 2700K, 3000K, 3500K, and 4000K color temperatures are available with 80 CRI or 90 CRI minimum.

Modular Optics Available with field interchangeable optics in 18° Spot, 24° Narrow Flood, or 40° Flood distributions.

Aesthetic Trim Trim features die cast beveled knife edge trim ring for clean ceiling interface available in white, black, satin nickel, or brushed bronze • Die cast baffles are available in white, black, satin nickel, or brushed bronze

LED Driver Choice of dedicated 120 volt (120) driver or universal voltage (MVOLT) driver that accommodates input voltages from 120-277 volts AC at 50/60Hz • Power factor > 0.9 • Dedicated 120 volt driver (120) is dimmable with the use of most incandescent, magnetic low voltage and electronic low voltage dimmers • Universal voltage driver (MVOLT) is dimmable with the use of most 0-10V protocol dimmers • For a list of compatible dimmers, see JUNO2ING2-DIM.

Life Rated for 50,000 hours at 70% lumen maintenance.

Labels ENERGY STAR® Certified • 90CRI fixtures are certified to the high efficacy requirements of California T24 JA8-2016 • Meets energy code Air Leakage requirements per ASTM E283 • UL and cUL listed for wet locations • 2NCHSG option is compatible with spray foam insulation with an R-value of 3.2 per inch or less.

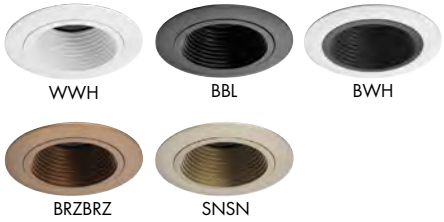
Junction Box Includes (2) ½" knock-outs equipped with pryout slots • Push-in electrical connectors for field connections.

Mounting Remodel style plaster frame installs from below the ceiling and accommodates ceiling thicknesses from ½" to 1" • For thicker ceilings up to 1 ½", order 2JCTA150 • New Construction mounting frame, 2NCMF, is also available with Patented (US Patent D552,969) Real Nail 3® telescoping bar hangers to position fixture and locate wiring prior to ceiling installation • Recommend a minimum of 5.5" cavity depth to install properly • Flexible supply is recommended and non-flexible supply requires top access.

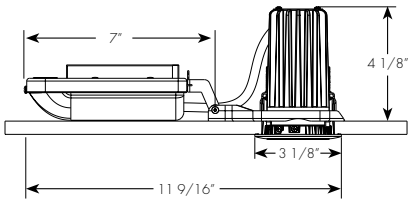
Real Nail 3 Bar Hangers 2NCHSG new construction housing and new construction mounting frame, 2NCMF, available with telescoping Real Nail® 3 system which permits quick placement of housing anywhere within 24" O.C. joists or suspended ceilings • Includes removable nail for repositioning of fixture in wood joist construction • Integral T-bar notch and clip for suspended ceilings • Design covered under US Patent D552,969 • 2NCHSG requires 2x8 construction

Specifications subject to change without notice.

Downlight Baffle Finishes



DIMENSIONS



2 5/8" CEILING CUTOUT
2" APERTURE

ELECTRICAL DATA (600L)

	Dedicated 120V (120)	Universal Voltage (MVOLT)	
Voltage	120	120	277
Input Power	7.5 (±5%)	7.2	7.5 (±5%)
Input Current	.06	.06	.03
Frequency	50/60Hz	50/60Hz	
Power Factor	>0.9	>0.9	>0.9

ELECTRICAL DATA (1000L)

	Dedicated 120V (120)	Universal Voltage (MVOLT)	
Voltage	120	120	277
Input Power	11.5 (±5%)	10.9	11.4 (±5%)
Input Current	.10	.09	.04
Frequency	50/60Hz	50/60Hz	
Power Factor	>0.9	>0.9	>0.9

AcuityBrands. 1300 S. Wolf Road • Des Plaines, IL 60018 • Phone 1-800-705-SERV (7378) • Visit us at www.acuitybrands.com/juno-recessed
Printed in U.S.A. Rev. 05/20/20

Light Commercial & Residential

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S8

Luminaire Cut Sheets

G1.10.0G2

2" IC 600 AND 1000 LUMENS LED ROUND DOWNLIGHT BAFFLE 2LEDTRIM G2 DB

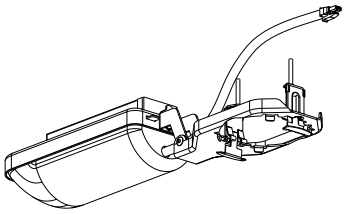
ORDERING INFORMATION DRIVER AND TRIM EACH ORDERED SEPARATELY.

DRIVER:

Example: 2LEDDRIVER G2 06LM 120 FRPC

Series		Generation		Lumens		Voltage		Driver	
2LEDDRIVER	Juno Recessed 2" Driver	**G2**	Generation 2	**06LM**	600 Nominal Lumens	**120**	120V	**FRPC**	Forward/Reverse Phase Cut
				10LM	1000 Nominal Lumens	**MVOLT**	Multi-Volt (120-277V)	**ZT**	0-10V Dimming

Note: 120V must be ordered with FRPC. MVOLT must be ordered with ZT



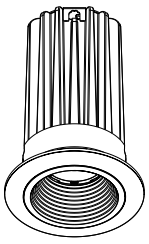
MOUNTING FRAME/DRIVER ASSEMBLY

Note: Driver assembly only intended for use with Gen2 LED trim modules. Not backward compatible with previous generation.

TRIM:

Example: 2LEDTRIM G2 DB 27K 80CRI FL BBL

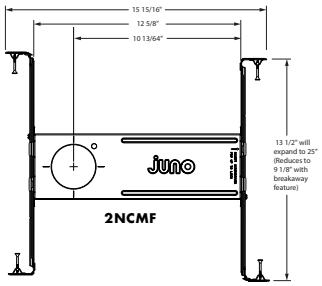
Series		Generation		Trim Designation		Color Temperature		CRI		Distribution		Trim Finish	
2LEDTRIM	Juno Recessed 2" LED Trim	**G2**	Generation 2	**DB**	Downlight Baffle Trim	**27K**	2700K	**80CRI**	80+ CRI	**FL**	Flood	**BBL**	Black Baffle, Black Trim Ring
						30K	3000K	**90CRI**	90+ CRI	**NFL**	Narrow Flood	**BWH**	Black Baffle, White Trim Ring
						35K	3500K			**SP**	Spot	**BRZBRZ**	Bronze Baffle, Bronze Trim Ring
						40K	4000K					**SNSN**	Satin Nickel Baffle, Satin Nickel Trim Ring
												WWH	White Baffle, White Trim Ring



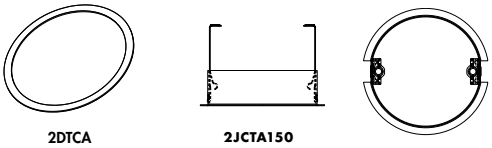
TRIM/LED ASSEMBLY

ACCESSORIES

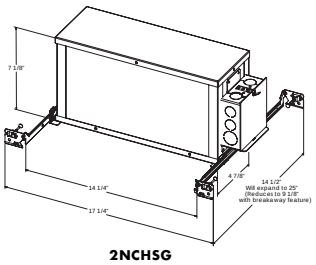
Catalog No.	Description
2NCMF	New Construction Mounting Frame with Real Nail® 3 bar hangers
2NCHSG	2" New Construction Housing for spray foam installation
2DTCA	2" LED Drop Tile Ceiling Adapter
2JCTA150	Thick Ceiling adapter for 1" - 1½" thick ceiling
LEDOPTIC2 SP	18° Spot Optic
LEDOPTIC2 NFL	24° Narrow Flood Optic
LEDOPTIC2 FL	40° Flood Optic



2NCMF



2DTCA **2JCTA150**



2NCHSG

AcuityBrands. 1300 S. Wolf Road • Des Plaines, IL 60018 • Phone 1-800-705-SERV (7378) • Visit us at www.acuitybrands.com/juno-recessed

Light Commercial & Residential

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

LUMA

St. Helens Public Safety Building

Type: S10

Luminaire Cut Sheets

WDGE2 LED

Architectural Wall Sconce
Visual Comfort Optic

Buy American

Catalog Number

Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

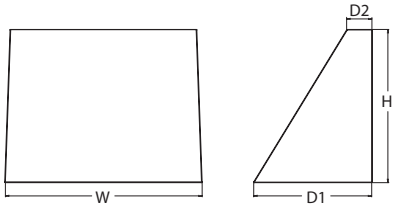
Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean rectilinear design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with nLight® AIR wireless controls, the WDGE family provides additional energy savings and code compliance.

WDGE2 delivers up to 6,000 lumens with a soft, non-pixelated light source, creating a visually comfortable environment. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

Specifications

Depth (D1):	7"
Depth (D2):	1.5"
Height:	9"
Width:	11.5"
Weight: (without options)	13.5 lbs



WDGE LED Family Overview

Luminaire	Optics	Standard EM, 0°C	Cold EM, -20°C	Sensor	Approximate Lumens (4000K, 80CRI)						
					P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W		--	750	1,200	2,000	--	--	--	--
WDGE2 LED	Visual Comfort	10W	18W	Standalone / nLight	--	1,200	2,000	3,000	4,500	6,000	--
WDGE2 LED	Precision Refractive	10W	18W	Standalone / nLight	700	1,200	2,000	3,200	4,200	--	--
WDGE3 LED	Precision Refractive	15W	18W	Standalone / nLight	--	7,500	8,500	10,000	12,000	--	--
WDGE4 LED	Precision Refractive			Standalone / nLight	--	12,000	16,000	18,000	20,000	22,000	25,000

Ordering Information

EXAMPLE: WDGE2 LED P3 40K 80CRI VF MVOLT SRM DDBXD

Series	Package		Color Temperature		CRI	Distribution		Voltage	Mounting	
WDGE2 LED	P1[1]	P1SW	27K	2700K	80CRI	VF	Visual comfort forward throw	MVOLT	**Shipped included**	
	P2[1]	P2SW	30K	3000K	90CRI	VW	Visual comfort wide	347[3]	SRM	Surface mounting bracket
	P3[1]	P3SW	35K	3500K				480[3]	ICW	Indirect Canopy/Ceiling Washer bracket (dry/damp locations only)[7]
	P4[1]	Door with small window (SW) is required to accommodate sensors. See page 2 for more details.	40K	4000K					**Shipped separately**	
	P5[1]		50K[2]	5000K					AWS	3/8inch Architectural wall spacer
									PBBW	Surface-mounted back box (top, left, right conduit entry). Use when there is no junction box available.

Options

E4WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (4W, 0°C min)
E10WH	Emergency battery backup, Certified in CA Title 20 MAEDBS (10W, 5°C min)
E20WC	Emergency battery backup, Certified in CA Title 20 MAEDBS (18W, -20°C min)
PE[4]	Photocell, Button Type
DS[5]	Dual switching (comes with 2 drivers and 2 light engines; see page 3 for details)
DMG[6]	0-10V dimming wires pulled outside fixture (for use with an external control, ordered separately)
BCE	Bottom conduit entry for back box (PBBW). Total of 4 entry points.
BAA	Buy America(n) Act Compliant

Standalone Sensors/Controls (only available with P1SW, P2SW & P3SW)

PIR	Bi-level (100/35%) motion sensor for 8-15' mounting heights. Intended for use on switched circuits with external dusk to dawn switching.
PIRH	Bi-level (100/35%) motion sensor for 15-30' mounting heights. Intended for use on switched circuits with external dusk to dawn switching
PIR1FC3V	Bi-level (100/35%) motion sensor for 8-15' mounting heights with photocell pre-programmed for dusk to dawn operation.
PIRH1FC3V	Bi-level (100/35%) motion sensor for 15-30' mounting heights with photocell pre-programmed for dusk to dawn operation.

Networked Sensors/Controls (only available with P1SW, P2SW & P3SW)

NLTAIR2 PIR	nLightAIR Wireless enabled bi-level motion/ambient sensor for 8-15' mounting heights.
NLTAIR2 PIRH	nLightAIR Wireless enabled bi-level motion/ambient sensor for 15-30' mounting heights.

See page 4 for out of box functionality

Finish

DDBXD	Dark bronze
DBLXD	Black
DNAXD	Natural aluminum
DWHXD	White
DSSXD	Sandstone
DDBTXD	Textured dark bronze
DBLBXD	Textured black
DNATXD	Textured natural aluminum
DWHGXD	Textured white
DSSTXD	Textured sandstone

One Lithonia Way • Conyers, Georgia 30012 • Phone: 1-800-705-SERV (7378) • www.lithonia.com

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S11

Luminaire Cut Sheets

Project		Catalog #		Type	
Prepared by		Notes		Date	

TopTier (D1-D6)

TopTier (D7-D10)

McGraw-Edison

TT TopTier

Parking Garage Luminaire

Product Features

Light ARchitect™

Interactive Menu

Product Certifications

Quick Facts

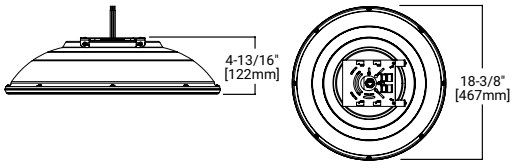
- Lumen packages range from 2,757 - 22,831
- Efficacies up to 146 lumens per watt
- Utilizes patented waveguide technology for maximum visual comfort
- Surface, pendant, trunnion, wall and direct conduit mount options

Connected Systems

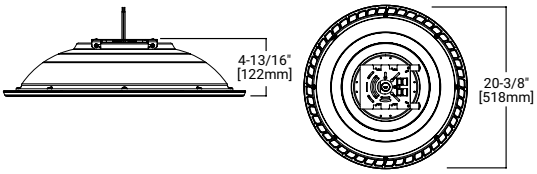
- WaveLinx Lite
- Synapse

Dimensional Details

SURFACE MOUNT
CQ, MQ, WQ and RW: D1-D6
DL: D1-D4
Base luminaire weight: 18.2 lbs (8.3 kg)



SURFACE MOUNT
CQ, MQ, WQ and RW: D7+
DL: D5+
Base luminaire weight: 20.1 lbs (9.1 kg)



NOTES:
1. Visit https://www.designlights.org/search/ to confirm qualification. Not all product variations are DLC qualified.
2. IDA Certified for 3000K CCT and warmer only.

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S12

Luminaire Cut Sheets

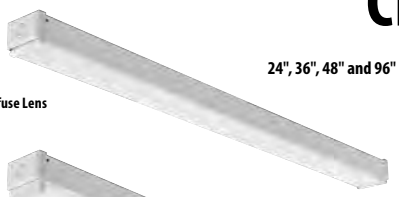
LITHONIA LIGHTING®

Catalog Number	
Notes	
Type	

LED Linear

CLX

24", 36", 48" and 96" Lengths



Flat Diffuse Lens

Round Diffuse Lens

Wide Diffuse Lens

CLX with Reflector

FEATURES & SPECIFICATIONS

INTENDED USE — The CLX is a linear lighting solution that is available in multiple lengths, lumen packages and distributions. Designed for versatility, the CLX can address virtually any indoor lighting need. The CLX is also offered in standard and high efficacy configurations and capable of being continuous row mounted or installed as a stand-alone fixture. Ideal for uplight and downlight in commercial, retail, manufacturing, warehouse, and display applications. **Certain airborne contaminants can diminish the integrity of acrylic and/or polycarbonate. Click here for Acrylic-Polycarbonate Compatibility table for suitable uses.**

CONSTRUCTION — Channel and cover are formed from code-gauge cold-rolled steel. Housing and lens endcaps are injection molded plastic to provide a more architectural look and feel. The endcaps come standard with a 7/8" knock out for continuous mounting but can be ordered without.

Finish: Paint options include high-gloss, baked white polyester (WH), galvanized (GALV), matte black (MB) and smoke gray (SKGY). Five-stage iron phosphate pre-treatment ensures superior paint adhesion and rust resistance.

OPTICS — Offered with acrylic lens and less lens configurations. Provides a choice of optical distributions including, wide, narrow, and aisle.

Models with wide diffuse lens provide up to 12% uplight. Please check the IES file for specific uplight value.

ELECTRICAL — Utilizes high-output LEDs integrated on a two-layer circuit board, ensuring cool-running operation. Optional internal pluggable wiring harness for reduced labor cost in row mounting applications. (See PLR_ ordering information on page 14.) Electronic LED driver is multi-volt input and 0-10V dimming standard (see Operational Data on page 6 for actual wattage consumption). This fixture is designed to withstand a maximum line surge of 2.5kV at 0.75kA combination wave for indoor locations, for applications requiring higher level of protection additional surge protection must be provided.

L70>100,000 hours at 25˚C.

LEDs provide nominal 80 CRI or 90 CRI at 3000 K, 3500 K,4000 K, or 5000 K.

Lumen output up to 2,500 lumens per foot.

INSTALLATION — Fixture may be ceiling or wall mounted (with or without THCLX hanger or angle mounted with CLXANGBRT), pendant or stem mounted with appropriate mounting options.

WARNING — Removing the lens and opening the fixture during installation exposes the LEDs, putting them at risk for damage.

If you plan to surface mount the fixture, we recommend using the THCLX. This eliminates the need to open the fixture.

If you plan to continuous row mount, we recommend using the PLR wiring harness option. This eliminates the need to open the fixture.

Damage to the LEDs caused during installation will not be covered under the warranty.

LISTINGS — CSA certified to US and Canadian safety standards. For use in damp locations between -4°F (-20°C) and 104°F (40°C). Optional High Ambient (HA) ranging to 122°F(50°C) available on certain lumen packages (See ambient temperature chart for additional information).
DesignLights Consortium® (DLC) Premium qualified product and DLC qualified product. Not all versions of this product may be DLC Premium qualified or DLC qualified. Please check the DLC Qualified Products List at www.designlights.org/QPL to confirm which versions are qualified.

BUY AMERICAN — Product with the BAA option is assembled in the USA and meets the Buy America(n) government procurement requirements under FAR, DFARS and DOT. Please refer to www.acuitybrands.com/buy-american for additional information.

WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification sheet create any warranty of any kind. All other express and implied warranties are disclaimed. Complete warranty terms located at: www.acuitybrands.com/support/warranty/terms-and-conditions

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.

Stock configurations are offered for shorter lead times:

Stock Part Number	UPC
CLX L48 3000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525816
CLX L48 3000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525885
CLX L48 5000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525939
CLX L48 5000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525908
CLX L96 6000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525861
CLX L96 6000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525915
CLX L96 10000LM SEF FDL MVOLT GZ10 40K 80CRI WH	00191723525922
CLX L96 10000LM SEF FDL MVOLT GZ10 50K 80CRI WH	00191723525830
CLX L48 3000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525960
CLX L48 3000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525892
CLX L48 5000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525854
CLX L48 5000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525946
CLX L96 6000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525878
CLX L96 6000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525823
CLX L96 10000LM SEF RDL MVOLT GZ10 40K 80CRI WH	00191723525953
CLX L96 10000LM SEF RDL MVOLT GZ10 50K 80CRI WH	00191723525847

Buy American

A+ Capable Luminaire

This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and out-of-the-box control compatibility with simple commissioning.

- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is part of an A+ Certified solution for nLight® control networks marked by a shaded background*

To learn more about A+, visit www.acuitybrands.com/aplus.

*See ordering tree for details

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

St. Helens Public Safety Building

Type: S12

Luminaire Cut Sheets

CLX LED Linear

ORDERING INFORMATION Lead times will vary depending on options selected. Consult with your sales representative.

Example: CLX L48 5000LM SEF WDL MVOLT GZ10 40K 80CRI WH

Series	Length	Nominal lumens	Performance package	Louver	Lens
CLX LED linear	L24 24" ‡	1500LM 1,500 lumens 2000LM 2,000 lumens 2500LM 2,500 lumens 3500LM 3,500 lumens 4500LM 4,500 lumens 5000LM 5,000 lumens ‡	SEF Standard efficiency ‡ HEF Premium efficiency	(Blank) Less louver SBLW Straight blade louver, white ‡ SBLMB Straight blade louver, matte black ‡ SBLGV Straight blade louver, galvanized ‡ SBLSKGY Straight blade louver, smoke gray ‡	L/Lens Less lens FDL Flat diffuse ‡ RDL Round diffuse ‡ WDL Wide diffuse ‡
	L36 36" ‡	2250LM 2,250 lumens 3000LM 3,000 lumens 3750LM 3,750 lumens 5250LM 5,250 lumens 6750LM 6,750 lumens 7500LM 7,500 lumens ‡			
	L48 48"	3000LM 3,000 lumens 4000LM 4,000 lumens 5000LM 5,000 lumens 7000LM 7,000 lumens ‡ 9000LM 9,000 lumens ‡ 10000LM 10,000 lumens ‡			
	L96 96"	6000LM 6,000 lumens 8000LM 8,000 lumens 10000LM 10,000 lumens 14000LM 14,000 lumens ‡ 18000LM 18,000 lumens ‡ 20000LM 20,000 lumens ‡			

Distribution	Voltage	Driver ‡	Glare Reflector	Color temperature	Coloring rendering index
(Blank) General ND Narrow ‡ WD Wide ‡ AD2 Aisle, 24° off center ‡	MVOLT 120-277V ‡ 120 120V 208 208V ‡ 240 240V ‡ 277 277V 347 347V ‡ 480 480V ‡	GZ1 Generic 0-10V, dims to 1% ‡ GZ10 Generic 0-10V, dims to 10% ‡ EZ1 eldoLED 0-10V, dims to 1% ‡	(blank) No reflectors LUGR Reflectors for additional glare reduction ‡	30K 3000 K 35K 3500 K 40K 4000 K 50K 5000 K	80CRI 80 CRI 90CRI 90 CRI

Options

PS1050	Emergency battery pack, 10W, CA Title 20 Noncompliant ‡
E10WLCP	Emergency battery pack, 10W Linear Constant Power, Certified in CA Title 20 MAEDBS ‡
BGTD	Generator transfer device, not avaialble with PS1050 ‡
OCS	5', 18/3 Reloc selectable One Pass cable (fixture will bear dry location label) ‡
HA	High ambient, for use in ambient temperatures up to 50°C ‡
EPNKO	Decorative endplate, no knock out ‡
OUTCTR	Wiring leads pulled through back center of fixture ‡
OUTEND	Wiring leads pulled through end of fixture ‡
Cord Sets:	
CS1W	6' Staight blade plug, 120V ‡
CS3W	NEMA twist-lock plug, 120V ‡
CS7W	Staight blade plug, 277V ‡
CS11W	NEMA twist-lock plug, 277V ‡
CS25W	NEMA twist-lock plug, 347V ‡
CS97W	NEMA twist-lock plug, 480V ‡
CS93W	600V SEOOW white cord, no plug (no voltage required)
CS6WG16STOWD5D	6' white cord, 16/5, no plug, includes low voltage dimming wires (no voltage required) ‡
PLR___	Plug-in wiring, see page 14 for ordering information
PLR1LVG	Plug-in wiring,low voltage dimming ‡
RRL___	RELOC®-ready luminaire. See page 14 for ordering information
SPD	Surge protection device, provides up to 6kV protection ‡
BAA	Buy America(n) Act Compliant
nLight® Wireless: ‡	
NLTAIR2 RES7	nLight® Generation 2 enabled PIR integral occupancy sensor with automatic dimming photocell
NLTAIR2 RES7PDT	nLight AIR Generation 2 enabled dual technology integral occupancy sensor with automatic dimming photocell
NLTAIR2 RIO	No sensor control
nLight® Wired: ‡	
N100	nLight® without lumen management
N100EMG	nLight® without lumen management For use with generator supply EM power ‡
NES7	nLight® nES 7 PIR integral occupancy sensor ‡
NESPDT7	nLight® nES PDT 7 dual technology integral occupancy control ‡
NES7ADCX	nLight® nES 7 ADCX PIR integral occupancy sensor with automatic dimming photocell ‡
NESPDT7ADCX	nLight® nES PDT 7 dual technology integral occupancy sensor with automatic dimming photocell ‡
Individual controls: ‡	
MSD7	PIR integral occupancy sensor
MSDPDT7	PDT 7 dual technology integral occupancy control
MSD7ADC	PIR integral occupancy sensor with automatic dimming control photocell
MSDPDT7ADC	PDT integral occupancy sensor with automatic dimming control photocell

Finish

WH	White
GALVW	Galvanized with white lens end caps
GALVB	Galvanized with black lens end caps
MB	Matte black
SKGYW	Smoke gray with white lens end caps
SKGYB	Smoke gray with black lens end caps

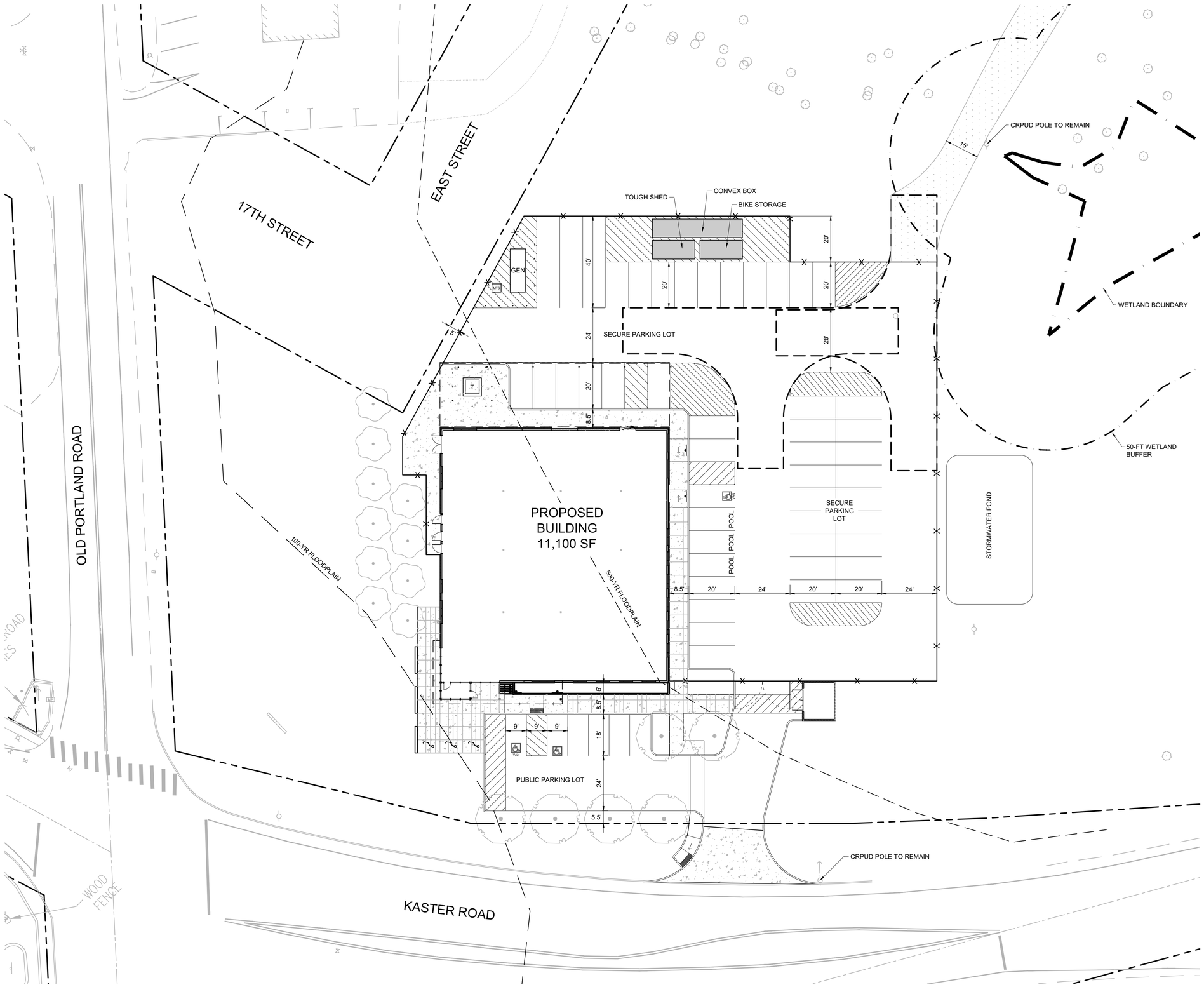
See Accessories and footnotes on next page

Refer to Luminaire Schedule for manufacturer's catalog ordering code, required lamping, finishes, modifications and/or required accessories.

PART 4

UPDATED CHARACTER RENDERING
MARCH 2. 2023.
VIEW FROM OLD PORTLAND RD AND KASTER RD


1
2
3
4
5
CARPORT
100' - 0"
27' - 8"
25' - 6"
25' - 9"
21' - 1"
F/BRICK
F
E
D
C
B
A
111' - 4"
28' - 4"
24' - 11"
26' - 0"
32' - 1"
REFFreezer
EVIDENCE STOR 442 SF
DRUG 97 SF
EVIDENCE TECH 160 SF
OFFICER EVIDENCE PROCESSING 280 SF
EMERGENCY ELECTRICAL ROOM 26 SF
ELEC. 197 SF
EQUIP STOR 182 SF
MUD RM 235 SF
H. INT. 95 SF
ARMORY 187 SF
HALL 377 SF
T/S 106 SF
T/S 106 SF
T/S 107 SF
T/S 106 SF
JANITOR 62 SF
REF
REF
D
W
DW
BREAK RM 299 SF
(40) LOCKERS 674 SF
DEFENSIVE TACTIC TRAINING 553 SF
STORAGE 64 SF
FIRE RISER 104 SF
FD
REC. STORAGE 137 SF
HALLWAY 458 SF
MECHANICAL 123 SF
DET 47 SF
DET 47 SF
STOR 29 SF
EXAMINER 174 SF
WELL 73 SF
DET 57 SF
HUB 2 330 SF
HALLWAY 369 SF
POLICE SERVER 116 SF
DET 49 SF
DET 49 SF
SERGEANT 124 SF
SERGEANT 119 SF
SERGEANT 120 SF
SERGEANT 120 SF
HALLWAY 347 SF
MAIL 12 SF
RECORDS 517 SF
HUB 101 SF
LIEUTENANT 120 SF
ADMIN 119 SF
SOFT INT./ CONF./ EVID. R. 127 SF
BRIEF 395 SF
CHIEF 195 SF
LOBBY 348 SF
UNI. 75 SF
SEGANT 124 SF
PATROL 373 SF
911 VEST. 94 SF
ENTRY CANOPY



1 C1.10 SITE PLAN

20 0 10 20 40 80

(IN FEET)

1 inch = 20 ft.

PARKING DATA

	ACCESSIBLE	STANDARD	CARPOOL/VANPOOL	OVERSIZED (10' x 40')	TOTAL
SECURE (10' x 20')	1	40	3	3	47
PUBLIC (9' x 18')	2	4	0	0	6
TOTAL	3	44	3	3	53

LEGEND

	EXISTING	PROPOSED
PROPERTY/ROW LINE		
100-YEAR FLOODPLAIN		
500-YEAR FLOODPLAIN		
EDGE OF PAVEMENT WETLAND		
BOUNDARY		
50-FT WETLAND BUFFER		
TREE		

Architecture ▪ Interiors
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MACKENZIE.
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Client

CITY OF ST. HELENS
265 STRAND STREET
ST. HELENS, OR 97051

Project

ST. HELENS PUBLIC SAFETY BUILDING
OLD PORTLAND RD AND KASTER RD
ST. HELENS, OR 97051

Mechanical/Electrical
PAE ENGINEERS
151 SW 1ST AVENUE
PORTLAND, OR 97204

PAE
pae-engineers.com

REVISION SCHEDULE

Delta	Issued As	Issue Date

SHEET TITLE:
SITE PLAN

DRAWN BY: ZMP

CHECKED BY: GIM

SHEET

C1.10

JOB NO. **2210310.00**

Report of Geotechnical Engineering Services

St. Helens Public Safety Building

St. Helens, Oregon

Prepared for

The City of St. Helens

November 18, 2021

0203864-000

HARTCROWSER

A division of Haley & Aldrich

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Report of Geotechnical Engineering Services

St. Helens Public Safety Building

St. Helens, Oregon

Prepared for

The City of St. Helens

November 18, 2021
0203864-000

Prepared by

Hart Crowser, a division of Haley & Aldrich

Daniel J. Trisler, P.E., G.E.
Principal, Geotechnical Engineer

Luke I. Kevan, P.E.
Project Engineer

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Portland, OR 97239
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APPENDIX C

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APPENDIX D

Hazard Deaggregation

Report of Geotechnical Engineering Services

St. Helens Public Safety Building

St. Helens, Oregon

1.0 INTRODUCTION

Hart Crowser, a division of Haley and Aldrich, (Hart Crowser) is pleased to submit this report of geotechnical engineering services for the proposed Public Safety Building at the corner of Old Portland Road and Kaster Road in St. Helens, Oregon. Our work was completed in general accordance with our proposal dated September 28, 2021, and our Personal Services Agreement with the City of St. Helens, dated October 15, 2021.

Based on our understanding of the project plans, the new development will include a one- to two-story building with associated parking and landscaping. A new roadway connecting the northeastern end of the property to S 15th Street is also included as a part of the development. Based on our experience with similar developments, we anticipate the building will be supported on shallow footings with structural loads between 3 and 5 kips per lineal foot for strip footings and up to 100 kips for column footings.

We understand the proposed building will be considered “Critical” and “Essential” for immediate occupancy after a seismic event. Therefore, a site-specific seismic hazard analysis is required, per Section 1803.3.2 of the Oregon Structural Specialty Code (OSSC).

The proposed development is located within the 100-year and 500-year floodplains, and therefore, per the St. Helens Municipal Code (SHMC) 17.46.050, new critical facilities (which includes police stations) are required to be at least 3 feet above the base flood elevation or to the height of the 500-year floodplain, whichever is higher. Based on our understanding of the project plans, finished floor elevation of the planned building will be 3 feet above the 100-year floodplain.

Significant earthwork, including excavation of bedrock, will be required to raise site grades and to construct the roadway extension. We understand the southeastern side of the property will be raised about 7 feet and the northwestern portion about 3 feet to meet the flood elevation requirements noted above. An unknown amount of rock excavation will be required in the northeast portion of the site for the roadway construction. Also, a new stormwater facility (detention pond) is conceptually planned for the southern portion of the site.

The location of the site is shown on Figure 1. The site and our exploration locations are shown of Figure 2. Characteristic Tectonics of the Pacific Northwest are shown on Figure 3. Peak Directional Scaling Factors are shown in Figure 4. The recommended seismic response spectrum is shown on Figure 5. Figures 1, 2, 4, and 5 are attached after the text of the report, while Figure 3 is embedded within the text.

Appendix A contains copies of our exploration logs. Appendix B contains the results of our laboratory testing. Appendix C contains the report of the geophysical testing performed at the site by Earth Dynamics, LLC (Earth Dynamics). Appendix D contains attachments associated with the site-specific seismic hazard evaluation.

2.0 SCOPE OF SERVICES

The purpose of our work was to evaluate subsurface conditions and to provide geotechnical engineering services for design of the planned development. We completed the following tasks in general accordance with our proposed scope of work.

- Reviewed readily available geologic, groundwater, and soil survey maps that cover the site vicinity.
- Conducted a field exploration program that included:
  - Notifying the "One-Call" service for public utility locates.
  - Conducting a geotechnical reconnaissance of the site.
  - Advancing 10 test pits to depths between 1 and 10 feet below ground surface (bgs).
  - Conducting field infiltration testing adjacent to three of the test pits at depths of 3 to 5 feet bgs
  - Performing surface shear wave velocity testing along three lines.
- Conducted a program of laboratory testing on selected soil samples. The laboratory tests performed included Atterberg limits, grain-size distribution, moisture content determinations, and fines content determinations.
- Evaluated seismic hazards, including ground shaking and ground shaking amplification, liquefaction, and lateral spread.
- Performed a site-specific seismic hazard investigation per the requirements of the OSSC.
- Conducted an engineering analyses to develop geotechnical design recommendations for infiltration systems, foundations, pavements, and seismic design criteria.
- Evaluated construction issues (i.e., rock rippability, temporary cuts, etc.)
- Prepared this report outlining our findings and recommendations, including information related to the following:
  - Subsurface soil and groundwater conditions;
  - Seismic hazards including the site-specific seismic hazard study results;
  - Site preparation and grading;
  - Utility trench construction;
  - Foundation design parameters;
  - Infiltration test results and recommendations; and
  - Pavement design.

3.0 SITE CONDITIONS

3.1 Geology, Geologic Hazards, and Soil Mapping

The geology at the project site is mapped as basalt assigned to the Miocene-age Sentinel Bluffs member of the Grande Ronde Basalt of the Columbia River Basalt Group (Evarts 2004). The Sentinel Bluffs member is described as two or more basalt flows that are 300 feet or more in thickness. Glacial outburst floods at the end of the last glacial period (about 13,000 to 17,000 years before present) stripped unconsolidated sediments and soil from the basalt and "scoured a complex, scabland-style topography into the basalt" at locations below approximately 200 feet elevation in the St. Helens area (Evarts 2004). We observed both outcrops and subsurface materials generally consistent with the mapped geology.

Statewide online hazards mapping by the Oregon Department of Geology and Mineral Industries (DOGAMI 2021; 2018) does not map any existing landslides on the site. Areas of steeper slopes on the site, generally corresponding to surface outcrops of basalt, are mapped has having moderate, "landslides possible," landslide susceptibility. The site is mapped as having "very strong" expected shaking during either a Cascadia or crustal fault earthquake event with a "moderate" liquefaction hazard. The nearest mapped active fault is the Quaternary Portland Hills Fault located approximately 7.5 miles to the southwest (Personius and Haller 2017).

The soils at the site are mapped by the U.S. Department of Agriculture (USDA 2021) as mantled by Rock outcrop-Xermbrepts complex soils. The rock outcrops are described as unweathered basaltic bedrock directly at the surface. The Xermbrepts soils are described as loam over unweathered bedrock at 18 inches derived from alluvium on terraces. This soil type has an estimated hydraulic conductivity of 0.6 to 2 inches per hour in the most restrictive layer.

Groundwater mapping (Snyder 2008) shows the approximate groundwater elevation to be 30 to 38 feet (NAVD 88). Based on a site elevation of approximately 50 to 70 feet (NAVD 88) the estimated depth to groundwater at the site is mapped as approximately 20 to 32 feet bgs.

3.2 Surface Conditions

The project site is located at the eastern corner of the intersection of Old Portland Road and Kaster Road in St. Helens, Oregon. The site is surrounded by residential development to the north and northwest, McCormick Park to the west, the St. Helens Recreation Center to the southeast, and undeveloped property to the south and east. The project site is undeveloped and is generally covered in grass, trees, and blackberry bushes. There is also, an existing approximately 100 feet long by 75 feet soil stockpile on the site. The stockpile is about 20 feet high and generally contained soil consisting of a silty sandy matrix with gravel and cobbles up to 6 inches in diameter.

At the northeastern corner of the property there is a bedrock outcropping. The oblong outcropping is approximately 300 feet long at its longest point measured from the southwest to the northeast, and about 150 feet wide at its widest point measured form the south west to the north east. The northern end is narrow and only about 50 feet wide. The top of the outcropping is flat and sits at an approximate elevation

of 70 feet (NAVD 88). This is approximately 10 feet above the existing ground surface in the footprint of the planned building, and about 10 to 15 feet above the eastern edge of the property. The walls of the outcropping are generally vertical. The rock within the outcropping appears to be strong basalt. The wall has several fractures and there is evidence of rock fall activity by the existing boulders at the toe of the rock outcropping walls. Also, at the base of the outcropping wall along the northeaster edge, there was garbage at the ground surface.

3.3 Subsurface Conditions

3.3.1 General

We explored subsurface soil and groundwater conditions at the site by completing 10 test pits (TP-1 through TP-10) on October 25 and 26, 2021. The explorations were performed using a CAT Model 305E hydraulic mini-excavator operated by Stratus Corporation of Gaston, Oregon. The exploration locations are shown on Figure 2. Appendix A summarizes our exploration methods and presents our exploration logs. Laboratory test results are provided on the exploration logs and attached in Appendix B.

Materials encountered in our exploration generally included 3 to 12 inches of topsoil overlying fill, or native alluvium, residual soil, and/or basalt rock. Native soils consisted of alluvial sandy silts and clays, and silty to clayey gravels that represent residual soil resulting from the *in situ* weathering of the underlying basalt. The undocumented fills were generally gravelly and contained construction debris and refuse. Basalt underlies all deposits at the site and all of our test pits met refusal in this unit. We note that no direct measurements of *in situ* density were taken and relative density of onsite materials was estimated from bucket action during test pit excavation. These materials are discussed in detail in the paragraphs below.

3.3.1 Fill

A layer of gravelly soil was present either at ground surface or below a thin layer of topsoil in test pits TP-1, TP-5, TP-6, TP-7, and TP-9. These soils were distinct from the underlying native alluvium and residual soil and are grouped here due to their inconsistent presence and generally similar appearance.

Fill soils consisted of poorly graded gravel with variable sand, silt, cobble, and boulder content. The soils were identified by their inclusion of debris, which included wood, brick, and refuse, and generally dark brown to black color. Boulders up to 2 feet in diameter were observed in these deposits. These soils typically extended to approximately 2 to 3.5 feet bgs, but were observed extending from ground surface to 7.0 feet bgs and directly overlying basalt at TP-6. Relative density estimated from bucket action during test pit excavation indicated a predominantly loose relative density with limited areas of medium dense relative density where boulders were observed.

3.3.1 Alluvium

We interpret sandy fine-grained soils observed beneath the surficial fill and/or topsoil in test pits TP-2, TP-4, TP-5, TP-9, and TP-10 as native alluvium based on the presence of mica mineral grains, indicative of Columbia River deposits in the St. Helens area. Where observed, these deposits extended to between 3 and 7 feet bgs and typically consisted of soft to medium stiff silt, elastic silt, and lean clay with variable

sand content. These deposits were observed discontinuously in the center of the lower western portion of the site and were not observed in our explorations in the higher eastern portion of the site.

Moisture contents in the alluvial soils ranged from 20 to 35 percent with an average of 25 percent based on six samples. Four Atterberg limits tests indicate liquid limits cluster between 45 to 52 percent moisture content and plastic indices range from 17 to 23, indicating medium to high plasticity. One grain size analysis determined a fines content of 76 percent.

3.3.2 Residual Soil

Residual soils, both fine-grained (silt and clay) and granular (sands and gravels), formed by decomposition of the underlying bedrock. The depths at which these soils were encountered at the site varied between approximately 0.3 and 7 feet bgs, and were observed in all test pits, except TP-3 and TP-6. They consisted predominantly of silty to clayey gravel with minor silt, and frequently contained numerous cobbles and boulders. These soils typically extended to the top of hard to very hard basalt at depths ranging between approximately 2 and 10 feet bgs. Bucket action during test pit excavation typically indicated a medium dense to dense relative density, but limited exposures of loose to soft soils were observed.

Fragments of fresh gravel and cobbles with a weathered rind were observed in this material and boulders up to 3.0 feet in diameter were encountered in this geologic unit.

Laboratory results on selected soil samples indicated *in situ* moisture contents of the residual soils typically ranged from approximately 16 to 24 percent. Two Atterberg limits tests on the fine-grained portion of the residual soil yielded liquid limits between 36 and 43 percent and plastic limits between 4 and 17 percent indicating low to medium plasticity. Grain size analyses determined fines content (percentage finer than the No. 200 sieve) varied between approximately 25 and 41 percent based on three tests in residual soils. We note that the grain size analysis does not include particles larger than 3 inches in diameter (cobbles and boulders), but original field samples of residual soil contained between 21 and 37 percent by weight of cobbles.

3.3.3 Grande Ronde Basalt

Basalt rock was encountered directly beneath the surficial deposits at depths between approximately 1 and 10 feet bgs across the site. All of our explorations met practical refusal prior to penetrating into this unit where rock hardness was relatively hard to very hard (R4 to R5). At test pit TP-1, very soft to medium hard (R1 to R3), predominantly decomposed basalt was encountered at 3 feet bgs and was able to be excavated to 5.5 bgs before achieving practical refusal on hard (R4) basalt. Additionally, an outcrop of moderately to slightly weathered basalt forms a knob with a steep southeast face at the center of the site (as shown on Figure 2).

3.3.4 Groundwater

Minor to moderate groundwater seepage was observed at 7 and 2 feet bgs in test pits TP-6 and TP-8, respectively, near the contact between the overlying gravelly deposits and hard basalt at depth. We interpret this as perched groundwater related to storm runoff and that the regional groundwater table is found at depths greater than our explorations (estimated 20 to 32 feet bgs).

Note that groundwater conditions are reported at the time of our explorations and field testing. Groundwater conditions can vary over time and may be influenced by weather, temperature, and other factors.

3.3.5 Infiltration Testing

We performed three *in situ* infiltration tests at the project site. The tests were completed in shallow test holes advanced adjacent to the primary test pits. The infiltration tests were performed in general conformance with the methods prescribed in the City of Portland Stormwater Management Manual (Portland 2020). The results of the field testing and fines content and soil type are provided in Table 1.

Table 1 – Infiltration Test Data

Infiltration Test No.	Test Pit No.	Approximate Test Depth (feet)	Field Drawdown Rate (inches/hour)	Soil Type (USCS)
IT-1	TP-2	3.3	2	GC
IT-2	TP-4	3.4	1.1	ML
IT-3	TP-5	3.0	0.6	CL

Note:

a. Infiltration tests IT-1 is an open pit test, while IT-2 and IT-3 are single-ring falling head tests.

Please refer to *Section 6.4 Infiltration Systems* for a discussion of our findings and recommendations regarding the design of infiltration systems.

3.3.6 Geophysical Testing

We subcontracted Earth Dynamics to conduct geophysical testing explorations at the project site. The purpose of the testing was to determine the average shear wave velocity of the site and the compressional wave velocity of the underlying basalt bedrock to aide in the determination of rock rippability. This testing included running two ReMi Shear Wave tests and analyses, and one Seismic Refraction test and analysis. The two ReMi tests were performed within the approximate planned building area, and the Seismic Refraction test was performed to the northeast of the planned building area. Please see Appendix C for the Geophysical Exploration report, including the locations of where the tests were performed and results of the analysis.

3.4 Seismic Hazards

3.4.1 Seismic Setting

Western Oregon sits at the contact between two large crustal tectonic plates. The Juan de Fuca Plate forms the floor of the Pacific Ocean off the coast of the northwestern United States, and moves northeastward from its spreading ridge boundary with the Pacific Plate at an average rate of approximately 1.5 inches per year. As it converges with the continental North American Plate, the Juan de Fuca Plate dips below (or “subducts”) beneath the North American Plate forming a shallow, eastward-dipping contact interface. This boundary is known as the Cascadia Subduction Zone (CSZ) and is responsible for the seismicity in the western Oregon and Washington regions; producing earthquakes

associated with three types of source zones: subduction interface, subduction intraslab, and crustal. Figure 3 shows the three earthquake source zones.

The seismicity of the region is generally related to the presence of the CSZ off the coast of Oregon and Washington. These and other seismic hazards are discussed in the following section.

Refer to *Section 5.4 Seismic Design* of this report for the seismic design recommendations.

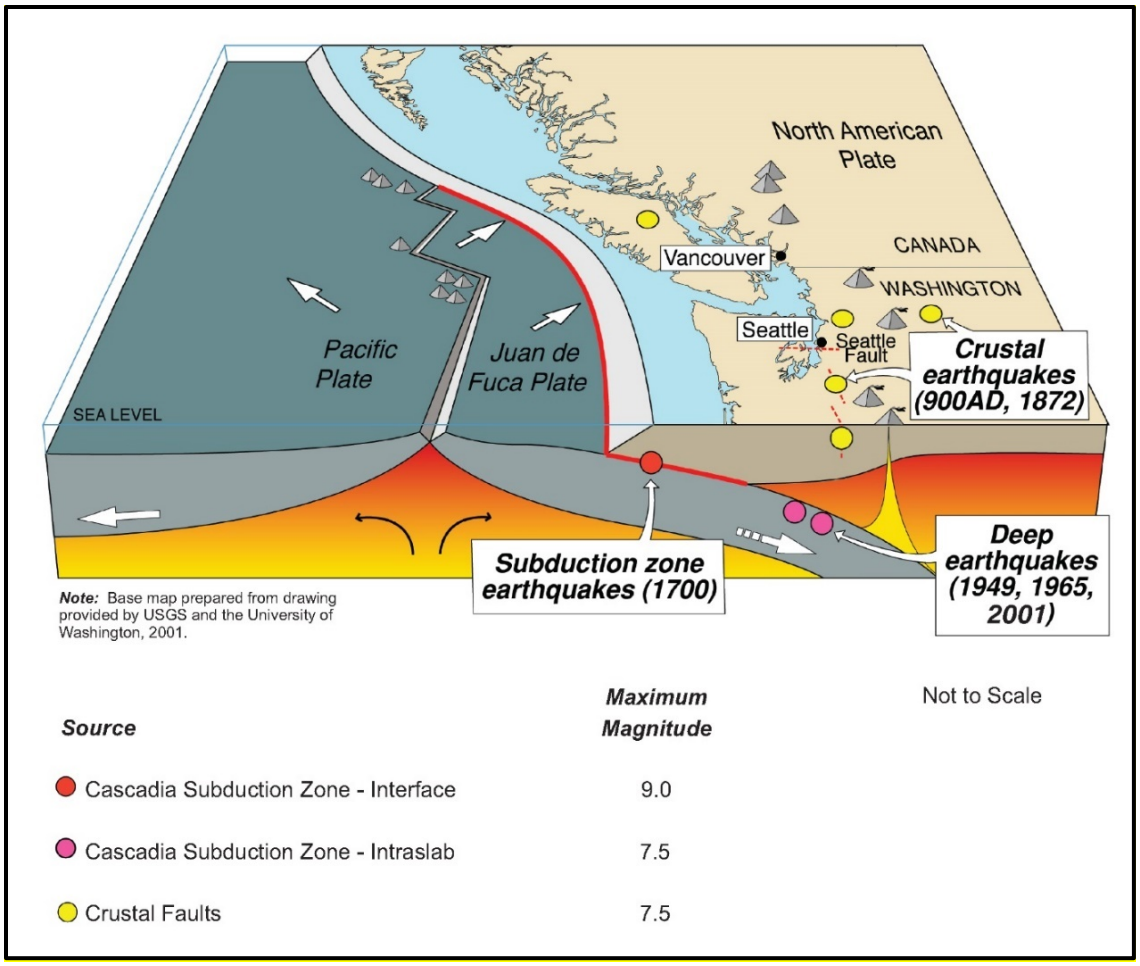

Figure 3. Characteristic Tectonics of the Pacific Northwest

Subduction Interface Sources. The displacement caused by the subduction of the Juan de Fuca Plate below the North American Plate does not generally manifest as slip between the two plates; rather, it is absorbed by compression of the North American Plate at the interface at relatively shallow depths. This compression, based on geologic and historical evidence, is released every 500 to 600 years on average in the form of magnitude 8 to 9 earthquakes, the last such event occurring in 1700. Characteristics of this type of earthquake may include very large ground accelerations, shaking durations in excess of 2 minutes, and particularly strong long-period ground motions that may affect tall or long-period structures.

Subduction Intraslab Sources. A deeper zone of seismicity is associated with a steeper bending of the Juan de Fuca Plate and the breaking of the plate under its own weight below the Pacific Northwest region. This

region, termed the Benioff Zone, produces intraslab earthquakes at depths of 40 to 70 kilometers (km). Such past events in western Washington include the 1949 Puget Sound, 1965 Olympia, and 2001 Nisqually Earthquakes. Deep, intraslab earthquakes tend to be felt over larger areas than shallower crustal events, and generally lack significant aftershocks.

Crustal Sources. Few geologic traces exist of the shallow crustal faults in the nearby Portland, Oregon and Vancouver, Washington areas. Several northwest-striking faults have been mapped in bedrock exposures in the Tualatin Mountains south of the site and below sedimentary cover (Blakely et al., 1995). To the south of the project site in the Portland area, a series of shallow crustal faults, including the Portland Hills Fault, Oatfield Fault, and the East Bank Fault have had their surface traces either eroded away or buried by ancient flood deposits but have been mapped by seismic reflection and refraction studies. Therefore, less information is known about these faults than faults with distinct surface traces. The project site lies about at least 16 miles north of these faults.

To the southwest of the project site, the Lacamas Fault strikes in an approximately northwest-southeast direction through Camas, Washington, and Lacamas Lake. The Lacamas Fault is a steeply dipping fault that has been mapped by surface slicken slides and shear zones, and from geophysical data. The fault is believed to be capable of producing earthquakes of magnitudes approximately 6.5 to 6.6. The project site is located approximately 18.5 miles northwest to the northern end of the Lacamas Fault at its closest mapped location.

3.4.2 Site Classification

The site shear wave velocity (V_S) was measured by Earth Dynamics using the refraction microtremor survey (ReMi) at the project site. The ReMi survey includes two linear arrays going NW-SE (ReMi1) and SW-NE (ReMi2) directions. The V_{S30} for the NW-SE (ReMi1) and SW-NE (ReMi2) profiles are 3,651 feet per second (fps) and 3,411 fps, respectively. The V_{S30} representative for the project site was selected as the average of the two profiles and is 3,531 fps (1,076 meters per second). The shear wave velocity measurement report is attached in Appendix C. This site-specific V_{S30} corresponds to Site Class B in accordance with Table 20.3-1 of the American Society of Civil Engineers (ASCE) 7-16 Chapter 20.

3.4.3 Liquefaction

Liquefaction is a phenomenon caused by a rapid increase in pore water pressure that reduces the effective stress between soil particles, resulting in the sudden loss of shear strength in the soil. Granular soils, which rely on interparticle friction for strength, are susceptible to liquefaction until the excess pore pressures can dissipate. Sand boils and flows observed at the ground surface after an earthquake are the result of excess pore pressures dissipating upwards, carrying soil particles with the draining water. In general, loose, saturated sand soils with low silt and clay contents are the most susceptible to liquefaction. Silty soils with low plasticity are moderately susceptible to liquefaction under relatively higher levels of ground shaking. For any soil type, the soil must be saturated for liquefaction to occur.

Due to the groundwater being 20 to 30 feet below the ground surface, and the only the hard residuals soils being saturated from perched water, the risk of liquefaction at this site is low.

3.4.4 Earthquake-Induced Landsliding/Rockfall

According to the DOGAMI HazVue Website (DOGAMI 2018), the rock outcrop area located at within the northeastern portion of the property is mapped as a "moderate landslide hazard." This is likely due to the steep slopes that exists in this area. Some potential for rock fall may provide issues for future development; however, for this project, the areas of concern with be graded out, or they do not face the planned developed areas. As such, it is our opinion the risk of seismic-induced land sliding and rock fall for this site is low.

3.4.5 Fault Surface Rupture

We used the U.S. Geologic Survey (USGS) U.S. Quaternary Faults Web Application (USGS 2020) to identify earthquake producing faults near the project site. No mapped earthquake producing crustal faults are present at the site. The closest known quaternary-age fault is the East Bank Fault mapped approximately at least 16 miles to the south. Therefore, we consider the hazard from fault surface rupture at the site to be low, although unmapped or otherwise unknown faults may be present that could result in a higher hazard.

4.0 CONCLUSIONS

Based on our explorations, testing, and analyses, it is our opinion that the site is suitable for the proposed use, provided the recommendations in this report are included in design and construction. We offer the following general summary of our conclusions.

- We encountered localized deposits of undocumented fill and based on the extensive site development, we anticipate there may be widespread zones of near-surface fill across the site. Loose or debris-laden undocumented fill materials will need to be removed from or reworked below the proposed structures.

- Site stratigraphy generally consists of silty gravel fill, stiff silts and clays, clayey gravels, and bedrock (at depth). The soils should be readily excavatable by conventional equipment. However, the underlying bedrock is strong and will likely require specialized equipment or methods for excavation.

- The proposed development is located within the 100-year and 500-year floodplains. Based on our understanding of the project plans, finished floor elevation of the planned building will be 3 feet above the 100-year floodplain. This means the site will be raised about 7 feet on the southeastern side of the property and about 3 feet on the northwestern part of the property.

- The proposed new foundation elements may be supported by a conventional spread footing foundation system.

- The groundwater table was not encountered during our explorations; however, locally perched groundwater from stormwater runoff was encountered within the dense clayey gravel residual soils and on top of bedrock.

- Infiltration testing conducted at the site indicated that infiltration rates in the upper silty sand soils and lower clayey gravel soils are low.

The following sections present our specific recommendations for earthworks and structural components of the project.

5.0 DESIGN RECOMMENDATIONS

5.1 Foundation Support Recommendations

5.1.1 General

The proposed buildings and other structures (e.g., trash enclosures) may be supported by conventional spread footings that bear on bedrock, new engineered fill, or re-worked existing fills. As mentioned previously, current preliminary development plans indicate that approximately 3 to 7 feet of fill will be placed beneath the proposed building area; therefore, we anticipate the building (as conceptually laid out) will be fully supported by new fill. However, other ancillary structures may be constructed in areas with shallow bedrock. Where undocumented fill or organic soils are encountered below foundations or slabs, then such materials should be removed and/or recompacted. New and reworked fill should be placed and compacted per *Section 8.0 Earthwork Recommendations* of this report.

The following recommendations are based on the assumption that maximum structural loads will be up to 100 kips for column footings and between 3 to 5 kips per linear foot for continuous wall footings. If structural loads are greater, then we should be contacted to verify that our recommendations are appropriate.

5.1.2 Shallow Foundations

5.1.2.1 Dimensions and Design Parameters

Spread footings may be designed using an allowable bearing pressure of 4,000 pounds per square foot (psf) if bearing on new engineered fill, or 8,000 psf if bearing on bedrock. Continuous strip footings should have a minimum width of 1.25 feet, while isolated footings should have a minimum dimension of 2.0 feet. The bottom of perimeter footings should extend at least 16 inches below the adjacent exterior grade. Footings located proximate to slopes (e.g., stormwater pond) should be set-back or embedded to provide at least 10 feet of horizontal coverage between the base of the footing and the slope.

The bearing values provided above represent net bearing pressures; the weight of the footings and overlying backfill can be ignored in calculating footing sizes. The recommended allowable bearing pressures apply to the total of dead plus long-term live loads and may be increased by one-third for short-term loads, such as wind or seismic forces.

5.1.2.2 Foundation Subgrade Preparation

Prior to the installation of the new footings and placement of reinforcing steel in the footing excavations, loose or disturbed soils should be removed, and the footing subgrade be compacted with a small vibratory

plate compactor to a dense condition. As noted previously, any pre-existing fills should be removed, processed to remove oversized materials and debris, and then be recompacted per *Section 8.0 Earthwork Recommendations*.

If water infiltrates and pools in the excavation, the water, along with any disturbed soil, should be removed before placing the reinforcing steel. If construction is undertaken during periods of rain, we recommend that imported granular material or lean concrete be placed over the base of footing excavations. The granular material or concrete reduces subgrade disturbance from standing water and from foot traffic during forming and tying of reinforcing steel. Typically, 3 to 6 inches of clean granular material that is lightly compacted until well interlocked provides sufficient protection from disturbance.

We recommend that Hart Crowser observe all foundation excavations to determine that bearing surfaces have been adequately prepared and that the soil conditions are consistent with those observed during our field investigation and assumed during design.

5.2 Retaining Structures

5.2.1 General

According to the project plans, a 6-foot-tall retaining structure is planned along the northeastern edge of the property. The following guidelines should be followed in the design of this retaining wall.

5.2.2 Design Parameters

The lateral earth pressures on retaining walls depends on the amount of wall movement allowed. Active earth pressures are appropriate for use for flexible walls that can tolerate displacement at the top equal to 0.1 percent of its height. At-rest earth pressures are appropriate for rigid walls that are not expected to deflect.

Flexible retaining walls should be designed to resist an active earth pressure of 45 pounds per cubic foot (pcf). Rigid retaining walls should be designed to resist an at-rest earth pressure of 65 pcf. These lateral earth pressures should be modelled as equivalent fluid pressures and are based on the following assumptions.

- The ground surface above the wall has a gradient flatter than 4:1 (H:V) for a minimum distance equal to the wall height.
- Hydrostatic pressures do not develop, and a drainage system will be provided behind the wall.

Surcharge loads applied closer than one-half of the wall height should be considered as uniformly distributed horizontal pressures equal to one-third of the distributed vertical surcharge pressure.

For seismic loading conditions on yielding walls (subject to active earth pressures), the lateral seismic surcharge can be modeled as a uniform pressure in psf of 10H (where H is the height of the wall in feet). The seismic surcharge was determined using the Mononobe and Okabe methodology. The lateral seismic surcharge is in addition to the static lateral pressure.

Footings for retaining walls should be designed as recommended in *Section 5.1 Foundation Support Recommendations*. Backfill should be placed and compacted as recommended in *Section 8.0 Earthwork Recommendations*.

5.2.3 Wall Drainage and Waterproofing

The above design parameters have been provided assuming that back-of-wall drains will be installed to prevent hydrostatic pressures. The drainage system should consist of a minimum 12-inch-wide zone of drain rock (or a prefabricated drainage panel), extending from the base of the wall to within 6 inches of finished grade. The drain rock or panel should be placed against the back of all retaining walls. Perforated collector pipes should be embedded at the base of the drain rock.

Where used, the drain rock should meet the requirements provided in *Section 8.5 Structural Fill and Backfill*. The perforated collector pipes should discharge at an appropriate location away from the base of the wall. The discharge pipe(s) should not be tied directly into stormwater drain systems, unless measures are taken to prevent backflow into the wall's drainage system.

5.3 Floor Slabs

Satisfactory subgrade support for concrete slabs supporting up to 200 psf areal loading can be obtained from new structural fill or native subgrade prepared in accordance with *Section 8.0 Earthwork Recommendations*.

A minimum 6-inch-thick layer of crushed rock should be placed over the prepared subgrade to assist as a capillary break. Base material placed directly below the slab should be 0.75- to 1-inch maximum size.

Slabs should be reinforced according to their proposed use and per the structural engineer's recommendations. Load-bearing concrete slabs may be designed assuming a modulus of subgrade reaction, k, of 125 pounds per square inch, provided the subgrade is prepared as recommended in this report.

We generally recommend the use of a vapor barrier beneath slabs-on-grade of occupied building spaces. However, within mechanical spaces the use of a vapor barrier is considered optional, and its use should be based on discussions among the members of the design team.

We recommend that Hart Crowser observe slab subgrade preparation before placement of aggregate base to determine that subgrade has been adequately prepared, and that the soil conditions are consistent with those observed during our explorations. We should also evaluate the compacted aggregate base to verify that required compaction levels have been achieved.

5.4 Seismic Design

5.4.1 Seismic Basis of Design and Analysis Methodology

The site-specific seismic hazard analysis conducted for the project site follows the procedures of site-specific ground motion for seismic design in ASCE 7-16 Chapter 21 and those of Section 1803 of the 2019

OSSC (OSSC 2019). The basis of design for ASCE 7-16 is the Risk-Targeted Maximum Considered Earthquake (MCE_R) at 5 percent damping, which is based on the 2,475-year return period hazard (2 percent probability of exceedance in 50 years) that is adjusted from the geometric mean to peak directional orientation and risk-adjusted to achieve a 1 percent probability of collapse in 50 years. The design earthquake response spectrum is equal to two-thirds of the MCE_R response spectrum.

The seismic hazard analysis for the site included both probabilistic and deterministic seismic hazard analyses (PSHA and DHSA, respectively). Inputs to both analysis procedures include information about the site, such as location and site class and information about nearby faults and their seismic activity.

A PSHA procedure evaluates the level of seismic hazard at a site considering the locations of regional faults, the likelihood and geometry of possible fault ruptures, and associated uncertainties. A DSHA procedure evaluates the level of seismic shaking at the site considering the maximum credible earthquake events from all seismic sources and the associated uncertainty, but the analysis does not consider the likelihood of those events occurring during the design life of the structure. The lesser of the probabilistic and deterministic hazards is used in code-based design per ASCE 7-16 Chapter 21.

We understand the new structure will be a one- or two-story building, corresponding to a structural period of approximately 0.1 to 0.2 seconds. We will present response spectra for the range of 0 to 3 seconds and hazard deaggregation results in this report for the range of 0 to 1 second, which covers the period range of interest related to the structure.

5.4.2 Design Code Parameters

The site-specific analysis results are bounded by surface spectrum developed following generalized, non-site-specific design procedures of ASCE 7-16 Chapter 11. This general spectrum will be referred to in this report as the “code-based spectrum.” The design parameters for the code-based spectrum are developed following the provisions of ASCE 7-16 and modifications in OSSC if applicable. The parameters used in the code-based spectrum are provided in Table 2. Note that these parameters are provided for reference only and not recommended for use in design. The parameters recommended for use in design are presented in Tables 11 and 12 in this report.

Table 2 – Code-Based Spectral Parameters (Not for Use in Design)

Site Property	Value
Latitude	45.8519
Longitude	-122.8116
Site Class	B
S_S	0.833
S_1	0.401
F_a	0.9
F_v	0.8
T_L	16 seconds

Note:

The information presented in the table can be obtained from:

https://earthquake.usgs.gov/ws/designmaps/asce7-16.json?latitude=45.85191&longitude=-122.811636&riskCategory=IV&siteClass=B&title=St Helens Public Safety Building

5.4.3 Probabilistic Seismic Hazard Analysis

A PSHA for this project was computed using the HAZ45 software. The analysis was conducted for the 2,475-year return period hazard level, as described in ASCE 7-16. The PSHA performed for this project will be used for hazard deaggregation and for comparison to the DSHA.

The seismic hazard model used with this software contains seismic source geometries and recurrence models developed, based on the 2014 USGS National Seismic Hazard Model as described in USGS Open-File Report 2014-1091 (Petersen et al., 2014). The source file used for the analyses includes source models for known surface faults (i.e., the Tacoma Fault), gridded crustal seismicity, and CSZ. Our HAZ45 source model was validated against the USGS 2014 National Seismic Hazard Maps (NSHMs) for grid points in the Pacific Northwest, including western Oregon.

The Hart Crowser PSHA logic tree contains ground motion models (GMMs) and weights, which generally follow the logic tree used in the 2014 USGS NSHMs with modifications to use more regionally appropriate GMMs or revised and updated GMMs. The development of the GMM logic tree involved close investigation of the individual GMMs and weights used in the 2014 USGS NSHMs to formulate an appropriate logic tree. The GMMs and weights used are presented in Tables 3 through 5. The weights and models used in the PSHA have been used on peer-reviewed Washington State Department of Transportation (WSDOT) projects, on several peer-reviewed tall buildings in the Seattle and Bellevue metro areas, on a peer-reviewed tsunami evacuation structure in Tokeland, Washington and on a peer-reviewed seismic retrofit project in Beaverton, Oregon.

Table 3 – GMMs and Relative Weights for Crustal Sources

Ground Motion Model (GMM)	GMM Abbreviation	GMM Weights	
		2014 USGS Logic Tree	Hart Crowser Logic Tree
Abrahamson, Silva, and Kamai. NGA-West2 (2014)	ASK14	0.22	0.25
Boore et al. NGA-West2 (2014)	BSSA14	0.22	0.25
Campbell and Bozorgnia NGA-West2 (2014)	CB14	0.22	0.25
Chiou and Youngs NGA-West2 (2014)	CY14	0.22	0.25
Idriss NGA-West2 (2014)	I14	0.12	-

Table 4 – GMMs and Relative Weights for Subduction Intraslab Sources

Ground Motion Model (GMM)	GMM Abbreviation	GMM Weights	
		2014 USGS Logic Tree	Hart Crowser Logic Tree
Atkinson and Boore (2003, 2008) Global Model[a]	AB03_G	0.1667[a]	0.1
Atkinson and Boore (2003) Cascadia Model[a]	AB03_C	0.1667[a]	0.1
Zhao et al. (2006)[b]	Z06	0.3333[b]	0.2

BC Hydro (2012)	BCHydro12	0.3333	-
BC Hydro Base Global (2018)[c]	BCHydro18	-	0.6

Notes:

a. Atkinson and Boore (2003) model is only valid for spectral periods of up to 3.0 seconds. The AB03 models had a correction to several periods and were revised in Atkinson and Boore (2008). The revised models are used in our PSHA.

b. Zhao et al. (2006) model is only valid for periods of up to 5.0 seconds.

c. The BCHydro12 model was used in the 2014 hazard maps, the revised 2018 model is used in our PSHA.

Table 5 – GMMs and Relative Weights for Subduction Interface Sources

Ground Motion Model (GMM)	GMM Abbreviation	GMM Weights	
		2014 USGS Logic Tree	Hart Crowser Logic Tree
Atkinson and Boore (2003, 2008) Global Model[a]	AB03_G	0.1[a]	0.1
Zhao et al. (2006)[b]	Z06	0.3[b]	0.3
Atkinson and Macias (2009)	AM09	0.3	-
BC Hydro (2012)	BCHydro12	0.3	-
Abrahamson, Gregor, and Addo (2018)[c]	BCHydro18	-	0.6

Notes:

a. Atkinson and Boore (2003) model is only valid for spectral periods of up to 3.0 seconds. The AB03 models had a correction to several periods and were revised in Atkinson and Boore (2008). The revised models are used in our PSHA.

b. Zhao et al. (2006) model is only valid for periods of up to 5.0 seconds.

c. The BCHydro12 model was used in the 2014 hazard maps, the revised 2018 model is used in our PSHA.

The site-specific PSHA GMM logic tree incorporated the following modification to the 2014 USGS logic tree:

- **Removed the Idriss NGA-West 2 GMM.** The Idriss GMM (Idriss 2014) includes significantly fewer input parameters and is, in general, less sophisticated than the other NGA-West2 GMMs. USGS gave this GMM only a 12 percent weight compared to 22 percent to the other NGA-West2 equations. We omitted the Idriss model from our logic tree weighting scheme.

- **Updated BC Hydro model to the 2018 version.** The 2018 BC Hydro GMM is an update to the 2016 and 2012 BC Hydro GMMs based on a more extensive subduction (interface and intraslab) ground motion database. As this model represents the most state-of-the-art GMM, a larger weight (0.60) was assigned to this model for both subduction intraslab and interface weighting schemes.

- **Removed the Atkinson and Macias (2009) GMM.** The Atkinson and Macias model response spectrum differs significantly from the rest of the subduction zone equations, including a much flatter decay at longer periods than other empirical GMMs. This equation was derived entirely from earthquake simulations rather than from observed ground motions and lacks a term corresponding to the site-specific V_{S30}.

The Zhao (2016) GMM represents an update to the Z06 GMM included in our weighting scheme and it was considered for inclusion. However, this GMM is observed to be extremely sensitive to distance when compared to other GMMs and we elected to not include this model due to a lack of confidence in it.

Certain GMMs are only applicable for the period ranges for which they were developed. The Atkinson and Boore (2003) model and the Zhao et al. (2006) model were developed for up to periods of 3 and 5 seconds, respectively. At longer periods, the weighting scheme was altered from those summarized in Tables 4 and 5 to exclude the inapplicable models, and to preserve the relative weights between the remaining GMMs. We understand this methodology is consistent with that used by USGS to develop their NSHMs. Note that the period range of interest for the project is less than 3 seconds and we do not anticipate the altered weights beyond 3 seconds will have an impact on the PSHA results. The geometric mean site-specific PSHA spectrum is presented in the attached Table 9.

The deaggregated hazard results from the PSHA are summarized in Appendix D for the 0.1 and 0.2 second. The deaggregated plots are shown for the V_{S30} of the project site.

5.4.4 Site-Specific Hazard Contributions

The relative contribution of hazard from different seismic sources at the site is evaluated in our PSHA for a Site Class B surface condition. The deaggregated hazard for periods from 0 to 3 seconds is summarized in Table 6 and more detailed deggregation at structural periods of 0.1 and 0.2 seconds are presented in the Appendix D.

Table 6 – Mean Seismic Hazard Contributions for the 2,475-year Return Period Event

Period (s)	Source Contribution (percent)			Mean Magnitude	Mean Distance (km)	Mean Epsilon
	Interface	Intraslab	Crustal			
0.00	66	6	28	8.1	62.06	1.00
0.10	**55**	**10**	**35**	**7.8**	**56.87**	**1.10**
0.20	**69**	**8**	**23**	**8.2**	**65.31**	**1.01**
0.30	76	6	19	8.4	68.95	0.96
0.40	79	5	16	8.5	71.36	0.95
0.50	81	4	15	8.5	73.22	0.94
0.60	81	4	15	8.5	74.25	0.97
0.70	82	3	15	8.6	75.31	0.96
0.80	84	3	13	8.6	76.94	0.94
0.90	85	3	12	8.6	78.59	0.92
1.00	86	3	11	8.6	80.06	0.91

5.4.5 Deterministic Seismic Hazard Analysis

At the project site, the majority of seismic hazard comes from the Cascadia Seismic Zone and a nearby megathrust large-magnitude event. The DSHA was also conducted for the site V_{S30}, and the result of that analysis is included for comparison only.

As the provisions of ASCE 7-16 specify that the lower of the PSHA spectrum or DSHA spectrum shall be selected for use in design, selection of the deterministic spectrum is not anticipated to be unconservative compared to a code-based design that considers both the PSHA and DSHA. The controlling fault was identified based on the PSHA deaggregation results at 0.1 and 0.2 seconds. This fault belongs to the Cascadia fold and fault belt (Class A) No. 784 (Personius 2002). The characteristics of the deterministic maximum earthquake are presented in Table 7.

Table 7 – Deterministic Maximum Earthquake Properties

Property	Abbreviation	Value
Moment Magnitude	M_w	9.1
Top of Rupture Plane	Z_{top}	0 km
Rupture Distance	R_{rup}	63.8 km
Site Shear Wave Velocity	V_{S30}	1,201 meters per second

The deterministic spectrum was computed utilizing the GMM weighting scheme for interface source from the PSHA presented above (Table 5). The computed 84th-percentile geometric mean DSHA spectrum is presented in Table 10.

5.4.6 MCE_R Response Spectrum Modifications

5.4.6.1 Modification for Targeted Risk

The MCE hazard is risk-adjusted to achieve a 1 percent probability of collapse in 50 years. To adjust the PSHA spectrum, we calculated the risk coefficients using Method 2 in ASCE 7-16, Section 21.2.1.2, by using an iterative integration procedure that combines the probability of exceedance of a given spectral acceleration with a lognormal probability density function representing the probability of collapse for that particular spectral acceleration (also known as a fragility curve).

The risk coefficients were calculated using a MATLAB script obtained from USGS and were determined using a lognormal standard deviation of 0.6. The input to the MATLAB script consisted of seismic hazard curves at each period (i.e., annual exceedance frequency versus spectral acceleration), which were obtained from the PSHA. The primary outputs of the code are the MCE_R and 2 percent in the 50-year uniform hazard response spectra. The risk coefficients, which the MATLAB script also computes, are simply the ratio of these two response spectra. The values for the hazard curves used as input are summarized in Table 8. The resulting risk coefficients are listed in Table 9.

To adjust the DSHA spectrum, we calculated the risk coefficients using Method 1 in ASCE 7-16, Section 21.2.1.2. These coefficients are listed in Table 10.

5.4.6.2 Modification for Maximum Component

The results of the PSHA and DSHA are geometric mean uniform hazard response spectra. The calculated spectral accelerations are orientation-independent, geometric mean horizontal components of the ground motions. However, the maximum spectral acceleration over all orientations (known as the maximum

component or peak directional accelerations) is a more significant parameter for structural design (NEHRP 2009). In order to develop the maximum component spectrum, the geometric mean response spectra obtained from the PSHA and DSHA were adjusted by period-dependent factors that relate maximum component to geometric mean spectral accelerations. We used the scale factors from Shahi and Baker (2013) to develop the MCE_R. These factors are shown in Table 9 for PSHA, Table 10 for DSHA, and illustrated in Figure 4.

5.4.7 Recommended Site-Specific Response MCE_R and Design Spectra

The site-specific MCE_R spectrum is defined as the lesser of the spectral response accelerations from the PSHA and DSHA MCE_R spectra at each period. The design response spectrum is then defined as two-thirds of the MCE_R spectrum. This design response spectrum is not allowed to fall below the minimum bounding spectrum defined in Section 21.3 of ASCE 7-16. In Figure 5, the MCE_R spectra based on PSHA and DSHA are presented and compared to the code-required minimum bounding spectrum as well as the code-based Site Class B MCE_R spectrum. The site-specific DSHA is higher than the site-specific PSHA spectrum at all levels, therefore the site-specific MCE_R spectrum is based on the PSHA spectrum. The recommended site-specific MCE_R and design response spectra are tabulated in Table 11 below.

Table 11 – Recommended Site-Specific Response Spectra

Period (s)	Recommended MCE_R Response Spectrum (g)	Recommended Design Earthquake Response Spectrum (2/3 MCE_R) (g)
0.01	0.42	0.28
0.1	0.94	0.63
0.2	1.00	0.67
0.3	0.83	0.55
0.4	0.68	0.46
0.5	0.57	0.38
0.6	0.48	0.32
0.7	0.42	0.28
0.8	0.38	0.25
0.9	0.34	0.23
1	0.31	0.20
1.5	0.21	0.14
2	0.16	0.10
3	0.10	0.064

5.4.8 Recommended Site-Specific Design Acceleration Parameters

Where a site-specific procedure is followed, ASCE 7-16 Section 21.4 provides a method to determine the site-specific design acceleration parameters, S_{DS} and S_{D1}, based on the design response spectrum. These values are shown in Table 12 below.

Table 12 – Site-Specific Design Acceleration Parameters

Design Spectral Response Acceleration Parameter at Short Periods S_{DS} (g)	Design Spectral Response Acceleration Parameter at One-Second Period S_{D1} (g)
0.60	0.21

6.0 DRAINAGE DESIGN RECOMMENDATIONS

6.1 Temporary Drainage

During mass grading at the site, the contractor should be made responsible for temporary drainage of surface water as necessary to prevent standing water and/or erosion at the working surface. During rough and finished grading of the building site, the contractor should keep all footing excavations and building pads free of water.

6.2 Surface Drainage

The finished ground surface around buildings should be sloped away from their foundations at a minimum 2 percent gradient for a distance of at least 5 feet. Downspouts or roof scuppers should discharge into a storm drain system that carries the collected water to an appropriate stormwater system. They should not be attached to footing or subslab drains. Trapped planter areas should not be created adjacent to buildings without providing means for positive drainage (i.e., swales or catch basins).

6.3 Subsurface Drainage

The groundwater table is found at depth; therefore, subsurface drainage systems should not be required to protect against groundwater. However, the use of irrigation and improper maintenance of surface drainage gradients adjacent to buildings can often result in adverse conditions, which direct irrigation or surface runoff towards buildings. So it would be prudent though not required, to install a perimeter footing drainage system around the proposed building.

If used, the footing drainage system should consist of a filter fabric-wrapped, drain rock-filled trench that extends at least 12 inches below the lowest adjacent grade (i.e., crawlspace or slab subgrade elevation). A perforated pipe should be placed at the base to collect water that gathers in the drain rock. The drain rock and filter fabric should meet specifications outlined in *Section 8.5 - Structural Fill and Backfill*.

The discharge for subsurface drainage systems should not be tied directly into the stormwater drainage system unless mechanisms are installed to prevent backflow. The use of sump pumps may be required.

6.4 Infiltration Systems

The results of on-site field infiltration testing are described in *Section 3.3.5 - Infiltration Testing*. The near-surface soils generally consist of lean clay or silt with sand, while deeper soils generally consisted of clayey and silty gravel with sand.

Based on our review of our field and laboratory data, the on-site soils have variable unfactored infiltration rates ranging from 0.6 inch per hour in clayey soil to 2 inches per hour in gravelly soil. All of the on-site soils, even the granular materials have relatively high fines content, and we consider the soils have to have a relatively low capacity for infiltration. Additionally, the basalt bedrock underlying the entire site represents an impermeable layer which will cause perching of stormwater. Based on these conditions, we would caution against the widespread use of infiltration systems for disposal of stormwater. Localized use of low volume systems, such as bioswales may be feasible; however, we recommend that we be consulted about any specific system.

For preliminary planning purposes, we recommend the application of a correction factor of 3 to our field infiltration rates to account for our field test methodology and soil variability. This results in design infiltration rates of 0.2 to 0.7 inch per hour. The appropriate design value will need to be determined based on the location, elevation, and type of proposed infiltration system. (We note that the City of St. Helens does not allow infiltration in systems with design rates below 0.5 inch per hour; therefore, some systems may not be feasible.)

6.5 Detention Pond

We understand that site stormwater is likely to be directed to a stormwater detention pond. Conceptual plans indicate that the pond may be on the order of 3 to 5 feet deep.

The pond construction shall be completed in conformance with *Section 8.0 Earthwork Recommendations* of this report. We recommend finished pond slopes have a maximum gradient of 2H:1V.

We note that depending upon the location and configuration of the pond, it could be constructed in fill or cut areas. If located in cut areas, there is the potential that bedrock may be encountered. If the pond exposes bedrock, then water perching on top of the bedrock may tend to seep into the pond. In such a case, it may be appropriate to line the pond to reduce seepage of perched water. If a liner is needed, then additional considerations regarding pond design (e.g., designing for liner buoyancy, etc.) may be required and we should be consulted for additional guidance.

7.0 PAVEMENT DESIGN AND CONSIDERATIONS

7.1 General

Our pavement design recommendations for the project include options for conventional flexible Asphalt Concrete (AC) or rigid Portland Cement Concrete (PCC) pavement. Our design thicknesses assume that new pavements will be supported by a subgrade prepared in conformance with *Section 8.0 Earthwork Recommendations* of this report.

We include our assumptions regarding traffic in the section below. If any of these assumptions are inaccurate, please contact us to develop updated recommendations.

7.2 Pavement Design Assumptions

We made the following assumptions regarding, and used the following parameters for, the design of the pavement sections.

- Traffic on the site will include up to approximately 250 passenger vehicle trips per day with weekly garbage trucks and occasional delivery trucks or fire engines.
- Based on the traffic loading noted above and a 2 percent annual growth rate, we estimate the 20-year design life equivalent single-axle loads (ESALs) to be approximately 50,000 for the site.
- We were not provided with traffic data for the planned roadway; however, for the City standard pavement section of 3 inches of asphalt over 10 inches of aggregate base, we correlate an equivalent ESAL loading of 200,000. This ESAL value seems reasonable for a low volume local street, but should be verified by a traffic engineer or others.
- A resilient modulus of 10,000 pounds per square inch (psi) was estimated for a subgrade that has been moisture conditioned and compacted in conformance with *Section 8.0 Earthwork Recommendations* of this report.
- A resilient modulus of 25,000 psi was estimated for the base rock.
- Initial and terminal serviceability indices of 4.2 and 2.5, respectively.
- Reliability and standard deviation of 85 percent and 0.45, respectively.
- Structural coefficients of 0.42 and 0.10 for the AC and base rock layers, respectively.
- Minimum moduli of rupture and elasticity of 570 and 3,600,000 psi, respectively, for conventional PCC.
- Minimum compressive strength of 4,000 psi for conventional PCC.

Also, construction traffic should be limited to non-building, unpaved portions of the site or haul roads. Construction traffic should not be allowed on new pavements. If construction traffic is to be allowed on newly constructed road sections, an allowance for additional traffic will need to be made in the design pavement section.

7.3 Pavement Sections

The AC pavement sections in Table 13 are minimum recommended material thicknesses.

Table 13 – AC Pavement Sections

Traffic Basis	AC Thickness (inches)	Aggregate Base Thickness (inches)
On Site - Drive Aisles	3.0	6.0
On Site - Parking Stalls	2.5	6.0

Traffic Basis	AC Thickness (inches)	Aggregate Base Thickness (inches)
Roadway Extension to S 15th Street [a]	3.0	10.0

Note:

a. Per Municipal Code Section 18.12.030, the minimum pavement section for streets is 3 inches of asphalt placed in 1 lift, over 10 inches of aggregate base.

The PCC pavement sections in Table 14 include both reinforced and unreinforced sections and are valid for all the traffic levels. The unreinforced PCC pavement would most typically be used in areas that receive "pass through" traffic (i.e., decorative crosswalks, etc.). The reinforced PCC pavement would typically be used as areas with extensive vehicular braking and increased long-term performance requirements (i.e., garbage storage areas).

Table 14 – PCC Pavement Sections

PCC Pavement Type	PCC Thickness (inches)	Aggregate Base Thickness (inches)
Unreinforced	5.0	6.0
Reinforced	6.0	6.0

7.4 Pavement Materials

7.4.1 Flexible AC

The AC should be Level 2, 12.5-mm, dense hot mixed asphalt concrete (HMAC) according to Oregon Standard Specifications (OSS) 00744 – Minor Hot Mixed Asphalt Concrete Pavement. The asphalt cement binder should be PG 64-22 Performance Grade Asphalt Cement. The minimum AC lift thicknesses should be 1.5 inches, though for the roadway a minimum 3-inch-thick lift is required. The AC should be compacted to 91 percent of Rice Density of the mix, as determined in accordance with ASTM D 2041.

7.4.2 Rigid PCC

Rigid PCC used for pavement should meet the specifications provided in OSS 00756 – Plain Concrete Pavement. The installed concrete should be Class 4000 1.5-inch paving concrete per OSS 02001 – Concrete. The PCC joints should have a maximum spacing of 12 feet and be constructed in accordance with OSS 00756.48 – Joints. Unreinforced PCC should be interlocked at contraction joints (e.g., continuous slab with no dowels), though dowels should be used at construction and expansion joints. Reinforced PCC shall have No. 4 bars at 18 inches on center, each way at the mid-depth of the PCC.

7.4.3 Aggregate Base

Imported granular material used as base aggregate (base rock) should meet the criteria specified in *Section 8.5 Structural Fill and Backfill* of this report. The base aggregate should be compacted to not less than 95 percent of the maximum dry density, as determined by ASTM D 1557.

8.0 EARTHWORK RECOMMENDATIONS

8.1 General

Based on available information, we anticipate that site grading will primarily consist of mass grading to increase the site elevation 3 feet above the 100-year flood plain. This will include adding approximately 3 feet of material to the northwestern end of the site, and approximately 7 feet of material to the southeastern portion of the site. However, cutting of the rock outcrop will also be required for the roadway extension.

All earthwork activities should be conducted in accordance with the OSS, particularly OSS 00330 – Earthwork, OSS 00400 – Drainage and Sewers, and OSS 02600 – Aggregates, depending upon the application (ODOT 2021).

8.2 Site Preparation

8.2.1 Subgrade Preparation and Evaluation

Initial site preparation and earthwork operations will include clearing and grubbing, stripping, and grading to establish subgrade elevation for improvements. The site has an organic-rich surficial layer between 6 and 12 inches thick. This material will not be suitable to remain beneath proposed improvements, including buildings and new fills. Actual stripping depths should be based on field observations at the time of construction. Stripped material should be transported off-site for disposal or stockpiled for use in landscaped areas.

Trees and their root balls should be grubbed out to the depth of significant roots, which could exceed 3 to 5 feet bgs for the tall conifer trees. Depending on the methods used to remove the root balls, considerable disturbance and loosening of the subgrade could occur during site grubbing. We recommend that soil disturbed during grubbing operations be removed to expose firm, undisturbed subgrade. The resulting excavations should be backfilled with compacted structural fill.

Following demolition, stripping, and rough excavation, the suitability of the subgrade for fill should be evaluated by a representative of Hart Crowser. In general, subgrades should expose undisturbed soils free from organics and debris, and that are firm and unyielding. Visible organic material (i.e., sod, roots larger than 0.25-inch diameter, and/or other plant material), debris, and other unsuitable materials should be removed from the subgrade area.

For large areas of subgrade, the subgrade should be evaluated by proof rolling with a fully loaded dump truck or similar heavy rubber-tired construction equipment to identify any remaining soft, loose, or unsuitable areas. In areas not accessible by trucks for proof rolling, during wet weather, or when the exposed subgrade is unsuitable for proof rolling, the subgrade should be evaluated by observing excavation activity and probing with a steel foundation probe.

8.2.2 Reworking of Existing Fill

Portions of the site are blanketed by undocumented fill. These materials should be removed and re-worked from areas of planned improvement. In general, this processing would include excavating the fill, removing debris and oversized materials (greater than 6 inches), moisture conditioning, and recompacting the material. More specifically, the undocumented fill should be reworked as an engineered fill in accordance with *Section 8.6 Fill Placement and Compaction*.

8.3 Wet Soil/Wet Weather Construction

Existing near-surface soils at the site commonly include fine-grained (clayey) materials, which will be susceptible to moisture related disturbance, particularly during wet weather. Therefore, we recommend existing surfacing materials be left in place as long as possible to protect the subgrade from equipment trafficking.

Disturbance to the subgrade should be expected if site preparation and earthwork are conducted during periods of excessive wet weather and/or when the moisture content of the surficial soil exceeds optimum. Wet soil construction practices may be necessary during extensive portions of the year, particularly during periods of wet weather. Wet soil construction practices include using equipment, such as smooth excavator buckets and tracked equipment, and stabilized haul roads and staging areas constructed of quarry spalls and separation geotextile, to limit subgrade disturbance.

8.4 Excavation and Slopes

8.4.1 General Excavations

The site is blanketed by about 1 to 10 feet of soil, which is generally medium stiff or medium dense. Below those depths the entire site is underlain by hard basalt bedrock.

It is our opinion that conventional earthmoving equipment in proper working condition should be capable of making necessary general excavations into the onsite soils; however, the bedrock is strong and not likely be excavatable with standard equipment. Additionally, the soil contains a large volume of cobbles and some boulders, which should also be excavatable with conventional earthwork equipment with some additional effort. However, the presence of these materials may cause trenches to cave or slough, resulting in greater than anticipated backfill quantities. Removal of bedrock materials is described in more detail below.

The earthwork contractor should be responsible for providing equipment and following procedures as needed to excavate the site soils and bedrock materials as described in this report.

Permanent slope excavations should have a minimum gradient of 2H:1V, and the foundations for the Public Safety Building must have a minimum horizontal cover of 10 feet adjacent to permanent slopes.

8.4.2 Temporary Excavation Stability (Soil)

Temporary soil cuts for site excavations that are more than 4 feet deep should be adequately sloped back to prevent sloughing and collapse, in accordance with Occupational Safety and Health Administration (OSHA) guidelines.

The stability and safety of cut slopes depend on a number of factors, including:

- Type and density of the soil;
- Presence and amount of groundwater seepage;
- Depth of cut;
- Proximity and magnitude of the cut to any surcharge loads, such as stockpiled material, traffic loads, or structures;
- Duration of the open excavation; and
- Care and methods used by the contractor.

Because of the variables involved, actual slope angles required for stability in temporary cut areas can only be estimated before construction. It is the responsibility of the contractor to ensure that the excavation is properly sloped or braced for worker protection in accordance with OSHA guidelines. The upper on-site soils consist of clay and clayey gravel that would be classified as OSHA Class B for excavation purposes.

In lieu of large open cuts, approved temporary shoring may be used for excavation support. A variety of shoring systems are available; consequently, we recommend that the contractor be responsible for selecting the appropriate system. All trench excavations should be made in accordance with applicable OSHA and state regulations.

We note that box shoring is a safety feature used to protect workers and does not prevent caving. If the excavations are left open for extended periods of time, then caving of the sidewalls may occur. The presence of caved material will limit the ability to properly backfill and compact the trenches. The voids between the box shoring and the sidewalls of the trenches should be properly filled with sand or gravel before caving occurs.

8.4.3 Rock Excavations and Cuts

The following specific information should be considered for excavations into bedrock.

8.4.3.1 Rock Excavation

The basaltic bedrock is hard and expected to be very difficult to excavate. During excavation of the test pits with a relatively small excavator (CAT 305E), the excavator could only expose the upper few inches of the rock surface. We anticipate the rock will not be easily excavated beyond this upper surface, and that large

dozers with rippers, rock hammers and/or blasting will be required to excavate the rock. Refer to the geophysical study in Appendix D for additional discussion regarding the rippability of the bedrock.

8.4.3.2 Permanent Rock Cuts

Based on our understanding of the subsurface conditions and review of the preliminary grading plans, proposed permanent cuts into bedrock at an inclination of 2H:1V will be globally stable, and will be suitable for construction according to the proposed plans and the recommendations in this report. We also anticipate that steeper permanent cuts into basaltic andesite bedrock, up to near vertical, may be globally stable. However, steeper cuts should be evaluated on a case-by-case basis to verify their global stability, but also to evaluate local stability (e.g., rockfall hazard). Furthermore, non-geotechnical considerations (i.e., trip-and-fall hazards, maintenance access, etc.) should also be evaluated by the project team in concert with Hart Crowser.

For planning purposes, it is reasonable to assume that from a geotechnical perspective, permanent cuts up to 1H:1V are globally stable when excavated into basaltic bedrock. However, permanent cuts into bedrock that are steeper than 2H:1V may locally expose areas of lower quality rock, which could require additional reinforcement (i.e., rock bolting) and should be evaluated on a case-by-case basis.

8.4.3.3 Temporary Rock Cuts

Temporary cuts into basaltic andesite bedrock that will be permanently buttressed by retaining walls or fill placed at 2H:1V or flatter, are likely to be stable at inclinations ranging from 1H:1V to near vertical. However, the stability of such cuts should be evaluated on a case-by-case basis during construction.

For planning purposes, it is reasonable to assume that from a geotechnical perspective, temporary cuts up to 1/2H:1V are globally stable when excavated into basaltic bedrock.

8.4.4 Dewatering

Groundwater is not expected within the depths of excavations; however, we do anticipate that perched water will be encountered on top of the underlying bedrock and clayey gravel layers. Measures should be taken to provide temporary drainage of perched and surface water to prevent standing water and/or erosion at the working surface or in excavations.

8.5 Structural Fill and Backfill

Structural fill should be considered to include any fill that is placed beneath buildings, foundations, slabs, pavements, and other areas intended to support structural elements or within their influence zone.

Fill should only be placed over a subgrade that has been prepared in conformance with the prior sections of this report. Fill should be placed and compacted per *Section 8.6 Fill Placement and Compaction*. A variety of material may be used as structural fill at the site. However, all material used as structural fill should be free of organic matter or other unsuitable materials, and should meet specifications provided in the OSS 00330 – Earthwork, OSS 00400 – Drainage and Sewers, and OSS 02600 – Aggregates, depending upon the appropriate application. A brief characterization of some of the acceptable materials and our recommendations for their use as structural fill are provided below.

8.5.1 On-Site Soils

The native, near-surface site soils generally consist of a clay layer up to 5 feet bgs and then clayey gravel to depths of up to 10 feet bgs. The surficial clayey soils are low to medium plasticity and have moisture contents between approximately 20 to 35 percent. These soils are generally not considered suitable for use as structural fill. However, if the soils are amended with lime or cement, they can be made suitable for use as structural fill. Refer to *Section 8.5.6 Amended Soil* for details.

Near surface gravelly fill soils may be suitable for re-use provided they are prepared in accordance with *Section 8.2.2 Reworking of Existing Fill* of this report.

The deeper, native gravelly soils, if segregated from the clayey soil, can be used for structural fill. However, these materials were typically saturated from perched water and may need to be dried prior to use. Furthermore, cobbles and boulders up to 3 feet in diameter were encountered in this material. Material greater than 6 inches in diameter must be removed prior to re-using. If used, the on-site soils should be placed and compacted in lifts with maximum uncompacted thicknesses and relative densities as recommended in the tables that follow.

The imported material that has been stockpiled on the southeastern edge of the property appeared to consist of a silty sandy matrix with gravel and rounded cobbles up to 6 inches in diameter. This material appears to be suitable for use as structural fill; however, prior to use we want to confirm the soil's suitability.

8.5.2 Imported Structural Fill

Imported granular material used as structural fill within the building pad should be pit or quarry run rock, crushed rock, or crushed gravel and sand and should meet the specifications provided in OSS 00330.14 – Selected Granular Backfill, or OSS 00330.15 – Selected Stone Backfill. The imported granular material should also be angular, fairly well graded between coarse and fine material, have less than 5 percent by dry weight passing the U.S. Standard No. 200 Sieve, and have at least two mechanically fractured faces. The material should be placed and compacted in lifts with maximum uncompacted thicknesses and relative densities as recommended in the tables that follow.

Imported material used as structural fill in area outside of the building pad should meet the specifications provided in OSS 00330.13 – Selected General Backfill. This imported material should be free of debris, be non-plastic, and should not contain any particles greater than 3 inches.

8.5.3 Aggregate Base

Imported granular material used as aggregate base (base rock) beneath pavements or the building should be clean, crushed rock or crushed gravel and sand that is fairly well-graded between coarse and fine. The base aggregate should meet the specifications of OSS 00641 – Aggregate Subbase, Base, and Shoulders.

Base Aggregate, depending upon application, with the exception that the aggregate have less than 5 percent by dry weight passing a U.S. Standard No. 200 Sieve and have at least two mechanically fractured faces.

For use beneath pavements or footings, the aggregate base should have a maximum particle size of 1 inch or 1.5 inches, while for use beneath the building or sidewalk slabs should have a maximum particle size of 0.75 or 1 inch. For use beneath buildings, the base rock should also meet the gradation of OSS 2630.11 – Open-Graded Aggregate.

The aggregate base material should be placed and compacted in lifts with maximum uncompacted thicknesses and relative densities as recommended in the tables that follow.

8.5.4 Trench Backfill

Trench backfill placed beneath, adjacent to, and for at least 12 inches above utility lines (i.e., the pipe zone) should consist of well-graded granular material with a maximum particle size of 1 inch and should meet the specifications of OSS 00405.13 – Pipe Zone Material and the pipe manufacturer's requirements.

Within pavement and slab subgrades the remainder of the trench backfill up to the subgrade elevation can consist of the above 1-inch material or of granular material with a maximum particle size of 3 inches, have less than 10 percent by dry weight passing the U.S. Standard No. 200 Sieve, and meet the specifications of OSS 00405.14 – Class B, C, or D Trench Backfill, as appropriate.

In landscape areas, trench backfill placed above the pipe zone may consist of general fill materials that are free of organics, materials over 3 inches in diameter, and meet the specifications provided in OSS 00405.14 – Class A, B, C, or D Trench Backfill, as appropriate.

The material should be placed and compacted in lifts with maximum uncompacted thicknesses and relative densities as recommended in the tables that follow.

8.5.5 Stabilization Material

If imported granular material is used to create haul roads for construction traffic or is required for stabilization of the bases of excavations, we recommend that material consist of pit or quarry run rock, or crushed rock. The material should generally be sized between 2 and 6 inches, have less than 5 percent by dry weight passing the U.S. Standard No. 4 Sieve, and have at least two mechanically fractured faces. The material should be free of organic matter and other deleterious material. The material should also meet the specifications of OSS 00330.16 – Stone Embankment Material.

Stabilization material should be placed in lifts between 12 and 18 inches thick and be compacted to a well-keyed condition with appropriate compaction equipment without using vibratory action. In trench excavations, a walk behind sheepsfoot roller or a pinwheel on an excavator typically can provide adequate compaction if carefully used.

If groundwater or an unstable subgrade is present and "quarry spalls" or similar open-graded rocks are used for stabilization of the base of excavations or access roadways, then a layer of separation fabric should be placed atop the stabilization material prior to the placement of the pipe bedding material. The geotextile should meet the specifications provided in OSS 02320.20 – Geotextile Property Values for soil separation. The geotextile should be installed in conformance with the specifications provided in OSS 00350 – Geosynthetic Installation.

8.5.6 Amended Soil

As an alternative to the use of imported granular material for structural fill, an experienced contractor may be able to amend the on-site soils with hydrated lime of Portland cement to obtain suitable support properties. Successful use of soil amendment depends on the use of correct mixing techniques, soil moisture content, and amendment quantities. Specific recommendations for soil amending, based on exposed site conditions and contractor equipment, can be provided if necessary.

Amended soils are hard and have low permeability. These soils do not drain well nor are they suitable for planting. Future planted areas should not be amended, if practical, or accommodations should be made for drainage and planting.

8.5.7 Drain Rock

Drain rock should consist of angular, granular material that meets the specifications provided in OSS 00430.11 – Granular Drain Backfill Material. The drain rock should be wrapped in a Type 1 drainage geotextile that meets the specifications provided in OSS Table 02320-1 – Geotextile Property Values. The geotextile should be installed in conformance with OSS 00350 – Geosynthetic Installation.

8.6 Fill Placement and Compaction

Structural fill should be placed and compacted in accordance with the following guidelines.

- Place fill and backfill on a prepared subgrade that consists of firm, inorganic native soils, or approved structural fill.

- Place fill or backfill in uniform horizontal lifts with a thickness appropriate for the material type and compaction equipment. Table 15 provides general guidance for lift thicknesses.

Table 15 – Guidelines for Uncompacted Lift Thickness

Compaction Equipment	Guidelines for Uncompacted Lift Thickness (inches)		
	On-Site Soil	Granular and Crushed Rock Maximum Particle Size ≤ 1.5 inch	Crushed Rock Maximum Particle Size > 1.5 inch
Plate Compactors and Jumping Jacks	4 - 8	4 - 8	Not Recommended
Rubber-Tire Equipment	6 - 8	10 - 12	6 - 8
Light Roller	8 - 10	10 - 12	8 - 10
Heavy Roller	10 - 12	12 - 18	12 - 16
Hoe Pack Equipment	12 - 16	18 - 24	12 - 16

Note:

The above table is based on our experience and is intended to serve as a guideline. The information provided in this table should not be included in the project specifications.

- Use appropriate operating procedures to attain uniform coverage of the area being compacted.

- Place fill at a moisture content within approximately 3 percent of optimum as determined in accordance with ASTM Test Method D 1557. Moisture condition fill soil to achieve uniform moisture content within the specified range before compacting. Compact fill to the percent of maximum dry densities as noted in Table 16 below.

- Do not place, spread, or compact fill soils during freezing or unfavorable weather conditions. Frozen or disturbed lifts should be removed or properly recompacted prior to placement of subsequent lifts of fill soils.

Table 16 – Fill Compaction Criteria

Fill Type	Percent of Maximum Dry Density Determined in Accordance with ASTM D 1557		
	0 - 2 Feet Below Subgrade	> 2 Feet Below Subgrade	Pipe Bedding and Pipe Zone
Mass Fill (fine-grained soils)	92	92	-----
Mass Fill (granular materials)	95	90	-----
Aggregate Base	95	95	-----
Trench Backfill	95	92	90
Nonstructural Trench Backfill	90	88	-----
Nonstructural Zones	90	88	90

Note:
"Nonstructural" areas are only located in landscaping zones, where the potential for localized trench settlement is acceptable to the owner.

During structural fill placement and compaction, a sufficient number of in-place density tests should be completed by Hart Crowser to verify that the specified degree of compaction is being achieved. For structural fill with more than 30 percent retained on the 3/4-inch sieve, Hart Crowser should visually verify proper compaction with a proof roll or other methods.

9.0 CONSTRUCTION OBSERVATIONS

Satisfactory foundation and earthwork performance depends to a large degree on quality of construction. Sufficient monitoring of the project activities is a key part of determining that the work is completed in accordance with the construction drawings and specifications. Subsurface conditions observed during construction should be compared with those encountered during subsurface explorations. Recognition of changed conditions often requires experience; therefore, Hart Crowser or their representative should visit the site with sufficient frequency to detect whether subsurface conditions change significantly from those anticipated.

We recommend that Hart Crowser be retained to monitor construction at the site to confirm that subsurface conditions are consistent with the site explorations and to confirm that the intent of project plans and specifications relating to earthwork and foundation construction are being met. In particular, we

recommend that the foundation construction and compaction of structural fill be observed and/or tested by Hart Crowser.

10.0 LIMITATIONS

We have prepared this report for the exclusive use of the City of St. Helens and Mackenzie and their authorized agents for the proposed Public Safety Building project in St. Helens, Oregon. Our work was completed in general accordance with our proposal dated September 28, 2021, and our Personal Services Agreement with the City of St. Helens, dated October 15, 2021. Our report is intended to provide our opinion of geotechnical parameters for design and construction of the proposed project based on exploration locations that are believed to be representative of site conditions. However, conditions can vary significantly between exploration locations and our conclusions should not be construed as a warranty or guarantee of subsurface conditions or future site performance.

Within the limitations of scope, schedule, and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty, expressed or implied, should be understood.

Any electronic form, facsimile, or hard copy of the original document (i.e., email, text, table, and/or figure), if provided, and any attachments are only a copy of the original document. The original document is stored by Hart Crowser and will serve as the official document of record.

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ST. HELENS PUBLIC SAFETY BUILDING
ST. HELENS, OREGON

VICINITY MAP

MAP SOURCE: ESRI
SITE COORDINATES: 45°51'7"N, 45°51'7"N

APPROXIMATE SCALE: 1 IN = 2000 FT
NOVEMBER 2021

FIGURE 1

LEGEND

- TEST PIT (DEPTH TO BEDROCK, FEET)
- INFILTRATION TEST
- SEWER MANHOLE
- ELEVATION CONTOUR, 1-FT INTERVAL (NAVD 88)
- ROAD RIGHT-OF-WAY
- BEDROCK OUTCROPS
- EXISTING FILL STOCKPILE
- SITE BOUNDARY

NOTES

1. AERIAL IMAGERY SOURCE: NEARMAP, 28 AUGUST 2021
2. ELEVATION CONTOUR SOURCE: AKS, 1 NOVEMBER 2021
3. ROAD RIGHT-OF-WAY SOURCE: AKS, 1 NOVEMBER 2021

N

0 100 200

SCALE IN FEET

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ST. HELENS PUBLIC SAFETY BUILDING
ST. HELENS, OREGON

SITE PLAN

NOVEMBER 2021

FIGURE 2

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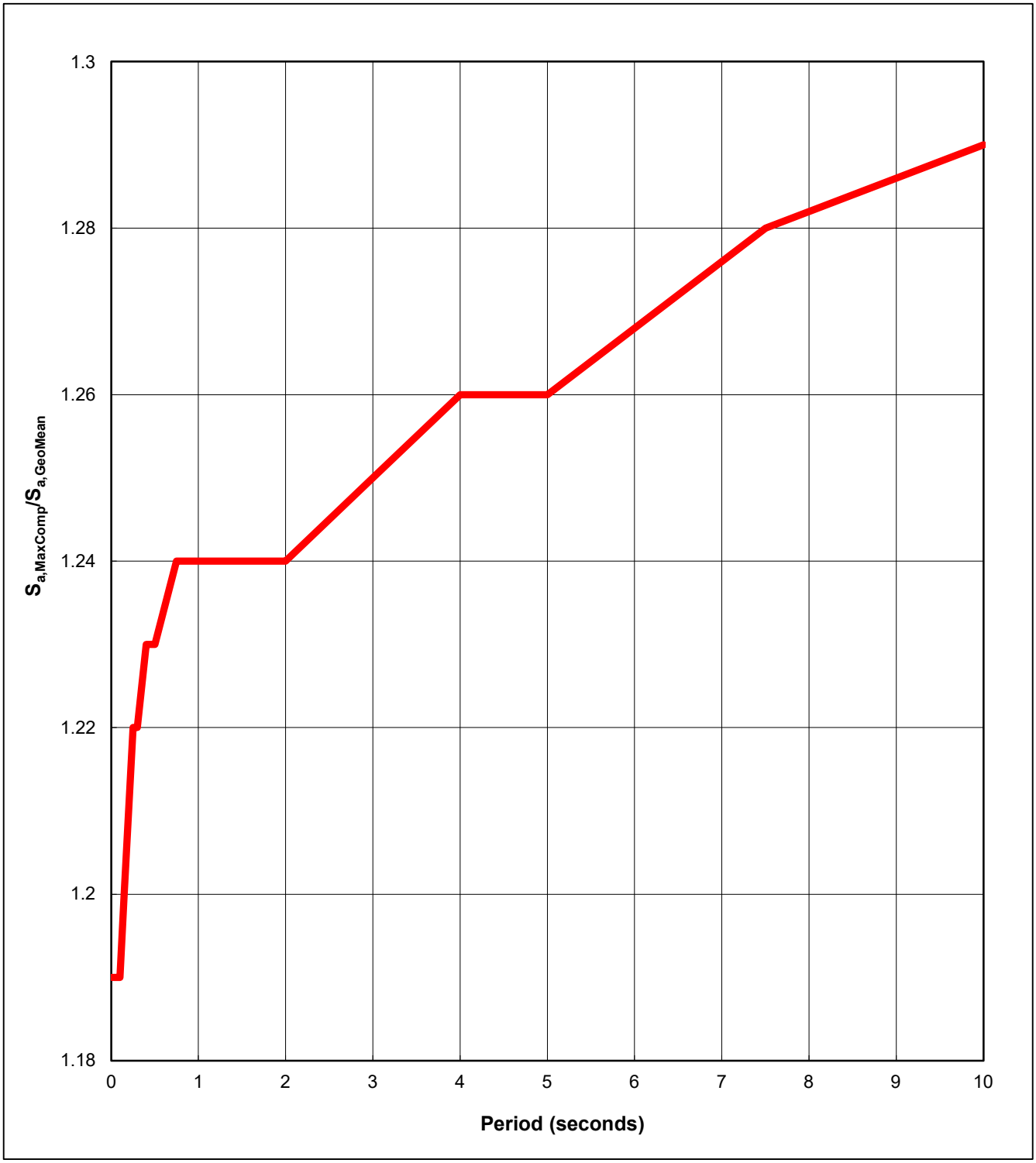

St Helens Public Safety Building
St. Helens, Oregon

Peak Directional Scaling Factors (Shahi and Baker, 2013)

0203864-000 11/2021

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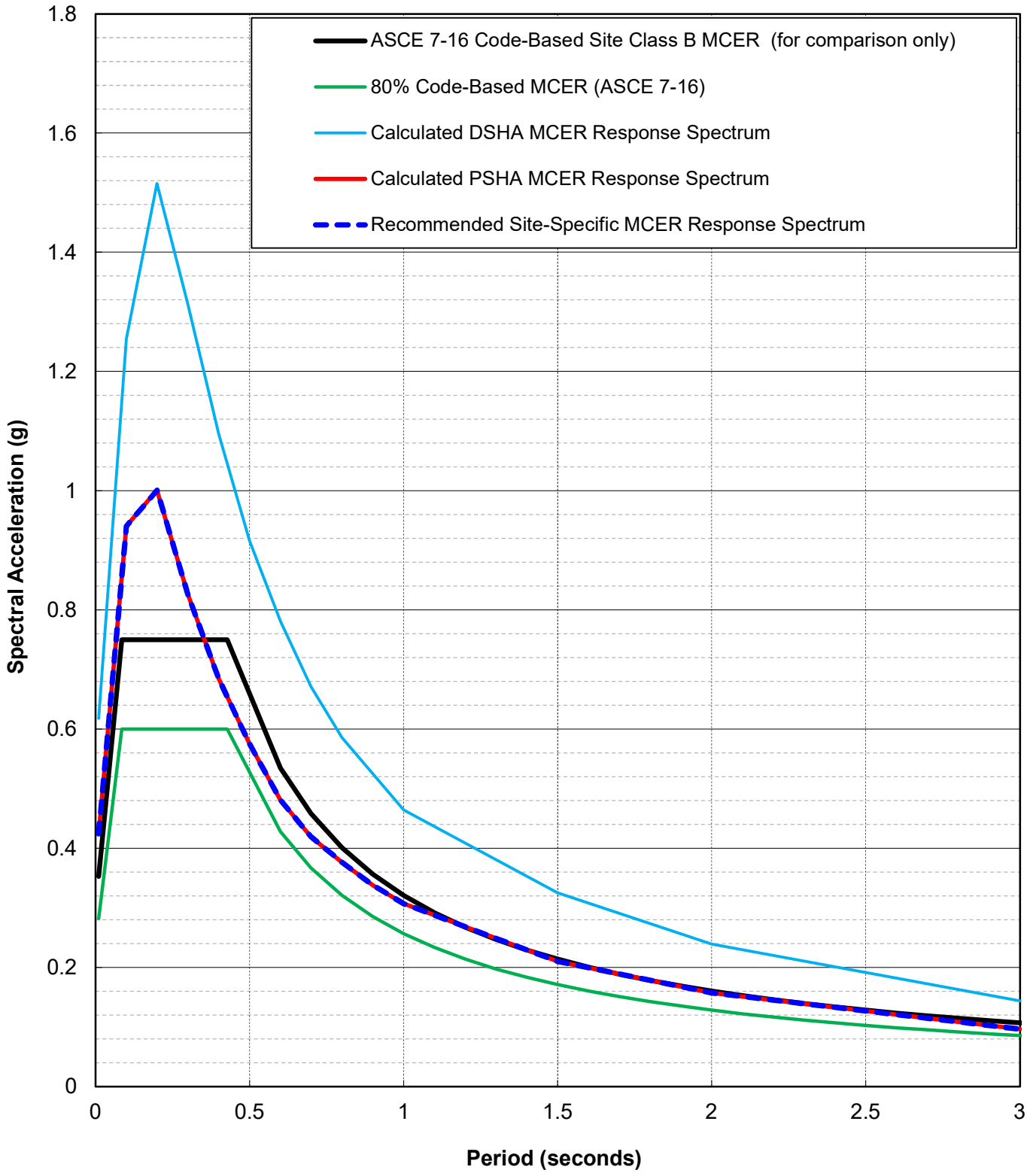
Figure
4



St Helens Public Safety Building
St. Helens, Oregon

Recommended Site-Specific MCE_R Spectrum

0203864-000 11/2021

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Figure
5

APPENDIX A
Field Explorations

APPENDIX A

Field Explorations

General

We evaluated subsurface conditions at the site by advancing ten test pits and three infiltration test holes on October 25 and 26, 2021. The field explorations were coordinated and overseen by geotechnical staff from Hart Crowser; who classified the various soil units encountered, obtained representative soil samples for geotechnical testing, recorded groundwater conditions, and maintained a detailed log of each exploration. Logs of the test pits are included in this appendix. Results of the laboratory testing are indicated on the exploration logs and are included in Appendix B.

Materials encountered in the explorations were classified in the field in general accordance with ASTM Standard Practice D 2488 "Standard Practice for the Classification of Soils (Visual-Manual Procedure)." Disturbed ("grab") samples were collected from sidewalls or excavation spoils during test pit explorations and from the core samples in the push probe boring. Sampling intervals are shown on the exploration logs included in this appendix.

The exploration logs in this appendix show our interpretation of the exploration, sampling, and testing data. The logs indicate the depth where the soils change. Note that the change may be gradual. In the field, we classified the samples taken from the explorations according to the methods presented on the *Figure A-1 Key to Exploration Logs*. This figure also provides a legend explaining the symbols and abbreviations used in the logs.

The approximate locations of the explorations are shown on Figure 2 of the report. Explorations were located in the field using a mapping grade Trimble GPS unit.

Test Pits

Ten test pit explorations, designated TP-1 through TP-10, were excavated on October 25 and 26, 2021. Test pit explorations were completed using a CAT Model 305E hydraulic trackhoe operated by Stratus Corporation of Gaston, Oregon. The explorations were continuously observed by geotechnical staff members from Hart Crowser and detailed field logs of the test pits were prepared. Disturbed ("grab") samples were collected from sidewalls or excavation spoils during test pit explorations. Sampling intervals are shown on the exploration logs included in this appendix.

Infiltration Testing

We conducted three infiltration tests designed IT-1 through IT-3 at the site adjacent to three test pits. IT-1 was conducted adjacent to TP-2, IT-2 adjacent to TP-4, and IT-3 adjacent to TP-5. The tests consisted of single-ring falling head infiltration tests or small open test pit holes, as referenced in and conducted in general accordance with the procedures in Portland 2020, and as briefly described below. Single-ring falling tests were attempted at each test locations; however, due to gravelly to cobbly nature of the site

soils, open-pit tests were utilized when pipe could not be sufficiently imbedded to conduct the single-ring tests. Infiltration test IT-1 is an open pit tests, while IT-2 and IT-3 are single-ring falling head tests.

The primary test pits were excavated to a depth of approximately 6 feet or more below the base of the tests to verify subsurface conditions below the base of the test. The adjacent infiltration test pits were advanced adjacent to each primary test pit and cuttings/or grab samples generated from infiltration holes/pits were observed to verify that subsurface conditions were relatively consistent with the primary test pit excavation.

- At IT-2 and IT-3, a 6-inch-diameter PVC pipe was placed in the bottom of the test pit. The tip of the pipe was pushed into the soil approximately 6 or more inches to form a seal around the base of the pipe. At IT-1, an approximately 2- by 2-foot area was excavated at the bottom of the test pit for the infiltration tests, because pipes could not be used due to the gravelly nature of the soils.

- The pipes/pits were filled with water depths roughly corresponding to the anticipated capacity of potential infiltration systems and were allowed to saturate. The tests were allowed to saturate for a minimum of approximately 4 hours or until the draw-down rates had sufficiently stabilized, as described in the test procedure.

- After the saturation period, the infiltration rate was monitored until the rate stabilized.

The results of our infiltration tests are provided in *Section 3.3.5* of this report. Please refer to the body of the report for a discussion of our findings and recommendations regarding the design of infiltration systems.

Sample Description

Identification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. ASTM D 2488 visual-manual identification methods were used as a guide. Where laboratory testing confirmed visual-manual identifications, then ASTM D 2487 was used to classify the soils.

Relative Density/Consistency

Soil density/consistency in borings is related primarily to the standard penetration resistance (N). Soil density/consistency in test pits and probes is estimated based on visual observation and is presented parenthetically on the logs.

SAND or GRAVEL Relative Density	N (Blows/Foot)	SILT or CLAY Consistency	N (Blows/Foot)
Very loose	0 to 4	Very soft	0 to 1
Loose	5 to 10	Soft	2 to 4
Medium dense	11 to 30	Medium stiff	5 to 8
Dense	31 to 50	Stiff	9 to 15
Very dense	>50	Very stiff	16 to 30
		Hard	>30

Moisture

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, usually soil is below water table

USCS Soil Classification Chart (ASTM D 2487)

Major Divisions			Symbols: Graph	Symbols: USCS	Typical Descriptions
Coarse Grained Soils: More than 50% of Material Retained on No. 200 Sieve	Gravel and Gravelly Soils: More than 50% of Coarse Fraction Retained on No. 4 Sieve	Clean Gravels (<5% fines)		GW	Well-Graded Gravel; Well-Graded Gravel with Sand
				GP	Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Gravels (5-12% fines)		GW-GM	Well-Graded Gravel with Silt; Well-Graded Gravel with Silt and Sand
				GW-GC	Well-Graded Gravel with Clay; Well-Graded Gravel with Clay and Sand
				GP-GM	Poorly Graded Gravel with Silt; Poorly Graded Gravel with Silt and Sand
				GP-GC	Poorly Graded Gravel with Clay; Poorly Graded Gravel with Clay and Sand
		Gravels with Fines (>12% fines)		GM	Silty Gravel; Silty Gravel with Sand
				GC	Clayey Gravel; Clayey Gravel with Sand
	Sand and Sandy Soils: More than 50% of Coarse Fraction Passing No. 4 Sieve	Sands with few Fines (<5% fines)		SW	Well-Graded Sand; Well-Graded Sand with Gravel
				SP	Poorly Graded Sand; Poorly Graded Sand with Gravel
		Sands (5-12% fines)		SW-SM	Well-Graded Sand with Silt Well-Graded Sand with Silt and Gravel
				SW-SC	Well-Graded Sand with Clay; Well-Graded Sand with Clay and Gravel
				SP-SM	Poorly Graded Sand with Silt; Poorly Graded Sand with Silt and Gravel
				SP-SC	Poorly Graded Sand with Clay; Poorly Graded Sand with Clay and Gravel
		Sands with Fines (>12% fines)		SM	Silty Sand; Silty Sand with Gravel
				SC	Clayey Sand; Clayey Sand with Gravel
Fine Grained Soils: More than 50% of Material Passing No. 200 Sieve	Silts			ML	Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
				MH	Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
	Silty Clay (based on Atterberg Limits)			CL-ML	Silty Clay; Silty Clay with Sand or Gravel; Gravelly or Sandy Silty Clay
	Clays			CL	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
				CH	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
	Organics			OL/OH	Organic Soil; Organic Soil with Sand or Gravel; Sandy or Gravelly Organic Soil
Highly Organic (>50% organic material)				PT	Peat - Decomposing Vegetation - Fibrous to Amorphous Texture

Minor Constituents

	Estimated Percentage
Sand, Gravel	
Trace	<5
Few	5 - 15
Cobbles, Boulders	
Trace	<5
Few	5 - 10
Little	15 - 25
Some	30 - 45

Soil Test Symbols

%F	Percent Passing No. 200 Sieve
AL	Atterberg Limits (%)
	Liquid Limit (LL)
	Water Content (WC)
	Plastic Limit (PL)
CA	Chemical Analysis
CAUC	Consolidated Anisotropic Undrained Compression
CAUE	Consolidated Anisotropic Undrained Extension
CBR	California Bearing Ratio
CIDC	Consolidated Drained Isotropic Triaxial Compression
CIUC	Consolidated Isotropic Undrained Compression
CK0DC	Consolidated Drained k0 Triaxial Compression
CK0DSS	Consolidated k0 Undrained Direct Simple Shear
CK0UC	Consolidated k0 Undrained Compression
CK0UE	Consolidated k0 Undrained Extension
CRSCN	Constant Rate of Strain Consolidation
DS	Direct Shear
DSS	Direct Simple Shear
DT	In Situ Density
GS	Grain Size Classification
HYD	Hydrometer
ILCN	Incremental Load Consolidation
K0CN	k0 Consolidation
kc	Constant Head Permeability
kf	Falling Head Permeability
MD	Moisture Density Relationship
OC	Organic Content
OT	Tests by Others
P	Pressuremeter
PID	Photoionization Detector Reading
PP	Pocket Penetrometer
SG	Specific Gravity
TRS	Torsional Ring Shear
TV	Torvane
UC	Unconfined Compression
UUC	Unconsolidated Undrained Triaxial Compression
VS	Vane Shear
WC	Water Content (%)

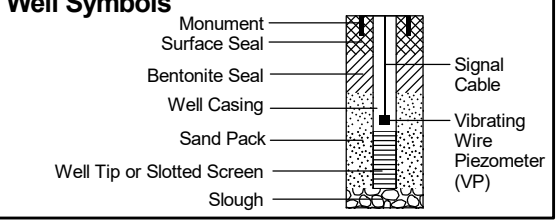
Groundwater Indicators

- Groundwater Level on Date or At Time of Drilling (ATD)
- Groundwater Level on Date Measured in Piezometer
- Groundwater Seepage (Test Pits)

Sample Symbols

- 1.5" I.D. Split Spoon
- 3.0" I.D. Split Spoon
- Modified California Sampler
- Rock Core Run
- Sonic Core
- Thin-walled Sampler
- Grab
- Cuttings
- Push Probe

Well Symbols



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Project: St. Helens Public Safety Building
Location: St. Helens, Oregon
Project No.: 0203-864-000

Key to Exploration Logs

Figure **A-1**
Sheet **1 of 3**

Scale of Relative Rock Weathering

Term	Description
Fresh	Crystals are bright. Discontinuities may show some minor surface staining. No discoloration in rock fabric.
Slightly Weathered	Rock mass is generally fresh. Discontinuities are stained and may contain clay. Some discoloration in rock fabric. Decomposition extends up to 1 inch into rock.
Moderately Weathered	Rock mass is decomposed 50% or less. Significant portions of rock show discoloration and weathering effects. Crystals are dull and show visible chemical alteration. Discontinuities are stained and may contain secondary mineral deposits.
Predominantly Decomposed	Rock mass is more than 50% decomposed. Rock can be excavated with geologist's pick. All discontinuities exhibit secondary mineralization. Complete discoloration of rock fabric. Surface of core is friable and usually pitted due to washing out of highly altered minerals by drilling water.
Decomposed	Rock mass is completely decomposed. Original rock "fabric" may be evident. May be reduced to soil with hand pressure.

Scale of Relative Rock Hardness

Hardness Designation	Term	Field Identification	Uniaxial Compressive Strength
R0	Extremely Soft	Can be indented with difficulty by thumbnail. May be moldable or friable with finger pressure.	< 100 psi
R1	Very Soft	Crumbles under firm blows with point of a geology pick. Can be peeled by a pocket knife. Scratched with fingernail.	100 - 1000 psi
R2	Soft	Can be peeled by a pocket knife with difficulty. Cannot be scratched with fingernail. Shallow indentation made by firm blow of geology pick.	1000 - 4000 psi
R3	Medium Hard	Can be scratched by knife or pick. Specimen can be fractured with a single firm blow of hammer/geology pick.	4000 - 8000 psi
R4	Hard	Can be scratched with knife or pick only with difficulty. Several hard hammer blows required to fracture specimen.	8000 - 16000 psi
R5	Very Hard	Cannot be scratched by knife or sharp pick. Specimen require many blows of hammer to fracture or chip. Hammer rebounds after impact.	> 16000 psi

Joint and Bedding Spacing Terms

Spacing	Joint Spacing Terms	Bedding/Foliation Spacing Terms
Less than 2 inches	Very Close	Very Thin (laminated)
2 inches to 1 foot	Close	Thin
1 foot to 3 feet	Moderately Close	Medium
3 feet to 10 feet	Wide	Thick
More than 10 feet	Very Wide	Very Thick (massive)

Stratification Terms

Term	Characteristics
Laminations	Thin beds (<1 cm)
Fissile	Tendency to break along laminations.
Parting	Tendency to break parallel to bedding.
Foliation	Non-depositional (e.g., segregation and layering of minerals in metamorphic rock)

Igneous Rock Textures

Texture	Grain Size
Pegmatitic	Very large; diameters measured in inches or feet
Phaneritic	Can be seen with the naked eye
Porphyritic	Grained of two widely different sizes
Aphanitic	Cannot be seen with the naked eye
Glassy	No grains present

Pyroclastic Rocks

Rock Name	Characteristics
Cinders	Uncemented glassy and vesicular ejecta 4-32 mm size
Tuff Breccia (Agglomerate)	Composed of ejecta >32mm size, in ash/tuff matrix, indurated
Lapilli Tuff	Composed of ejecta 4-32 mm size, in ash/tuff matrix, indurated
Tuff	Cemented volcanic ash particles <4mm size, indurated
Pumice	Excessively vesiculated glassy lava

Degree of Vesicularity

Designation	Percentage of Cavities (by volume) of Total Sample
Some Vesicules	5 to 25 Percent
Highly Vesicular	15 to 50 Percent
Scoriaceous	Greater than 50 Percent

Other Terms:

Core Recover (CR) = the ratio of core recovered to the core run length expressed as a percentage.

Rock Quality Designation (RQD) = the percentage of rock core recovered in intact pieces of 4 inches or more in length in the length of a core run. Does not include mechanical breaks caused by drilling.

Reference:

Oregon Department of Transportation (ODOT), 1987. *Soil and Rock Classification Manual*, May 1987.

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.852430 Long: -122.809902 (WGS 84)
Total Depth: 5.5 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 55.64 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Length (inches)	Number / Tests	Graphic Log	Material Description
55.0	0.0					Topsoil (3-inch thick)
			12	S-1		POORLY GRADED GRAVEL (GP), trace cobbles/boulders, (loose), moist, black, fine to coarse angular gravel. [FILL]
52.5	2.5		12	S-2 AL, GS, WC		SILTY GRAVEL WITH SAND (GM), (loose to medium dense), moist, brown, fine to coarse sand, fine to coarse angular to subangular gravel. [RESIDUAL SOIL]
			12	S-3		BASALT, gray-brown, predominantly decomposed, very soft to medium hard (R1 to R3) [GRANDE RONDE BASALT]
						grades to brown, moderately weathered, medium hard (R3)
50.0	5.0		12	S-4		
						Refusal at 5.5 feet. Refusal on hard (R4) basalt
47.5	7.5					
45.0	10.0					

PL WC LL
Fines Content (%)
10 20 30 40
28

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
Location: St. Helens, Oregon
Project No.: 0203864-000

Test Pit Log
TP-1

Figure **A-2**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.852223 Long: -122.812049 (WGS 84)
Total Depth: 5.5 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 61.85 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL WC LL / Fines Content (%)	Depth (feet)
61.85	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 12-inch thick).		0.0
						SANDY SILT (ML), (soft to medium stiff), moist, brown, fine to coarse sand, medium plasticity, micaceous. [ALLUVIUM]		
60.0	2.5		6	S-1 AL, WC				2.5
						CLAYEY GRAVEL WITH SAND (GC), little cobbles, (medium dense to dense), moist, light brown, fine to coarse sand, fine to coarse angular to subangular gravel, low plasticity fines. [RESIDUAL SOIL]		
57.5	5.0		6	S-2 GS, WC			41	5.0
			6	S-3				
55.0	7.5							7.5
52.5	10.0							10.0

Refusal at 5.5 feet.
Refusal on hard (R4) basalt

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
Location: St. Helens, Oregon
Project No.: 0203864-000

Test Pit Log
TP-2

Figure **A-3**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.851719 Long: -122.812122 (WGS 84)
Total Depth: 1 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 61.41 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	Depth (feet)
61.4	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 12-inch thick).	0.0
			6	S-1			
						Refusal at 1.0 feet. Refusal on hard (R4) basalt	
60.0	2.5						2.5
57.5	5.0						5.0
55.0	7.5						7.5
52.5	10.0						10.0

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
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Test Pit Log
TP-3

Figure **A-4**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.851458 Long: -122.811639 (WGS 84)
Total Depth: 7 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 58.12 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL WC LL / Fines Content (%)	Depth (feet)
58.1	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 12-inch thick).		0.0
57.5						SANDY SILT (ML), (soft to medium stiff), moist, light brown, fine to medium sand, low to medium plasticity, micaceous. [ALLUVIUM]		
			6	S-1 WC			●	
55.0	2.5							2.5
			6	S-2 AL, WC			●—|	
53.1	5.0					CLAYEY GRAVEL WITH SAND (GC), some cobbles, (medium dense to dense), moist, light brown, fine to coarse sand, fine to coarse angular to subangular gravel, low plasticity fines. [RESIDUAL SOIL]		5.0
			6	S-3 GS, WC			25 ✖	
						Refusal at 7.0 feet. Refusal on hard (R4) basalt		
52.5	7.5							7.5
50.0	10.0							10.0
47.5								

Fines Content (%) axis: 10 20 30 40

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
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Test Pit Log
TP-4

Figure **A-5**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.851535 Long: -122.811108 (WGS 84)
Total Depth: 10 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 56.09 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL / WC / LL (10 20 30 40)	Depth (feet)
56.09	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 6-inch thick).		0.0
55.0	1.1					SILTY GRAVEL (GM), (loose), moist, dark brown to black, fine to coarse angular gravel and cobbles, nonplastic to low plasticity fines, contains wood, brick, and garbage. [FILL]		
53.6	2.5					SANDY LEAN CLAY (CL), (medium stiff), moist, light brown, fine sand, low to medium plasticity fines, micaceous. [ALLUVIUM]		2.5
52.5	3.6							
51.1	5.0							5.0
50.0	6.1		6	S-1 AL, WC				
48.6	7.5					CLAYEY GRAVEL WITH SAND (GC), (medium dense to dense), moist to wet, light brown, fine to coarse sand, fine to coarse angular to subangular gravel, low to medium plasticity fines. [RESIDUAL SOIL]		7.5
47.5	8.6		6	S-2				
46.09	10.0					Refusal at 10.0 feet. Refusal on hard (R4) basalt		10.0

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Test Pit Log
TP-5

Figure **A-6**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.851841 Long: -122.810641 (WGS 84)
Total Depth: 7 feet Depth to Seepage: 6 feet
Ground Surface Elevation: 57.00 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	Water Level	Depth (feet)
57.0	0.0					SILTY GRAVEL (GP-GM), some cobbles, few boulders, (loose to medium dense), moist, black to dark brown, fine to coarse angular to subangular gravel, boulders up 2 feet. [FILL]		0.0
55.0	2.5		12	S-1				2.5
52.5	5.0					grades to wet moderate seepage	~○ 10/25/2021	5.0
50.0	7.5					Refusal at 7.0 feet. Refusal on hard (R4) basalt		7.5
47.5	10.0							10.0

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Test Pit Log
TP-6

Figure **A-7**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.852701 Long: -122.809734 (WGS 84)
Total Depth: 5.5 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 52.97 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number Tests	Graphic Log	Material Description	Depth (feet)
52.5	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 6-inch thick).	0.0
			12	S-1		SILTY GRAVEL WITH SAND (GM), few boulders, (loose), moist, brown, fine to coarse angular gravel, contains wood and debris. [FILL]	
50.0	2.5						2.5
			12	S-2		CLAYEY GRAVEL WITH SAND (GC), little boulders, (medium dense to dense), dry, light brown, fine to coarse angular gravel, boulders up to 3 feet. [RESIDUAL SOIL]	
47.5	5.0						5.0
						Refusal at 5.5 feet. Refusal on hard (R4) basalt	
45.0	7.5						7.5
42.5	10.0						10.0

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
Location: St. Helens, Oregon
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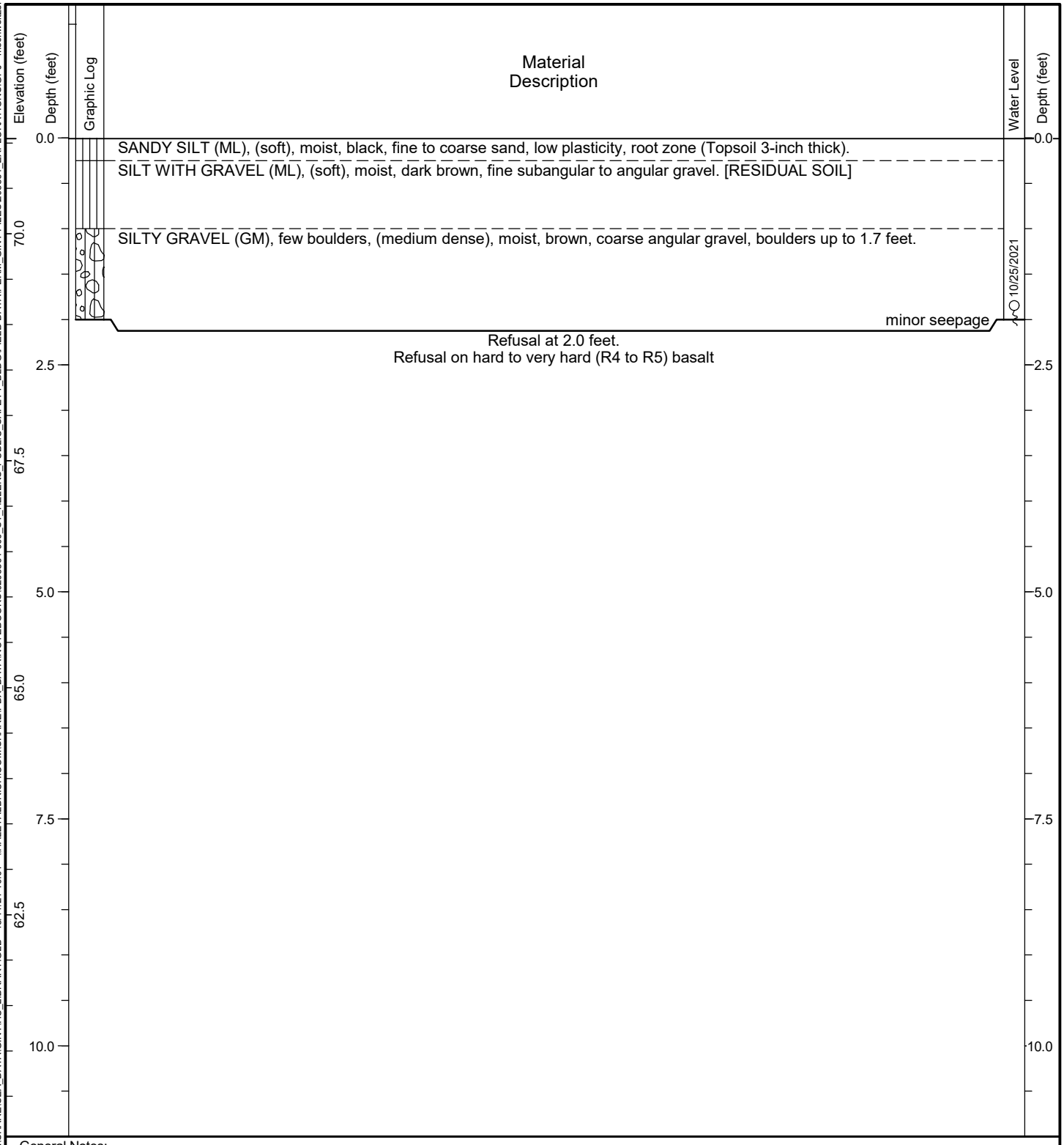
Test Pit Log
TP-7

Figure **A-8**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.852240 Long: -122.810513 (WGS 84)
Total Depth: 2 feet Depth to Seepage: 1.9 feet
Ground Surface Elevation: 71.06 feet (NAVD 88)
Comments:



General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.852197 Long: -122.811469 (WGS 84)
Total Depth: 8 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 59.88 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description
57.5	0.0					SILTY GRAVEL WITH SAND (GM), little to some cobbles, (loose), moist, black to dark brown, fine to coarse gravel, nonplastic fines. [FILL]
	2.5					SANDY ELASTIC SILT (MH), (medium stiff), moist, light brown, fine to medium sand, low to medium plasticity fines, micaceous. [ALLUVIUM]
			6	S-1 AL, GS, WC		
55.0	5.0					CLAYEY GRAVEL WITH SAND (GC), little to some cobbles, (medium dense to dense), moist, brown, fine to coarse angular gravel. [RESIDUAL SOIL]
52.5	7.5		6	S-2		
50.0	10.0					Refusal at 8.0 feet. Refusal on hard (R4) basalt

PL WC LL
✖ Fines Content (%)
10 20 30 40
76

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Project: St. Helens Public Safety Building
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Test Pit Log
TP-9

Figure **A-10**
Sheet **1 of 1**

Logged by: R. Rosenberg Checked by: D. Knapp
Rig Model/Type: Cat® 305E / Excavator
Location: Lat: 45.851904 Long: -122.811622 (WGS 84)
Total Depth: 7.5 feet Depth to Seepage: Not Encountered
Ground Surface Elevation: 59.46 feet (NAVD 88)
Comments:

Elevation (feet)	Depth (feet)	Sample Data: Type	Sample Data: Length (inches)	Sample Data: Number / Tests	Graphic Log	Material Description	PL / WC / LL (10 20 30 40)	Depth (feet)
59.5	0.0					SANDY SILT (ML), (soft), moist, black, fine to coarse sand, low plasticity, root zone (Topsoil 6-inch thick).		0.0
						LEAN CLAY WITH SAND (CL), (medium stiff), moist, light brown, medium to fine sand, low to medium plasticity, micaceous. [ALLUVIUM]		
57.5	2.5		6	S-1 / WC			WC ●	2.5
						CLAYEY GRAVEL WITH SAND (GC), little to some cobbles, (medium dense to dense), moist, light brown, fine to coarse angular gravel, low to medium plasticity fines. [RESIDUAL SOIL]		
55.0	5.0							5.0
52.5	7.5		6	S-2 / AL		Refusal at 7.5 feet. Refusal on hard (R4) basalt	LL ⊢	7.5
50.0	10.0							10.0

General Notes:
1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Material stratum lines are interpretive and actual changes may be gradual. Solid lines indicate distinct contacts and dashed lines indicate gradual or approximate contacts.
3. USCS designations are based on visual-manual identification (ASTM D 2488), unless otherwise supported by laboratory testing (ASTM D 2487).
4. Groundwater level, if indicated, is at time of drilling/excavation (ATD) or for date specified. Level may vary with time.
5. Location and ground surface elevations are approximate.

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Test Pit Log
TP-10

Figure **A-11**
Sheet **1 of 1**

APPENDIX B
Laboratory Testing

APPENDIX B

Laboratory Testing

General

Soil samples obtained from the exploration were transported to our laboratory and evaluated to confirm or modify field classifications, as well as to assess engineering properties of the soils encountered. Representative samples were selected for laboratory testing. The tests were performed in general accordance with the test methods of the ASTM or other applicable procedures. A summary of the test results is included as Figure B-1.

Visual Classifications

Soil samples obtained from the explorations were visually classified in the field and in our geotechnical laboratory based on the Unified Soil Classification System (USCS) and ASTM classification methods. ASTM Test Method D 2488 was used to classify soils using visual and manual methods. ASTM Test Method D 2487 was used to classify soils based on laboratory test results.

Laboratory Test Results

Moisture Content

Moisture contents of samples were obtained in general accordance with ASTM Test Method D 2216. The results of the moisture content tests completed on samples from the explorations are presented on the exploration log included in Appendix A and on Figure B-1 in this appendix.

Fines Content Analyses

Fines content analyses were performed to determine the percentage of soils finer than the No. 200 Sieve—the boundary between sand size particles and silt size particles. The tests were performed in general accordance with ASTM Test Method D 1140. The test results are indicated on the exploration log included in Appendix A and on Figure B-1 in this appendix.

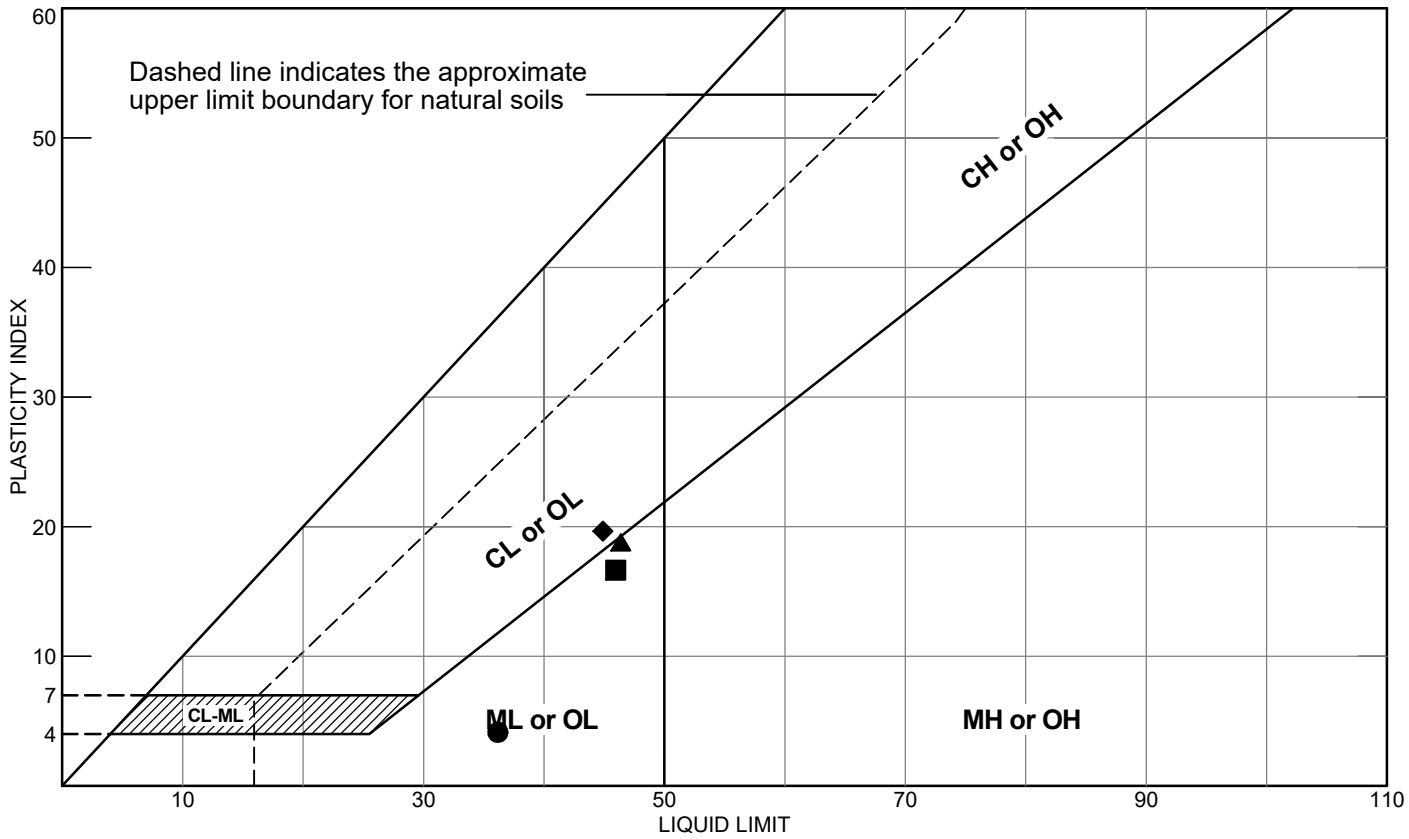
Sieve Analyses

Sieve analysis tests were performed to determine the quantitative distribution of particle sizes in the sample. The tests were performed in general accordance with ASTM Test Methods D 6913 04 and D 1140. The “percent fines” portion of the test results are indicated on the appropriate exploration log included in Appendix A and on Figure B-1 in this appendix. The full test results are shown on Figure B-2 in this appendix.

Atterberg Limits Testing

Atterberg limits (liquid limit, plastic limit, and plasticity index) were obtained in general accordance with ASTM Test Method D 4318. The results of the Atterberg limits tests are presented on the exploration logs included in Appendix A, summarized on Figure B-1 in this appendix, and shown in detail on Figure B-2 in this appendix.

	ID		(%)	(pcf)	(%)	(%)	(%)	Limit	Limit	Index	(%)	(tsf)	(tsf)	
TP-1	S-2	2.0	20.1		28			36	32	4				
TP-2	S-1	2.0	29.6					46	29	17				
TP-2	S-2	3.5	16.3		41	16	42							
TP-4	S-1	1.5	28.1											
TP-4	S-2	4.5	24.8					46	28	18				
TP-4	S-3	6.5	24.3		25	20	55							
TP-5	S-1	6.0	35.1					45	25	20				
TP-9	S-1	3.0	19.7		76			52	29	23				
TP-10	S-1	2.5	25.0											
TP-10	S-2	6.5						43	26	17				



Location and Description	LL	PL	PI	#200	MC%	USCS
● **Source:** TP-1 **Sample No.:** S-2 **Depth:** 2.0 to 3.0 SILTY GRAVEL WITH SAND	36	32	4	28	20	GM
■ **Source:** TP-2 **Sample No.:** S-1 **Depth:** 2.0 to 2.5 SANDY SILT	46	29	17	NT	30	ML
▲ **Source:** TP-4 **Sample No.:** S-2 **Depth:** 4.5 to 5.0 SANDY SILT	46	28	18	NT	25	ML
◆ **Source:** TP-5 **Sample No.:** S-1 **Depth:** 6.0 to 6.5 SANDY LEAN CLAY	45	25	20	NT	35	CL

Remarks:

●
■
▲
◆

HC ATTERBERG LIMITS - \\HALEYALDRICH.COM\SHARE\PDX_DATA\GEOMATICS\GINT\HC_LIBRARY.GLB - 11/10/21 11:41 - \\HALEYALDRICH.COM\SHARE\PDX_DATA\NOTEBOOKS\0203864-000_ST_HELENS_PUBLIC_SAFETY_BLDG\FIELD DATA\PERM_GINT FILES\203864_EXPLORATIONS.GPJ - dknapp

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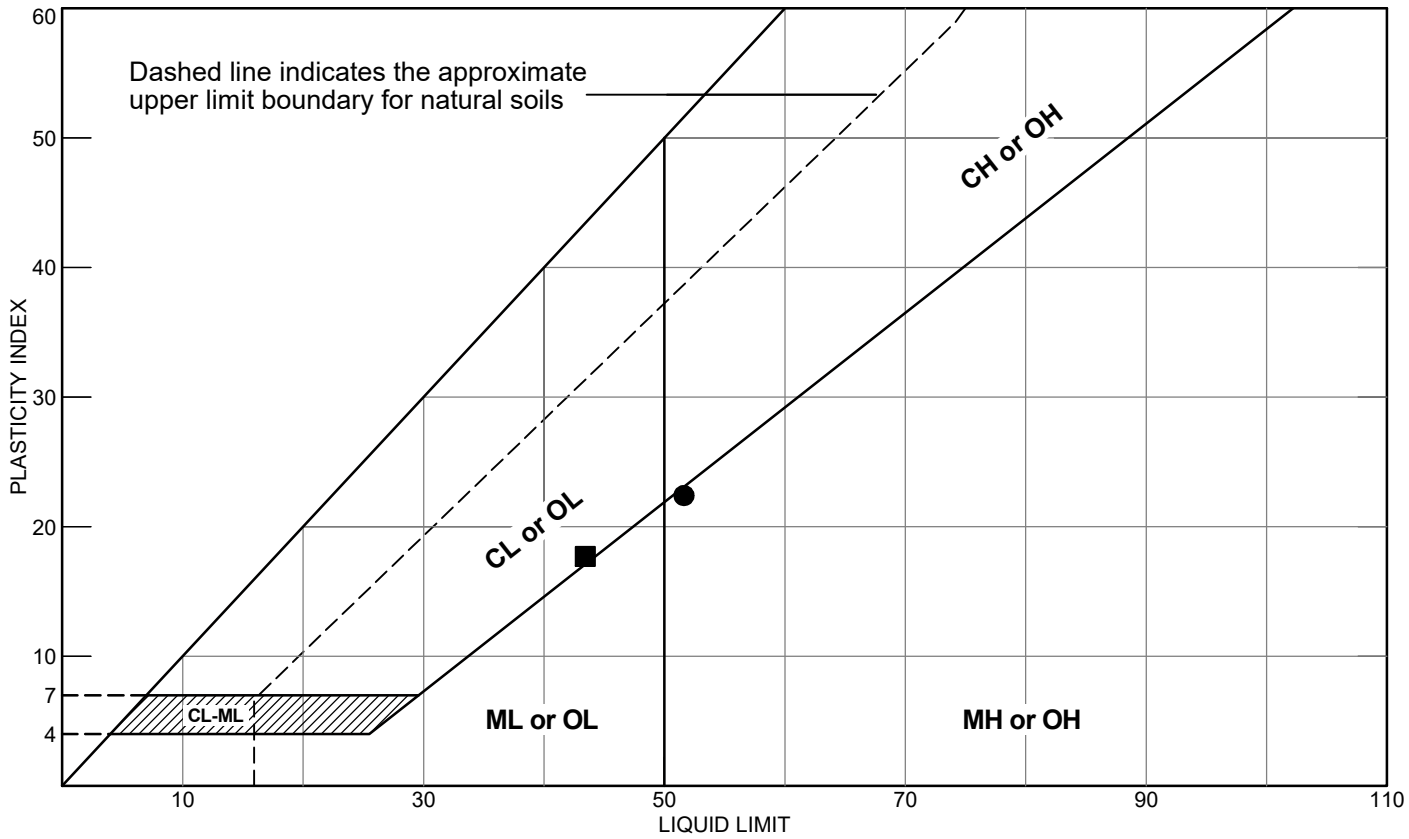
Location: St. Helens, Oregon
Project No.: 0203864-000

Liquid Limit, Plastic Limit, and Plasticity Index

Figure **B-2**
Sheet **1 of 2**



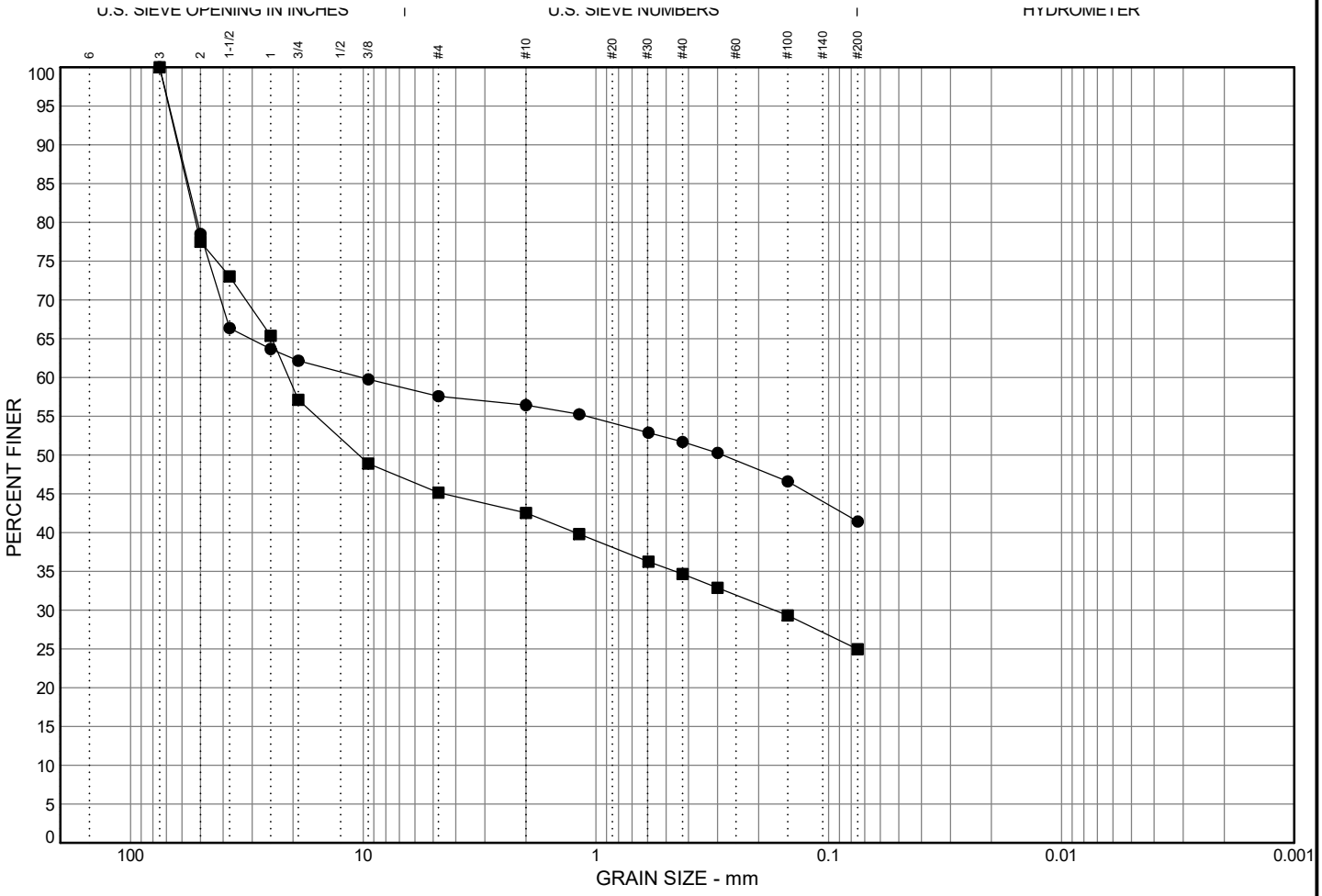
Location and Description	LL	PL	PI	#200	MC%	USCS
● **Source:** TP-9 **Sample No.:** S-1 **Depth:** 3.0 to 3.5 SANDY ELASTIC SILT	52	29	23	76	20	MH
■ **Source:** TP-10 **Sample No.:** S-2 **Depth:** 6.5 to 7.0 CLAYEY GRAVEL WITH SAND	43	26	17	NT	NT	GC

Remarks:

●

■

HARTCROWSER A division of Haley & Aldrich	Project: St. Helens Public Safety Building Location: St. Helens, Oregon Project No.: 0203864-000	**Liquid Limit, Plastic Limit, and Plasticity Index**	Figure **B-2** Sheet **2 of 2**



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	Location and Description	% Cobbles	% Gravel	% Sand	% Silt	% Clay	MC%	USCS
●	**Source:** TP-2 **Sample No.:** S-2 **Depth:** 3.5 to 4.0 CLAYEY GRAVEL WITH SAND	0.0	42.4	16.2	41.4		16	GC
■	**Source:** TP-4 **Sample No.:** S-3 **Depth:** 6.5 to 7.0 CLAYEY GRAVEL WITH SAND	0.0	54.9	20.2	25.0		24	GC

	LL	PI	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
●			56.515	10.184	0.285					
■			57.225	20.915	10.411	0.171				

Remarks:

● Original field sample had 21% cobbles. Particles greater than 3-inches were not included in grain size distribution calculations.
■ Original field sample had 37% cobbles. Particles greater than 3-inches were not included in grain size distribution calculations.

HARTCROWSER A division of Haley & Aldrich

Project: St. Helens Public Safety Building
Location: St. Helens, Oregon
Project No.: 0203864-000

Particle-Size Analysis

Figure **B-3**
Sheet **1 of 1**

APPENDIX C
Geophysical Testing Report

Report on

Geophysical Exploration
St. Helens Public Safety Building Site
St. Helens, Oregon

November 9, 2021

Prepared for:

Hart Crowser
6240 SW Macadam
Portland, OR 97239

Prepared by:

EARTH DYNAMICS LLC
2284 N.W. Thurman St.
Portland, OR 97210
(503) 227-7659
Project No. 21210

1.0 - Introduction

Hart Crowser engaged Earth Dynamics LLC to conduct geophysical explorations for the proposed St. Helens Public Safety Building. The site is located near the intersection of Old Portland Road and Kaster Road in St. Helens, Oregon. The purpose of the exploration is to determine the average shear wave velocity of the site and the compressional wave velocity of basalt bedrock at the site. These data are needed for the design of the proposed building and to determine the rippability of the basalt.

This work was requested and authorized by Mr. Luke Kevan of Hart Crowser. The geophysical field work was conducted on October 26, 2021 under the supervision of Mr. Daniel Lauer of Earth Dynamics LLC. The explorations consist of two ReMi shear wave profiles and one Seismic Refraction profile. The locations of the profiles were requested by Hart Crowser Personnel. This report describes the methodology and results of the geophysical investigation.

2.0 - Method

2.1 - Seismic Refraction

The seismic velocity of soil and rock is a function of the density and elastic properties of the material. Therefore, variations in subsurface materials can be inferred from analysis of the seismic velocity. Application of the method is limited to areas where seismic velocity increases or is constant with depth. Low velocity zones, which are common in basalt, cannot be resolved with seismic refraction.

A seismic refraction exploration consists of measuring the time required for a seismic wave to travel from a seismic source to a receiving transducer. A sledgehammer, large weight dropped, or explosive device is typically used for the seismic source and vertical geophones are used as receiving transducers. A seismograph records signals from the geophones. By analyzing the arrival time of the seismic wave as a function of distance from the seismic source, the seismic velocities of the underlying soil/rock units and the depth to geologic contacts can be determined. The seismic refraction method requires that seismic sources be placed at each end of the geophone array. Intermediate and off end sources are also often used to increase resolution and penetration. The depth of penetration is typically one-quarter to one-third of the geophone array length, and lateral resolution is typically one-half of the geophone spacing.

The seismic refraction survey for this study was conducted using a Seismic Source 24-channel DAQ Link IV seismograph. One refraction array was completed along a profile location designated by Hart Crowser personnel. The geophone spacing is five feet and the array is 115 feet long. A 20-pound

sledgehammer was used as the seismic source. Data from several hammer hits were acquired at each shot point. Stacking the multiple hits enhances the first seismic wave arrival at each geophone. For this study, data are required from a total of five shot points. The seismic refraction profile is designated SR-1.

The seismic data are analyzed using SeisOpt@2D Ver. 6.0 by Optim Software. SeisOpt@2D uses a forward modeling global optimization technique. The technique consists of creating a finite element velocity model through which travel times are computed. The computed times are compared with the observed data. Thousands of iterations are completed to find the velocity model with the minimum travel time error. Comparison of the computed travel times to the measured values provides an indication of the validity of the model. Several velocity models are run using different grid resolution and depth values to obtain the best result for each data set. SeisOpt generates xyz data files that are input to Surfer® 17 for contouring, scaling, and data presentation. The SeisOpt modeling technique is generally superior to discrete layer modeling because lateral, as well as vertical variations can be resolved, and gradual increases in seismic velocity with depth can be quantified.

2.2 – ReMi Shear Wave analysis

The Refraction Microtremor (ReMi) technique provides a simplified characterization of relatively large volumes of the subsurface. The method can be used to estimate one-dimensional shear wave velocity profiles and provide site-specific soil classification data as described in ASCE/SEI 7-16 (2017). In a ReMi survey, geophones are deployed at designated intervals along a linear array. The resolution and depth of investigation depends upon the geophone cut-off frequency, spacing of the geophones, the total array length and the frequency characteristics of the Rayleigh waves at the site. For “rule of thumb” survey planning, the nominal depth of investigation is assumed to be approximately one-third of the geophone array length.

The theoretical basis of the ReMi method is the same as Spectral Analysis of Surface Waves (SASW) and Multi-channel Analysis of Surface Waves (MASW) as first described to the earthquake engineering community by Nazarian and Stokoe (1984). However, ReMi does not require a frequency-controlled source and the field equipment is much more compact and economical. A complete description of the theoretical basis for ReMi is described by Louie (2001). In ReMi analysis all interpretation is done in the frequency domain, and the method assumes that the most energetic arrivals recorded are Rayleigh waves. By applying a time-domain velocity analysis, Rayleigh waves can be separated from body waves, air waves, and other coherent noise. Transforming the time-domain velocity results into the frequency domain allows combination of many arrivals over a long time period, and yields easy recognition of dispersive surface waves.

Data reduction is completed in two steps. First, the time versus amplitude seismic records are transformed into spectral energy shear wave frequency versus shear wave velocity (or slowness). The data are graphically presented in what is commonly termed a p-f plot. The interpreter determines a dispersion curve from the p-f plot by selecting the lower bound of the spectral energy shear wave velocity versus frequency trend. The second phase of the analysis consists of fitting the measured dispersion curve with a theoretical dispersion curve that is based upon a model of multiple layers with various shear wave velocities. The model velocities and layer thicknesses are adjusted until a 'best fit' to the measured data is obtained. This type of interpretation does not provide a unique model. Interpreter experience and knowledge of the existing geology is important to provide a realistic solution. The data are presented as one-dimensional velocity profiles that represent the average shear wave velocities of the subsurface layers over the length of the geophone array.

For this project, data were acquired for two ReMi arrays. These ReMi arrays are designated ReMi-1 and ReMi-2. Each ReMi array consists of twenty-four 4.5 Hz vertical geophones spiked into the ground surface. For ReMi-1 a 15-foot geophone spacing was used for a total array length of 345 feet. For ReMi-2 a 13-foot geophone spacing was used for a total array length of 299 feet. More than twenty 30-second long seismic records of ambient seismic noise were recorded for each array. Data were also acquired when vehicles, and people were moving on and near the site.

2.3 - Location and Elevation Survey

The profiles were laid out using tape measures draped on the ground surface. Relative elevation data are acquired along the seismic refraction profile using a level and stadia rod.

Horizontal position data were obtained with a Trimble GEOXH 6000 GPS receiver. The position data were post-processed to increase the accuracy of the GPS positions. The reported horizontal accuracy of the post-processed position data is less than ±1 foot. Location data were recorded at the ends of each profile. Recorded GPS data for the profile end points are summarized in Table 2-1. The GPS data are displayed in degrees, decimal minutes Latitude and Longitude using the WGS 1984 datum.

Table 2-1. GPS Position Data for Geophysical Profile endpoints. (WGS 1984).

Profile Location	Latitude	Longitude
SR-1 0’	45° 51.1357’N	122° 48.6725’W
SR-1 115’	45° 51.1442’N	122° 48.6479’W
ReMi-1 0’	45° 51.0993’N	122° 48.7387’W
ReMi-1 345’	45° 51.1346’N	122° 48.6759’W
ReMi-1 0’	45° 51.1300’N	122° 48.7244’W
ReMi-1 299’	45° 51.0916’N	122° 48.6803’W

3.0 - Results

The approximate locations of the geophysical profiles are shown in Figure 3-1. GPS data are contained in Table 2-1.

A computed seismic velocity model with interpreted geology for seismic refraction profile SR-1 is contained in Figure 3-2. The model in Figure 3-2 contains interpretations of the geologic contacts.

The ReMi analysis and results for the two ReMi Arrays are contained in Figures 3-3 and 3-4. Figures 3-3 and 3-4 contain the p-f plot, the dispersion curve, the derived velocity versus depth model that best fits the geology of the site and a table containing the shear wave velocity with depth for the array.

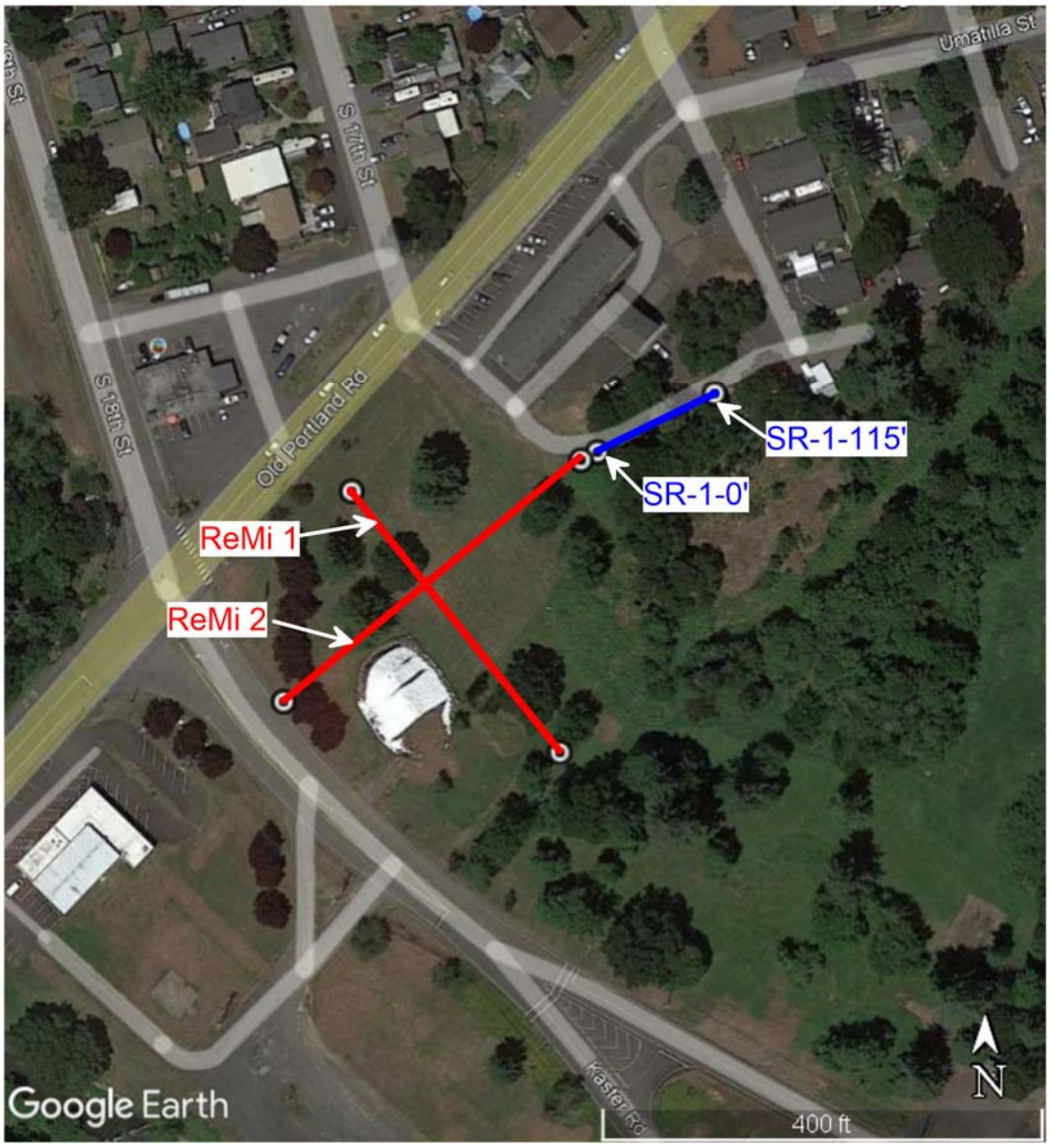


Figure 3-1. Site plan showing approximate locations of seismic profiles.

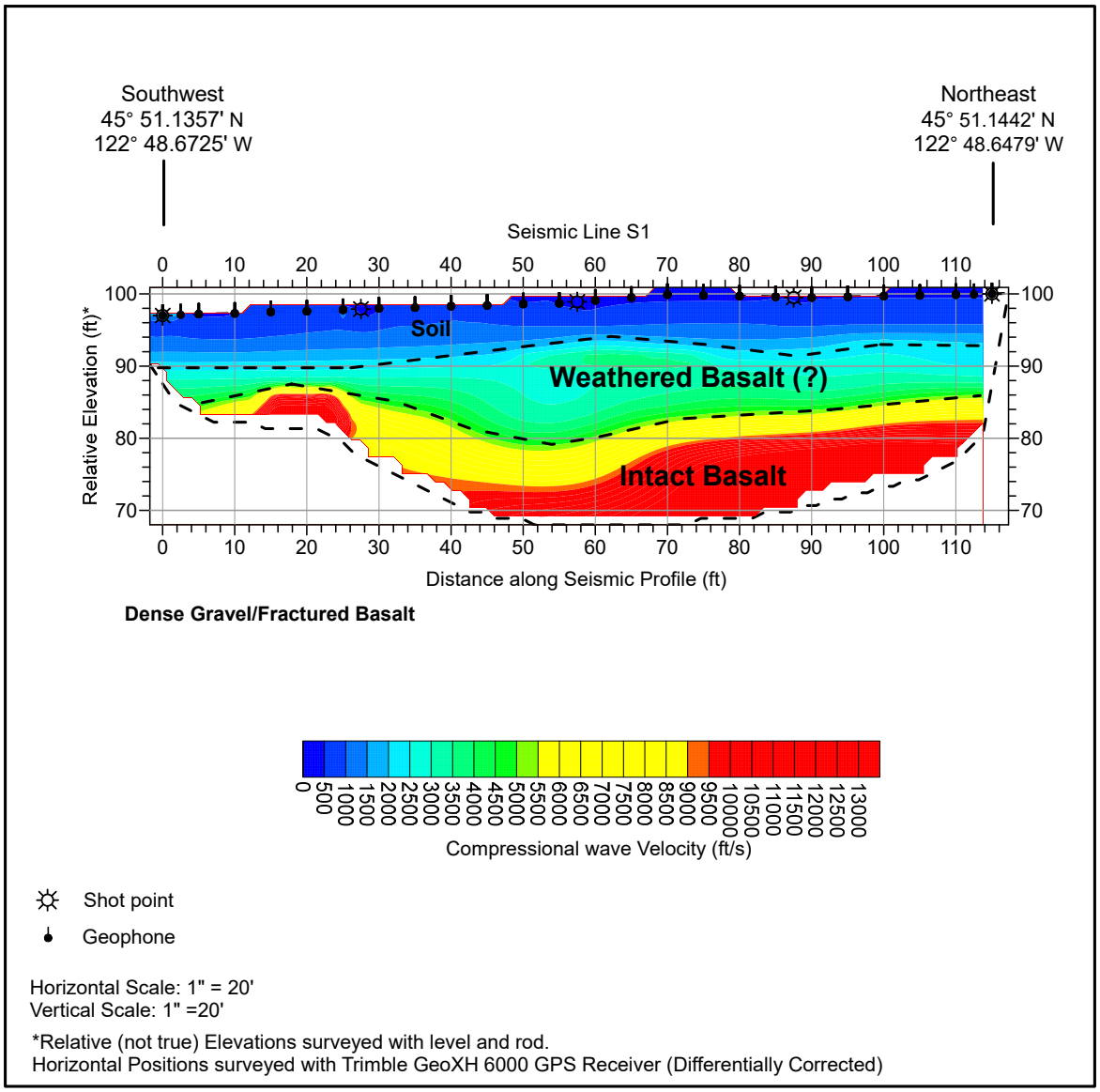
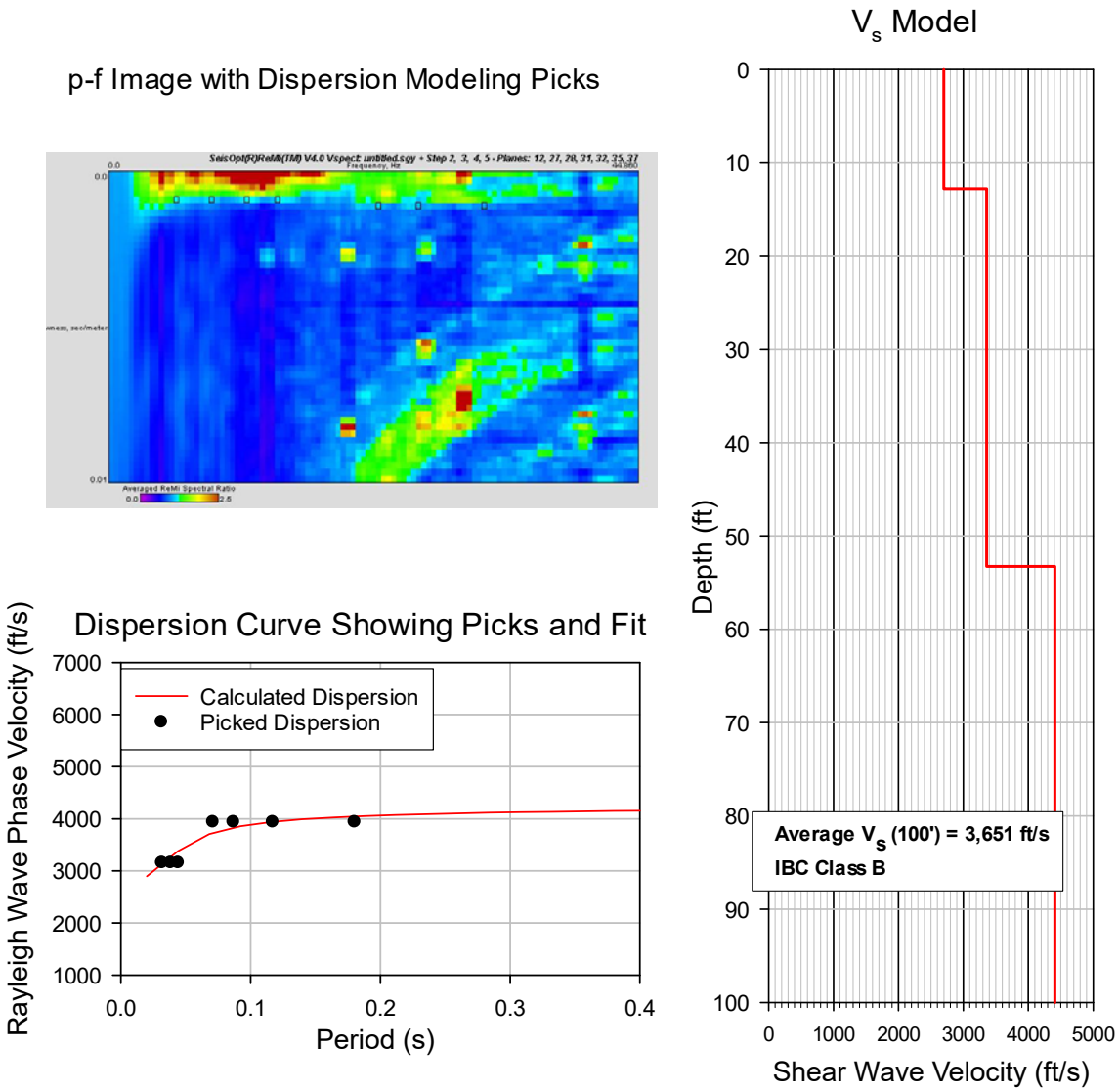
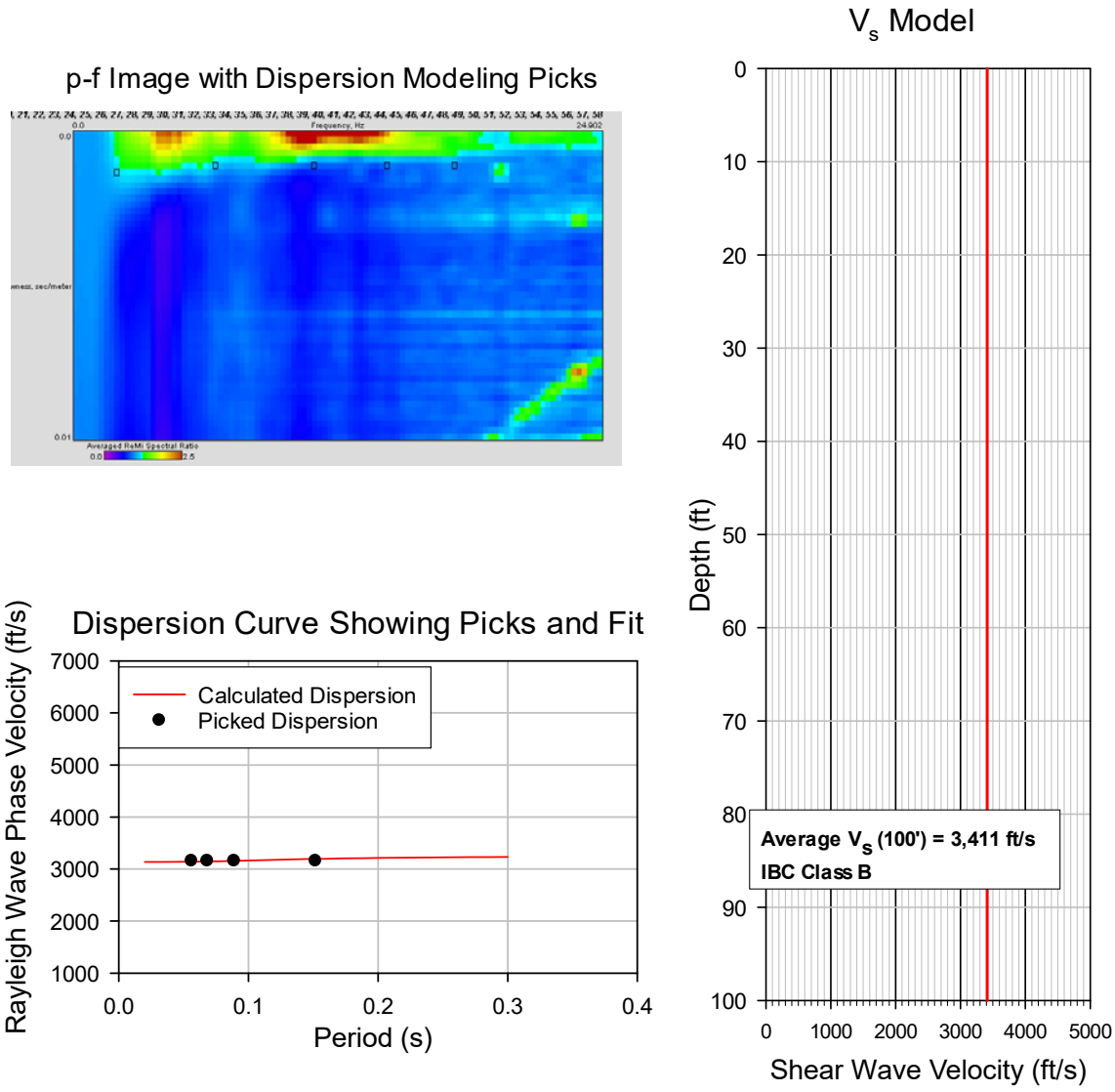


Figure 3-2. Seismic Refraction Profile SR-1 Model with interpretations.



Depth Interval (ft)	Shear-wave velocity (ft/s)
0 – 12.75	2,697
12.75 – 53.25	3,359
53.25 – 100	4,409

Figure 3-3. ReMi-1 Results



Depth Interval (ft)	Shear-wave velocity (ft/s)
0 – 100	3,411

Figure 3-4. ReMi-2 Results

4.0 - Discussion

4.1 – Seismic Refraction

The seismic refraction data acquired in this study are of good quality. The stacking of several hits at each shot point allows for good confidence in picking each first arrival. There is good correlation of the models to the measured data.

Earth Dynamics LLC has completed numerous seismic refraction studies in Portland and surrounding areas. In many cases it is observed that the minimum velocity of un-weathered and fractured basalt is greater than approximately 5,000 feet per second (ft/sec). Weathered, fractured and/or residual basalt typically has a seismic velocity range of 3,000 to 5,000 ft/s. Soils and silts and other unconsolidated sediments typically have a seismic velocity less than 3,000 ft/s. These observations appear to correlate well with the boring log data and seismic models at this site.

The seismic velocity model contained in Figure 3-2 contains the interpreted geologic contact of the top of weathered and intact basalt shown with black dashed lines. In the models, the blue colors represent the soil near the surface, green colors represent decomposed basalt and the yellow and red colors represent intact basalt. The geologic interpretations are based on information from the boring logs, steep gradients in the seismic velocity models and the assumed seismic velocities of the subsurface material expected at this site.

Compressional wave (p-wave) seismic velocity is related to ripper performance in the Caterpillar Performance Handbook (1985). Caterpillar performance data for basalt are summarized in Table 3. The data in Table 4-1 indicate that basalt with a seismic velocity less than 4,500 ft/s is generally rippable with moderately sized equipment and that basalt with seismic velocities greater than 9,200 ft/s is generally non-rippable.

Areas with p-wave velocity greater than 9,200 ft/s is shown with red shading in the profile in Figure 3-4. Areas with p-wave velocities lower than 9,200 ft/s may be rippable with a D10 or smaller excavator. However, basalt rippability is very dependent on the characteristics of particular basalt formations. Basalt which contains interflows, joints or weathered zones may be rippable even when the modeled seismic velocity is greater than 9,200 ft/s. Also, the depth to unrippable basalt may vary significantly across the site.

Table 4-1. Ripper performance in basalt. Caterpillar Tractor Co., Caterpillar Performance Handbook, (October, 1985)

Ripper Model	P-wave Seismic Velocity (ft/sec)		
	Rippable	Marginal	Non-Rippable
D7G	<4,500	4,500 - 5,200	>5,200
D8L	<7,600	7,600 - 8,600	>8,000
D9L	<8,000	8,000 - 9,000	>9,000
D10	<8,300	8,300 - 9,200	>9,200

4.2 - ReMi

The dispersion curve data indicate that there is very little dispersion of surface waves. This result indicates that the shear wave velocity of the subsurface material at the site is relatively uniform. The data quality and the model fit to the data for the arrays is good. The RMS error of the model fit for these data is less than ±200 ft/s.

4.2.1 ASCE Classifications

ASCE/SEI 7-16 (2017) defines five site classes based upon the average shear-wave velocity of the soil to a depth of 30 Meters (100 feet). The ASCE classification is summarized in Table 4-1. The classifications in Table 4-1 are incorporated into the International Building Code (IBC 2018). Earthquake shaking is expected to be stronger where shear-wave velocity is lower. Average shear wave velocity to a depth of 100 ft (V_{s100}) is calculated using Equation 4-1.

$$Vs(100) = \frac{100}{\sum_{i=1}^{i=n}\left(\frac{d_i}{Vs_i}\right)} \qquad \text{Equation 4-1}$$

Where:

n = the number of intervals
i = the interval number
d_i = the thickness of the i^{th} interval in feet
Vs_i = the velocity of the i^{th} interval

Using Equation 1 and the data in Figure 4-2, the average shear wave velocity to a depth of 100 ft for ReMi-1 and ReMi-2 is calculated to be 3,651ft/s and 3,411ft/s respectively. This velocity range corresponds to IBC seismic design classification of “B”.

Table 4-1. Summary of ASCE soil classification.

Class	Average S-wave Velocity (ft/sec)	Description
A	> 5,000	Hard rock
B	2,500 – 5,000	Rock
C	1,200 – 2,500	Very dense soil and soft rock
D	600 – 1,200	Stiff soil
E	<600	Soil

The ReMi model suggests that the shear wave velocity is consistent to at least a depth of 100 feet below the ground surface.

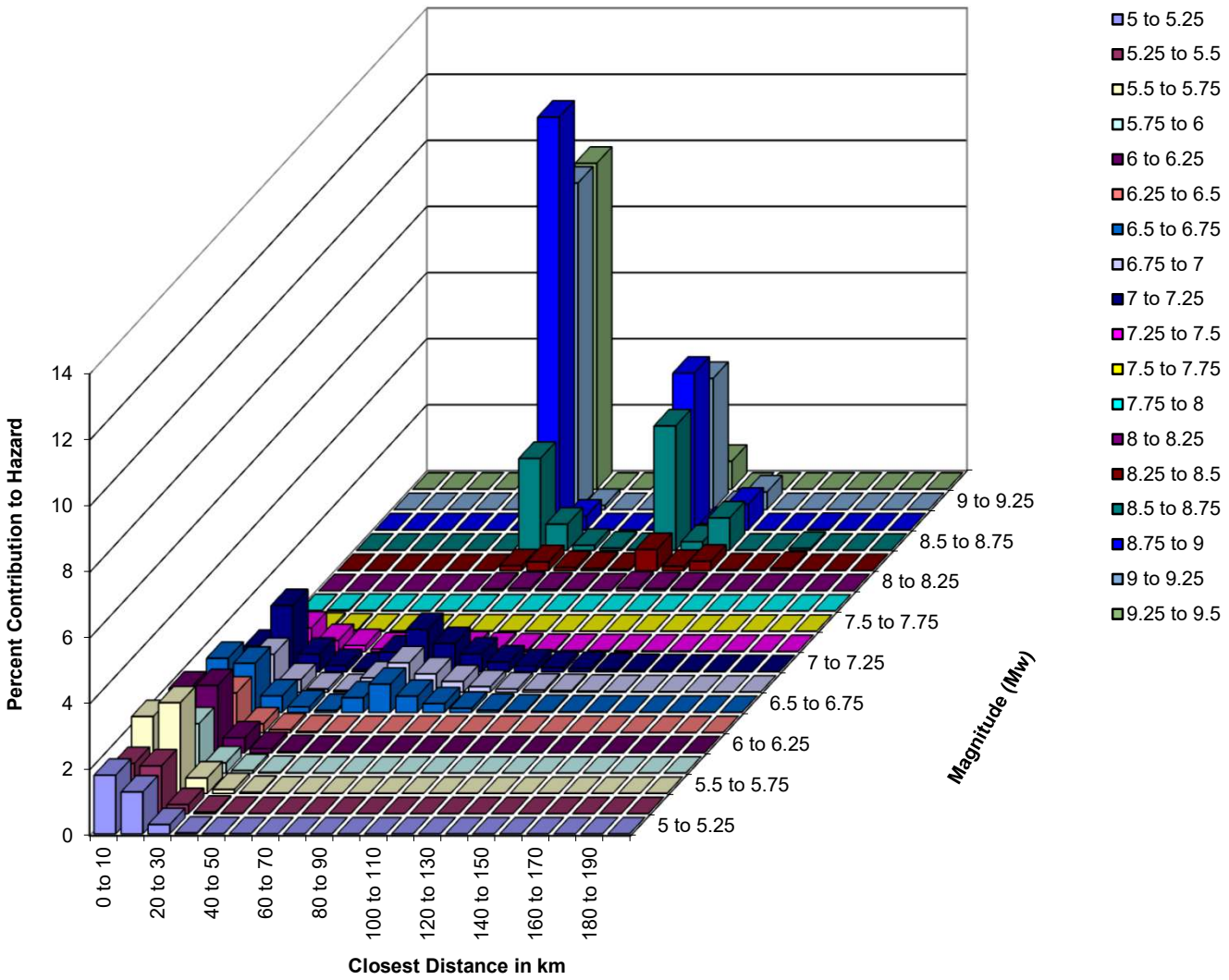
5.0 - Limitations

The inversion of seismic refraction data does not produce a unique model. Theoretically, there are an infinite number of models that will fit the data as well as the models presented in this report. Further, many geologic materials have similar seismic velocity. We have presented models and interpretations which we believe to be the best fit given the geology and known conditions at the site. However, no warranty is made or intended by this report or by oral or written presentation of this work. Earth Dynamics accepts no responsibility for damages as a result of decisions made or actions taken based upon this report.

RESPECTFULLY SUBMITTED
EARTH DYNAMICS LLC

Daniel Lauer
Principal - Senior Geophysicist

APPENDIX D
Hazard Deaggregation



Source	Percent Contribution
Cascadia Interface	55.1%
Crustal sources	1.3%
Gridded Crustal Seismicity	33.9%
Deep Intraslab	9.7%

Site and Hazard Information	
Latitude	45.8519
Longitude	-122.8116
Return Period	2,475 years
Vs30	3,531 feet/sec
Sa Period	0.1 s
Amplitude	0.89 g

Parameter	Mean	Modal
Magnitude	7.79	8.75 to 9
Distance (km)	57	60 to 70
Epsilon	1.10	-

Note: Deaggregation amplitude and intensity shown for geometric mean PSHA. Not for use in design.

St Helens Public Safety Building
St. Helens, Oregon

PSHA Hazard Deaggregation at 0.1 seconds for 2,475-year Return Period

0203864-000 11/21

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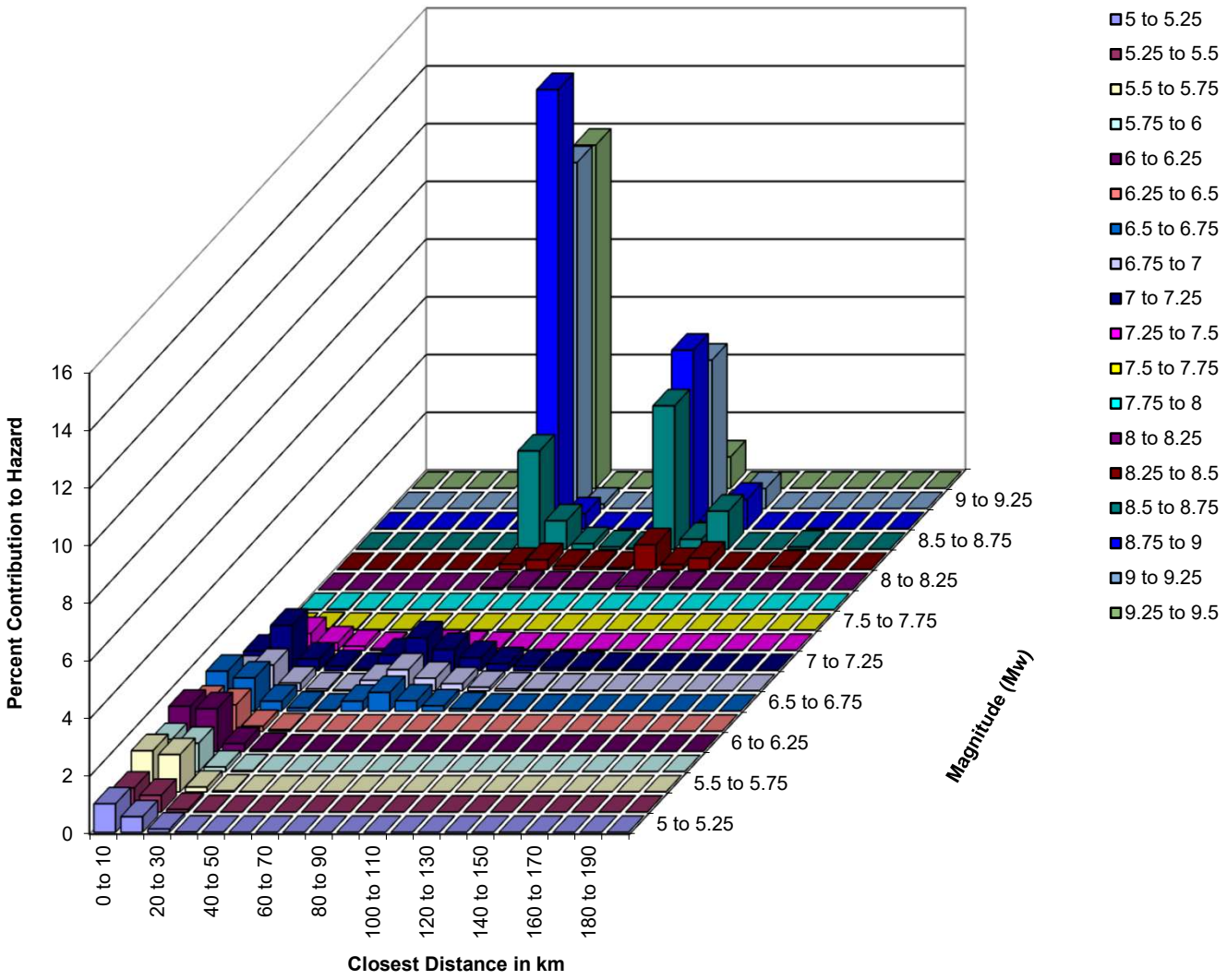
Figure
D-1



Source	Percent Contribution
Cascadia Interface	68.8%
Crustal sources	1.0%
Gridded Crustal Seismicity	22.4%
Deep Intraslab	7.8%

Site and Hazard Information	
Latitude	45.8519
Longitude	-122.8116
Return Period	2,475 years
Vs30	3,531 feet/sec
Sa Period	0.2 s
Amplitude	0.93 g

Parameter	Mean	Modal
Magnitude	8.19	8.75 to 9
Distance (km)	65	60 to 70
Epsilon	1.01	-

Note: Deaggregation amplitude and intensity shown for geometric mean PSHA. Not for use in design.

St Helens Public Safety Building
St. Helens, Oregon

PSHA Hazard Deaggregation at 0.2 seconds for 2,475-year Return Period

0203864-000 11/21

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Figure
D-2

DRAFT

AIA® Document A133™ – 2019

Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

AGREEMENT made as of the « » day of « » in the year « »
(In words, indicate day, month, and year.)

BETWEEN the Owner:
(Name, legal status, address, and other information)

« The City of St. Helens » «an Oregon municipality»
«265 Strand Street»
«St. Helens, OR, 97051 »
« »

and the Construction Manager:
(Name, legal status, address, and other information)

«TBD»« »
« »
« »
« »

for the following Project:
(Name, location, and detailed description)

« CITY OF ST HELENS NEW PUBLIC SAFETY BUILDING »
« Corner of Old Portland Road and Kaster Road in St. Helens ,Oregon »

« The Construction manager will lead and assist with the preconstruction and construction phases of the new Public Safety Building. The current Police Station was built in 1971 as 2,200 square foot, wood framed building with a detached garage. The garage was updated in 1988 and a second floor has been in the planning stages since the early 1990s but never constructed due to budget constraints. As the current station was built for a police force that didn't need to handle digital data or face current issues such as active shooters, school shootings, online child pornography, or the opioid and mental health crises of today, an entirely new building is needed. Mackenzie Inc. has designed a new public safety building that will provide a safe space for a modern police force, be ADA compliant, improve evidence storage and ensure the privacy of crime victims. It will also create a space for an emergency preparedness center where first responders can coordinate a response to local disasters. The City has approved $12.6 million for the project budget and we hope to have the doors open April 2025.»

The Architect:
(Name, legal status, address, and other information)

« Mackenzie Inc. Architecture Planning & Interior Design» «an Oregon corporation»
« 1515 SE Water Ave, Suite 100»
« Portland, OR 97214»

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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«»

The Owner and Construction Manager agree as follows.

TABLE OF ARTICLES

ARTICLE 1 INITIAL INFORMATION

§ 1.1 This Agreement is based on the Initial Information set forth in this Section 1.1.
(For each item in this section, insert the information or a statement such as "not applicable" or "unknown at time of execution.")

§ 1.1.1 The Owner's program for the Project, as described in Section 4.1.1:
(Insert the Owner's program, identify documentation that establishes the Owner's program, or state the manner in which the program will be developed.)

« TBD »

§ 1.1.2 The Project's physical characteristics:
(Identify or describe pertinent information about the Project's physical characteristics, such as size; location; dimensions; geotechnical reports; site boundaries; topographic surveys; traffic and utility studies; availability of public and private utilities and services; legal description of the site, etc.)

« This Project is located at the corner of Old Portland Road and Kaster Road in St. Helens ,Oregon. The Construction manager will lead and assist with the preconstruction and construction phases of the new Public Safety Building. The current Police Station was built in 1971 as 2,200 square foot, wood framed building with a detached garage. The garage was updated in 1988 and a second floor has been in the planning stages since the early 1990s but never constructed due

to budget constraints. As the current station was built for a police force that didn't need to handle digital data or face current issues such as active shooters, school shootings, online child pornography, or the opioid and mental health crises of today, an entirely new building is needed. Mackenzie Inc. has designed a new public safety building that will provide a safe space for a modern police force, be ADA compliant, improve evidence storage and ensure the privacy of crime victims. It will also create a space for an emergency preparedness center where first responders can coordinate a response to local disasters. The City has approved $12.6 million for the project budget and we hope to have the doors open April 2025»

§ 1.1.3 The Owner's budget for the Guaranteed Maximum Price, as defined in Article 6:
(Provide total and, if known, a line item breakdown.)

« TBD – Owner's total budge for all costs associated with the Project is $12.6 million. Owner will work with Construction Manager to identify the "Budget" amount as defined in Article 6. »

§ 1.1.4 The Owner's anticipated design and construction milestone dates (See RFP and Proposal):

.1 Design phase milestone dates, if any:

« See Master Schedule attached to RFP »

.2 Construction commencement date:

« See Master Schedule attached to RFP »

.3 Substantial Completion date or dates:

« See Master Schedule attached to RFP »

.4 Other milestone dates:

« See Master Schedule attached to RFP »

§ 1.1.5 The Owner's requirements for accelerated or fast-track scheduling, or phased construction, are set forth below:
(Identify any requirements for fast-track scheduling or phased construction.)

«TBD»

§ 1.1.6 The Owner's anticipated Sustainable Objective for the Project:
(Identify and describe the Owner's Sustainable Objective for the Project, if any.)

«TBD»

§ 1.1.6.1 If the Owner identifies a Sustainable Objective, the Owner and Construction Manager shall complete and incorporate AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, into this Agreement to define the terms, conditions and services related to the Owner's Sustainable Objective. If E234–2019 is incorporated into this agreement, the Owner and Construction Manager shall incorporate the completed E234–2019 into the agreements with the consultants and contractors performing services or Work in any way associated with the Sustainable Objective.

§ 1.1.7 Other Project information:
(Identify special characteristics or needs of the Project not provided elsewhere.)

« See RFP, Proposal »

§ 1.1.8 The Owner identifies the following representative in accordance with Section 4.2:
(List name, address, and other contact information.)

« »
« »
« »
« »
«Email: _____»
«Phone:_____»

§ 1.1.9 The persons or entities, in addition to the Owner's representative, who are required to review the Construction Manager's submittals to the Owner are as follows:
(List name, address and other contact information.)

«TBD»

§ 1.1.10 The Owner shall retain the following consultants and contractors:
(List name, legal status, address, and other contact information.)

.1 Geotechnical Architect:

« TBD »« »
« »
« »
« »
« »

.2 Civil Architect:

« TBD »« »
« »
« »
« »
« »

.3 Other, if any:
(List any other consultants retained by the Owner, such as a Project or Program Manager.)

« »

§ 1.1.11 The Architect's representative:
(List name, address, and other contact information.)

« TBD »
« » « »
« »
«_____»
«Phone: »
« »

§ 1.1.12 The Construction Manager identifies the following representative in accordance with Article 3:
(List name, address, and other contact information.)

«TBD – Identified in Proposal »
« »
« »
« »
« »
« »

§ 1.1.13 The Owner's requirements for the Construction Manager's staffing plan for Preconstruction Services, as required under Section 3.1.9:
(List any Owner-specific requirements to be included in the staffing plan.)

« See list identified in Proposal»

§ 1.1.14 The Owner's requirements for subcontractor procurement for the performance of the Work:
(List any Owner-specific requirements for subcontractor procurement.)

«See ORS 279C.337(3), RFP and Proposal »

§ 1.1.15 Other Initial Information on which this Agreement is based:

«See RFP and Proposal»

§ 1.2 The Owner and Construction Manager may rely on the Initial Information. Both parties, however, recognize that such information may materially change and, in that event, the Owner and the Construction Manager shall appropriately adjust the Project schedule, the Construction Manager's services, and the Construction Manager's compensation. The Owner shall adjust the Owner's budget for the Guaranteed Maximum Price and the Owner's anticipated design and construction milestones, as necessary, to accommodate material changes in the Initial Information.

§ 1.3 Neither the Owner's nor the Construction Manager's representative shall be changed without ten days' prior notice to the other party. Owner shall have sole discretion to approve any replacement representative proposed by Construction Manager.

ARTICLE 2 GENERAL PROVISIONS

§ 2.1 The Contract Documents

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract and are as fully a part of the Contract as if attached to this Agreement or repeated herein. Upon the Owner's acceptance of the Construction Manager's Guaranteed Maximum Price proposal, the Contract Documents will also include the documents described in Section 3.2.3 and identified in the Guaranteed Maximum Price Amendment and revisions prepared by the Architect and furnished by the Owner as described in Section 3.2.8. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. If anything in the other Contract Documents, other than a Modification, is inconsistent with this Agreement, this Agreement shall govern. An enumeration of the Contract Documents, other than a Modification, appears in Article 15.

§ 2.2 Relationship of the Parties

The Construction Manager accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Construction Manager's skill and judgment in furthering the interests of the Owner to furnish efficient construction administration, management services, and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish or approve, in a timely manner, information required by the Construction Manager and to make payments to the Construction Manager in accordance with the requirements of the Contract Documents.

§ 2.3 General Conditions

§ 2.3.1 For the Preconstruction Phase, AIA Document A201™–2017, General Conditions of the Contract for Construction, as amended, shall apply as follows: Section 1.5, Ownership and Use of Documents; Section 1.7, Digital Data Use and Transmission; Section 1.8, Building Information Model Use and Reliance; Section 3.12.10, Professional Services; Section 10.3, Hazardous Materials; Section 13.1, Governing Law. The term "Contractor" as used in A201–2017 shall mean the Construction Manager.

§ 2.3.2 For the Construction Phase, the general conditions of the contract shall be as set forth in A201–2017, as amended, which document is incorporated herein by reference. The term "Contractor" as used in A201–2017 shall mean the Construction Manager.

§ 2.3.3 In the event of a conflict between this document and AIA Document A201-2017, this document shall be controlling.

ARTICLE 3 CONSTRUCTION MANAGER'S RESPONSIBILITIES

The Construction Manager's Preconstruction Phase responsibilities are set forth in Sections 3.1 and 3.2, and in the applicable provisions of A201-2017 referenced in Section 2.3.1. The Construction Manager's Construction Phase responsibilities are set forth in Section 3.3. The Owner and Construction Manager may agree, in consultation with the Architect, for the Construction Phase to commence prior to completion of the Preconstruction Phase, in which case, both phases will proceed concurrently. The Construction Manager shall identify a representative authorized to act on behalf of the Construction Manager with respect to the Project.

§ 3.1 Preconstruction Phase

§ 3.1.1 Extent of Responsibility

The Construction Manager shall exercise reasonable care in performing its Preconstruction Services. The Owner and Architect shall be entitled to rely on, and shall not be responsible for, the accuracy, completeness, and timeliness of services and information furnished by the Construction Manager. The Construction Manager, however, does not warrant or guarantee estimates and schedules except as may be included as part of the Guaranteed Maximum Price. The Construction Manager is not required to ascertain that the Drawings and Specifications are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Construction Manager shall promptly report to the Architect and Owner any nonconformity discovered by or made known to the Construction Manager as a request for information in such form as the Architect may require.

§ 3.1.2 The Construction Manager shall provide a preliminary evaluation of the Owner's program, schedule and construction budget requirements, each in terms of the other.

§ 3.1.3 Consultation

§ 3.1.3.1 The Construction Manager shall schedule and conduct meetings with the Architect and Owner to discuss such matters as procedures, progress, coordination, and scheduling of the Work.

§ 3.1.3.2 The Construction Manager shall advise the Owner and Architect on proposed site use and improvements, selection of materials, building systems, and equipment. The Construction Manager shall also provide recommendations to the Owner and Architect, consistent with the Project requirements, on constructability; availability of materials and labor; time requirements for procurement, installation and construction; prefabrication; and factors related to construction cost including, but not limited to, costs of alternative designs or materials, preliminary budgets, life-cycle data, and possible cost reductions. The Construction Manager shall consult with the Architect regarding professional services to be provided by the Construction Manager during the Construction Phase.

§ 3.1.3.3 The Construction Manager shall assist the Owner and Architect in establishing building information modeling and digital data protocols for the Project, if any, using AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 3.1.4 Project Schedule

When Project requirements in Section 4.1.1 have been sufficiently identified, the Construction Manager shall prepare and periodically update a Project schedule for the Architect's review and the Owner's acceptance. The Construction Manager shall obtain the Architect's approval for the portion of the Project schedule relating to the performance of the Architect's services. The Project schedule shall coordinate and integrate the Construction Manager's services, the Architect s services, other Owner consultants' services, and the Owner's responsibilities; and identify items that affect the Project's timely completion. The updated Project schedule shall include the following: submission of the Guaranteed Maximum Price proposal; components of the Work; times of commencement and completion required of each Subcontractor; ordering and delivery of products, including those that must be ordered in advance of construction; and the occupancy requirements of the Owner.

§ 3.1.5 Phased Construction

The Construction Manager, in consultation with the Architect, shall provide recommendations with regard to accelerated or fast-track scheduling, procurement, and sequencing for phased construction. The Construction Manager

shall take into consideration cost reductions, cost information, constructability, provisions for temporary facilities, and procurement and construction scheduling issues.

§ 3.1.6 Cost Estimates

§ 3.1.6.1 Based on the preliminary design and other design criteria prepared by the Architect, the Construction Manager shall prepare, for the Architect's review and the Owner's approval, preliminary estimates of the Cost of the Work or the cost of program requirements using area, volume, or similar conceptual estimating techniques. If the Architect or Construction Manager suggests alternative materials and systems, the Construction Manager shall provide cost evaluations of those alternative materials and systems.

§ 3.1.6.2 As the Architect progresses with the preparation of the Schematic Design, Design Development and Construction Documents, the Construction Manager shall prepare and update, at appropriate intervals agreed to by the Owner, Construction Manager and Architect, an estimate of the Cost of the Work with increasing detail and refinement. The Construction Manager shall include in the estimate those costs to allow for the further development of the design, price escalation, and market conditions, until such time as the Owner and Construction Manager agree on a Guaranteed Maximum Price for the Work. The estimate shall be provided for the Architect's review and the Owner's approval. The Construction Manager shall inform the Owner and Architect in the event that the estimate of the Cost of the Work exceeds the latest approved Project budget, and make recommendations for corrective action.

§ 3.1.6.3 If the Architect is providing cost estimating services as a Supplemental Service, and a discrepancy exists between the Construction Manager's cost estimates and the Architect's cost estimates, the Construction Manager and the Architect shall work together to reconcile the cost estimates within a reasonable amount of time to allow for the orderly progress of the Project.

§ 3.1.7 As the Architect progresses with the preparation of the Schematic Design, Design Development and Construction Documents, the Construction Manager shall consult with the Owner and Architect and make recommendations regarding constructability and schedules, for the Architect's review and the Owner's approval.

§ 3.1.8 The Construction Manager shall provide recommendations and information to the Owner and Architect regarding equipment, materials, services, and temporary Project facilities.

§ 3.1.9 The Construction Manager shall provide a staffing plan for Preconstruction Phase services for the Owner's review and approval.

§ 3.1.10 If the Owner identified a Sustainable Objective in Article 1, the Construction Manager shall fulfill its Preconstruction Phase responsibilities as required in AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, attached to this Agreement.

§ 3.1.11 Subcontractors and Suppliers

§ 3.1.11.1 If the Owner has provided requirements for subcontractor procurement in section 1.1.14, the Construction Manager shall provide a subcontracting plan, addressing the Owner's requirements, for the Owner's review and approval.

§ 3.1.11.2 The Construction Manager shall develop bidders' interest in the Project.

§ 3.1.11.3 The processes described in Article 9 shall apply if bid packages will be issued during the Preconstruction Phase.

§ 3.1.12 Procurement

The Construction Manager shall prepare, for the Architect's review and the Owner's acceptance, a procurement schedule for items that must be ordered in advance of construction. The Construction Manager shall expedite and coordinate the ordering and delivery of materials that must be ordered in advance of construction. If the Owner agrees to procure any items prior to the establishment of the Guaranteed Maximum Price, the Owner shall procure the items on terms and conditions acceptable to the Construction Manager. Upon the establishment of the Guaranteed Maximum Price, the Owner shall assign all contracts for these items to the Construction Manager and the Construction Manager shall thereafter accept responsibility for them.

§ 3.1.13 Compliance with Laws
The Construction Manager shall comply with applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to its performance under this Contract, and with equal employment opportunity programs, and other programs as may be required by governmental and quasi-governmental authorities.

§ 3.1.14 Other Preconstruction Services
Insert a description of any other Preconstruction Phase services to be provided by the Construction Manager, or reference an exhibit attached to this document
(Describe any other Preconstruction Phase services, such as providing cash flow projections, development of a project information management system, early selection or procurement of subcontractors, etc.)

« See RFP and Proposal »

§ 3.2 Guaranteed Maximum Price Proposal
§ 3.2.1 At a time to be mutually agreed upon by the Owner and the Construction Manager, the Construction Manager shall prepare a Guaranteed Maximum Price proposal for the Owner's and Architect's review, and the Owner's acceptance. The Guaranteed Maximum Price in the proposal shall be the sum of the Construction Manager's estimate of the Cost of the Work, the Construction Manager's contingency described in Section 3.2.4, and the Construction Manager's Fee described in Section 6.1.2.

§ 3.2.2 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes, or equipment, all of which, if required, shall be incorporated by Change Order.

§ 3.2.3 The Construction Manager shall include with the Guaranteed Maximum Price proposal a written statement of its basis, which shall include the following:

.1 A list of the Drawings and Specifications, including all Addenda thereto, and the Conditions of the Contract;
.2 A list of the clarifications and assumptions made by the Construction Manager in the preparation of the Guaranteed Maximum Price proposal, including assumptions under Section 3.2.2;
.3 A statement of the proposed Guaranteed Maximum Price, including a statement of the estimated Cost of the Work organized by trade categories or systems, including allowances; the Construction Manager's contingency set forth in Section 3.2.4; and the Construction Manager's Fee;
.4 The anticipated date of Substantial Completion upon which the proposed Guaranteed Maximum Price is based; and
.5 A date by which the Owner must accept the Guaranteed Maximum Price.

§ 3.2.4 In preparing the Construction Manager's Guaranteed Maximum Price proposal, the Construction Manager shall include a contingency for the Construction Manager's exclusive use to cover those costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order.

§ 3.2.5 The Construction Manager shall meet with the Owner and Architect to review the Guaranteed Maximum Price proposal. In the event that the Owner or Architect discover any inconsistencies or inaccuracies in the information presented, they shall promptly notify the Construction Manager, who shall make appropriate adjustments to the Guaranteed Maximum Price proposal, its basis, or both.

§ 3.2.6 If the Owner notifies the Construction Manager that the Owner has accepted the Guaranteed Maximum Price proposal in writing before the date specified in the Guaranteed Maximum Price proposal, the Guaranteed Maximum Price proposal shall be deemed effective without further acceptance from the Construction Manager. Following acceptance of a Guaranteed Maximum Price, the Owner and Construction Manager shall execute the Guaranteed Maximum Price Amendment amending this Agreement, a copy of which the Owner shall provide to the Architect. The Guaranteed Maximum Price Amendment shall set forth the agreed upon Guaranteed Maximum Price with the information and assumptions upon which it is based.

§ 3.2.7 The Construction Manager shall not incur any cost to be reimbursed as part of the Cost of the Work prior to the execution of the Guaranteed Maximum Price Amendment, unless the Owner provides prior written authorization for such costs.

§ 3.2.8 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions and clarifications contained in the Guaranteed Maximum Price Amendment. The Owner shall promptly furnish such revised Contract Documents to the Construction Manager. The Construction Manager shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions and clarifications contained in the Guaranteed Maximum Price Amendment and the revised Contract Documents.

§ 3.2.9 The Construction Manager shall include in the Guaranteed Maximum Price all sales, consumer, use and similar taxes for the Work provided by the Construction Manager that are legally enacted, whether or not yet effective, at the time the Guaranteed Maximum Price Amendment is executed.

§ 3.3 Construction Phase

§ 3.3.1 General

§ 3.3.1.1 For purposes of Section 8.1.2 of A201–2017, the date of commencement of the Work shall mean the date of commencement of the Construction Phase.

§ 3.3.1.2 The Construction Phase shall commence upon the Owner's execution of the Guaranteed Maximum Price Amendment or, prior to acceptance of the Guaranteed Maximum Price proposal, by written agreement of the parties. The written agreement shall set forth a description of the Work to be performed by the Construction Manager, and any insurance and bond requirements for Work performed prior to execution of the Guaranteed Maximum Price Amendment.

§ 3.3.2 Administration

§ 3.3.2.1 The Construction Manager shall schedule and conduct meetings to discuss such matters as procedures, progress, coordination, scheduling, and status of the Work. The Construction Manager shall prepare and promptly distribute minutes of the meetings to the Owner and Architect.

§ 3.3.2.2 Upon the execution of the Guaranteed Maximum Price Amendment, the Construction Manager shall prepare and submit to the Owner and Architect a construction schedule for the Work and a submittal schedule in accordance with Section 3.10 of A201–2017.

§ 3.3.2.3 Monthly Report

The Construction Manager shall record the progress of the Project. On a monthly basis, or otherwise as agreed to by the Owner, the Construction Manager shall submit written progress reports to the Owner and Architect, showing percentages of completion and other information required by the Owner.

§ 3.3.2.4 Daily Logs

The Construction Manager shall keep, and make available to the Owner and Architect, a daily log containing a record for each day of weather, portions of the Work in progress, number of workers on site, identification of equipment on site, problems that might affect progress of the work, accidents, injuries, and other information required by the Owner. Construction Manager shall submit the daily logs to Owner monthly.

§ 3.3.2.5 Cost Control

The Construction Manager shall develop a system of cost control for the Work, including regular monitoring of actual costs for activities in progress and estimates for uncompleted tasks and proposed changes. The Construction Manager shall identify variances between actual and estimated costs and report the variances to the Owner and Architect, and shall provide this information in its monthly reports to the Owner and Architect, in accordance with Section 3.3.2.3 above.

ARTICLE 4 OWNER'S RESPONSIBILITIES

§ 4.1 Information and Services Required of the Owner

§ 4.1.1 The Owner shall provide information with reasonable promptness, regarding requirements for and limitations on the Project, including a written program which shall set forth the Owner's objectives, constraints, and criteria, including

schedule, space requirements and relationships, flexibility and expandability, special equipment, systems, sustainability and site requirements.

§ 4.1.2 [Omitted].

§ 4.1.3 The Owner shall establish and periodically update the Owner's budget for the Project, including (1) the budget for the Cost of the Work as defined in Article 7, (2) the Owner's other costs, and (3) reasonable contingencies related to all of these costs. If the Owner significantly increases or decreases the Owner's budget for the Cost of the Work, the Owner shall notify the Construction Manager and Architect. The Owner and the Architect, in consultation with the Construction Manager, shall thereafter agree to a corresponding change in the Project's scope and quality.

§ 4.1.4 Structural and Environmental Tests, Surveys and Reports. During the Preconstruction Phase, the Owner shall furnish the following information, if reasonably available, or services with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services. The Construction Manager shall be entitled to reasonably rely on the accuracy of information and services furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 4.1.4.1 The Owner shall furnish tests, inspections, and reports, required by law and as otherwise agreed to by the parties, such as structural, mechanical, and chemical tests, tests for air and water pollution, and tests for hazardous materials.

§ 4.1.4.2 The Owner shall furnish, if reasonably available, surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a written legal description of the site. The surveys and legal information shall include, as applicable, grades and lines of streets, alleys, pavements and adjoining property and structures; designated wetlands; adjacent drainage; rights-of-way, restrictions, easements, encroachments, zoning, deed restrictions, boundaries and contours of the site; locations, dimensions and other necessary data with respect to existing buildings, other improvements and trees; and information concerning available utility services and lines, both public and private, above and below grade, including inverts and depths. All the information on the survey shall be referenced to a Project benchmark.

§ 4.1.4.3 The Owner, when such services are requested, shall furnish services of geotechnical engineers, which may include test borings, test pits, determinations of soil bearing values, percolation tests, evaluations of hazardous materials, seismic evaluation, ground corrosion tests and resistivity tests, including necessary operations for anticipating subsoil conditions, with written reports and appropriate recommendations.

§ 4.1.5 During the Construction Phase, the Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Construction Manager's performance of the Work with reasonable promptness after receiving the Construction Manager's written request for such information or services.

§ 4.1.6 If the Owner identified a Sustainable Objective in Article 1, the Owner shall fulfill its responsibilities as required in AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, attached to this Agreement.

§ 4.2 Owner's Designated Representative

The Owner shall identify a representative authorized to act on behalf of the Owner with respect to the Project. The Owner's representative shall render decisions promptly and furnish information expeditiously, so as to avoid unreasonable delay in the services or Work of the Construction Manager. Except as otherwise provided in Section 4.2.1 of A201–2017, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 4.2.1 Legal Requirements. The Owner shall furnish all legal, insurance and accounting services, including auditing services, that may be reasonably necessary at any time for the Project to meet the Owner's needs and interests.

§ 4.3 Architect
The Owner shall retain an Architect to provide services, duties and responsibilities as described herein, including any additional services requested by the Construction Manager that are necessary for the Preconstruction and Construction Phase services under this Agreement.

ARTICLE 5 COMPENSATION AND PAYMENTS FOR PRECONSTRUCTION PHASE SERVICES

§ 5.1 Compensation

§ 5.1.1 For the Construction Manager's Preconstruction Phase services described in Sections 3.1 and 3.2, the Owner shall compensate the Construction Manager as follows:
(Insert amount of, or basis for, compensation and include a list of reimbursable cost items, as applicable.)

« See Proposal. Hourly up to the not-to-exceed amount of $_____ »

§ 5.1.2 The hourly billing rates for Preconstruction Phase services of the Construction Manager and the Construction Manager's Consultants and Subcontractors, if any, are set forth below.
(If applicable, attach an exhibit of hourly billing rates or insert them below.)

«See Proposal»

Individual or Position	Rate

§ 5.1.2.1 Hourly billing rates for Preconstruction Phase services include all costs to be paid or incurred by the Construction Manager, as required by law or collective bargaining agreements, for taxes, insurance, contributions, assessments and benefits and, for personnel not covered by collective bargaining agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, and shall remain unchanged unless the parties execute a Modification.

§ 5.1.3 [Omitted].

§ 5.2 Payments

§ 5.2.1 Unless otherwise agreed, payments for services shall be made monthly in proportion to services performed.

§ 5.2.2 Payments are due and payable upon presentation of the Construction Manager's invoice. Amounts unpaid «» («») days after the invoice date shall bear interest at the rate entered below, or in the absence thereof at the legal rate prevailing from time to time at the principal place of business of the Construction Manager.
(Insert rate of monthly or annual interest agreed upon.)

« » % « »

See Amendment No. 1 to AIA Document A133-2019

ARTICLE 6 COMPENSATION FOR CONSTRUCTION PHASE SERVICES

§ 6.1 Contract Sum

§ 6.1.1 The Owner shall pay the Construction Manager the Contract Sum in current funds for the Construction Manager's performance of the Contract after execution of the Guaranteed Maximum Price Amendment. The Contract Sum is the Cost of the Work as defined in Article 7 plus the Construction Manager's Fee.

§ 6.1.2 The Construction Manager's Fee:
(State a lump sum, percentage of Cost of the Work or other provision for determining the Construction Manager's Fee.)

«See Proposal»

§ 6.1.3 The method of adjustment of the Construction Manager's Fee for changes in the Work:

«See Proposal»

§ 6.1.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

«See Proposal»

§ 6.1.5 Rental rates for Construction Manager-owned equipment shall not exceed «one hundred» percent («100» %) of the standard rental rate paid at the place of the Project.

§ 6.1.6 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any.)

«**§6.1.6.1** The Construction Manager and Owner acknowledge that in the event that the Construction Manager fails to achieve Substantial Completion of the work by the date of Substantial Completion, as adjusted, in accordance with this Agreement, the Owner will incur substantial damages and the extent of such damages shall be incapable of accurate measurement. Nonetheless, the parties acknowledge that on the date of this Agreement, the amount of liquidated damages set forth below represents a good faith estimate as to the actual potential damages that the Owner would incur as a result of late Substantial Completion of the Project. Such liquidated damages shall be the sole and exclusive remedy of the Owner for late completion of the Project, and the Owner hereby waives all other remedies available at law or in equity with respect to losses resulting from late completion. The amount of the liquidated damages calculated hereunder does not include any penalty.

«**§6.1.6.2** If the Construction Manager fails to achieve Substantial Completion of the Work on or before the date of Substantial Completion, as adjusted, for any reason other than Excusable Delays, the Construction Manager shall pay to the Owner liquidated damages in the amount of $_____, plus any attorneys' fees and expert fees assessed in connection with the enforcement of any provision of this Agreement, per Calendar Day for each Calendar Day the date of Substantial Completion is delayed beyond the Date of Substantial Completion. To the extent the Owner takes legal occupancy of the Project and has the opportunity to use the Project for its intended purpose after the Date of Substantial Completion; payment of liquidated damages shall be made contemporaneously with the Owner's required payment to the Construction Manager at Final Completion, and such payments may be offset against each other. Notwithstanding such offset, the Construction Manager reserves the right to challenge its liability for liquidated damages pursuant to the dispute resolution procedures of this Agreement.

«**§6.1.6.3** Excusable Delays. To the extent any of the following events result in an actual delay in the Work affecting the Work activities on the critical path schedule, such shall constitute an "Excusable Delay" (to the extent not set forth below, a delay will be considered an "Inexcusable Delay."

1. Failure or inability of the Owner to make available any or the entire site of the Project in accordance with the requirements of the Project Schedule.
2. Failure or inability of the Owner or the Construction Manager to obtain necessary zoning changes, variances, code changes, permits, or approvals from any governmental authority, or failure to obtain any street or alley vacations required for the performance of the Work, except to the extent due to the sole fault or sole neglect of the Construction Manager.
3. Delays resulting from acts or omissions of separate contractors (not Subcontractors), except to the extent separate contractors perform their work properly and in accordance with Construction Manager schedules.
4. Delays resulting from Force Majeure.
5. Differing, unusual, or concealed site conditions that could not be reasonably anticipated by the Construction Manager in preparing the Project Schedule, including, without limitation, archaeological finds, and soil conditions (including rock or other geological conditions), underground foundations, abandoned utility lines, and water conditions.
6. Delays resulting from the existence or discovery of hazardous materials on the Project site not brought to the site by the Construction Manager.
7. Delays resulting from changes in Applicable laws after the date of Execution of this Agreement.
8. Delays occurring due to the acts or omissions of the Owner and those within the control of the Owner, including, but not limited to, separate contractors.
9. Delays resulting from local utility providers.
10. Weather impact delays beyond 20 scheduled work days. A weather impact day shall be a day in which a full day's critical path activity cannot be accomplished.

»

§ 6.1.7 Other:
(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

«Any savings the Construction Manager realizes in performing the public improvement contract will accrue to the Owner.»

§ 6.2 Guaranteed Maximum Price
The Construction Manager guarantees that the Contract Sum shall not exceed the Guaranteed Maximum Price set forth in the Guaranteed Maximum Price Amendment, subject to additions and deductions by Change Order as provided in the Contract Documents. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Construction Manager without reimbursement by the Owner. All savings will be for the benefit of Owner. Construction Manager shall not share in any savings.

§ 6.3 Changes in the Work
§ 6.3.1 The Owner may, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions. The Owner shall issue such changes in writing. The Construction Manager may be entitled to an equitable adjustment in the Contract Time as a result of changes in the Work.

§ 6.3.1.1 The Architect may order minor changes in the Work as provided in Article 7 of AIA Document A201–2017, General Conditions of the Contract for Construction.

§ 6.3.2 Adjustments to the Guaranteed Maximum Price on account of changes in the Work subsequent to the execution of the Guaranteed Maximum Price Amendment may be determined by any of the methods listed in Article 7 of AIA Document A201–2017, General Conditions of the Contract for Construction.

§ 6.3.3 Adjustments to subcontracts awarded on the basis of a stipulated sum shall be determined in accordance with Article 7 of A201–2017, as they refer to "cost" and "fee," and not by Articles 6 and 7 of this Agreement. Adjustments to subcontracts awarded with the Owner's prior written consent on the basis of cost plus a fee shall be calculated in accordance with the terms of those subcontracts.

§ 6.3.4 In calculating adjustments to the Guaranteed Maximum Price, the terms "cost" and "costs" as used in Article 7 of AIA Document A201–2017 shall mean the Cost of the Work as defined in Article 7 of this Agreement and the term "fee" shall mean the Construction Manager's Fee as defined in Section 6.1.2 of this Agreement.

§ 6.3.5 If no specific provision is made in Section 6.1.3 for adjustment of the Construction Manager's Fee in the case of changes in the Work, or if the extent of such changes is such, in the aggregate, that application of the adjustment provisions of Section 6.1.3 will cause substantial inequity to the Owner or Construction Manager, the Construction Manager's Fee shall be equitably adjusted on the same basis that was used to establish the Fee for the original Work, and the Guaranteed Maximum Price shall be adjusted accordingly.

ARTICLE 7 COST OF THE WORK FOR CONSTRUCTION PHASE
§ 7.1 Costs to Be Reimbursed
§ 7.1.1 The term Cost of the Work shall mean costs necessarily incurred by the Construction Manager in the proper performance of the Work. The Cost of the Work shall include only the items set forth in Sections 7.1 through 7.7.

§ 7.1.2 Where, pursuant to the Contract Documents, any cost is subject to the Owner's prior approval, the Construction Manager shall obtain such approval in writing prior to incurring the cost.

§ 7.1.3 Costs shall be at rates not higher than the standard rates paid at the place of the Project, except with prior approval of the Owner.

§ 7.1.4 Special Cost Terms. Notwithstanding anything herein to the contrary, the parties agree that the following special terms shall apply to the identified costs:

A. Insurance/Bond Cost – shall be reimbursed at ___% of the GMP.

B. General Conditions (Appendix E – General Conditions Matrix) - The table found in Appendix E states the categories of specific General Conditions Work costs that support the cost for General Conditions Work that will be payable under the Contract. The total cost for General Conditions Work in Appendix E, based on the categories of General Conditions Work in the table, shall not to exceed the sum of $_____, i.e, that will be the maximum amount payable to Construction Manager for General Conditions Work identified in Appendix E, regardless of the final Project cost or the actual construction period required to complete the Project. All items of General Conditions Work listed by Owner in the table in Appendix E will be compensated either in a lump sum, fixed amount, or a not to exceed amount on a cost reimbursement basis. As identified in the GMP Amendment. Any item of Work that might customarily be considered to be General Conditions Work by Construction Manager but which is not listed in the table may be compensated on a cost reimbursement basis if it is otherwise described as a compensable Cost of the Work in this Article 7.

§ 7.2 Labor Costs

§ 7.2.1 Wages or salaries of construction workers directly employed by the Construction Manager to perform the construction of the Work at the site or, with the Owner's prior approval, at off-site workshops.

§ 7.2.2 Wages or salaries of the Construction Manager's supervisory and administrative personnel when stationed at the site and performing Work, with the Owner's prior approval.

§ 7.2.2.1 Wages or salaries of the Construction Manager's supervisory and administrative personnel when performing Work and stationed at a location other than the site, but only for that portion of time required for the Work, and limited to the personnel and activities listed below:
(Identify the personnel, type of activity and, if applicable, any agreed upon percentage of time to be devoted to the Work.)

« »

§ 7.2.3 Wages and salaries of the Construction Manager's supervisory or administrative personnel engaged at factories, workshops or while traveling, in expediting the production or transportation of materials or equipment required for the Work, but only for that portion of their time required for the Work.

§ 7.2.4 Costs paid or incurred by the Construction Manager, as required by law or collective bargaining agreements, for taxes, insurance, contributions, assessments and benefits and, for personnel not covered by collective bargaining agreements, customary benefits such as sick leave, medical and health benefits, holidays, vacations and pensions, provided such costs are based on wages and salaries included in the Cost of the Work under Sections 7.2.1 through 7.2.3.

§ 7.2.5 If agreed rates for labor costs, in lieu of actual costs, are provided in this Agreement, the rates shall remain unchanged throughout the duration of this Agreement, unless the parties execute a Modification.

§ 7.3 Subcontract Costs

Payments made by the Construction Manager to Subcontractors in accordance with the requirements of the subcontracts and this Agreement.

§ 7.4 Costs of Materials and Equipment Incorporated in the Completed Construction

§ 7.4.1 Costs, including transportation and storage at the site, of materials and equipment incorporated, or to be incorporated, in the completed construction.

§ 7.4.2 Costs of materials described in the preceding Section 7.4.1 in excess of those actually installed to allow for reasonable waste and spoilage. Unused excess materials, if any, shall become the Owner's property at the completion of the Work or, at the Owner's option, shall be sold by the Construction Manager. Any amounts realized from such sales shall be credited to the Owner as a deduction from the Cost of the Work.

§ 7.5 Costs of Other Materials and Equipment, Temporary Facilities and Related Items

§ 7.5.1 Costs of transportation, storage, installation, dismantling, maintenance, and removal of materials, supplies, temporary facilities, machinery, equipment and hand tools not customarily owned by construction workers that are

provided by the Construction Manager at the site and fully consumed in the performance of the Work. Costs of materials, supplies, temporary facilities, machinery, equipment, and tools, that are not fully consumed, shall be based on the cost or value of the item at the time it is first used on the Project site less the value of the item when it is no longer used at the Project site. Costs for items not fully consumed by the Construction Manager shall mean fair market value.

§ 7.5.2 Rental charges for temporary facilities, machinery, equipment, and hand tools not customarily owned by construction workers that are provided by the Construction Manager at the site, and the costs of transportation, installation, dismantling, minor repairs, and removal of such temporary facilities, machinery, equipment, and hand tools. Rates and quantities of equipment owned by the Construction Manager, or a related party as defined in Section 7.8, shall be subject to the Owner's prior approval. The total rental cost of any such equipment may not exceed the purchase price of any comparable item.

§ 7.5.3 Costs of removal of debris from the site of the Work and its proper and legal disposal.

§ 7.5.4 Costs of the Construction Manager's site office, including general office equipment and supplies.

§ 7.5.5 Costs of materials and equipment suitably stored off the site at a mutually acceptable location, subject to the Owner's prior approval.

§ 7.6 Miscellaneous Costs

§ 7.6.1 Premiums for that portion of insurance and bonds required by the Contract Documents that can be directly attributed to this Contract.

§ 7.6.1.1 Costs for self-insurance, for either full or partial amounts of the coverages required by the Contract Documents, with the Owner's prior approval.

§ 7.6.1.2 Costs for insurance through a captive insurer owned or controlled by the Construction Manager, with the Owner's prior approval.

§ 7.6.2 Sales, use, or similar taxes, imposed by a governmental authority, that are related to the Work and for which the Construction Manager is liable. Costs paid or incurred by the Construction Manager for the Corporate Activity Tax directly related to the Work shall be considered a cost of the Work provided that such tax shall be excluded from the cost of the Work for the purpose of calculating the Construction Manager's fee.

§ 7.6.3 Fees and assessments for the building permit, and for other permits, licenses, and inspections, for which the Construction Manager is required by the Contract Documents to pay.

§ 7.6.4 Fees of laboratories for tests required by the Contract Documents; except those related to defective or nonconforming Work for which reimbursement is excluded under Article 13 of AIA Document A201–2017 or by other provisions of the Contract Documents, and which do not fall within the scope of Section 7.7.3.

§ 7.6.5 Royalties and license fees paid for the use of a particular design, process, or product, required by the Contract Documents.

§ 7.6.5.1 The cost of defending suits or claims for infringement of patent rights arising from requirements of the Contract Documents, payments made in accordance with legal judgments against the Construction Manager resulting from such suits or claims, and payments of settlements made with the Owner's consent, unless the Construction Manager had reason to believe that the required design, process, or product was an infringement of a copyright or a patent, and the Construction Manager failed to promptly furnish such information to the Architect as required by Article 3 of AIA Document A201–2017. The costs of legal defenses, judgments, and settlements shall not be included in the Cost of the Work used to calculate the Construction Manager's Fee or subject to the Guaranteed Maximum Price.

§ 7.6.6 Costs for communications services, electronic equipment, and software, directly related to the Work and located at the site, with the Owner's prior approval.

§ 7.6.7 Costs of document reproductions and delivery charges.

§ 7.6.8 Deposits lost for causes other than the Construction Manager's negligence or failure to fulfill a specific responsibility in the Contract Documents.

§ 7.6.9 Legal, mediation and arbitration costs, including attorneys' fees, other than those arising from disputes between the Owner and Construction Manager, reasonably incurred by the Construction Manager after the execution of this Agreement in the performance of the Work and with the Owner's prior approval, which shall not be unreasonably withheld, so long as such dispute is not caused by Construction Manager's negligent or wrongful acts or omissions.

§ 7.6.10 Expenses incurred in accordance with the Construction Manager's standard written personnel policy for relocation and temporary living allowances of the Construction Manager's personnel required for the Work, with the Owner's prior approval.

§ 7.6.11 That portion of the reasonable expenses of the Construction Manager's supervisory or administrative personnel incurred while traveling in discharge of duties connected with the Work.

§ 7.7 Other Costs and Emergencies

§ 7.7.1 Other costs necessary to complete the Work, with the Owner's prior approval.

§ 7.7.2 Costs incurred in taking action to prevent threatened damage, injury, or loss, in case of an emergency affecting the safety of persons and property, as provided in Article 10 of AIA Document A201–2017.

§ 7.7.3 Costs of repairing or correcting damaged or nonconforming Work executed by the Construction Manager, Subcontractors, or suppliers, provided that such damaged or nonconforming Work was not caused by the negligence of, or failure to fulfill a specific responsibility by, the Construction Manager, and only to the extent that the cost of repair or correction is not recovered by the Construction Manager from insurance, sureties, Subcontractors, suppliers, or others.

§ 7.7.4 The costs described in Sections 7.1 through 7.7 shall be included in the Cost of the Work, notwithstanding any provision of AIA Document A201–2017 or other Conditions of the Contract which may require the Construction Manager to pay such costs, unless such costs are excluded by the provisions of Section 7.9.

§ 7.8 Related Party Transactions

§ 7.8.1 For purposes of this Section 7.8, the term "related party" shall mean (1) a parent, subsidiary, affiliate, or other entity having common ownership of, or sharing common management with, the Construction Manager; (2) any entity in which any stockholder in, or management employee of, the Construction Manager holds an equity interest in excess of ten percent in the aggregate; (3) any entity which has the right to control the business or affairs of the Construction Manager; or (4) any person, or any member of the immediate family of any person, who has the right to control the business or affairs of the Construction Manager.

§ 7.8.2 If any of the costs to be reimbursed arise from a transaction between the Construction Manager and a related party, the Construction Manager shall notify the Owner of the specific nature of the contemplated transaction, including the identity of the related party and the anticipated cost to be incurred, before any such transaction is consummated or cost incurred. If the Owner, after such notification, authorizes the proposed transaction in writing, then the cost incurred shall be included as a cost to be reimbursed, and the Construction Manager shall procure the Work, equipment, goods, or service, from the related party, as a Subcontractor, according to the terms of Article 9. If the Owner fails to authorize the transaction in writing, the Construction Manager shall procure the Work, equipment, goods, or service from some person or entity other than a related party according to the terms of Article 9.

§ 7.9 Costs Not To Be Reimbursed

§ 7.9.1 The Cost of the Work shall not include the items listed below:

- **.1** Salaries and other compensation of the Construction Manager's personnel stationed at the Construction Manager's principal office or offices other than the site office, except as specifically provided in Section 7.2, or as may be provided in Article 14;
- **.2** Bonuses, profit sharing, incentive compensation, and any other discretionary payments, paid to anyone hired by the Construction Manager or paid to any Subcontractor or vendor, unless the Owner has provided prior approval;
- **.3** Expenses of the Construction Manager's principal office and offices other than the site office;
- **.4** Overhead and general expenses, except as may be expressly included in Sections 7.1 to 7.7;

.5 The Construction Manager's capital expenses, including interest on the Construction Manager's capital employed for the Work;

.6 Except as provided in Section 7.7.3 of this Agreement, costs due to the negligence of, or failure to fulfill a specific responsibility of the Contract by, the Construction Manager, Subcontractors, and suppliers, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable;

.7 Any cost not specifically and expressly described in Sections 7.1 to 7.7;

.8 Costs, other than costs included in Change Orders approved by the Owner, that would cause the Guaranteed Maximum Price to be exceeded; and

.9 Costs for services incurred during the Preconstruction Phase.

ARTICLE 8 DISCOUNTS, REBATES, AND REFUNDS

§ 8.1 Cash discounts obtained on payments made by the Construction Manager shall accrue to the Owner.

§ 8.2 Amounts that accrue to the Owner in accordance with the provisions of Section 8.1 shall be credited to the Owner as a deduction from the Cost of the Work.

ARTICLE 9 SUBCONTRACTS AND OTHER AGREEMENTS

§ 9.1 Those portions of the Work that the Construction Manager does not customarily perform with the Construction Manager's own personnel shall be performed under subcontracts or other appropriate agreements with the Construction Manager. The Owner may designate specific persons from whom, or entities from which, the Construction Manager shall obtain bids. The Construction Manager shall obtain bids from Subcontractors, and from suppliers of materials or equipment fabricated especially for the Work, who are qualified to perform that portion of the Work in accordance with the requirements of the Contract Documents. The Construction Manager shall deliver such bids to the Architect and Owner with an indication as to which bids the Construction Manager intends to accept. The Owner then has the right to review the Construction Manager's list of proposed subcontractors and suppliers in consultation with the Architect and, subject to Section 9.1.1, to object to any subcontractor or supplier. Any advice of the Architect, or approval or objection by the Owner, shall not relieve the Construction Manager of its responsibility to perform the Work in accordance with the Contract Documents. The Construction Manager shall not be required to contract with anyone to whom the Construction Manager has reasonable objection.

§ 9.1.1 When a specific subcontractor or supplier (1) is recommended to the Owner by the Construction Manager; (2) is qualified to perform that portion of the Work; and (3) has submitted a bid that conforms to the requirements of the Contract Documents without reservations or exceptions, but the Owner requires that another bid be accepted, then the Construction Manager may require that a Change Order be issued to adjust the Guaranteed Maximum Price by the difference between the bid of the person or entity recommended to the Owner by the Construction Manager and the amount of the subcontract or other agreement actually signed with the person or entity designated by the Owner.

§ 9.2 Subcontracts or other agreements shall conform to the applicable payment provisions of this Agreement, and shall not be awarded on the basis of cost plus a fee without the Owner's prior written approval. If a subcontract is awarded on the basis of cost plus a fee, the Construction Manager shall provide in the subcontract for the Owner to receive the same audit rights with regard to the Subcontractor as the Owner receives with regard to the Construction Manager in Article 10.

ARTICLE 10 ACCOUNTING RECORDS

The Construction Manager shall keep full and detailed records and accounts related to the Cost of the Work in a manner that meets GAP, and exercise such controls, as may be necessary for proper financial management under this Contract and to substantiate all costs incurred. The accounting and control systems shall be satisfactory to the Owner. The Owner and the Owner's auditors shall, during regular business hours and upon reasonable notice, be afforded access to, and shall be permitted to audit and copy, the Construction Manager's records and accounts, including complete documentation supporting accounting entries, books, job cost reports, correspondence, instructions, drawings, receipts, subcontracts, Subcontractor's proposals, Subcontractor's invoices, purchase orders, vouchers, memoranda, and other data relating to this Contract. The Construction Manager shall preserve these records for a period of ten years after final payment, or for such longer period as may be required by law.

ARTICLE 11 PAYMENTS FOR CONSTRUCTION PHASE SERVICES

§ 11.1 Progress Payments

§ 11.1.1 Progress Payments shall be made in accordance with provisions in Amendment No. 1

§ 11.1.8 Retainage

§ 11.1.8.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

«See Amendment No. 1»

§ 11.1.8.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

« N/A »

§ 11.1.8.2 Reduction or limitation of retainage, if any, shall be as follows:
(If the retainage established in Section 11.1.8.1 is to be modified prior to Substantial Completion of the entire Work, insert provisions for such modification.)

« See Amendment No. 1 »

§ 11.1.8.3 Except as set forth in this Section 11.1.8.3, upon Substantial Completion of the Work, the Construction Manager may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 11.1.8. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:
(Insert any other conditions for release of retainage, such as upon completion of the Owner's audit and reconciliation, upon Substantial Completion.)

« »

§ 11.1.9 If final completion of the Work is materially delayed through no fault of the Construction Manager, the Owner shall pay the Construction Manager any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 11.1.10 Except with the Owner's prior written approval, the Construction Manager shall not make advance payments to suppliers for materials or equipment which have not been delivered and suitably stored at the site.

§ 11.1.11 The Owner and the Construction Manager shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors, and the percentage of retainage held on Subcontracts, and the Construction Manager shall execute subcontracts in accordance with those agreements.

§ 11.1.12 In taking action on the Construction Manager's Applications for Payment the Architect and Owner shall be entitled to rely on the accuracy and completeness of the information furnished by the Construction Manager, and such action shall not be deemed to be a representation that (1) the Architect or Owner has made a detailed examination, audit, or arithmetic verification, of the documentation submitted in accordance with Section 11.1.4 or other supporting data; (2) that the Architect or Owner has made exhaustive or continuous on-site inspections; or (3) that the Architect or Owner has made examinations to ascertain how or for what purposes the Construction Manager has used amounts previously paid on account of the Contract. Such examinations, audits, and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 11.2 Final Payment

§ 11.2.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Construction Manager in accordance with AIA Document A201-2017.

§ 11.2.2 Within 30 days of the Owner's receipt of the Construction Manager's final accounting for the Cost of the Work, the Owner shall conduct an audit of the Cost of the Work or notify the Architect that it will not conduct an audit.

§ 11.2.2.1 If the Owner conducts an audit of the Cost of the Work, the Owner shall, within 10 days after completion of the audit, submit a written report based upon the auditors' findings to the Architect.

§ 11.2.2.2 Within seven days after receipt of the written report described in Section 11.2.2.1, or receipt of notice that the Owner will not conduct an audit, and provided that the other conditions of Section 11.2.1 have been met, the Architect will either issue to the Owner a final Certificate for Payment with a copy to the Construction Manager, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding a certificate as provided in Article 9 of AIA Document A201–2017. The time periods stated in this Section 11.2.2 supersede those stated in Article 9 of AIA Document A201–2017. The Architect is not responsible for verifying the accuracy of the Construction Manager's final accounting.

§ 11.2.2.3 If the Owner's auditors' report concludes that the Cost of the Work, as substantiated by the Construction Manager's final accounting, is less than claimed by the Construction Manager, the Construction Manager shall be entitled to request mediation of the disputed amount without seeking an initial decision pursuant to Article 15 of AIA Document A201–2017. A request for mediation shall be made by the Construction Manager within 30 days after the Construction Manager's receipt of a copy of the Architect's final Certificate for Payment. Failure to request mediation within this 30-day period shall result in the substantiated amount reported by the Owner's auditors becoming binding on the Construction Manager. Pending a final resolution of the disputed amount, the Owner shall pay the Construction Manager the amount certified in the Architect's final Certificate for Payment.

§ 11.2.3 The Owner's final payment to the Construction Manager shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

«See Amendment No. 1»

§ 11.2.4 If, subsequent to final payment, and at the Owner's request, the Construction Manager incurs costs, described in Sections 7.1 through 7.7, and not excluded by Section 7.9, to correct defective or nonconforming Work, the Owner shall reimburse the Construction Manager for such costs, and the Construction Manager's Fee applicable thereto, on the same basis as if such costs had been incurred prior to final payment, but not in excess of the Guaranteed Maximum Price. If adjustments to the Contract Sum are provided for in Section 6.1.7, the amount of those adjustments shall be recalculated, taking into account any reimbursements made pursuant to this Section 11.2.4 in determining the net amount to be paid by the Owner to the Construction Manager.

§ 11.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.
(Insert rate of interest agreed upon, if any.)

« » % « »
See Amendment No. 1

ARTICLE 12 DISPUTE RESOLUTION

§ 12.1 Initial Decision Maker

§ 12.1.1 Any Claim between the Owner and Construction Manager shall be resolved in accordance with the provisions set forth in this Article 12 and Article 15 of A201–2017. .

§ 12.1.2 The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017 for Claims arising from or relating to the Construction Manager's Construction Phase services, unless the parties appoint below another individual, not a party to the Agreement, to serve as the Initial Decision Maker.
(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

«N/A»
« »
« »
« »

§ 12.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[« X»] Arbitration pursuant to Article 15 of AIA Document A201–2017

[« »] Litigation in a court of competent jurisdiction

[« »] Other: *(Specify)*

« »

If the Owner and Construction Manager do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 13 TERMINATION OR SUSPENSION

§ 13.1 Termination Prior to Execution of the Guaranteed Maximum Price Amendment

§ 13.1.1 If the Owner and the Construction Manager do not reach an agreement on the Guaranteed Maximum Price, the Owner may terminate this Agreement upon not less than seven days' written notice to the Construction Manager, and the Construction Manager may terminate this Agreement, upon not less than seven days' written notice to the Owner.

§ 13.1.2 In the event of termination of this Agreement pursuant to Section 13.1.1, the Construction Manager shall be compensated for Preconstruction Phase services and Work performed prior to receipt of a notice of termination, in accordance with the terms of this Agreement. In no event shall the Construction Manager's compensation under this Section exceed the compensation set forth in Section 5.1.

§ 13.1.3 Prior to the execution of the Guaranteed Maximum Price Amendment, the Owner may terminate this Agreement upon not less than seven days' written notice to the Construction Manager for the Owner's convenience and without cause, and the Construction Manager may terminate this Agreement, upon not less than seven days' written notice to the Owner, for the reasons set forth in Article 14 of A201–2017.

§ 13.1.4 In the event of termination of this Agreement pursuant to Section 13.1.3, the Construction Manager shall be equitably compensated for Preconstruction Phase services and Work performed prior to receipt of a notice of termination. In no event shall the Construction Manager's compensation under this Section exceed the compensation set forth in Section 5.1.

§ 13.1.5 If the Owner terminates the Contract pursuant to Section 13.1.3 after the commencement of the Construction Phase but prior to the execution of the Guaranteed Maximum Price Amendment, the Owner shall pay to the Construction Manager an amount calculated as follows, which amount shall be in addition to any compensation paid to the Construction Manager under Section 13.1.4:

.1 Take the Cost of the Work incurred by the Construction Manager to the date of termination;

.2 Add the Construction Manager's Fee computed upon the Cost of the Work to the date of termination at the rate stated in Section 6.1 or, if the Construction Manager's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion; and

.3 Subtract the aggregate of previous payments made by the Owner for Construction Phase services.

§ 13.1.6 The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 13.1.5.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Construction Manager shall, as a condition of receiving the payments referred to in this Article 13, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction

Manager under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Construction Manager will contain provisions allowing for assignment to the Owner as described above.

§ 13.1.6.1 If the Owner accepts assignment of subcontracts, purchase orders or rental agreements as described above, the Owner will reimburse or indemnify the Construction Manager for all costs arising under the subcontract, purchase order or rental agreement, if those costs would have been reimbursable as Cost of the Work if the contract had not been terminated. If the Owner chooses not to accept assignment of any subcontract, purchase order or rental agreement that would have constituted a Cost of the Work had this agreement not been terminated, the Construction Manager will terminate the subcontract, purchase order or rental agreement and the Owner will pay the Construction Manager the costs necessarily incurred by the Construction Manager because of such termination.

§ 13.2 Termination or Suspension Following Execution of the Guaranteed Maximum Price Amendment
§ 13.2.1 Termination
The Contract may be terminated by the Owner or the Construction Manager as provided in Article 14 of AIA Document A201–2017.

§ 13.2.2 Termination by the Owner for Cause
§ 13.2.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A201–2017, the amount, if any, to be paid to the Construction Manager under Article 14 of AIA Document A201–2017 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed an amount calculated as follows:

.1 Take the Cost of the Work incurred by the Construction Manager to the date of termination;
.2 Add the Construction Manager's Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 6.1 or, if the Construction Manager' Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;
.3 Subtract the aggregate of previous payments made by the Owner; and
.4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A201–2017.

§ 13.2.2.2 The Owner shall also pay the Construction Manager fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Construction Manager that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 13.2.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Construction Manager shall, as a condition of receiving the payments referred to in this Article 13, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Construction Manager, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Construction Manager under such subcontracts or purchase orders.

§ 13.2.3 Termination by the Owner for Convenience
If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Construction Manager a termination fee as follows:
(Insert the amount of or method for determining the fee, if any, payable to the Construction Manager following a termination for the Owner's convenience.)

« N/A »

If any termination for cause if found to be improper for any reason, it shall be converted to a termination for convenience and Construction Manager's remedy shall be limited to as if it has been a termination for convenience from inception.

§ 13.3 Suspension
The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017; in such case, the Guaranteed Maximum Price and Contract Time shall be increased as provided in Article 14 of AIA Document A201–2017, except that the term "profit" shall be understood to mean the Construction Manager's Fee as described in Sections 6.1 and 6.3.5 of this Agreement.

ARTICLE 14 MISCELLANEOUS PROVISIONS

§ 14.1 Terms in this Agreement shall have the same meaning as those in A201–2017. Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 14.2 Successors and Assigns

§ 14.2.1 The Owner and Construction Manager, respectively, bind themselves, their partners, successors, assigns and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 14.2.2 of this Agreement, and in Section 13.2.2 of A201–2017, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 14.2.2 The Owner may, without consent of the Construction Manager, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Construction Manager shall execute all consents reasonably required to facilitate the assignment.

§ 14.3 Insurance and Bonds

§ 14.3.1 Preconstruction Phase

The Construction Manager shall maintain the following insurance for the duration of the Preconstruction Services performed under this Agreement. If any of the requirements set forth below exceed the types and limits the Construction Manager normally maintains, the Owner shall reimburse the Construction Manager for any additional cost.

§ 14.3.1.1 Commercial General Liability with policy limits of not less than «One Million» ($ «1,000,000.00») for each occurrence and «Two Million» ($ «2,000,000.00») in the aggregate for bodily injury and property damage.

§ 14.3.1.2 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager with policy limits of not less than «One Million» ($ «1,000,000.00») per accident for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles, along with any other statutorily required automobile coverage.

§ 14.3.1.3 The Construction Manager may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and / or umbrella liability insurance, provided that such primary and / or umbrella liability insurance policies result in the same or greater coverage as the coverages required under Sections 14.3.1.1 and 14.3.1.2, and in no event shall any umbrella liability insurance provide narrower coverage than the primary policy. .

§ 14.3.1.4 Workers' Compensation at statutory limits and Employers Liability with policy limits not less than «Five Hundred Thousand» ($ «$500,000»).

§ 14.3.1.5 Professional Liability covering negligent acts, errors and omissions in the performance of professional services, with policy limits of not less than «One Million» ($ «$1,000,000») per claim and «Two Million» ($ «2,000,000.00») in the aggregate.

§ 14.3.1.6 Other Insurance

(List below any other insurance coverage to be provided by the Construction Manager and any applicable limits.)

Coverage	Limits
Pollution Liability Insurance	Not less than $1,000,000 each loss / $1,000,000 aggregate

§ 14.3.1.7 Additional Insured Obligations. To the fullest extent permitted by law, the Construction Manager shall cause the primary and excess or umbrella polices for Commercial General Liability and Automobile Liability to include the Owner as an additional insured for claims caused in whole or in part by the Construction Manager's negligent acts or omissions. The additional insured coverage shall be primary and non-contributory to any of the Owner's insurance policies and shall apply to both ongoing and completed operations.

§ 14.3.1.8 The Construction Manager shall provide certificates of insurance to the Owner that evidence compliance with the requirements in this Section 14.3.1.

§ 14.3.2 Construction Phase
After execution of the Guaranteed Maximum Price Amendment, the Owner and the Construction Manager shall purchase and maintain insurance as set forth in AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price, Exhibit B, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 14.3.2.1 The Construction Manager shall provide bonds as set forth in AIA Document A133™–2019 Exhibit B, and elsewhere in the Contract Documents.

§ 14.4 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:
(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

«Email addressed to [TBD] with subject line of "OFFICIAL CONTRACT NOTICE"»

§ 14.5 Other provisions:

«See Amendment No. 1»

ARTICLE 15 SCOPE OF THE AGREEMENT
§ 15.1 This Agreement represents the entire and integrated agreement between the Owner and the Construction Manager and supersedes all prior negotiations, representations or agreements, either written or oral. This Agreement may be amended only by written instrument signed by both Owner and Construction Manager.

§ 15.2 The following documents comprise the Agreement:

.1 AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price

.2 AIA Document A133™-2019, Exhibit A, Guaranteed Maximum Price Amendment, if executed, to be issued in the Construction Phase and completed at the time of Amendment

.3 AIA Document A133™–2019, Exhibit B, Insurance and Bonds, if executed, to be issued in the Construction Phase and completed at the time of Amendment

.4 AIA Document A201™–2017, General Conditions of the Contract for Construction

.5 Other Exhibits:
(Check all boxes that apply.)

[« »] AIA Document E234™–2019, Sustainable Projects Exhibit, Construction Manager as Constructor Edition, dated as indicated below:
(Insert the date of the E234-2019 incorporated into this Agreement.)

« »

[« »] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.6 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201–2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Construction Manager's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or

proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

«Request for Proposal for CM/GC Services for City of St. Helens New Public Safety Building»
«Proposal»
«Amendment No. 1 to AIA Document A133-2019»

This Agreement is entered into as of the day and year first written above.

OWNER *(Signature)*	**CONSTRUCTION MANAGER** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

DRAFT AIA® Document A133™ – 2019 Exhibit A

Guaranteed Maximum Price Amendment

This Amendment dated the « » day of « » in the year « », is incorporated into the accompanying AIA Document A133™–2019, Standard Form of Agreement Between Owner and Construction Manager as Constructor where the basis of payment is the Cost of the Work Plus a Fee with a Guaranteed Maximum Price dated the « » day of « » in the year « » (the "Agreement")
(In words, indicate day, month, and year.)

for the following **PROJECT:**
(Name and address or location)

« CITY OF ST HELENS NEW PUBLIC SAFETY BUILDING »
« Corner of Old Portland Road and Kaster Road in St. Helens ,Oregon »

THE OWNER:
(Name, legal status, and address)

« The City of St. Helens » «an Oregon municipality»
«265 Strand Street»
«St. Helens, OR, 97051 »
« »

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

«TBD»« »
« »

TABLE OF ARTICLES

ARTICLE A.1 GUARANTEED MAXIMUM PRICE

§ A.1.1 Guaranteed Maximum Price

Pursuant to Section 3.2.6 of the Agreement, the Owner and Construction Manager hereby amend the Agreement to establish a Guaranteed Maximum Price. As agreed by the Owner and Construction Manager, the Guaranteed Maximum Price is an amount that the Contract Sum shall not exceed. The Contract Sum consists of the Construction Manager's Fee plus the Cost of the Work, as that term is defined in Article 6 of the Agreement.

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

AIA Document A201™–2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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§ A.1.1.1 The Contract Sum is guaranteed by the Construction Manager not to exceed « » ($ « »), subject to additions and deductions by Change Order as provided in the Contract Documents.

§ A.1.1.2 Itemized Statement of the Guaranteed Maximum Price. Provided below is an itemized statement of the Guaranteed Maximum Price organized by trade categories, including allowances; the Construction Manager's contingency; alternates; the Construction Manager's Fee; and other items that comprise the Guaranteed Maximum Price as defined in Section 3.2.1 of the Agreement.
(Provide itemized statement below or reference an attachment.)

« See attached Itemized Statement »

§ A.1.1.3 The Construction Manager's Fee is set forth in Section 6.1.2 of the Agreement.

§ A.1.1.4 The method of adjustment of the Construction Manager's Fee for changes in the Work is set forth in Section 6.1.3 of the Agreement.

§ A.1.1.5 Alternates
§ A.1.1.5.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price

§ A.1.1.5.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Exhibit A. Upon acceptance, the Owner shall issue a Modification to the Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

§ A.1.1.6 Unit prices, if any:
(Identify the item and state the unit price and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)

ARTICLE A.2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
§ A.2.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[« »] The date of execution of this Amendment.

[« »] Established as follows:
(Insert a date or a means to determine the date of commencement of the Work.)

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of execution of this Amendment.

§ A.2.2 Unless otherwise provided, the Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work. The Contract Time shall be measured from the date of commencement of the Work.

§ A.2.3 Substantial Completion
§ A.2.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Construction Manager shall achieve Substantial Completion of the entire Work:

(Check one of the following boxes and complete the necessary information.)

[« »] Not later than « » (« ») calendar days from the date of commencement of the Work.

[« »] By the following date: « »

§ A.2.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Construction Manager shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ A.2.3.3 If the Construction Manager fails to achieve Substantial Completion as provided in this Section A.2.3, liquidated damages, if any, shall be assessed as set forth in Section 6.1.6 of the Agreement.

ARTICLE A.3 INFORMATION UPON WHICH AMENDMENT IS BASED

§ A.3.1 The Guaranteed Maximum Price and Contract Time set forth in this Amendment are based on the Contract Documents and the following:

§ A.3.1.1 The following Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ A.3.1.2 The following Specifications:
(Either list the Specifications here, or refer to an exhibit attached to this Amendment.)

« »

Section	Title	Date	Pages

§ A.3.1.3 The following Drawings:
(Either list the Drawings here, or refer to an exhibit attached to this Amendment.)

« »

Number	Title	Date

§ A.3.1.4 The Sustainability Plan, if any:
(If the Owner identified a Sustainable Objective in the Owner's Criteria, identify the document or documents that comprise the Sustainability Plan by title, date and number of pages, and include other identifying information. The Sustainability Plan identifies and describes the Sustainable Objective; the targeted Sustainable Measures; implementation strategies selected to achieve the Sustainable Measures; the Owner's and Construction Manager's roles and responsibilities associated with achieving the Sustainable Measures; the specific details about design reviews, testing or metrics to verify achievement of each Sustainable Measure; and the Sustainability Documentation required for the Project, as those terms are defined in Exhibit C to the Agreement.)

Title	Date	Pages

Other identifying information:

§ A.3.1.5 Allowances, if any, included in the Guaranteed Maximum Price:

(Identify each allowance.)

Item	Price

§ A.3.1.6 Assumptions and clarifications, if any, upon which the Guaranteed Maximum Price is based:
(Identify each assumption and clarification.)

« »

§ A.3.1.7 The Guaranteed Maximum Price is based upon the following other documents and information:
(List any other documents or information here, or refer to an exhibit attached to this Amendment.)

« »

ARTICLE A.4 CONSTRUCTION MANAGER'S CONSULTANTS, CONTRACTORS, DESIGN PROFESSIONALS, AND SUPPLIERS

§ A.4.1 The Construction Manager shall retain the consultants, contractors, design professionals, and suppliers, identified below:
(List name, discipline, address, and other information.)

« »

This Amendment to the Agreement entered into as of the day and year first written above.

OWNER *(Signature)*	**CONSTRUCTION MANAGER** *(Signature)*
« »« »	« »« »
(Printed name and title)	*(Printed name and title)*

DRAFT AIA® Document A133™ – 2019 Exhibit B

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Construction Manager, dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

for the following **PROJECT**:
(Name and location or address)

« CITY OF ST HELENS NEW PUBLIC SAFETY BUILDING »
« Corner of Old Portland Road and Kaster Road in St. Helens ,Oregon »

THE OWNER:
(Name, legal status, and address)

« The City of St. Helens » «an Oregon municipality»
«265 Strand Street»
«St. Helens, OR, 97051 »
« »

THE CONSTRUCTION MANAGER:
(Name, legal status, and address)

«TBD»« »
« »

TABLE OF ARTICLES

ARTICLE B.1 GENERAL

The Construction Manager shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction.

ARTICLE B.2 [OMITTED]

ARTICLE B.3 CONSTRUCTION MANAGER'S INSURANCE AND BONDS

§ B.3.1 General

§ B.3.1.1 Certificates of Insurance. The Construction Manager shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article B.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final

ADDITIONS AND DELETIONS: The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Document A201™–2017, General Conditions of the Contract for Construction. Article 11 of A201™–2017 contains additional insurance provisions.

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Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section B.3.2.1 and Section B.3.3.1. The certificates will show the Owner as an additional insured on the Construction Manager's Commercial General Liability and excess or umbrella liability policy or policies.

§ B.3.1.2 Deductibles and Self-Insured Retentions. The Construction Manager shall disclose to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Construction Manager.

§ B.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Construction Manager shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds for claims caused in whole or in part by the Construction Manager's negligent acts or omissions during the Construction Manager's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Construction Manager's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.

§ B.3.2 Construction Manager's Required Insurance Coverage

§ B.3.2.1 The Construction Manager shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Construction Manager shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Construction Manager is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ B.3.2.2 Commercial General Liability

§ B.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than «Five Million» ($ «$5,000,000») each occurrence, «Ten Million» ($ «$10,000,000») general aggregate, and « Ten Milliom » ($ « 10.000.000 ») aggregate for products-completed operations hazard, providing coverage for claims including

- **.1** damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;
- **.2** personal injury and advertising injury;
- **.3** damages because of physical damage to or destruction of tangible property, including the loss of use of such property;
- **.4** bodily injury or property damage arising out of completed operations; and
- **.5** the Construction Manager's indemnity obligations under Section 3.18 of the General Conditions.

§ B.3.2.2.2 The Construction Manager's Commercial General Liability policy under this Section B.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

- **.1** Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.
- **.2** Claims for property damage to the Construction Manager's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.
- **.3** Claims for bodily injury other than to employees of the insured.
- **.4** Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.
.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.
.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.
.8 Claims related to roofing, if the Work involves roofing.
.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.
.10 Claims related to earth subsidence or movement, where the Work involves such hazards.
.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ B.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Construction Manager, with policy limits of not less than «One Million» ($ «$1,000,000») per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ B.3.2.4 The Construction Manager may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section B.3.2.2 and B.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ B.3.2.4.1 Builder's Risk for the full amount of the GMP.

§ B.3.2.5 Workers' Compensation at statutory limits.

§ B.3.2.6 Employers' Liability with policy limits not less than «One Million» ($ «$1,000,000»).

§ B.3.2.7 Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks

§ B.3.2.8 If the Construction Manager is required to furnish professional services as part of the Work, the Construction Manager shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than «Two Million» ($ «$2,000,000») per claim and «Four Million» ($ «$4,000,000») in the aggregate.

§ B.3.2.9 If the Work involves the transport, dissemination, use, or release of pollutants, the Construction Manager shall procure Pollution Liability insurance, with policy limits of not less than «One Million» ($ «1,000,000») per claim and «One Million» ($ «1,000,000») in the aggregate.

§ B.3.2.10 Coverage under Sections B.3.2.8 and B.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ B.3.2.11 Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ B.3.2.12 Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate.

§ B.3.3 Construction Manager's Other Insurance Coverage

§ B.3.3.1 Insurance selected and described in this Section B.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Construction Manager shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:
(If the Construction Manager is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

« »

§ B.3.3.2 The Construction Manager shall purchase and maintain the following types and limits of insurance in accordance with Section B.3.3.1.
(Select the types of insurance the Construction Manager is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[« »] **§ B.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section B.2.3, which, if selected in this Section B.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section B.2.3.1.3 and Section B.2.3.3. The Construction Manager shall comply with all obligations of the Owner under Section B.2.3 except to the extent provided below. The Construction Manager shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Construction Manager shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:
(Where the Construction Manager's obligation to provide property insurance differs from the Owner's obligations as described under Section B.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

« »

[« »] **§ B.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for Work within fifty (50) feet of railroad property.

[« »] **§ B.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than « » ($ « ») per claim and « » ($ « ») in the aggregate, for liability arising from the encapsulation, removal, handling, storage, transportation, and disposal of asbestos-containing materials.

[« »] **§ B.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[« »] **§ B.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Construction Manager and used on the Project, including scaffolding and other equipment.

[« »] **§ B.3.3.2.6 Other Insurance**
(List below any other insurance coverage to be provided by the Construction Manager and any applicable limits.)

Coverage	Limits

§ B.3.4 Performance Bond and Payment Bond

The Construction Manager shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($See Amendment 1)
Payment Bond	See Amendment 1
Performance Bond	See Amendment 1

Payment and Performance Bonds shall be AIA Document A312™, Payment Bond and Performance Bond, or contain provisions identical to AIA Document A312™, current as of the date of this Agreement.

ARTICLE B.4 SPECIAL TERMS AND CONDITIONS

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

« See Amendment 1 »

DRAFT

AIA® Document A201® – 2017

General Conditions of the Contract for Construction

for the following PROJECT:
(Name and location or address)

« CITY OF ST HELENS NEW PUBLIC SAFETY BUILDING »
« Corner of Old Portland Road and Kaster Road in St. Helens ,Oregon »

THE OWNER:
(Name, legal status and address)

« The City of St. Helens » «an Oregon municipality»
«265 Strand Street»
«St. Helens, OR, 97051 »
« »

THE ARCHITECT:
(Name, legal status and address)
« Mackenzie Inc. Architecture Planning & Interior Design» «an Oregon corporation»
« 1515 SE Water Ave, Suite 100»
« Portland, OR 97214»
« »

TABLE OF ARTICLES

ADDITIONS AND DELETIONS:
The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

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14 TERMINATION OR SUSPENSION OF THE CONTRACT

15 CLAIMS AND DISPUTES

INDEX
(Topics and numbers in bold are Section headings.)

ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, the Owner's Request for Proposal, the Proposal, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

§ 1.1.6 The Specifications

The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

§ 1.1.7 Instruments of Service

Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

§ 1.1.8 Initial Decision Maker

The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.8 Amendment

Amendment shall mean a written modification of the Agreement (including without limitation any agreed change to the GMP), identified as an Amendment, and executed by Construction Manager, the Owner's Authorized Representative, and, where required, approved in writing by the Owner.

§ 1.1.9 Construction Phase

The Construction Phase shall mean the period commencing on the earliest of the following: Owner's written notice to the Construction Manager to proceed with the subcontractor solicitation process for Early Work or GMP Work prior to execution of an Early Work Amendment or GMP Amendment; Owner's execution of a GMP Amendment or

Early Work Amendment, together with the earlier of (i) issuance by Owner of a Notice to Proceed with any on-site construction or (ii) execution of a subcontract or issuance of a purchase order for materials or equipment required for the Work.

§ 1.1.10 Early Work
Early Work shall mean Construction Phase Services authorized by Amendment that the parties agree should be performed in advance of establishment of the GMP. Permissible Early Work shall be limited to: early procurement of materials and supplies; early release of bid or proposal packages for site development and related activities; and any other advance work related to critical components of the Project for which performance prior to establishment of the GMP will materially affect the critical path schedule of the Project.

§ 1.1.11 Early Work Amendment
Early Work Amendment shall mean an Amendment to this CM/GC Contract executed by and between the parties to authorize Early Work.

§ 1.1.12 Guaranteed Maximum Price (GMP)
GMP shall mean the Guaranteed Maximum Price of the Contract, as stated in dollars within the GMP Amendment, as determined in accordance with Article 6, and as it may be adjusted from time to time pursuant to the provisions of this Agreement**.**

§ 1.1.13 General Conditions Work
General Conditions Work ("GC Work") shall mean (i) that portion of the Work required to support construction operations that is not included within overhead or general expense but is called out as GC Work in Exhibit C, and (ii) any other specific categories of Work approved in writing by the Owner's Authorized Representative as forming a part of the GC Work.

§ 1.1.14 GMP Amendment
GMP Amendment shall mean an Amendment to the Contract, issued in the form of Exhibit B and executed by and between the parties, to establish the GMP and identify the GMP Supporting Documents for Construction Phase Services.

§ 1.1.15 GMP Supporting Documents
GMP Supporting Documents shall mean the documents referenced in the GMP Amendment as the basis for establishing the GMP. The GMP Supporting Documents shall expressly identify the Plans and Specifications, assumptions, qualifications, exclusions, conditions, allowances, unit prices, and alternates that form the basis for the GMP.

§ 1.1.16 Preconstruction Phase
The Preconstruction Phase shall mean the period commencing on the date of this CM/GC Contract and ending upon commencement of the Construction Phase; provided that if the Owner and CM/GC agree, the Construction Phase may commence before the Preconstruction Phase is completed, in which case both phases shall proceed concurrently, subject to the terms and conditions of the Contract Documents.

§ 1.2 Correlation and Intent of the Contract Documents
§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Architect does not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 [Omitted]

§ 2.2 [Omitted]

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

§ 2.3.2 The Owner shall retain an Architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 If the employment of the Architect terminates, the Owner shall employ a successor and whose status under the Contract Documents shall be that of the Architect.

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to reasonably rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the

Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

§ 3.1.2 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.3 The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Architect in the Architect's administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect

shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

§ 3.3.3 The Contractor shall be responsible for inspection of portions of Work already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.7 Permits, Fees, Notices and Compliance with Laws

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- **.3** whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and

coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or Architecting unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor

except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, and except to the extent otherwise void under ORS 30.140, the Contractor shall indemnify, defend (with counsel approved by the Owner) and hold harmless Owner, Owner's Authorized Representative, Architect, Architect's consultants, and their respective officers, directors, agents, employees, partners, members, stockholders and affiliated companies (collectively "Indemnitees") from and against all liabilities, damages, losses, claims, expenses (including reasonable attorney fees), demands and actions of any nature whatsoever that arise out of, result from or are related to the following:

- Any damage, injury, loss, expense, inconvenience or delay described in this Subsection.
- Any accident or occurrence that happens or is alleged to have happened in or about the Project Site or any place where the Work is being performed, or in the vicinity of either, at any time prior to the time the Work is fully completed in all respects.
- Any failure of the Contractor to observe or perform any duty or obligation under the Contract Documents that is to be observed or performed by the Contractor, or any breach of any agreement, duty, obligation, responsibility, covenant, provision, requirement, representation or warranty of the Contractor contained in the Contract Documents or in any subcontract.
- The negligent acts or omissions of the Contractor, a Subcontractor or anyone directly or indirectly employed by them or any one of them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.
- Any failure to comply with all applicable Laws by the Contractor or any Subcontractor, or anyone employed by any one of them, or anyone for whose acts they may be liable.
- Any lien filed upon the Project or bond claim in connection with the Work.

Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this Subsection. In claims against any person or entity indemnified under this Subsection by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, the indemnification obligation under this Subsection shall not be limited by a limitation on amount or type of damages, compensation or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts or other employee benefit acts.

§ 3.18.2 Notwithstanding the Contractor's foregoing defense obligations, neither the Contractor nor any attorney engaged by the Contractor shall defend any claim in the name of the Owner, nor purport to act as legal representative of the Owner, without the prior written consent of the Owner's legal counsel. The Owner may, at any time at its election, assume its own defense and settlement in the event that it determines that the Contractor is prohibited from defending the Owner, or that the Contractor is not adequately defending the Owner's interests, or that an important governmental principle is at issue or that it is in the best interests of the Owner to do so. The Owner reserves all rights to pursue any claims it may have against the Contractor.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

§ 4.1.2 Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect.

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

§ 4.2.5 Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

§ 4.2.6 The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.8 The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.9 The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.11 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

§ 4.2.13 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

.1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

.2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity,

the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

§ 6.1.3 The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- **.1** The change in the Work;
- **.2** The amount of the adjustment, if any, in the Contract Sum; and
- **.3** The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- **.1** Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- **.2** Unit prices stated in the Contract Documents or subsequently agreed upon;
- **.3** Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- **.4** As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

- **.1** Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- **.2** Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- **.3** Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- **.4** Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- **.5** Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon

compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- **.5** damage to the Owner or a Separate Contractor;
- **.6** reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- **.7** repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

§ 9.6.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Architect.

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the

Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect

finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 [Omitted].

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- **.1** employees on the Work and other persons who may be affected thereby;
- **.2** the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- **.3** other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 [Omitted].

§ 10.3.4 The Owner shall not be responsible for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 [Omitted].

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance. Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance [Omitted]

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of

subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 [Omitted].

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance [Omitted]

§11.5 Adjustment and Settlement of Insured Loss [Omitted]

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two years after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The two-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The two-year period for correction of Work shall be extended by corrective Work performed by the Contractor pursuant to this Section 12.2, as it relates to the portion of the Work corrected.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the two-year period for

correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such must be done in writing. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Oregon Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary

by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor [Omitted]

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- **.4** otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- **.1** Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- **.2** Accept assignment of subcontracts pursuant to Section 5.4; and
- **.3** Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

.1 cease operations as directed by the Owner in the notice;

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement. In no instance shall Contractor be entitled to profit or overhead on unperformed Work.

§ 14.4.4 If a termination by Owner for cause is found to be improper for any reason, the termination shall be converted into a termination by Owner for convenience and Contractors remedies limited as if it had been a termination for convenience from inception.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the Owner and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by Contractor under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the Contractor first recognizes the condition giving rise to the Claim, whichever is later. . Failure to give timely notice shall constitute a waiver by Contractor of the claim.

§ 15.1.3.2 Claims by Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the Owner. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- **.1** damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- **.2** damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the Arbitration Service of Portland . A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the Arbitration Service of Portland in accordance with its Procedural Rules

in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the Arbitration Service of Portland, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the Arbitration Service of Portland, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

ATTACHMENT 5

AMENDMENT #1 TO
STANDARD FORM OF AGREEMENT BETWEEN OWNER AND CONTRACTOR

This Amendment #1 supplements the terms of the underlying Agreement to set forth terms required for Oregon Public Contracts. To the extent of any conflict between the requirements of this Amendment #1 and the requirements imposed by the underlying Agreement, this Amendment #1 shall control. The remaining terms of the Agreement remain in full force and effect. The Owner and the Contractor hereby agree:

1. Mandatory Terms For Oregon Public Improvement Contract.

(a) Contractor shall:

(1) Make payment promptly, as due, to all persons supplying to the contractor labor or material for the performance of the work provided for in the Agreement;

(2) Pay all contributions or amounts due the Industrial Accident Fund from the contractor or subcontractor incurred in the performance of the contract;

(3) Not permit any lien or claim to be filed or prosecuted against the state or a county, school district, municipality, municipal corporation or subdivision thereof, on account of any labor or material furnished;

(4) Pay to the Department of Revenue all sums withheld from employees under ORS 316.167;

(5) Demonstrate that an employee drug testing program is in place;

(6) To the extent the Work includes demolition, salvage or recycle construction and demolition debris, if feasible and cost-effective;

(7) To the extent the Work includes lawn and landscape maintenance, compost or mulch yard waste material at an approved site, if feasible and cost-effective;

(b) If the Contractor fails, neglects or refuses to pay promptly a person's claim for labor or services that the person provides to the contractor or a subcontractor in connection with the Agreement as the claim becomes due, Owner may pay the amount of the claim to the person that provides

the labor or services and charge the amount of the payment against funds due or to become due the Contractor by reason of the Agreement;

(c) If the Contractor or its subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the Agreement within 30 days after receiving payment from Owner, Contractor or its subcontractor owes the person the amount due plus interest charges that begin at the end of the 10-day period within which payment is due under ORS 279C.580 (4) and that end upon final payment, unless payment is subject to a good faith dispute as defined in ORS 279C.580. The rate of interest on the amount due is nine percent per annum. The amount of interest may not be waived;

(d) If Contractor or its subcontractor fails, neglects or refuses to pay a person that provides labor or materials in connection with the public improvement contract, the person may file a complaint with the Construction Contractors Board, unless payment is subject to a good faith dispute as defined in ORS 279C.580;

(e) Paying a claim in the manner authorized (b) through (d) above does not relieve the Contractor or the Contractor's surety from obligation with respect to an unpaid claim;

(f) No person may not be employed for more than 10 hours in any one day, or 40 hours in any one week, except in cases of necessity, emergency or when the public policy absolutely requires it, and in such cases the employee shall be paid at least time and a half pay:

(1)

(i) For all overtime in excess of eight hours in any one day or 40 hours in any one week when the work week is five consecutive days, Monday through Friday; or

(ii) For all overtime in excess of 10 hours in any one day or 40 hours in any one week when the work week is four consecutive days, Monday through Friday; and

(2) For all work performed on Saturday and on any legal holiday specified in ORS 279C.540;

(g) Contractor shall give notice in writing to employees who work on Work covered by the Agreement, either at the time of hire or before commencement of work on the Agreement, or by posting a notice in a

location frequented by employees, of the number of hours per day and days per week that the employees may be required to work;

(h) Contractor shall promptly, as due, make payment to any person, copartnership, association or corporation furnishing medical, surgical and hospital care services or other needed care and attention, incident to sickness or injury, to the employees of the Contractor, of all sums that the Contractor agrees to pay for the services and all moneys and sums that the Contractor collected or deducted from the wages of employees under any law, contract or agreement for the purpose of providing or paying for the services;

(i) Contractor shall comply with ORS 656.017 unless exempt under ORS 656.126;

(j) The withholding of retainage by Contractor and its subcontractors shall be in accordance with ORS 701.420;

(k) In accordance with ORS 279C.560, unless Owner finds in writing that accepting a bond, security or other instrument poses an extraordinary risk that is not typically associated with the bond, security or other instrument, Owner will approve the Contractor's written request to deposit bonds, securities or other instruments with the Owner or in a custodial account or other account satisfactory to Owner with an approved bank or trust company, to be held instead of cash retainage for the benefit of Owner. In such event, Owner will reduce the cash retainage by an amount equal to the value of the bonds, securities and other instruments. Interest or earnings on the bonds, securities and other instruments shall accrue to the Contractor. Bonds, securities and other instruments deposited instead of cash retainage shall be assigned to or made payable to Owner and shall be of a kind approved by the Director of the Oregon Department of Administrative Services, including but not limited to: Bills, certificates, notes or bonds of the United States; Other obligations of the United States or agencies of the United States; Obligations of a corporation wholly owned by the federal government; Indebtedness of the Federal National Mortgage Association; General obligation bonds of the State of Oregon or a political subdivision of the State of Oregon; or Irrevocable letters of credit issued by an insured institution, as defined in ORS 706.008. The Contractor shall execute and provide such documentation and instructions respecting the bonds, securities and other instruments as Owner may require to protect its interests. When Owner determines that all requirements for the protection of Owner’s interest have been fulfilled, the

bonds and securities deposited instead of cash retainage will be released to the Contractor. If Owner accepts a surety bond from Contractor in lieu of retainage, Contractor shall accept like bonds from its subcontractors or suppliers from which Contractor has retainage. Contractor shall then reduce the moneys Contractor holds as retainage in an amount equal to the value of the bond and pay the amount of the reduction to the subcontractor or supplier.

(l) Owner shall make progress payments on the Agreement monthly as work progresses. Payments shall be based upon estimates of work completed that are approved by Owner. A progress payment is not considered acceptance or approval of any work or waiver of any defects therein. Owner shall pay to Contractor interest on the progress payment, not including retainage, due the contractor. The interest shall commence 30 days after receipt of the invoice from the Contractor or 15 days after the payment is approved by Owner, whichever is the earlier date. The rate of interest charged to Owner on the amount due shall equal three times the discount rate on 90-day commercial paper in effect at the Federal Reserve Bank in the Federal Reserve district that includes Oregon on the date that is 30 days after receipt of the invoice from Contractor or 15 days after the payment is approved by Owner, whichever is the earlier date, but the rate of interest may not exceed 30 percent. Interest shall be paid automatically when payments become overdue. Owner shall document, calculate and pay any interest due when payment is made on the principal. Interest payments shall accompany payment of net due on the Agreement. Owner will not require Contractor to petition, invoice, bill or wait additional days to receive interest due. When an invoice is filled out incorrectly, when there is any defect or impropriety in any submitted invoice or when there is a good faith dispute, Owner shall so notify Contractor within 15 days stating the reason or reasons the invoice is defective or improper or the reasons for the dispute. A defective or improper invoice, if corrected by Contractor within seven days of being notified by Owner, may not cause a payment to be made later than specified in this section unless interest is also paid. If requested in writing by a subcontractor, Contractor, within 10 days after receiving the request, shall send to the subcontractor a copy of that portion of any invoice, request for payment submitted to Owner or pay document provided by Owner to Contractor specifically related to any labor or materials supplied by the subcontractor. Payment of interest may be postponed when payment on the principal is delayed because of disagreement between Owner and Contractor.

(m) Owner will reserve as retainage from all progress payment five percent (5%) of the payment. As work progresses, Owner may (but is not required) reduce the amount of the retainage and Owner may (but is not required) eliminate retainage on any remaining monthly contract payments after 50 percent of the Work under the Agreement is completed if, in Owner's opinion, such work is progressing satisfactorily. Elimination or reduction of retainage shall be allowed only upon written application by Contractor, and the application shall include written approval of Contractor's surety. However, when the contract work is 97.5 percent completed, Owner may, at the Owner's sole discretion and without application by Contractor, reduce the retained amount to 100 percent of the value of the Work remaining to be done. Upon receipt of a written application by Contractor, the Owner shall respond in writing within a reasonable time. The retainage held by Owner shall be included in and paid to Contractor as part of the final payment of the contract price. Owner shall pay to Contractor interest at the rate of 1.5 percent per month on the final payment due Contractor, interest to commence 30 days after the work under the Agreement has been completed and accepted and to run until the date when the final payment is tendered to Contractor. Contractor shall notify Owner in writing when the contractor considers the work complete and Owner shall, within 15 days after receiving the written notice, either accept the work or notify Contractor of work yet to be performed on the Agreement. If Owner does not, within the time allowed, notify Contractor of work yet to be performed to fulfill contractual obligations, the interest provided by this subsection shall commence to run 30 days after the end of the 15-day period.

(n) Contractor shall include in each subcontract for property or services the contractor enters into with a subcontractor, including a material supplier, for the purpose of performing a construction contract:

(1) A payment clause that obligates Contractor to pay subcontractor for satisfactory performance under the subcontract within 10 days out of amounts the Owner pays to Contractor under the Agreement;

(2) A clause that requires Contractor to provide subcontractor with a standard form that the subcontractor may use as an application for payment or as another method by which the subcontractor may claim a payment due from Contractor;

(3) A clause that requires Contractor, except as otherwise provided in this paragraph, to use the same form and regular administrative procedures for processing payments during the entire term of the subcontract. Contractor may change the form or the regular administrative procedures Contractor uses for processing payments if Contractor: (i) Notifies the subcontractor in writing at least 45 days before the date on which the contractor makes the change; and (ii) Includes with the written notice a copy of the new or changed form or a description of the new or changed procedure.

(4) An interest penalty clause that obligates Contractor, if the Contractor does not pay the subcontractor within 30 days after receiving payment from Owner, to pay subcontractor an interest penalty on amounts due in each payment Contractor does not make in accordance with the payment clause included in the subcontract under paragraph (a) of this subsection. Contractor or subcontractor is not obligated to pay an interest penalty if the only reason that Contractor or subcontractor did not make payment when payment was due is that Contractor or subcontractor did not receive payment from Owner or Contractor when payment was due. The interest penalty: (i) Applies to the period that begins on the day after the required payment date and that ends on the date on which the amount due is paid; and (ii) Is computed at the rate specified in ORS 279C.515 (2).

(o) Contractor shall, in each of the Contractor's subcontracts, require the first-tier subcontractor to include a payment clause and an interest penalty clause that conforms to the standards of subsection (n) of this section in each of the first-tier subcontractor's subcontracts and to require each of the first-tier subcontractor's subcontractors to include such clauses in the first-tier subcontractors' subcontracts with each lower-tier subcontractor or supplier.

(p) Contractor expressly agrees to be bound by and comply with prevailing rate of wage laws applicable to Contractor's Work in accordance with ORS 279C.800 et seq. The prevailing wage rates in effect when this Project was first advertised are hereby expressly incorporated into this Agreement by reference. Information on BOLI Prevailing Wage Rates may be obtained at the following site: www.oregon.gov/BOLI/WHD/PWR/pwr_state.shtml. A copy of these rates may be requested by calling the Bureau of Labor and Industries

directly (Bureau of Labor and Industries – (971) 673-0838). Information on the Federal Davis-Bacon Act rates may be obtained at the following site: www.oregon.gov/ODOT/HWY/SPECS/wages.shtml. Contractor's workers must be paid not less than the specified minimum hourly rate of wage in accordance with ORS 279C.838 and 279C.840.

(q) Contractor shall have a public works bond filed with the Construction Contractors Board and shall provide Owner with a copy of such bond before starting work unless Contractor is exempt under ORS 279C.836(4), (7), (8) or (9). Contractor shall include a similar provision in any subcontract.

(r) Contractor shall keep the prevailing rates of wage for Project posted in a conspicuous and accessible place in or about the Project and, if it provides a health and welfare plan or pension plan or both, shall post a notice describing the plan, including information on how and where to make claims and where to obtain further information, in a conspicuous and accessible place in or about the Project.

(s) Contractor shall furnish to Owner a weekly affidavit with supporting detailed exhibits in a form that complies with the certified statement requirements of ORS 279C.845, certifying wages paid and to whom during each proceeding weekly payroll period, for itself and all subcontractor who are required to submit such certified statements under ORS 279C.845. If Contractor has failed to timely submit a required certified statement, Owner, pursuant to ORS 279C.845(8), shall withhold twenty-five percent (25%) from any amount owed to Contractor until Contractor provides the required certified statement.

OWNER:

By: _____
Name: _____
Title: _____

CONTRACTOR:

By: _____
Name: _____
Title: _____

ELEMENT OF PROJECT COSTS TO BE INCLUDED IN GENERAL CONDITIONS

The table below states the categories of specific General Conditions Work costs that support the cost for General Conditions Work that will be payable under the Contract. The total cost for General Conditions Work shown below, based on the categories of General Conditions Work below, shall be the not to exceed amount that will be payable to CM/GC for General Conditions Work, regardless of the final Project cost or the actual construction period required to complete the Project. All items of General Conditions Work listed by Owner in the table below will be compensated either in a lump sum, fixed amount, or a not to exceed amount on a cost reimbursement basis. Any item of Work that might customarily be considered to be General Conditions Work by CM/GC but which Owner has not listed in the table below may be compensated on a cost reimbursement basis if it is described as Cost of the Work in (General Conditions section 7.3.4).

B.1 Project Manager	B.27 Office Security
B.2 Project Engineer	B.28 Sustainability Coordinator / Supervisor
B.3 Superintendent	B.29 Clerical/Secretarial
B.4 Field Supervision	B.30 Project Coordination
B.5 field Coordination	B.31 Estimating and Cost Engineering
B.6 General Foreman	B.32 Overtime for CM / GC Onsite Supervisory Staff
B.7 Quality Control	B.33 Field Engineer
B.8 Safety Coordinator / Supervisor	B.34 Delivery Services
B.9 Trade Coordination	B.35 Project Foreman
B.10 Office Equipment	B.36 Fork Lift for Loading / Unloading of misc. materials
B.11 Printing / reproduction	B.37 Loading & Unloading of miscellaneous materials
B.12 Phones / Phone lines	B.38 Jobsite Clean-up (excludes Final Cleanup)
B.13 Fuel / Maintenance	B.39 Office Supplies
B.14 Substance Abuse Testing	B.40 Office Clean-up
B.15 Construction Signage	B.41 Temporary Toilets / Sinks
B.16 Progress Photo (Monthly)	B.42 First Aid Supplies
B.17 Temporary Office	B.43 IT Equipment
B.18 Postage / Delivery	B.44 Material Handling
B.19 Internet service	B.45 Staging Area Maintenance
B.20 Vehicles	B.46 Safety barrier / Safety warnings / Safety Handrails
B.21 Submittal Review & Approval	B.47 All cost for Sustainable Construction Practices
B.22 Courier Delivery Services	B.48 Temp. water include distribution & utility charges
B.23 Drop Boxes & Disposal fees	B.49 Drinking water
B.24 Office furniture	B.50 Small tools
B.25 Drafting and Detailing	B.51 Maintenance & Monitoring of Erosion Control
B.26 Site Security	B.52 Travel / Mileage / Subsistence

ST. HELENS PUBLIC SAFETY BUILDING (REDESIGN + CONSTRUCTION)